PRIOR LAKE SPRING LAKE WATERSHED DISTRICT

AGENDA

Tuesday, September 17, 2024

6:00 PM

Council Chambers
Prior Lake City Hall

BOARD OF MANAGERS:
Bruce Loney, President; Frank Boyles, Vice President;
Christian Morkeberg, Treasurer; Ben Burnett, Secretary; Matt Tofanelli, Manager

Note: Individuals with items on the agenda or who wish to speak to the Board are encouraged to be in attendance when the meeting is called to order.

Board Workshop 4:00 PM – *Parkview Conference Room*

4:00 – 4:30 PM	W.1	Farmer-led Council Interview Findings (Emily Dick/ Scott SWCD)
4:30 – 4:50 PM	W.2	Minnesota Watersheds Resolutions Update (Joni Giese)
4:50 – 5:05 PM	W.3	Minnesota Watersheds Resolution Delegate Selection Discussion (Joni Giese)
5:05 – 5:20 PM	W.4	2025 Draft Budget (Joni Giese)
5:20 – 5:35 PM	W.5	Administrator Report (Joni Giese)
5:35 – 5:50 PM	W.6	Liaison Updates

- District Partners in Attendance
- Managers' Summary of other Meetings Attended

6:00 – 6:01 PM 1.0 **BOARD MEETING CALL TO ORDER & PLEDGE OF ALLEGIANCE**

6:01 – 6:02 PM 2.0 **PUBLIC COMMENT**

If anyone wishes to address the Board of Managers on an item not on the agenda or on the consent agenda, please come forward at this time. Go up to the podium, turn on the microphone and state your name and address. (The Chair may limit your time for commenting.)

6:02 - 6:07 PM **PUBLIC HEARING – 2025 Proposed Budget and Levy Certification**

If anyone wishes to address the Board of Managers on the 2025 proposed budget and levy, please come forward at this time. Go up to the podium, turn on the microphone and state your name and address. (The Chair may limit your time for commenting.)

- 2025 Proposed Levy Certification—Resolution 24-384 (Vote)

6:07 – 6:08 PM 3.0 **APPROVAL OF AGENDA** (Additions/Corrections/Deletions)

6:08 – 6:40 PM 4.0 **OTHER OLD/NEW BUSINESS**

4.1 Programs & Projects Update (Discussion)
4.2 Minnesota Watersheds Resolution Delegate Selection (Vote)
4.3 Ferric Chloride Site Improvements Request for Quotes (Vote)

6:40 – 6:50 PM 5.0 **TREASURER'S REPORT**

5.1 Monthly Financial Reports (Discussion Only)

- Financial Report
- Treasurers Report
- Cash Flow Projections
- Cost Analysis

6:50 – 6:55 PM 6.0 **CONSENT AGENDA**

The consent agenda is considered as one item of business. It consists of routine administrative items or items not requiring discussion. Items can be removed from the consent agenda at the request of the Board member, staff member, or a member of the audience. Please state which item or items you wish to remove for separate discussion.

6.1 Meeting Minutes – August 20, 2024, Board Workshop

6.2 Meeting Minutes – August 20, 2024, Board Meeting

6.3 Claims List and Bank Purchase Card Expenditures Summary

6.4 Revised Scope of Services: Desilt Pond Outlet & High-flow Bypass Improvement Feasibility Study

6.5 Lake Ridge Stormwater Study Request for Proposals

6:55 – 7:00 PM 7.0 **UPCOMING MEETING/EVENT SCHEDULE:**

- CAC Meeting, Thursday, September 26, 2024, 6:00 pm (Spring Lake Township – Town Hall)
- Board of Managers Workshop, Tuesday, October 15, 2024, 4:00 pm (Prior Lake City Hall – Council Chambers)
- Board of Managers Meeting, Tuesday, October 15, 2024, 6:00 pm (Prior Lake City Hall – Council Chambers)

7:00 PM 8.0 **ADJOURNMENT**

PLSLWD Board Staff Report
September 12, 2024

Subject |	2025 Proposed Budget and Levy		
Board Meeting Date |	September 17, 2024	**Item No:**	Public Hearing
Prepared By |	Joni Giese, District Administrator		
Attachments |	a.) Resolution 24-384 Certifying the Proposed 2025 Administrative and Metropolitan Water Management Tax Levy b.) Draft 2025 Budget in Financial Statement Format c.) Draft 2025 Budget Memorandum		
Proposed Action |	Motion to adopt Resolution 24-384 Certifying the Proposed 2025 Administrative and Metropolitan Water Management Tax Levy in the total amount of $2,066,590.		

Background

The 2025 budget development process started in May and June with staff meeting with the Board of Managers and the CAC, both individually and jointly, to highlight District progress towards programs and projects as identified in the District's Water Resources Management Plan and to discuss priorities that will influence the development of the 2025 budget. The Board of Managers reviewed and provided comments on budget drafts at the July and August board workshops. The CAC reviewed and provided comments on a draft budget at their July meeting.

Discussion

The 2025 proposed levy and budget represent:

- An increase of $117,590 from the 2024 levy of $1,949,000. This is a 6.0% increase from 2024.
- Based on the proposed levy of $2,066,590, the 2025 tax rate would be 2.844%, which is 0.025% higher than the 2024 tax rate of 2.819%.
- Approximately 91% of the budget is directed towards projects and programs to either improve water quality or reduce flooding.
- $756,500 of budget reserves (funds budgeted and/or committed in previous years) will be used to cover 2025 projects and program costs. This amount represents 23.5% of the proposed 2025 budget.
- $246,435 of grant revenue (7.7% of the proposed 2025 budget) will be used to cover 2025 projects and program costs. Grant revenue is approximately $219,000 higher than 2024. District staff continue to submit grant applications to help offset project costs. This grant revenue ***does not*** include the expected MPCA grant revenue of approximately $856,000 associated with PLOC pipelining project, as that will be reflected in the PLOC financial statements.

- The PLOC Contributions line item includes the District's estimated contribution to annual PLOC operations and maintenance, along with the District's portion of the local match associated with the MPCA grant.
- The budget reflects the District's continued efforts to build a reserve fund to cover future anticipated lake alum treatments at a slightly reduced contribution rate than previous years.
- With the increase in capital project activity supporting enhanced water quality and flood mitigation, it is possible that the District will need to issue bonds in 2025 or 2026 to cover expected capital costs.

The budget is presented in two formats. The budget is presented in a financial statement format with individual budget line items listed along with comparisons to the 2024 and 2023 budgets. The budget memorandum provides a description of each budget line item and specific activities/projects covered by each budget item.

After approval of the proposed levy at the September board meeting, a proposed levy certification will be submitted to Scott County. After submission of the proposed levy certification, the levy cannot be increased, but still can be reduced for the final levy certification submission to the County in December.

Recommendation

Motion to adopt Resolution 24-384 Certifying the Proposed 2025 Administrative and Metropolitan Water Management Tax Levy in the total amount of $2,066,590.

Resolution 24-384

Certifying the Proposed 2025
Administrative and Metropolitan Water Management Tax Levy

WHEREAS the Prior Lake-Spring Lake Watershed District (PLSLWD) is a watershed management organization and political subdivision of the State of Minnesota established under and operating with powers and purposes set forth at Minnesota Statutes Chapters 103B and 103D;

WHEREAS the PLSLWD has an approved watershed management plan under Minnesota Statutes Section 103B.231;

WHEREAS Minnesota Statute Section 103D.905, subdivision 3, authorizes the PLSLWD to levy an *ad valorem* tax on real property within the PLSLWD for the administrative expenses of the District not to exceed $500,000.00;

WHEREAS Minnesota Statutes Section 103B.241, subdivision 1, authorizes the PLSLWD to levy an *ad valorem* tax on real property within the PLSLWD sufficient to pay the increased costs to the PLSLWD to prepare and implement its watershed management plan;

THEREFORE, BE IT RESOLVED that in accordance with Minnesota Statutes Section 103D.915, the Board hereby approves and certifies to the Scott County Auditor an *ad valorem* levy in the total amount of $2,066,590 to be levied on all taxable property within the PLSLWD, composed of the following:

- $ 261,600 for the General Fund under authority of Minnesota Statutes Section 103D.905, subdivision 3;
- $ 1,804,990 to implement the watershed management plan under Minnesota Statutes Section 103B.241, subdivision 1, for the general projects and programs of the PLSLWD.

The question was on the adoption of the Resolution and there were ____ yeas and ____ nays as follows:

	Yea	Nay	Absent
Boyles	☐	☐	☐
Burnett	☐	☐	☐
Loney	☐	☐	☐
Morkeberg	☐	☐	☐
Tofanelli	☐	☐	☐

Upon vote, the chair declared the resolution adopted.

It is hereby certified that the Board of the Prior Lake-Spring Lake Watershed District adopted this Resolution at a duly convened meeting of the Board held on the 17th day of September 2024, and that such Resolution is in full force and effect on this date, and that such Resolution has not been modified, amended, or rescinded since its adoption.

_____ Dated: September 17, 2024

Ben Burnett, Secretary

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT
2025 Budget - Draft (9-17-2024)

Program Element		2025 Source of Funds				2024 Budget	2023 Budget
		2025 Levy	Budget Reserve	Grant Funds/Fees	2025 Budget		
	General Fund (Administration)						
	Revenues						
	Property Taxes	$ 261,600	$ -	$ -	$ 261,600	$ 252,000	$ 249,200
	Interest	-	-	18,400	18,400	9,000	3,000
	Other	-	-	-	-	-	-
	Total Revenues	**$ 261,600**	**$ -**	**$ 18,400**	**$ 280,000**	**$ 261,000**	**$ 252,200**
	Expenditures						
	Administrative Salaries and Benefits	$ 137,100	$ -	$ 18,400	$ 155,500	$ 145,000	$ 138,000
	703 · Telephone, Internet & IT Support	19,500	-	-	19,500	16,000	16,200
	702 - Rent	28,200	-	-	28,200	27,500	28,300
	706 · Office Supplies	7,000	-	-	7,000	8,000	9,000
	709 · Insurance and Bonds	13,000	-	-	13,000	13,000	14,200
	670 · Accounting	36,300	-	-	36,300	33,500	31,000
	671 · Audit	11,000	-	-	11,000	10,500	9,000
	903 · Fees, Dues, and Subscriptions	1,500	-	-	1,500	1,500	1,500
	660 · Legal (not for projects)	8,000	-	-	8,000	6,000	5,000
	General Fund (Administration) Expenditures	**$ 261,600**	**$ -**	**$ 18,400**	**$ 280,000**	**$ 261,000**	**$ 252,200**
	Net Change in General Fund	**-**	**-**	**-**	**-**	**-**	**-**

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT

2025 Budget - Draft (9-17-2024)

Program Element		2025 Source of Funds					
		2025 Levy	Budget Reserve	Funds/Fees	2025 Budget	2024 Budget	2023 Budget
	Implementation Fund						
	Revenues						
	Property Taxes	$ 1,804,990	$ -	$ -	$ 1,804,990	$ 1,697,000	$ 1,670,736
	Grants/Fees	-	-	250,935	250,935	34,000	120,664
	Interest	-	-	124,300	124,300	61,000	67,200
	Budget Reserves	-	756,500	-	756,500	523,356	362,300
	Total Revenues	**$ 1,804,990**	**$ 756,500**	**$ 375,235**	**$ 2,936,725**	**$ 2,315,356**	**$ 2,220,900**
	Expenditures						
	Program Salaries and Benefits (not JPA/MOA)	$ 379,700	$ -	$ 124,300	$ 504,000	$ 485,500	**492,900**
Water Qual	550 Public Infrastructure Partnership Projects	$ 50,000	$ -	$ -	$ 50,000	$ 50,000	$ -
Water Qual	550 200 Street Pond Improvements	-	15,000	30,000	45,000	-	-
Water Qual	550 Swamp Lake IESF	434,765	18,600	181,935	635,300		
Water Qual	611 Farmer-led Council	72,000	-	-	72,000	55,000	54,000
Water Qual	611 Cost-Share Incentives	88,000	-	-	88,000	68,000	58,000
Water Qual	611 Highway 13 Wetland, FeCl System & Desilt, O&M	43,000	170,000	-	213,000	305,000	98,000
Water Qual	611 Carp Management	88,500	-	-	88,500	96,500	94,000
Water Qual	611 Spring Lake Demonstration Project Maintenance	1,200	-	-	1,200	1,200	1,200
Water Qual	611 Buck Stream Stabilization Parcel Maintenance	4,000			4,000	-	-
Water Qual	611 Alum Internal Loading Reserve	200,000	-	-	200,000	230,000	220,000
Water Qual	611 Fish Stocking (consolidated with Carp Mgmt in 2025)	-	-	-	-	2,000	3,000
Water Qual	626 Planning and Program Development	31,000	-	-	31,000	27,500	17,500
Water Qual	626 Fish Lake Management Plan Update	-		-	-	-	81,300
Water Qual	626 LGU Plan Review	3,000	-		3,000	4,000	4,000
Water Qual	626 Engineering not for programs	21,000	-	-	21,000	20,000	15,000
Water Qual	626 Debt Issuance Planning	15,000	-	-	15,000	-	10,000
Water Qual	626 District Plan Update	-	-		-	2,500	2,500
Water Qual	626 Capital Project Planning (Prev: Upper Watershed Projects)	16,200	341,400	7,500	365,100	636,000	524,500
Water Qual	637 District Monitoring Program	89,100	-	-	89,100	84,500	81,000
Water Qual	648 Permitting and Compliance	65,000	-	-	65,000	62,000	79,000
Water Qual	648 Update MOAs with cities & county	-	5,000	-	5,000	5,000	10,000
Water Qual	648 BMP and Easement Inventory & Inspections	35,500	-	4,500	40,000	47,875	10,000
	WQ TOTAL	**1,257,265**	**550,000**	**223,935**	**2,031,200**	**1,697,075**	**1,363,000**
Water Storage	550 District-wide Hydraulic & Hydrologic model	4,000	-	-	4,000	5,000	5,000
Water Storage	626 Comprehensive Wetland Plan Update	-	35,500	-	35,500	35,500	-
	WS TOTAL	**4,000**	**35,500**	**-**	**39,500**	**40,500**	**5,000**
AIS	637 Aquatic Vegetation Management	18,600	-	12,000	30,600	17,500	15,000
AIS	637 Automated Veg Monitoring (consol w Veg Mgmt 2025)	-	-	-	-	1,300	2,000
AIS	637 Aquatic Veg Surveys (consolidated w Veg Mgmt 2025)	-	-	-	-	12,000	5,500
AIS	637 Boat inspections on Spring, Upper & Lower Prior	19,000	-	15,000	34,000	34,000	32000
	AIS TOTAL	**37,600.0**	**-**	**27,000**	**64,600**	**64,800**	**54,500**
Ed & Out	652 Education and Outreach Program	18,300	9,000	-	27,300	38,500	40,000
	E&O TOTAL	**18,300**	**9,000**	**-**	**27,300**	**38,500**	**40,000**
	PLOC Contribution	**108,125**		**-**	**108,125**	**38,981**	**185,500**
	Debt (Bond) Payments	**-**	**162,000**		**162,000**		
	Debt Payment Reserve	**-**	**-**	**-**	**-**	**-**	**80,000**
	Total Implementation Fund	**$ 1,804,990**	**$ 756,500**	**$ 375,235**	**$ 2,936,725**	**$ 2,365,356**	**$ 2,220,900**
	Net Change in Fund Balance Implementation Fund	**-**	**-**	**-**	**-**		**-**

	Grant Funds/Fees Anticipated				**2025 Budget**	**2024 Budget**	**2023 Budget**
	Interest Income (general fund & Implementation fund)			$ 142,700	$ 142,700	$ 70,000	70,200
	648 New Easement Acquisition/Amendment Fees			4,500	4,500	5,000	5,000
Water Qual	**648 Easement amendment/violations fees**			-	-	2,000	500
	2025 WBIF Grant			209,935	209,935	-	-
	626 UWB (BWSR Lower MN River South (WBIF Grant)			-	-	-	3,958
	Fish Lake Mgmt Plan & Swamp IESF Feas. ('23 WBIF Grant)			-	-	-	82,806
	Spring Lake Twnshp Contributions			9,500	9,500	-	4,000
	AIS Grant for Upper Prior Lake (DNR Grant)			-	-	-	4,335
AIS	**611 Aquatic Vegetation Mgmt. (Scott County)**			27,000	27,000	27,000	20,065
	Total Grant Funds/Fees Anticipated			**$ 393,635**	**$ 393,635**	**104,000**	**$ 190,864**

Budget Summary

Fund Sources/Fund Expenditures	2025 Levy	Budget Reserves	Grants/Rev	Budget Total	2024 Levy	Levy Increase	% Increase
General Fund	$ 261,600		$ 18,400	$ 280,000	252,000		
Implementation Fund	$ 1,804,990	$ 756,500	$ 375,235	$ 2,936,725	1,697,000		
Total Fund Sources	**$ 2,066,590**	**$ 756,500**	**$ 393,635**	**$ 3,216,725**	**1,949,000**	**$ 117,590**	**6.0%**
Expenditures							
General Fund				280,000			
Implementation Fund				2,936,725			
Total Expenditures				**3,216,725**			

Fund Balance Commitments/Assingments

	2025 (Budget)				2024 (Estimate)			
	12-31-24 Bal	Additions	Reductions	12-31-25 Bal	12-31-23 Bal	Additions	Reductions	12-31-24 Bal
611 Alum Internal Loading Reserve	$ 910,000	$ 200,000	$ (22,000)	$ 1,088,000	$ 700,000	$ 230,000	$ (20,000)	$ 910,000
626 Capital Project Planning (Prev: Upper Watershed Projects)	$ 341,400	$ 16,200	$ (357,600)	$ -	$ 442,000	$ 194,000	$ (294,600)	$ 341,400
Debt Payment Reserve	$ 180,000	$ -	$ (162,000)	$ 18,000	$ 180,000	$ -		$ 180,000
	$ 1,431,400	**$ 216,200**	**$ (541,600)**	**$ 1,106,000**	**$ 1,322,000**	**$ 424,000**	**$ (314,600)**	**$ 1,431,400**

PRIOR LAKE-SPRING LAKE WATERSHED DISTRICT

MEMORANDUM

TO: PLSLWD BOARD OF MANAGERS

FROM: JONI GIESE

SUBJECT: 2025 BUDGET (DRAFT)

DATE: 9/17/2024

The following provides background to the 2025 Budget. The activities are broken out between the General Fund and Implementation Fund, with the implementation fund budget line items organized under the Water Resource Management Plan's three priorities: Water Quality, Reduce Flooding, and Aquatic Invasive Species (AIS). Expenses relating to Prior Lake Outlet Channel (PLOC) operations are reflected in a separate 2025 PLOC budget.

When a budget item benefits more than one of the priorities, it is listed under the category of projected highest benefit. Budget totals are broken out by recommended revenue sources.

405 - General Fund

570 - 573 Administrative Salaries and Benefits

Description: This budget item includes staff salaries and associated benefits for administrative activities, which includes holidays and PTO. Staff time also includes District document archiving procedures.

Why it is Important: Staff must expend a certain portion of their time on basic office operations, such a preparing time reports, preparing state-mandated reports and operations.

2024 Budget: $145,000

2024 Year End Expense: $145,000 (estimate)

2025 Budget: $155,500

One staff member is anticipated to retire in 2025. The General Fund budget was increased to provide 120 hours of training time for new staff member by existing staff member prior to retirement.

Estimated salaries and benefits are based on the following assumptions:

- 7% average salary increase (3% COLA + 4% average merit)
- 10% increase in healthcare insurance premiums
- 5% increase in dental insurance premiums

Specific salary/benefit estimates covered by this budget item include:

Salaries and payroll taxes (social security and medicare)	$121,900
Benefits (PERA, Health, Dental, Disability, Life Insurance)	33,600
TOTAL:	**$155,500**

2025 Revenue Source(s):

- Levy: $137,100
- Interest Income: $18,400

703 – Telephone, Intranet & IT Support

Description: This budget item includes staff cellular phone reimbursements, database support, and District website domain hosting and listing fees. It also includes IT consultant support services. Office telephone and intranet services are included in the Prior Lake City Hall lease.

Why it is Important: District staff use their cellular phones to perform District business. The District needs to maintain a presence on the internet via a website. District business is primarily performed on computers. A well-maintained computer system protects the District from cyber-attacks, enhances staff productivity, and allows efficient use of/upgrades to software licenses and hardware. The Districts' Microsoft software license is paid through the IT consultant and reflected in the consultant fees listed below. Estimated 2025 budget is less than 2024, due to a reduction in staff computers maintained by IT consultant. 2024 also included duplicate website hosting fees for a portion of the year during development of new website.

2024 Budget: $16,000

2024 Year End Expense: $15,800 (estimate)

2025 Budget: $19,500 ($20,800 total with approximately 6% allocated to PLOC budget)

Specific activities/projects covered by this budget item include:

Staff cell phone reimbursements	$2,800
Website hosting and listing fees, Database updates	1,100
IT consultant standard support	15,600
TOTAL:	**$19,500**

2025 Revenue Source(s):

- Levy: $19,500

702 – Rent

Description: The District entered into a lease for office space with the City of Prior Lake, effective July 1, 2021. The District has the option to renew the lease for four additional one-year terms with an annual cost escalation of 3 percent per year. The renewal in 2025 will be the final one-year renewal. A new lease will need to renegotiated for the year starting July 1, 2026.

2024 Budget: $27,500

2024 Year End Expense: $27,500

2025 Budget: $28,200 ($30,000 total with approximately 6% allocated to PLOC budget)

Specific activities/projects covered by this budget item include:

City of Prior Lake lease payments	$28,200
TOTAL:	**$28,200**

2025 Revenue Source(s):

- Levy: $28,200

706 – Office Supplies

Description: This budget item includes general office supplies, copier rental, copies/printing, postage, new computers/tablets, mileage and meals associated with performing District business.

Why it is Important: Office supplies are needed to perform District business.

2024 Budget: $8,000.

2024 Year End Expense: $6,000 (estimate).

2025 Budget: $7,000 ($7,500 total with approximately 6% allocated to PLOC budget)

Specific activities/projects covered by this budget item include:

Ricoh copier (rent and copies)	$4,200
Mileage	800
Postage	1,000
Other office supplies	1,000
TOTAL:	**$7,000**

2025 Revenue Source(s):

- Levy: $7,000

709 – Insurance and Bonds

Description: This budget item includes annual property, liability (including bonds), auto, and workers compensation insurance coverage premiums.

Why it is Important: District should have insurance coverage to protect District's property and cover potential liabilities.

2024 Budget: $14,200

2024 Year End Expense: $12,700.

2025 Budget: $13,000 Includes premium adjustments and increases based on insurance provider stated rate percentage increases for 2025. (Total $13,800 with approximately 6% allocated to PLOC budget).

Specific activities/projects covered by this budget item include:

Property	$1,900
Liability	5,300
Excess Liability	1,700
Auto	400
Workers compensation	3,700
TOTAL:	**$13,000**

2025 Revenue Source(s):

- Levy: $13,000

670 – Accounting

Description: This budget item covers accounting services provided the District's contracted certified public accountant (CPA) to maintain accounting software and records, help prepare monthly and year-end financial statements, assist with annual audit, process biweekly payroll and year-end forms, and prepare custom reports/analysis as requested. The District CPA also provides accounting services for the PLOC, costs for which are reflected in a separate PLOC budget.

Why it is Important: Per the PLSLWD Governance Manual, the District will contract with the certified public accountant to monthly review the District bank accounts, payroll and investment funds, and to assist with monthly bookkeeping to ensure the District's finances are managed in accordance with generally accepted accounting principles and best practices.

2024 Budget: $33,500

2024 Year End Expense: $33,500 (estimate).

2025 Budget: $36,300 (Separate fee allocated to PLOC budget)

Specific activities/projects covered by this budget item include:

Contracted accounting firm, CliftonLarsonAllen LLP (CLA)	$36,300
TOTAL:	**$36,300**

2025 Revenue Source(s):

- Levy: $36,300

671 – Audit

Description: This budget item covers annual audit costs paid to contracted auditor. Other associated audit costs, such as District accountant's time to prepare for audit, work with auditors, and to submit audit to the state, along with the District attorney's time to respond to

audit questions (e.g., audit opinion) are expensed in 670 – Accounting and 660 – Legal, respectively.

Why it is Important: An annual audit is required per State Statute 103D.355.

2024 Budget: $10,500 ($14,000 per audit cost per biannual proposal – 25% allocated to PLOC)

2024 Year End Expense: $10,500

2025 Budget: $11,000 ($14,700 total – 25% allocated to PLOC).

Specific activities/projects covered by this budget item include:

Contracted audit firm (Abdo)	$11,000
TOTAL:	**$11,000**

2025 Revenue Source(s):

- Levy: $11,000

903 – Fees, Dues and Subscriptions

Description: This budget item includes organization memberships, service subscriptions not associated with projects/programs, and fees associated with staff hiring.

2024 Budget: $1,500

2024 Year End Expense: $1,500 (estimate).

2025 Budget: $1,500

Specific activities/projects covered by this budget item include:

Organization memberships	$200
Miscellaneous fees	200
Subscriptions	1,100
TOTAL:	**$1,500**

2025 Revenue Source(s):

- Levy: $1,500

660 – Legal (not project related)

Description: This budget item covers miscellaneous legal services not associated with a District project.

Why it is Important: Legal issues arise as a course of performing District duties. It is in the District's best interest to consult an attorney to ensure issues are addressed in the best interest of the District.

2024 Budget: $6,000

2024 Year End Expense: $8,000 (estimate)

2025 Budget: $8,000

Specific activities/projects covered by this budget item include:

Contracted legal firm, Smith Partners	$8,000
TOTAL:	**$8,000**

2025 Revenue Source(s):

- Levy: $8,000

509 – Implementation Fund

570 – 573 Program Salaries and Benefits

Description: This budget item includes staff salaries and associated benefits for Implementation Fund activities. It also includes all Board of Managers per diems.

Why it is Important: The District's programs and projects can only be accomplished with stable, highly skilled staff.

2024 Budget: $485,500

2024 Year End Estimate: $458,200 (estimate) Implementation Fund salary costs are low in 2024 due to budgeting for, but not hiring seasonal interns in 2024 and the retirement of a part-time staff member whose salary was also included in the 2024 budget.

2025 Budget: $509,000. For 2025, salaries and benefits are projected to increase due to cost of living and to adjust the salary of several staff members to better align with market conditions. Staff salary and benefits allocated to the PLOC are approximately 6.0% of staff salary/benefits to reflect expected staff activity associated with the PLOC. Includes salaries for two summer seasonal interns.

Estimated salaries and benefits are based on the following assumptions:

- 7% average salary increase (3% COLA + 4% average merit)
- 10.0% increase in healthcare insurance premiums
- 4.2% increase in dental insurance premiums

Specific salary/benefit estimates covered by this budget item include:

Salaries, per diems, and payroll taxes (social security and medicare)	$399,400
Benefits (PERA, Health, Dental, Disability, Life Insurance)	104,600
TOTAL:	**$504,000**

2025 Revenue Source(s):

- Levy: $379,700
- Interest Income: $124,300

Water Quality Projects

550 Public Infrastructure Partnership Projects (PIPP)

Description: This program was developed to help reduce runoff to the lakes by working with LGU partners to retrofit streets, highways, public properties and other public infrastructure with volume management, rate controls and phosphorus load reduction BMPs as LGUs complete public site or public infrastructure construction, repair, or maintenance projects.

Why it is Important: Phosphorus and other pollutants in stormwater runoff is a significant water quality problem. Water quality BMPS, runoff volume reductions, and rate control reduces waterbody impairments and flooding.

How Long in Existence: 2015

2024 Budget: $0

2024 Year End Expense: $0 (estimated)

2025 Budget: $50,000

Specific activities/projects covered by this budget item include:

Assess functioning of previous PIPP Projects	$50,000
TOTAL:	**$50,000**

2025 Revenue Source(s):

- Levy: $50,000

550 – 200 Street Pond Improvements

Description: This project is expected to be constructed in 2025 and is included in the District's Fish Lake Management Plan and Water Resources Management Plan (WRMP).

Why it is Important: Implementation of projects advances the mission and goals of the District as identified in the two District plans.

2024 Budget: $0

2024 Year End Expense: $0 (estimate)

2025 Budget: $45,000

2025 Revenue Source(s):

- Levy: $0
- Budget Reserves: $15,000
- Grants: $30,000

550 – Swamp Lake IESF

Description: This project is expected to be constructed in 2025 and is included in the District's Swamp Lake IESF Feasibility Study and Water Resources Management Plan (WRMP). Total estimated project cost is $589,200. $388,665 of the cost will be covered either by future grants or new District bond debt (see District Bonding budget item). 2025 budget reflects project costs that will be covered by budget reserves or already secured grant funds.

Why it is Important: Implementation of projects advances the mission and goals of the District as identified in the feasibility study and District's WRMP.

2024 Budget: $61,000

2024 Year End Expense: $42,400 (estimate)

2025 Budget: $635,300

2025 Revenue Source(s):

- Levy: $434,765
- Budget Reserves: $18,600
- Grants: $181,935

611 – Farmer-led Council

Description: The purpose of the Farmer-led Council (FLC) is to: improve public understanding of farming operations; proactively address water quality concerns; help develop win-win programming and provide networking and education opportunities for District farmers. Initiatives and projects within the Farmer-Led Council Program in 2025 include cost share projects, speakers fees, Scott SWCD assistance, FLC training stipend, and meeting costs. The incentives and cost-shares provided by the FLC program change each year as new information is learned and as new conservation ideas are spearheaded by the FLC members.

Why it is Important: There are 50-60 farmers in the District and a small number of farmers manage roughly half of the farmland acreage. There is a lot of opportunity to make a big difference with the key players, most of which are at the table through FLC.

How Long in Existence: March 2013

2024 Budget: $55,000

2024 Year End Expense: $55,000 (estimate)

2025 Budget: $72,000

Specific activities/projects covered by this budget item include:

SWCD Staff time (project coordination, assessing farms, etc.)	$30,000
Lake Friendly Farm program (alternating years – include in 2026)	$0
Program pass through costs, including, but not limited to, cover crops, water quality inlets, preparing conservation plans.	$38,000
Meetings (food, space rental, materials, etc.)	$2,000
Guest Speaker fees for FLC meetings	$2,000
TOTAL:	**$72,000**

2025 Revenue Source(s):

- Levy: $72,000

611 - Cost-share Incentives

Description: With cash incentives paid for by the District, Scott SWCD and other partners encourage residential and agricultural best management practices. The District has cooperated in the creation of a Cost Share Docket with the Scott SWCD, Scott WMO, Lower Minnesota River Watershed District, and the Vermillion River Watershed. Programs and practices included in the cost share docket include, but are not limited to, residue management (no-till & strip till), conservation cover, cover crops, filter strips, streambank and shoreline protection, nutrient management, well decommissioning, and wetland restoration. District dollars for this program are amplified by Scott SWCD-secured grant funding for cost share projects, making projects even more cost-effective. Scott SWCD contributions to cost share projects are not reflected in the District's budget. In 20xx, Scott SWCD contributed $x to cost share projects.

Why it is important: Water resources throughout the watershed benefit through adoption of conservation practices on the land. Since non-point source pollution is largely unregulated, it is essential that landowners are provided incentives that include technical assistance as well as cost share funds to mitigate pollution. Cost share dollars are based upon a "pay for performance" principle.

How Long in Existence: 2011

2024 Budget: $68,000

2024 Year End Expense: $68,000 (estimate).

2024 Budget: $88,000

Specific activities/projects covered by this budget item include:

Cost Share Technical Services (SWCD staff time)	$45,000
Cost Share Projects (pass-through)	$30,000
Cost Share Management (SWCD staff time)	$13,000
TOTAL:	**$88,000**

2025 Revenue Source(s):

- Levy: $88,000
- Grant(s): $0 *(Note: SWCD grants used for cost share projects are not accounted for in the overall budget as they do not pass through the District)*

611 - Highway 13 Wetland, FeCl System and Desilt Pond

Description: The Desilt Pond was built in 1978. A ferric chloride system was constructed in 1998 upstream at the outlet of the wetland treatment system. The FeCl system was designed for water quality treatment but also stores water. It was redesigned in 2013. The facility on average doses around 6,100 gallons of FeCl throughout the year. Treatment typically occurs March through November annually removing approximately 55% of the dissolved phosphorus and 34% of the total phosphorus concentrations in the water. In 2024, a feasibility study was conducted to assess the lifespan of the facility and equipment, system effectiveness, and better access for chemical delivery. System sensors and data loggers were replaced in 2024 to allow the system to continue flow paced dosing. Engineering and bidding are expected to begin in late 2024 with construction beginning in 2025. System and site improvements will include building modification, new tank, new pump, pump skid, and driveway updates.

Why it is Important: The ferric chloride system treats stormwater coming from County Ditch 13, which is responsible for carrying the majority of pollutants into Spring Lake. The system infrastructure is aging creating concerns for longevity and safety.

How Long in Existence: 1998

2024 Budget: $305,000

2024 Year End Expense: $135,000 (estimate). Construction of most of the system upgrades was postponed to 2025.

2025 Budget: $213,000

Specific activities/projects covered by this budget item include:

Ferric Chloride deliveries (~2.5 fills)	$27,000
System Monitoring to meet MPCA Permits: Lab analysis	$13,000
Utilities, permits, maintenance and equipment	$3,000
2025 Ferric Chloride system and site improvements (Building modification, tank replacement, driveway improvement, skid and jump replacement)	$170,000
TOTAL:	**$213,000**

2024 Revenue Source(s):

- Levy: $43,000
- Budget Reserves: $170,000

611 – Carp Management

Description: Carp management includes funding for efforts identified in the District's Integrated Pest Management Plan.

Why it is Important: Carp management improves water quality and lake habitat. This estimate assumes the 2024 population estimate for Upper Prior Lake shows carp populations

reduced proposed sustainable levels and a transition to a maintenance phase for Upper Prior Lake. In 2025, populations estimates will be performed on Spring Lake to determine if management can transition to maintenance phase.

How Long in Existence: Since 2010

2024 Budget: $96,500

2024 Year End Expense: $94,500 (estimate).

2025 Budget: $88,500

Specific activities/projects covered by this budget item include:

Consultant/Contractor services (removals and seinings-approx. two events, population assessments, pit station operations, data analysis, desilt/bypass barrier design consulting related to carp, data management, presentation to Board)	$78,900
Bluegill stocking (Desilt pond next to Spring Lake)	$2,000
Tracking (PIT station maintenance, 10 radio tags, PIT tags)	$2,800
Program equipment (waders, net repairs, bins, gloves, ice signs, etc.)	$650
Storage shed rental for carp. equipment	$1,600
CD13 bypass weir tine barrier engineering and construction	$2,000
Barrier	$550
	$88,500

2024 Revenue Source(s):

- Levy: $88,500

611 - Spring Lake Demonstration Parcel Maintenance

Description: Partially funded by a CPL grant and Great River Greening, beach, oak savanna and shoreline restoration and low-maintenance grass as completed in 2017. On-going annual buckthorn treatment and an invasive herbaceous species treatment are expected for 2025.

Why it is Important: This restoration site includes two educational signs that highlight to the public the importance of oak savanna native plants and give credit to our restoration project partners. In addition, this shoreline restoration helps enhance previous habitat work completed at the nearby Spring Lake Regional Park and provides vital habitat connections for wildlife by maintaining critical oak savanna habitat.

How Long in Existence: Since 2017.

2024 Budget: $1,200

2024 Year End Expense: $600 (estimate).

2025 Budget: $1,200

Specific activities/projects covered by this budget item include:

Buckthorn treatment	$600
Herbaceous treatment	$600
TOTAL:	**$1,200**

2025 Revenue Source(s):

- Levy: $1,200

611 – Buck Stream Stabilization Parcel Maintenance

Description: Partially funded by a CWF grant stream stabilization was completed in 2024. On-going annual buckthorn treatment and vegetation management are expected for 2025 and 2026.

Why it is Important: This restoration site reconnects the floodplain of a highly erosive section of the Buck stream which will reduce sediment and nutrient loading to Buck Lake, and therefore, Spring Lake. Two years of vegetation maintenance support by the District is expected ($4,000 each year) to establish native seeding and control for recurring buckthorn.

How Long in Existence: Since 2024.

2024 Budget: $0

2024 Year End Expense: $0 (estimate)

2025 Budget: $4,000

Specific activities/projects covered by this budget item include:

Vegetation management and buckthorn treatment	$4000
TOTAL:	**$4,000**

2025 Revenue Source(s):

- Levy: $4,000

611 - Alum Internal Loading Reserve

Description: This line item was created to fund alum treatments for waterbodies in the District. Upper Prior Lake's 2020 Alum Treatment was approximately $500,000 and another treatment of the same or higher estimated cost is anticipated in the coming years. A future alum treatment on Upper Prior Lake is needed to meet grant assurances for a previous BWSR grant. Spring Lake will also likely need maintenance treatments in the near future. Fish and Pike Lake may need alum treatments in the future as well. Moving forward the fund will cover sediment monitoring, treatment design, and physical treatment.

Why it is Important: Alum treatments are effective in capturing internal phosphorus loads. Recent treatments in Spring and Upper Prior have resulted in improvements in lake quality indicators.

How Long in Existence: Since 2017 (incrementally build up and then spend on treatments)

2024 Budget: $230,000

2024 Year End Expense: $20,000 (estimate) for Spring Lake sediment coring

2024 Year End Commitment: $210,000

Total Committed Funds: $910,000 (after 2024 commitment)

2025 Budget: $200,000 (continue to build reserve)

Specific activities/projects covered by this budget item include:

Conduct sediment coring analysis on Upper Prior Lake	$22,000
Continue to build reserve	$178,000
TOTAL:	**$200,000**

2025 Revenue Source(s):

- Levy: $200,000

611 - Fish Stocking

Description: Annual stocking of bluegills in the upstream wetlands of Spring Lake and Prior Lake with known carp observations to reduce carp populations.

Why it is important: Bluegills are an important predator of carp eggs. The District monitors connected wetlands for carp spawning activity and bluegill presence. To keep recruitment in the lakes down, the District needs to stock these upstream wetlands with bluegills. The DNR only allows stocking to occur in connected wetlands where carp spawning typically occurs. Fish stocking generates a lot of community enthusiasm, volunteerism, and goodwill towards the District.

How Long in Existence: 2019

2024 Budget: $2,000

2024 Year End Expense: $2,500 (includes expenditure of $500 donation from Spring Lake Association).

2025 Budget: Starting in 2025, fish stocking has been consolidated into the 611 Carp Management program

626 - Planning and Program Development

Description: This category includes general activities that support the District's planning and program development activities. Costs associated with these activities include professional training courses and webinars, software and other subscriptions, equipment replacement, all Board activity costs, professional organization membership dues, volunteer and advisory committee appreciation costs, and activities designed to support staff appreciation and morale.

2024 Budget: $27,500

2024 Year End Expense: $27,500 (estimate).

2025 Budget: $31,000

Specific activities/projects covered by this budget item include:

Software/other subscriptions	$6,000
Training (staff and managers)	$12,000
Minnesota Watersheds membership dues	$7,500
Board activity	$2,000
Advisory committee/volunteer appreciation	$1,000
Staff logo wear and field gear	$1,000
Staff Appreciation Activities	$1,500
TOTAL:	**$31,000**

2024 Revenue Source(s):

Levy: $31,000

626 – LGU Plan Review

Description: Other agencies within PLSLWD occasionally update their plans and rules. As part of their plan or rules update process they solicit review comments from PLSLWD. This budget item covers the District Engineer's time needed to review and provide comments on partner agencies' proposed plans and rules.

2024 Budget: $4,000

2024 Year End Expense: $1,700

2025 Budget: $3,000

Specific activities/projects covered by this budget item include:

Consultant review and comments (Scott County Groundwater Plan and Scott WMO 2027-2037 Watershed Management Plan update)	$3,000
TOTAL:	**$3,000**

2025 Revenue Source(s):

Levy: $3,000

626 - Engineering not for Programs (general engineering)

Description: Throughout the year, staff requests the District Engineer assistance with tasks associated with partners or PLSLWD that were unanticipated. This budget item also include time for the District Engineer to attend board and staff meetings.

Why it is Important: Staff needs to consult with engineering experts on unanticipated, time-sensitive concerns. Staff also need to coordinate with the District Engineer on an on-going basis to coordinate work deliverables and schedules.

2024 Budget: $20,000

2024 Year End Expense: $20,000 (estimate).

2025 Budget: $21,000

Specific activities/projects covered by this budget item include:

Engineer bi-monthly attendance at staff coordination meetings	$3,700
Engineer attendance at board meetings	$5,700
Misc. assistance to staff and partners	$11,600
TOTAL:	**$21,000**

2025 Revenue Source(s):

- Levy: $21,000

626 – Debt Issuance Planning

Description: In 2022, the managers interviewed public finance advisory firms and selected a preferred firm to work with. District staff continue to work to advance potential projects towards implementation. Should District staff obtain landowner support on several projects in 2025 for implementation in either 2025 or 2026, the District will likely need to start the process of planning for debt issuance.

Why it is Important: The approach and timing of debt issuance is best performed with guidance provided by public finance advisors. This budget will be used for "Proof of Concept" planning that will result in a multi-year plan that identifies funding needs, gaps, and approaches that best address the District's needs.

2024 Budget: $0

2024 Year End Expense: $0 (estimate)

2025 Budget: $15,000

Specific activities/projects covered by this budget item include:

Public finance advisors "Proof of Concept"	$15,000
TOTAL:	**$15,000**

2025 Revenue Source(s):

- Levy: $15,000

626 - District Plan Update

Description: The District approved the 2020-2030 Water Resources Management Plan Update in 2020. Updates on ten-year cycles are required by state statute and Rule 8410.

Why it is Important: As the District refines implementation projects for District initiatives, such as Upper Watershed projects, it is beneficial to incorporate refined projects into the Water Resource Management Plan in order to affirm CIP funding and to bolster the District's changes of obtaining grant funds. The District completed a minor plan amendment in 2024 with no amendment envisioned for 2025.

2024 Budget: $2,500

2024 Year End Expense: $500 (estimate).

2025 Budget: $0

626 – Capital Project Planning (Previous Name: Upper Watershed Projects)

Description: The District is working to advance projects to provide water quality and/or flood mitigation benefits. This budget item covers initial feasibility screenings, feasibility studies, landowner consultation and negotiations. Generally, once landowner approval is secured, the project is transferred to 550 - Capital Projects.

Why it is important: Several lakes in PLSLWD are listed as impaired by the MPCA. Watershed District residents have indicated an on-going concern about potential flooding in the District.

How Long in Existence: 2020

2024 Budget: $636,000

2024 Year End Expense: $70,200 (estimate).

2024 Transfers to 550 - Capital Projects: $224,400

UW Remaining Budget (12/31/2024): $341,400 - estimate

2024 Year End Commitment: $341,400

2025 Budget: $365,100

Specific activities/projects covered by this budget item include:

Fish Lake – shoreline cost share, soil grid sampling, Lake Ridge feasibility study, other external load management actions	$66,000
Feasibility Studies (new and/or update). Potential projects include Spring Lake West, Buck Chemical, MB13 site, Buck Lake Outlet	$140,000
Projects TBD (flood and/or water quality)	$120,600
District Engineer Assistance	$21,500
Liaison Assistance (SWCD - $15,000, Edina Realty- $2,000)	$17,000
TOTAL:	**$365,100**

2023 Revenue Source(s):

- Levy: $16,200
- Grants: $7,500
- Previously Committed Funds: $341,400

637 - District Monitoring Program

Description: This program includes District monitoring activities including planning and coordination of the volunteer and contracted lake sampling, lake level and chemistry monitoring; precipitation monitoring; weather station; stream chemistry, level, flow and synoptic monitoring; database management; equipment purchase and maintenance; TMDL's; data management; and reporting. The District's Long-term Monitoring Plan that is part of the Water Resources Management Plan provides greater details on program activities.

Why is it Important: Characterize current conditions; track changes over time**;** protect human health; target potential water quality problems**;** design pollution prevention programs; assess program goals and respond to emergencies.

How Long in Existence:
Lake Chemistry: 2004; CAMP, 1997
Stream Monitoring: ≤1991
Lake Level Monitoring: 1906
Precipitation Monitoring: ≤1989
Zoo/Phytoplankton: 2020

2024 Budget: $84,500

2024 Year End Expense: $84,500 (estimate).

2025 Budget: $89,100

Specific activities/projects covered by this budget item include:

Lake Chemistry Monitoring: TRPD and CAMP contracts; winter chloride analysis	$27,600
Lake Level Monitoring: Logger service, website graphing, equipment hardware & maintenance	$2,200
Stream Monitoring: Water quality lab analysis, level sensor replacement (5-year cycle , equipment maintenance	$35,000
Flow Monitoring: SWCD contracted flow monitoring and benchmark surveying	$4,000
Precipitation Monitoring: Weather station service and maintenance	$200
Effectiveness Monitoring: Studies relating to projects effectiveness; $1,600 to SWCD for one Sutton Drone survey, $1,000 to EOR for drone data analysis and memo; monitoring equipment.	$9,200
Zoo/Phytoplankton Monitoring: Collection and lab analysis	$2,300
Equipment, Boat and Truck O&M: Miscellaneous equipment including well tubes, stream loggers, hardware, equipment servicing, etc. Gas, truck oil changes, required truck maintenance, and boat gas, maintenance, and winterization.	$3,200
Data Management: Contracted database services	$5,400
TOTAL:	**$89,100**

For more detailed descriptions of the activities/projects covered by this budget item: See the PLSLWD Long Term Monitoring Plan.

2025 Revenue Source(s):

- Levy: $89,100

648 - Permitting and Compliance

Description: The District has established rules and standards for land disturbing activities. This budget item includes engineering review of public and private projects until equivalency is established and District has confidence partners are enforcing equivalent rules. It also includes Scott SWCD assistance with coordinating development reviews and performing erosion and sediment control inspections for District permitted projects.

Why it is Important: District rules function to protect District water resources, such as water resource buffering, along with water quality, rate control, and volume control requirements for new and redevelopment projects. The permitting program also helps fulfill the District's obligations under its MS4 Permit.

How Long in Existence: The District's Board of Managers first adopted Rules regarding the protection and management of land and water resources in 1975.

2024 Budget: $62,000.

2024 Year End Expense: $43,000 (estimate).

2025 Budget: $65,000. For ongoing development review and permitting activity. New rules were approved in 2022. With the application of the rules over the past two years, staff has determined that several minor revisions are needed to the rules to better clarify District regulatory intent.

Specific activities/projects covered by this budget item include:

EOR Engineering Review Services	$27,000
SCWD Services	$30,000
Rules Update	$8,000
TOTAL:	**$65,000**

2025 Revenue Source(s):

- Levy: $65,000

648 - Update MOAs with Cities and County

Description: With the adoption of updated District rules, the District is working to establish equivalency MOAs for permitting with Savage, Prior Lake and Scott County. Equivalency MOAs indicate that the LGU's rules have been reviewed and determined to be equivalent with the District's rules. When this occurs, the District chooses to not enforce the District's rules as the LGU's rules are achieving an equivalent outcome.

Why it is important: These MOAs are contingent upon the LGU creating equivalent rules and successfully enforcing their rules. Equivalency reduces permitting burden on District residents.

How Long in Existence: Varies; All have expired.

2024 Budget: $5,000

2024 Year End Expense: $1,000 (estimate). Working to establish final equivalency agreements with Prior Lake and Scott County and Savage in 2025.

2025 Budget: $5,000

Specific activities/projects covered by this budget item include:

Legal and engineering services associated with negotiating and preparing MOAs.	$5,000
TOTAL:	**$5,000**

2025 Revenue Source(s):

- Budget Reserve: $5,000

648 - BMP and Easement Inventory & Inspections

Description: The District's conservation easements provide buffers surrounding wetlands and watercourses within the District. Most of the easements were acquired during the land development or redevelopment process, but some were acquired during water quality improvement projects with private landowners. This budget item includes engineering services to review easement boundaries and easement amendment requests and creation of GIS mapping of conservation easement;surveys of easement boundaries as needed; equipment and materials to mark boundaries and complete inspections; and Scott SWCD services to secure development agreements and conservation easements, attend development review meetings, perform easement inspections and resolve identified violations.

Why it is Important: Vegetative buffers reduce the impact of surrounding development and land use on watercourses and wetland functions by stabilizing soil to prevent erosion, filtering sediment from runoff, and moderating water level fluctuations during storms. Buffers also provide essential habitat for wildlife. Requiring buffers recognizes that watercourse and wetland quality and function are related to the surrounding upland. The easement program monitors and enforces existing conservation easements. Compliant easements are monitored on a three-year cycle to ensure compliance and to establish good relationships between landowners and the PLSLWD. The main objective is to achieve voluntary compliance, but to follow through with clear and consistent enforcement procedures when necessary.

How Long in Existence: Mainly since the 2003 Rule revisions, but several were acquired earlier.

2024 Budget: $49,875

2024 Year End Expense: $49,000 (estimate)

2025 Budget: $40,000

Specific activities/projects covered by this budget item include:

Scott SWCD Program Coordination Services	$28,500
Engineering Services	$4,000
Legal Assistance	$3,000
Materials & equipment: signs, posts, recording fees, etc.	$4,500
TOTAL:	**$40,000**

2025 Revenue Source(s):

- Levy: $35,500
- Easement Acquisition/Amendment/Enforcement Fees (estimated): $4,500
  **Fees are reimbursements received from property owners associated with monument sign materials, title work, easement amendment recording costs and associated professional services to facilitate easement acquisition/amendment/enforcement.*

652 - Education and Outreach

Description: The District's Education & Outreach program involves programs and project which educate the public regarding water resources as well as encourage public involvement. Several primary mechanisms for education and outreach are conducted by the District including:

- Required MS4 education components, such as Storm drain stenciling with the City of Prior Lake and lake associations; outreach booths at community events; and participation and collaboration with SCWEP.
- Direct outreach efforts include:
  - Website updates
  - Social media (Facebook and Instagram)
  - Writing news articles and press releases
  - Responding to direct citizen inquiries
- Citizen Advisory Committee meetings and initiatives (CAC)

Why it is important: A watershed district is required to have an education and outreach program, as part of the District's MS4 permit and Water Resource Management plan. The District's education and outreach program provides a crucial means for the District to gain landowner support for projects, improve the public's general understanding of water resources, water quality benefits provided by the District, how each citizen impacts water resources; and to inspire citizens to change their behaviors and habitats to better support water resource health. Upon a comparative study of metro watershed districts, 3% of the total budget is the average and median amount spent on Education and Outreach. The District has been far below this in recent history which impacts reputability, progress and resident relationships.

How Long in Existence: Since the District was created in 1970.

2024 Budget: $38,500

2024 Year End Expense: $29,500 (estimate).

2025 Budget: $27,300

SCWEP (to meet MS4 requirements)	7,325
Educational tours, events & materials	16,975
CAC (meeting costs, initiatives)	3,000
TOTAL:	**$27,300**

2023 Revenue Source(s):

- Levy: $18,300
- Budget Reserve: $9,000

Reduce Flooding Projects

550 - District-wide Hydraulic & Hydrologic Model

Description: The H&H model is updated as needed to support District planning and project implementation.

Why it is important: In order to develop feasible and realistic implementation projects. Hydraulic and hydrologic conditions must reflect existing conditions to the extent possible.

2024 Budget: $5,000

2024 Year End Expense: $0 (estimate).

2025 Budget: $4,000

Specific activities/projects covered by this budget item include:

Modeling update as needed to update to current hydraulic and hydrologic conditions to support flood reduction and upper watershed projects.	$4,000
TOTAL:	**$4,000**

2025 Revenue Source(s):

- Levy: $4,000

626 – Comprehensive Wetland Plan Update

Description: The District's current Comprehensive Wetland Plan was adopted by the Board in 2012 that was based on numerous high-level assumptions with no ground truthing of assumptions used. Since the plan's adoption, better mapping information (e.g., County's new LIDAR) should be coming available to help the District better assess and categorize wetlands as good candidates for either flood reduction or water quality improvements. Staff expected the LIDAR data to be available in 2024, but its availability has been delayed and is now expected in late 2024.

The new data will also assist the District's effort to estimate potential flood storage available. For wetlands that appear to be good candidates for flood reduction of water quality enhancements, ground truthing of outlet control elevations can be performed, which will provide enhanced understanding of potential flood reduction of water quality benefits.

Why it is important: In pursuit of wetland restoration projects that address water quality and flood reduction goals, it is vital that the District have the best information available to select cost effective projects and to have a good understanding of the wetlands to inform the District's outreach to potential partners and landowners.

2024 Budget: $35,500

2024 Year End Expense: $0 (estimate)

2025 Budget: $35,500

Specific activities/projects covered by this budget item include:

Update the Comprehensive Wetland Plan	$35,500
TOTAL:	**$35,500**

2025 Revenue Source(s):

- Budget Reserves: $35,500

Upper Watershed Flood Reduction

Additional flood reduction projects are included in the Upper Watershed budget item.

Aquatic Invasive Species (AIS)

637 - Aquatic Vegetation Management

Description: Aquatic vegetation surveys during the early spring indicate whether treatment of Curlyleaf Pondweed (CLP) is necessary in Tier 1 lakes. The Aquatic Vegetation Management program includes the initial pre-treatment delineation and post-treatment assessment surveys. The District will request grants funds from Scott County, which has a state AIS grant to cover up to $12,000 annually for management of CLP.

Vegetation surveys assess the distribution, type, and growth density of lake macrophytes (aquatic plants). PLSLWD contracts with a consultant, currently Blue Water Science, to perform

in-lake surveys. Summer point intercept surveys are planned to be completed on Tier 1 lakes every other year, Tier 2 lakes every three years, and Tier 3 lakes every five years.

The biobase program maps vegetation density, bathymetry, and bottom hardness in lakes using a Doppler sonar depth finder. This program creates a "heat map" of the location and density (% of water column) of the vegetation. This creates a very accurate and repeatable survey map that allows for consistent year-to-year comparisons.

Why it is important: Curlyleaf Pondweed has negative effects on water quality, and pushes out native vegetation, which is vital to fish and other wildlife. Vegetation and biobased surveys provide data and insights into how the lake is responding to BMPs, alum treatments, carp removals, and other water quality improvement projects. Lake vegetation is a response indicator to nutrients and sunlight availability within the lake. It is important to track these changes over time to be able to assess program goals of increased native plant distribution, diversity, and frequency of occurrence.

2024 Budget: $14,000 (Aquatic Vegetation Management only)

2024 Year End Expense: $14,000 (estimate).

2025 Budget: $30,600
Specific activities/projects covered by this budget item include:

CLP Delineations and Assessments	$7,800
Summer Point Intercept Survey	$11,500
CLP treatments	$10,000
Biobase Subscription	$1,000
Kayak sonar and battery	$300
TOTAL:	**$30,600**

2025 Revenue Source(s):

- Grant(s): $12,000 (Scott County – Lower Prior, Spring and Fish Lakes, as needed)
- Levy: $18,600

637 - Automated Vegetation Monitoring (BioBase)

Description: This program maps vegetation density, bathymetry, and bottom hardness in lakes using a Doppler sonar depth finder. This program creates a "heat map" of the location and density (% of water column) of the vegetation. This creates a very accurate and repeatable survey map that allows for consistent year to year comparisons. Data is recorded and collected on an SD card while on the water and is uploaded to an online account where it is processed by servers automatically.

Why is it Important: Characterize current vegetation locations; track changes over time; assess program goals and assess how water quality supports aquatic vegetation growth and aquatic vegetation treatment.

How Long in Existence: 2013

2024 Budget: $1,300

2024 Year End Expense: $ 1,000 (estimate).

2025 Budget: Starting in 2025, Automated Vegetation Monitoring has been consolidated into 637 - Aquatic Vegetation Management.

637 - Aquatic Vegetation Surveys

Description: Surveys will assess the distribution, type, and growth density of lake macrophytes (aquatic plants). PLSLWD contracts with a consultant, currently Blue Water Science, to perform in-lake surveys. Summer point intercept surveys are planned to be completed on Tier 1 lakes every other year, Tier 2 lakes every three years, and Tier 3 lakes every five years. Surveys conducted for the purpose of AIS management (CLP delineations) are accounted for in the 611 Aquatic Vegetation Management budget.

Why is it Important: Vegetation surveys provide data and insights into how the lake is responding to BMPs, alum treatments, carp removals, and other water quality improvement projects. Our survey datasets have also aided in grant writing and reporting. Lake vegetation is a response indicator to nutrients and sunlight availability within the lake. It is important to track these changes over time to be able to assess program goals of increased native plant distribution, diversity, and frequency of occurrence.

How Long in Existence: ≤1996 Blue Water Science Surveys

2024 Budget: $12,000

2024 Year End Expense: $12,000 (estimate).

2025 Budget: Starting in 2025, Aquatic Vegetation Surveys has been consolidated into 637 - Aquatic Vegetation Management.

637 - Boat Inspections on Spring, Fish, Upper and Lower Prior

Description: The budget for this program funds aquatic invasive species (AIS) inspections. Boat inspections include a contractor to provide in-person boat inspections at boat launches at Tier 1 and potentially other lakes within the District during high boat activity periods during the year.

Why is it Important: Boat inspections are an important step in an effort to prevent the transport of AIS from one waterbody to the next. This program provides in-person and up-close inspection of boats entering and exiting the lakes.

How Long in Existence: 2019 boat inspections

2024 Budget: $34,000

2024 Year End Expense: $34,000 (estimate).

2025 Budget: $34,000

Specific activities/projects covered by this budget item include:

Contract boat inspections on Spring, Fish, Upper Prior, and Lower Prior Lakes	$34,000
TOTAL:	**$34,000**

2025 Revenue Source(s):

- Levy: $19,000
- Grant: $15,000

Other Budget Items

PLOC Restoration, Maintenance & Monitoring

Description: The District is a partner in the management of the Prior Lake Structure and Outlet Channel and shares in the maintenance expenses.

How long in existence: 2006

2024 Budget: $38,981

2024 Year End Expense: $38,981

2025 Budget: $108,125

The PLSLWD was successful in securing state grant funds to help cover approximately 90% of eligible costs to line a 0.4-mile, 36-inch pipe, extending out from the PLOC outlet structure. PLOC allocation includes PLSLWD's proportionate share of the Pipelining local match for the grant and for standard PLOC operations and maintenance.

Specific activities/projects covered by this budget item include:

PLSLWD estimated proportional share of PLOC O&M expenses for 2025	$108,125
TOTAL:	**$108,125**

2025 Revenue Source(s):

- Levy: $108,125

Debt Payment Reserve

Description: In July 2021, the Board of Managers selected six projects from the Upper Watershed Blueprint for near term implementation. Initial analysis indicated that debt issuance may be a feasible approach to finance these planned capital improvements. To avoid a significant spike in the watershed levy in future years, a reserve was established to gradually build up the levy dollar value needed to pay down the new projected debt.

It is possible the District will need to bond during 2025 to cover the cost of the TH 13 Wetland dredging. An estimate of $700,000 was used for the bonding costs. It was assumed the bond would be paid off in 5 years. Bond payments for 2025 were estimated at $162,000. The existing debt payment reserve has adequate funds to cover the bond payments in 2025.

Total Committed Funds: $180,000 (after 2023 commitment)

Bond Payments in 2025: $162,000

Reserve Funds available at 12/31/2025: $18,000

SEPTEMBER 2024 PROGRAMS AND PROJECTS UPDATE

PROGRAM OR PROJECT	LAST MONTH'S STAFF ACTIVITIES	NEXT STEPS
Upper Watershed Projects **Buck Stream Stabilization, Spring West IESF, MB CD-13 IESF, Swamp IESF, Fish Lake Mgmt Plan, Sutton IESF, Swamp IESF, Buck Chemical Treatment, Potential Flood Storage Projects** *Project Lead: Emily*	**Buck Stream Stabilization** • Completed change order for adjusted completion date. • Conducted survey of easement for bank consent and nondisturbance form. **Spring Lake West IESF** • Planned monitoring after outlet replacement. Needed lower waters in order to take distinct water samples. • Held meeting with alternate site landowner. Prepared easement estimates for consideration. **MB CD-13 IESF** • First discussion with landowner, agreed to set up additional meeting. **Swamp IESF** • Drafted WBIF workplan for approval. **Fish Lake Management Plan (FLMP)** • Coordinated with SWCD to scope 200 St Pond improvements. • Follow up after workshop as part of shoreline restoration campaign. • Drafted WBIF workplan for approval. • Discussed field nutrient reduction agreement with farmer on West side of Fish Lake. • Submit RFP for Lake Ridge Stormwater Study for Board approval. **Potential Flood Storage Projects** • SWCD planning surveying for Project 10 in fall.	**Buck Stream Stabilization** • Hold preconstruction meeting, "before" interviews and photos, and issue notice to proceed. • Record landowner agreements. • Obtain consent and nondisturbance from final bank. **Spring Lake West IESF** • Monitor two rain events. • Assess ideal and feasible IESF or BMP for implementation. • Meet with alternate site landowner to assess interest. **MB CD-13 IESF** • Understand landowner willingness to proceed in investigation. **Swamp IESF** • Begin work with EOR once workplan is signed. **Fish Lake Management Plan** • Understand landowner willingness to develop implementation steps. • Review submitted Proposals for Lakeridge Stormwater study. • Sign agreement for tracking field nutrient reduction on West side of Fish Lake. **Potential Flood Storage Projects** • Conduct survey on Project 10 in fall.
Carp Management ***Rough Fish Management (Class 611)*** *Project Lead: Jeff*	• CPUE survey on Spring and Upper Prior lakes • Continued recapture study on Upper Prior Lake. • Performed PIT station maintenance.	• Collaborate with SMSC on carp management. • Continue mark and recapture study on Upper Prior Lake. • Implant new radio tags • Uninstall PIT stations for winter • Update IPM Plan

SEPTEMBER 2024 PROGRAMS AND PROJECTS UPDATE

PROGRAM OR PROJECT	LAST MONTH'S STAFF ACTIVITIES	NEXT STEPS
Ferric Chloride System Operations *Project Lead: Jeff and Emily*	• Continue weekly sampling routine. • Worked with EOR on desilt outlet work order to accommodate comments from last board meeting • Aquatic vegetation continues to get caught on FeCl carp barrier requiring extra maintenance needs. • Reviewed 90% design for FeCl site improvements • Work with landowners on easement and construction items.	• Work with EOR on scheduling and contractor bids • Proceed with RFQ for construction of FeCl site improvements. • Proceed with feedline locating RFQ. • Work with legal to adjust easement for access drive.
Farmer-Led Council *Project Lead: Emily*	• Continued coordination with Scott SWCD. • Held August 27 FLC meeting.	• Continue to support and review FLC projects.
Cost Share Incentives *Project Lead: Emily*	• Provided feedback on potential cost share projects. • Approved projects for the entirety of 2024 budget.	• Review cost share applications with Scott SWCD as needed. • Present non-traditional cost share project types for Board approval as applicable.
Sutton Lake Outlet and Lake Management Plan *Project Lead: Emily*	**Lake Management Plan** • Planned timing on fall drone survey.	**Lake Management Plan** • Plan landowner communications. • Organize drone in fall.
Website and Media *Project Lead: Danielle*	**Social Media** • Continue updating Facebook and Instagram: PLOC Grant Funding • Respond to comments and messages as needed **Website** • PLOC guide "StoryMap" **Articles** • PLOC grant funding website article	**Social Media** • Continue updating Facebook and Instagram with relevant topics • Respond to comments and messages as needed **Website** • Update website as needed
Citizen Advisory Committee *Project Lead: Danielle*	• Coordinate CAC volunteers for Fall Community Fest • Prep for Sept. CAC Meeting	• Coordinate with CAC members on volunteer opportunities • September CAC Meeting
Education Program *Project Lead: Danielle*	• See Website and Media section. • Planning Volunteer Buckthorn Removal and Wreathmaking • Coordinated with CAMP volunteers • Fall Community Fest	• Promote and Complete Volunteer Buckthorn Removal Project (Oct. 5) • Prep for and promote Buckthorn Wreathmaking event

SEPTEMBER 2024 PROGRAMS AND PROJECTS UPDATE

PROGRAM OR PROJECT	LAST MONTH'S STAFF ACTIVITIES	NEXT STEPS
Monitoring Program *Project Lead: Jeff and Zach*	• Data processing in WISKI. • Conducted bi-weekly stream and Swamp Lake monitoring regime. • Downloaded stream and lake level logger data • Conducted graphing website maintenance.	• Finalize mapping report on historic monitoring site locations and analysis. • Continue QA/QC in WISKI. • Continue uploading historic data from WQDB to WISKI. • Continue collecting stream flow measurements.
Aquatic Vegetation Management and Surveys *Project Lead: Jeff*	• None.	• Request grant reimbursement funds.
AIS *Project Lead: Jeff and Zach*	• Coordination between Waterfront Restoration and DNR on inspection coverage, trainings, and violations.	• Continue coordinating with DNR on CD3 station installation agreement. • Coordinate with DNR and Waterfront Restorations on boat inspection coverage.
Rules Revisions *Project Lead: Joni*	• Meeting with Scott County to advance equivalency MOA	• Finalize City of Prior Lake equivalency MOA. • Finalize City of Savage interim equivalency agreement. • Continue working with Scott County to finalize equivalency MOA and review Scott County rule updates to confirm equivalency.

BMPs & Easements
Project Lead: Joni
	• Held monthly coordination meeting with SWCD.
	• Worked on monument sign installation agreement template.
		• Wrap up work on outstanding issues associated with:
		  ○ Development Agreement and Conservation Easement establishment process and document templates.
		  ○ Implement first encroachment agreements.
		• Work to resolve outstanding easement violations.

Permitting *Project Lead: Joni*	• Provided permit review comments to LGU partners on four projects. • Performed construction inspections on Permit 23.02. • Worked to close old permit (22.02). • Pre-permit meetings with City of Prior Lake regarding TH 13 trail. • Issued Permit 24.01	• Continue construction inspections. • Continue to close out old permits. • Continue to provide permit review comments to LGU partners.

SEPTEMBER 2024 PROGRAMS AND PROJECTS UPDATE

PROGRAM OR PROJECT	LAST MONTH'S STAFF ACTIVITIES	NEXT STEPS
Planning Activities *Project Lead: Joni and Emily*	• Met with Scott WMO to discuss issues associated with their Water Resources Plan Update. • Begun compiling a master project spreadsheet to aid in TMDL, website, and future maintenance tracking needs.	• Print Water Resources Management Plan amendment and circulate to requested parties.
Outlet Channel Projects and Administration *Project Lead: Emily/Jeff*	• Conducted outlet channel inspections and followed up with any violations. • Cleared vegetation from grates. • Refined 2025 draft budget. • Prepared for and hosted Special Project Cooperator meeting to adopt 2025 budget. • MPCA grant funding awarded, eligible costs discussed and grant agreement in drafting.	• Continue channel inspections. • Sign MPCA grant agreement. • Proceed with engineer to update contract and set construction timeline.
General Administration *Project Lead: Joni*	• Researched and prepared draft MN Watersheds resolution. • Refined proposed 2025 budget. • Participated in City of Prior Lake Flood Response coordination meetings • Researched local office space lease options.	• Continue to participate and learn more about potential Scott County coordinated benefits plan. • Update remainder of personnel policy. • Address outstanding encroachment issue related to a District owned parcel.

PLSLWD Board Staff Report
September 12, 2024

Subject |	Minnesota Watershed Resolutions Delegate Selection	
Board Meeting Date |	September 17, 2024	**Item No:** 4.2
Prepared By |	Joni Giese, District Administrator	
Attachments |	None	
Proposed Action |	Motion to appoint (insert manager names) as delegates and (insert manager name) as an alternate to vote on resolutions on behalf of PLSLWD at the Minnesota Watersheds annual meeting and to authorize the District Administrator to submit the delegate appointment form to Minnesota Watersheds.	

Background

Annually Minnesota Watersheds solicits resolutions from its membership to help inform the organization's legislative platform.

Discussion

Voting in favor or against proposed resolutions will occur on December 6 as part of the annual resolutions hearing at the Minnesota Watershed annual conference. Each member watershed district or watershed management organization is expected appoint two managers and one alternate to serve as the District's delegate for voting on resolutions.

The District will cover costs associated with conference attendance, such as conference registration, mileage, lodging and meals.

Recommendation

Motion to appoint (insert manager names) as delegates and (insert manager name) as an alternate to vote on resolutions on behalf of PLSLWD at the Minnesota Watersheds annual meeting and to authorize the District Administrator to submit the delegate appointment form to Minnesota Watersheds.

Budget Impact

The PLSLWD annual training budget includes funds to cover conference dues, lodging for two nights, and mileage for 2 managers.

PLSLWD Board Staff Report
September 11, 2024

Subject |	Ferric Chloride Site Improvements Request for Quotes
Board Meeting Date |	September 17, 2024 **Item No:** 4.3
Prepared By |	Emily Dick, Water Resources Project Manager
Attachments |	Ferric Chloride Site Improvements Construction Documents
Proposed Action |	Motion to authorize the issuance of a Request For Quotes related to the construction of the Ferric Chloride Site Improvements.

Background

The District's Ferric Chloride Treatment System is an essential part of the District's efforts to reduce phosphorus reaching Spring Lake, and downstream Prior Lake. The District contracted EOR to conduct the Ferric Chloride System Assessment in 2023 to recommend system updates, equipment lifetimes, and optimization of the system. In August 2024, the Board approved a Scope of Services for EOR to provide the engineering, design, permitting, bidding and construction administration work associated with the recommended ferric chloride site improvements. The improvements include reinforcing the access drive, creating an access point to remove the old tank, and replacement of aged system elements. The District has $265,250 budgeted for these improvements in 2024.

Discussion

In the process of surveying the driveway for design, it was found that the existing easement does not cover small (~.005 acres) sections of the existing driveway. Staff have coordinated with the landowners of the property and are in the process of correcting the existing easement to overlay the existing driveway. Depending on the timeline of easement correction, the driveway improvements will either occur before or after the building improvements. In either case, construction of the building will be suitable and is ready to proceed.

EOR and subconsultants have completed the draft plans and specifications for the building and access drive improvements. These draft plans are expected to have small revisions within the -4% to +6.5% contingency range upon final revisions from the architect. The engineer's opinion of probable cost for all improvements is $162,692.64.

The intended schedule is summarized as follows:

September 18, 2024- Request for Quotes is issued
September 25, 2024- Pre-Quote meeting is held at site
October 7, 2024- Quote Packages are opened
October 15, 2024- Recommendation of Quote Award at Board meeting, Authorization to Contract
November 15, 2024- Contracting Complete with contractor
December 15, 2024- Substantial completion of driveway improvements
March 15, 2025- Substantial completion of building improvements

Recommendation

Staff recommends managers authorize the issuance of a Request For Quotes related to the construction of the Ferric Chloride Site Improvements Project.

Budget Impact

The cost associated with the proposed activity is estimated to be $162,692.64 with an accuracy range of -4% to 6.5% and is covered under budget item 611- Ferric Chloride System Assessment.

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT

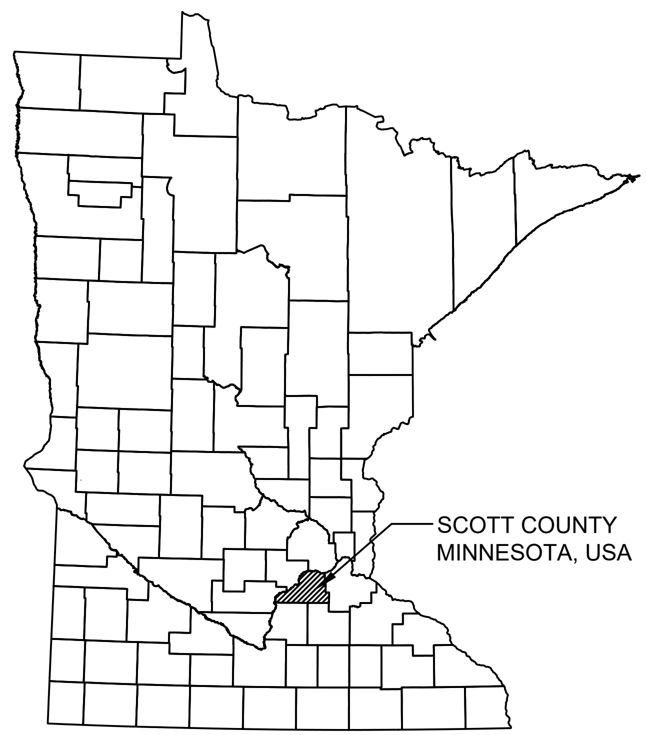
FECL3 TREATMENT BUILDING RETROFIT

SCOTT COUNTY, JORDAN, MN

PROJECT SUBMITTAL PHASE ISSUED FOR BID

Sheet List Table

THIS PLAN SET CONTAINS 12 SHEETS.



PROJECT LOCATION, REFERENCE MAP

LEGEND

FEATURE	EXISTING	PROPOSED
MAJOR CONTOUR	975	975
MINOR CONTOUR	974	974
DRAINAGE FLOW ARROWS	-0.5%	
PROPERTY BOUNDARY		
CONSTRUCTION LIMITS		
EASEMENT		
FENCE		
GRAVEL EDGE		
SILT FENCE		SF
SEDIMENT LOGS		

GENERAL NOTES

EXISTING UTILITIES

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

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

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

CONSTRUCTION NOTE

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

GOVERNING SPECIFICATIONS

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

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

GOPHER STATE ONE-CALL

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

811 Know what's below. Call before you dig.

GSOC GOPHER STATE ONE CALL

EOR water ecology community

EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

KYLE D. CRAWFORD DATE: 09/10/2024 LICENSE #54906

DATE	NO.	DESCRIPTION
09/10/2024	1	DRAFT ISSUED FOR BID
	2	
	3	
	4	
	5	
	6	

DESIGNED BY: KDC
DRAWN BY: BKC
CHECKED BY: XXX
EOR JOB #758-0179

PLSLWD

FECL3 TREATMENT BUILDING RETROFIT
SCOTT COUNTY, JORDAN, MN

TITLE SHEET

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT PRIOR LAKE, MN 55372

T000

GRADING & EROSION CONTROL NOTES

1. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO START OF SITE GRADING. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES OR VARIATIONS.
2. ENGINEER WILL PROVIDE INITIAL HORIZONTAL AND VERTICAL CONTROL BENCHMARKS AND PROJECT DESIGN CAD DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SAID HORIZONTAL AND VERTICAL CONTROL POINTS SET BY OWNER. CONTRACTOR TO PROVIDE CONSTRUCTION STAKING UTILIZING A PROFESSIONAL LAND SURVEYOR AS NECESSARY, TO BE INCIDENTAL TO THE CONTRACT.
3. INSTALL PERIMETER EROSION CONTROL MEASURES AND PERFORM TREE CLEAN ROOT CUTTING BEFORE BEGINNING SITE GRADING ACTIVITIES. SOME EROSION CONTROL SUCH AS SEDIMENT CONTROL LOGS AND CHANGES TO SILT FENCE MAY BE INSTALLED AS GRADING OCCURS IN THE SPECIFIC AREA. MAINTAIN EROSION CONTROLS THROUGHOUT THE GRADING PROCESS AND REMOVE WHEN APPROVED BY THE COUNTY AND ENGINEER.
4. CONTRACTOR TO ADHERE TO ALL COUNTY AND STATE REQUIREMENTS, INCLUDING THE REQUIREMENT TO MINIMIZE THE AREA DISTURBED BY GRADING AT ANY GIVEN TIME AND TO COMPLETE VEGETATION RESTORATION WITHIN THE TIME REQUIRED BY THE PERMIT AFTER COMPLETION OF GRADING OF AN AREA.
5. ALL EXPOSED SOIL AREAS WITHIN 100 FEET OF A WATER OF THE STATE OR ANY STORMWATER CONVEYANCE SYSTEM CONNECTED TO A WATER OF THE STATE MUST BE STABILIZED WITHIN 7 DAYS (STEEPER THAN 3:1 SLOPES), 14 DAYS (FLATTER THAN 3:1 SLOPES).
6. WHERE INDICATED ON THE PLANS AND ADDITIONAL LOCATION AS NECESSARY, APPROVED INLET PROTECTION IS TO BE USED DURING CONSTRUCTION.
7. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH COUNTY AND NPDES PERMITS.
8. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES, INCLUDING THE REMOVAL OF ACCUMULATED SILT IN FRONT OF SILT FENCES, SEDIMENT CONTROL LOGS, ETC. DURING THE DURATION OF THE CONSTRUCTION.
9. MAINTAIN EXISTING EROSION CONTROL. RE-ESTABLISH ANY EXISTING EROSION CONTROL DISTURBED BY CONSTRUCTION.
10. CONTRACTOR SHALL PROVIDE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED FOR CONSTRUCTION. ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
11. REMOVE ALL EROSION CONTROL MEASURES AFTER THE WORK HAS BEEN ACCEPTED BY ENGINEER.
12. THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKED ONTO EXISTING STREETS AND PAVED AREAS WITHIN 24 HOURS OF NOTICE. THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
13. IF BLOWING DUST BECOMES A NUISANCE, THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS. THIS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
14. SWEEP ADJACENT STREETS IN ACCORDANCE WITH COUNTY AND NPDES PERMITS AND PROJECT REQUIREMENTS. THIS SHALL BE COMPLETED AT A MINIMUM ONCE PER DAY DURING ACTIVE CONSTRUCTION AND MORE OFTEN AS NECESSARY, OR AS REQUESTED BY COUNTY OR ENGINEER.
15. INSPECT EROSION CONTROL DEVICES AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING EROSION CONTROL DEVICES.
16. SEDIMENT REMOVAL - SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT.
17. ANY SEDIMENT REMAINING IN PLACE AFTER THE EROSION CONTROL DEVICE IS NO LONGER REQUIRED SHALL BE GRADED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED WITH THE APPROPRIATE SEED MIX AS DIRECTED BY ENGINEER.
18. SUITABLE GRADING MATERIAL SHALL CONSIST OF ALL SOIL ENCOUNTERED ON SITE WITH EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL AND OTHER UNSTABLE MATERIAL. STOCKPILE TOPSOIL AND GRANULAR FILL AT LOCATIONS DIRECTED BY ENGINEER.
19. EXISTING GRANULAR MATERIALS SHALL BE SEGREGATED AND STOCKPILED FOR REUSE ON-SITE.
20. SUBGRADE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF THE EXISTING PAVEMENT.
21. GRADES SHOWN ARE FINISHED GRADES WITH TOLERANCES OF ±0.10 FEET.
22. ALL EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ANY ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OFF THE CONSTRUCTION SITE. DISPOSAL SHALL BE DONE IN A MANNER THAT MEETS ALL APPLICABLE LOCAL AND STATE REGULATIONS.
23. CONTRACTOR IS RESPONSIBLE FOR GRADING AND SLOPING THE FINISHED GROUND SURFACE TO PROVIDE SMOOTH & UNIFORM SLOPES, WHICH PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND INFRASTRUCTURE AND PREVENT PONDING IN LOWER AREAS. CONTACT ENGINEER IF FIELD ADJUSTMENTS TO GRADING PLANS ARE REQUIRED.

TRAFFIC CONTROL

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A TRAFFIC CONTROL PLAN WITH TRAFFIC CONTROL DEVICES AND SIGNING CONFORMING TO THE MMUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, LATEST EDITION.
2. CONTRACTOR TO SUBMIT TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL MAINTAIN RESIDENT AND EMERGENCY ACCESS AT ALL TIMES.
4. CONTRACTOR SHALL PROVIDE A MINIMUM 48 HOUR (NOT INCLUDING WEEKENDS AND HOLIDAYS) ADVANCE NOTICE WHEN ROAD CLOSURES AND DETOURS OCCUR.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL, SIGNAGE, FLAGGING, AND ASSOCIATED MAINTENANCE.
6. ANY CHANGES TO THE TRAFFIC CONTROL PLAN NEED TO BE RESUBMITTED TO THE COUNTY AND ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTATION OF THE CHANGES.
7. ANY COST INCURRED FOR TRAFFIC CONTROL SHALL BE INCIDENTAL TO THE CONTRACT.

PERMIT NOTES

1. SCOTT COUNTY
   - A. GRADING PERMIT
   - B. BUILDING PERMIT
   - C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL ADDITIONAL COUNTY PERMITS NOT LISTED ABOVE (NONE ANTICIPATED) PRIOR TO CONSTRUCTION. ANY COST INCURRED FOR OBTAINING THESE PERMITS SHALL BE INCIDENTAL TO THE CONTRACT.
2. MINNESOTA DEPARTMENT OF TRANSPORTATION
   - A. DRIVEWAY ACCESS PERMIT
3. MINNESOTA POLLUTION CONTROL AGENCY, NPDES/SDS CONSTRUCTION STORMWATER PERMIT
   - A. DISTURBANCE IS LESS THAN ONE ACRE, THEREFORE A NPDES/SDS PERMIT IS NOT REQUIRED.

GENERAL SITE WORK NOTES

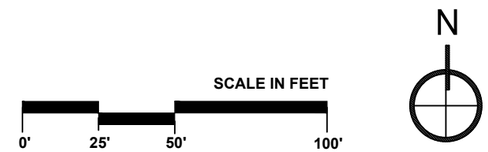
1. VERIFY HORIZONTAL LOCATION AND ELEVATION WHERE A CONNECTION TO EXISTING PAVEMENT, STRUCTURE, PIPE OR OTHER SITE FEATURE IS TO BE MADE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE PLANS.
2. REFERENCE TO MNDOT SPECIFICATIONS SHALL MEAN DIVISIONS II AND III OF THE 2020 SPECIFICATIONS FOR CONSTRUCTION.
3. SEE RESTORATION PLAN FOR VEGETATION RESTORATION REQUIREMENTS.
4. ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MMUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, LATEST EDITION.
5. ALL CONSTRUCTION WORK SHALL BE COMPLETED WITHIN COUNTY-APPROVED WORKING HOURS. IF WORK ON WEEKENDS AND/OR HOLIDAYS IS REQUESTED, CONTRACTOR SHALL CONTACT THE COUNTY AND ENGINEER A MINIMUM OF 48 HOURS PRIOR TO AFOREMENTIONED WORK DAY. COUNTY SHALL APPROVE/DISAPPROVE THESE REQUESTS AT THEIR DISCRETION.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR PLOWING SNOW AS NEEDED TO ACCESS BUILDING AND PROJECT SITE. SNOW MANAGEMENT SHALL NOT IMPEDED SURROUNDING PROPERTY'S SITE ACCESS.

GENERAL UTILITY NOTES

1. CONTRACTOR SHALL CONTACT 'GOPHER STATE ONE CALL' WITHIN TWO WORKING DAYS PRIOR TO EXCAVATION/CONSTRUCTION FOR UTILITY LOCATIONS. *TWIN CITIES METRO AREA: 651-454-0002* OR TOLL-FREE: 1-800-252-1166.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND INVERTS, SHOWN OR NOT SHOWN. ANY DISCREPANCY BETWEEN PLANS AND FIELD CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
3. ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE COUNTY AND MNDOT SPECIFICATIONS AND REQUIREMENTS.
4. UTILITY TRENCHES SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698.78 OR AASHTO T-99) FROM THE PIPE ZONE TO WITHIN THREE FEET OF THE GROUND SURFACE AND 100% STANDARD PROCTOR IN THE UPPER THREE FEET. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND CONDUCTING TEST. COMPACTION IN GREEN SPACE AREAS SHALL BE AT LEAST 90% STANDARD PROCTOR OR AS DIRECTED BY THE ENGINEER.
5. THE LOCATION OF UNDERGROUND FACILITIES AND/OR STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORD AT THE TIME THE PLANS WERE PREPARED AND ARE NOT GUARANTEED TO BE COMPLETE OR CORRECT. THE SUBSURFACE UTILITY INFORMATION SHOWN IS UTILITY QUALITY LEVEL D, AS DETERMINED USING THE GUIDELINES OF "CI/ASCE 38-02 STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE THE EXACT LOCATION OF ALL FACILITIES AND TO PROVIDE ADEQUATE PROTECTION OF SAID UTILITIES DURING THE COURSE OF WORK.
6. CONTRACTOR SHALL NOTIFY MNDOT 48 HOURS IN ADVANCE OF WORKING WITHIN THE EXISTING RIGHT OF WAY.

SCHEDULE OF ESTIMATED QUANTITIES

Division 2: General / Grading				
1	Mobilization	2021.501	LS	1.00
2	Salvage 24" CMP Apron	2104.502	EA	2.00
3	Common Excavation	2105.607	CY	42.00
4	Common Borrow (LV)	2105.607	CY	107.00
5	Aggregate Surfacing (CV) Class 5	2118.507	CY	117.00
6	Aggregate Base (CV) Class 5	2211.507	CY	26.00
Division 2: Miscellaneous Construction (Stormwater)				
7	24" CS Pipe Culvert	2501.503	LF	35.00
Division 2: Miscellaneous Construction (Landscape / Traffic Control)				
8	Vehicular Gate	2557.502	EA	1.00
9	Install Sign "PRIVATE DRIVE, NO TURNAROUND"	2564.502	EA	2.00
10	Erosion Control Supervisor	2573.501	LS	1.00
11	Sediment Control Log Type Compost	2573.503	LF	196.00
12	Topsoil Borrow	2574.507	CY	4.00
13	Rolled Erosion Prevention Category 25	2575.504	SY	427.00
14	Seeding	2575.505	ACRE	0.15
15	Seed Mixture STR (26 lbs/acre)	2575.508	LB	4.00
Special Construction				
16	Treatment Piping, Tank & Appurtenances	SP	LS	1.00
17	Garage Door	SP	LS	1.00



water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

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KYLE D. CRAWFORD DATE: 09/10/2024 LICENSE #54906

DATE	NO.	DESCRIPTION
09/10/2024	1	DRAFT ISSUED FOR BID
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	4	
	5	
	6	

DESIGNED BY: KDC
DRAWN BY: BKC
CHECKED BY: XXX
EOR JOB #758-0179

PLSLWD

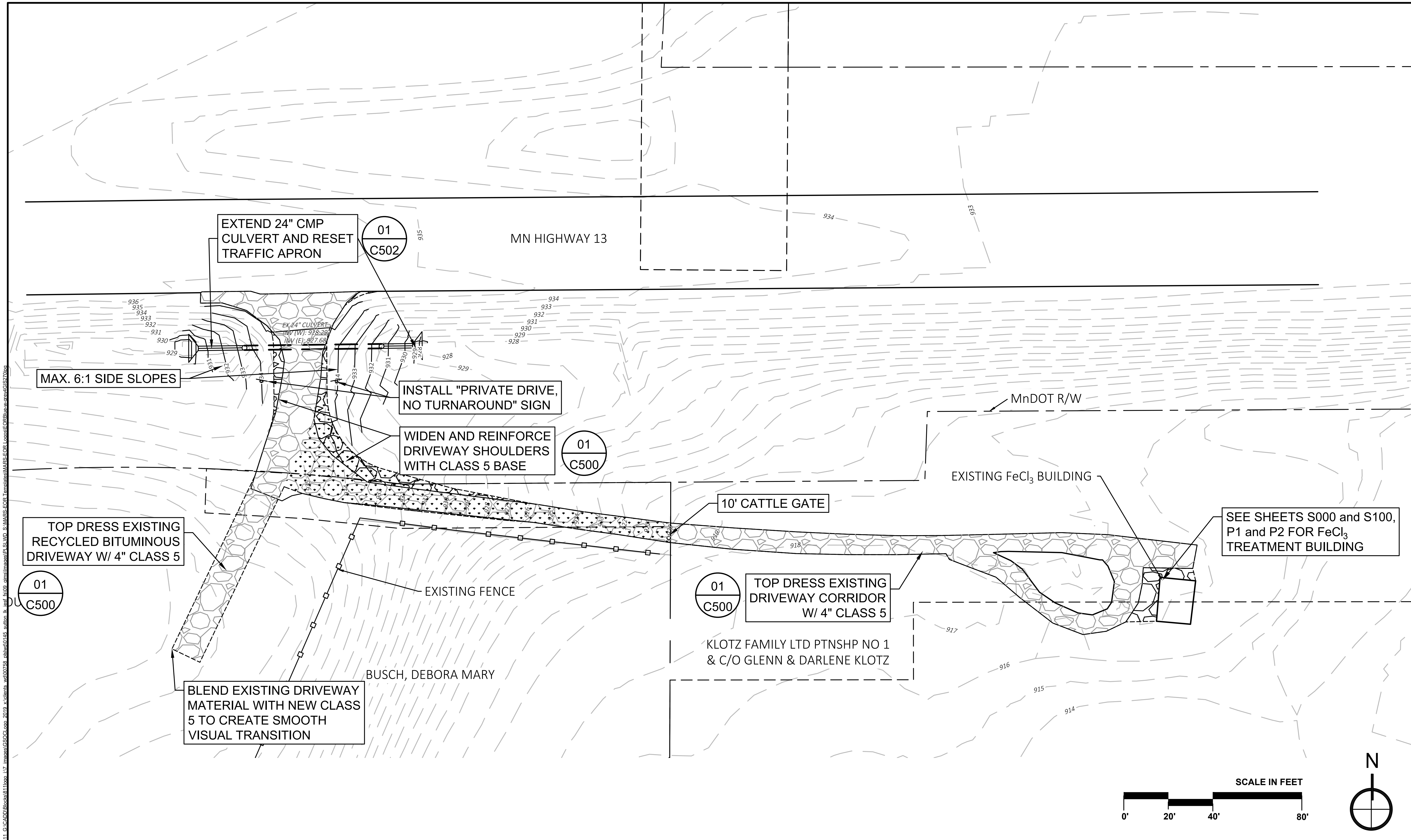
FECL3 TREATMENT BUILDING RETROFIT

SCOTT COUNTY, JORDAN, MN

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT

NOTES & SEQ

C100



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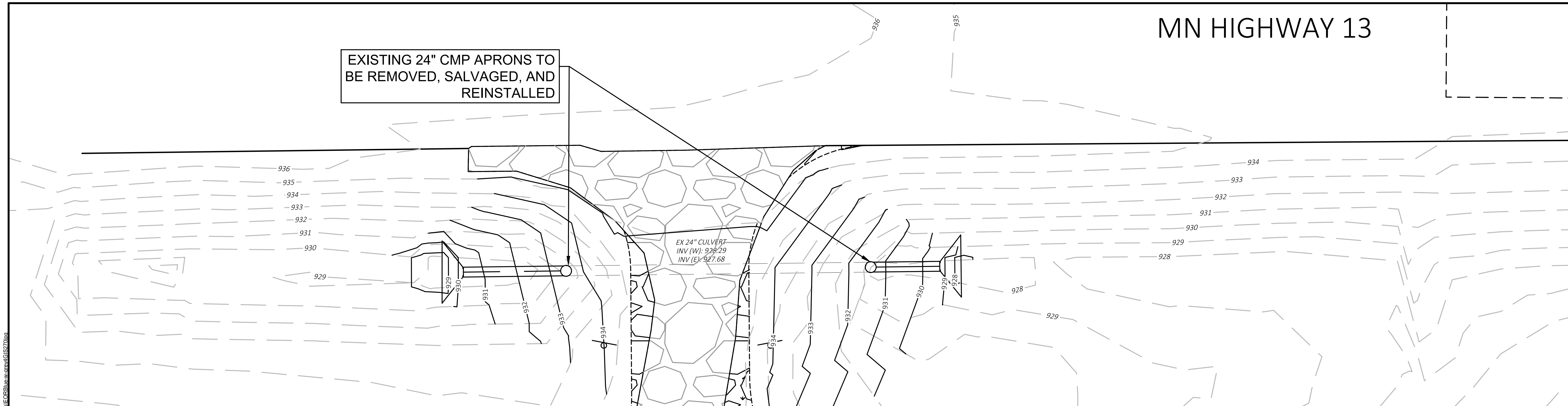
FECL3 TREATMENT BUILDING RETROFIT

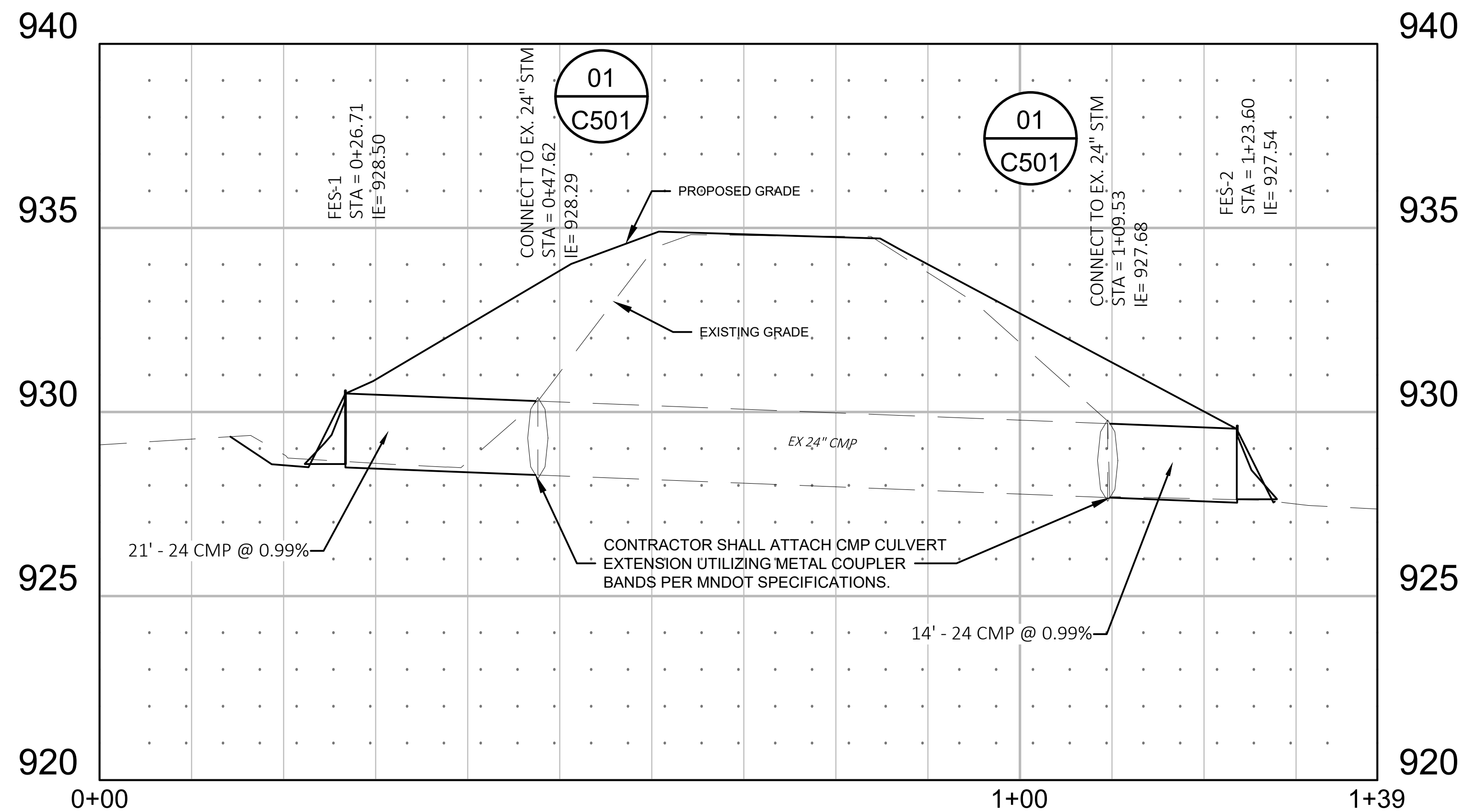
SCOTT COUNTY, JORDAN, MN

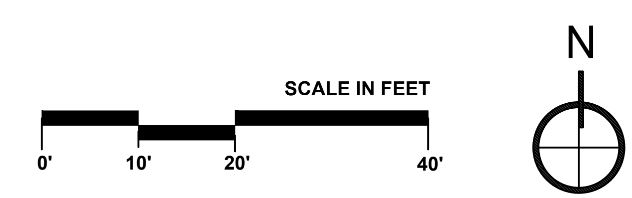
PRIOR LAKE SPRING LAKE WATERSHED DISTRICT PRIOR LAKE, MN 55372

GRADING & DRAINAGE PLAN

C101







EOR water ecology community EMMONS & OLIVIER RESOURCES, INC. 1919 UNIV. AVE. W. #300 ST. PAUL, MN TEL: 651.770.8448 WWW.EORINC.COM	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. KYLE D. CRAWFORD DATE: 09/10/2024 LICENSE #54906	DESIGNED BY: KDC DRAWN BY: BKC CHECKED BY: XXX EOR JOB #758-0179	FECL3 TREATMENT BUILDING RETROFIT SCOTT COUNTY, JORDAN, MN PRIOR LAKE SPRING LAKE WATERSHED DISTRICT PRIOR LAKE, MN 55372	STORM SEWER PLAN & PROFILE C102

DATE	NO.	DESCRIPTION
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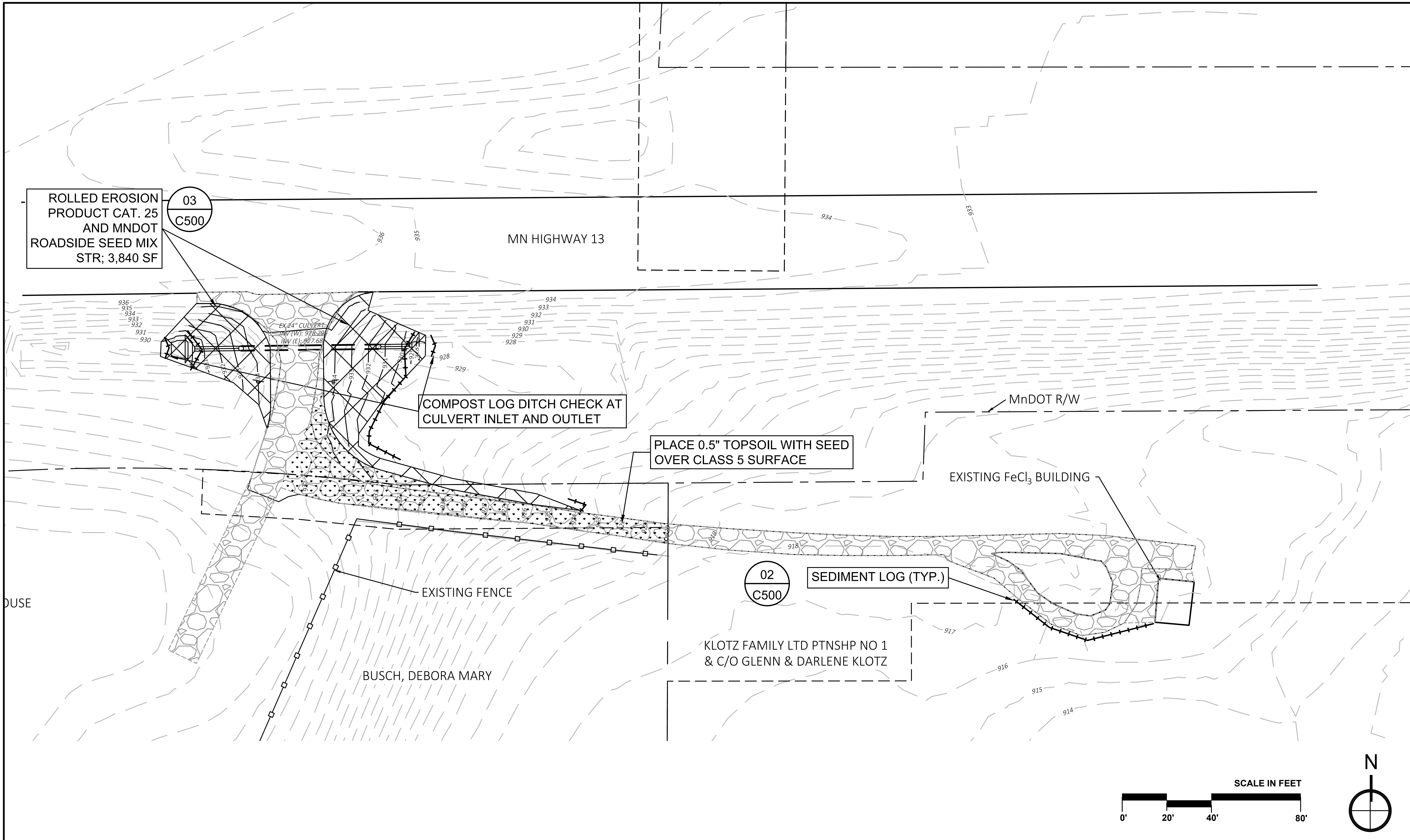
PLSLWD

Plot Date: 09/10/2024



Plot Date: 09/10/2024
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4758-0179_existinglinework
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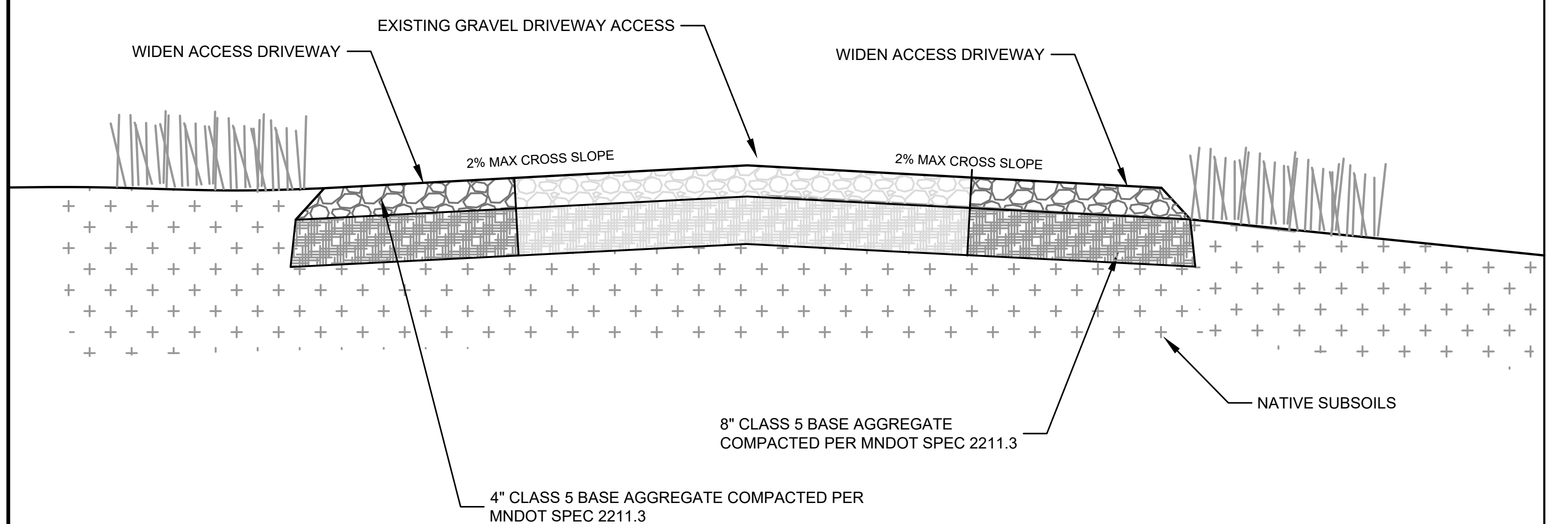
FECL3 TREATMENT BUILDING RETROFIT

SCOTT COUNTY, JORDAN, MN

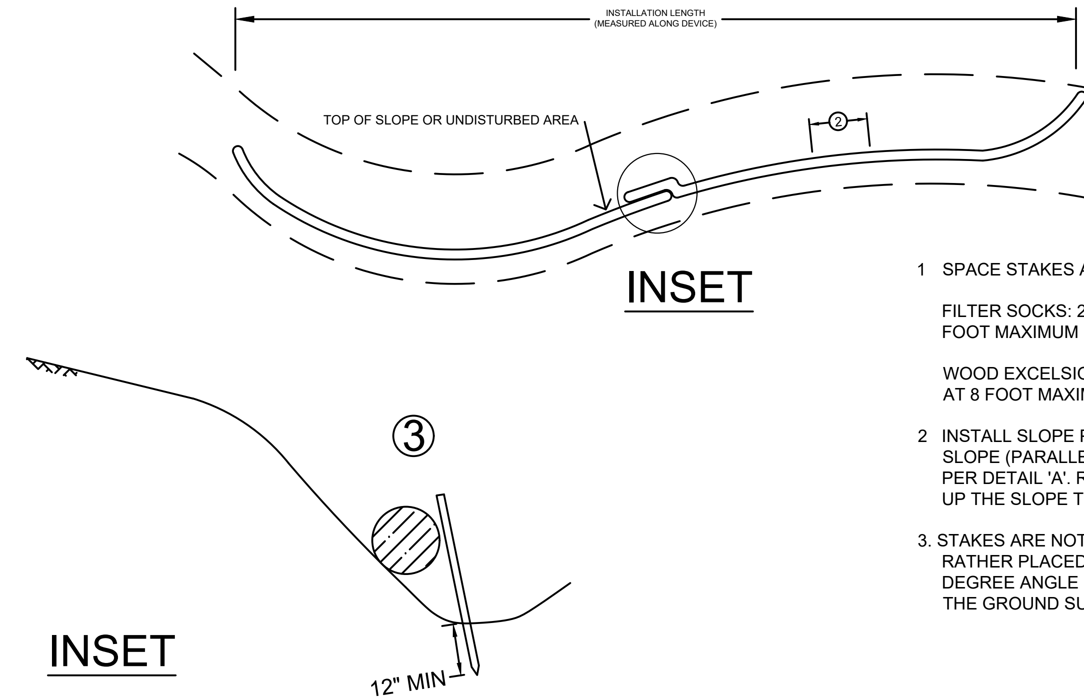
PRIOR LAKE SPRING LAKE WATERSHED DISTRICT PRIOR LAKE, MN 55372

ESC & RESTORATION PLAN

C103



01 C500 GRAVEL DRIVEWAY CROSS SECTION
(NO SCALE)



1 SPACE STAKES AS FOLLOWS:

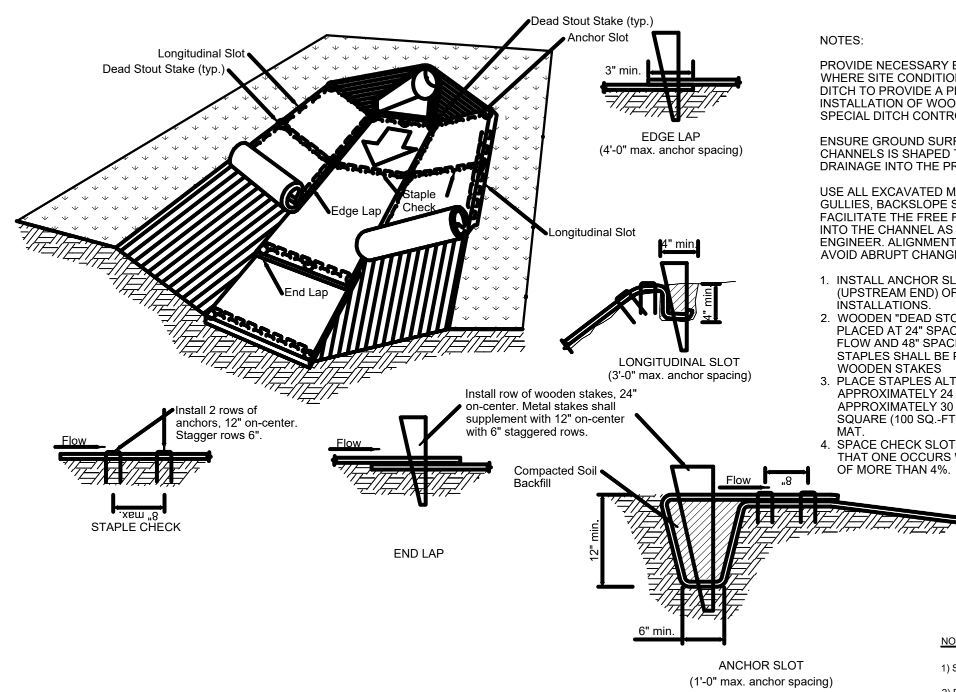
FILTER SOCKS: 2"X2" NOMINAL WOOD STAKES AT 8 FOOT MAXIMUM STAKING.

WOOD EXCELSIOR LOGS: 1"X1" NOMINAL WOOD STAKES AT 8 FOOT MAXIMUM SPACING.

2 INSTALL SLOPE PROTECTION PERPENDICULAR TO SLOPE (PARALLEL TO CONTOURS). OVERLAP JOINTS PER DETAIL 'A'. RUN THE LAST 10 FEET OF EACH DEVICE UP THE SLOPE TO PREVENT FLOW RUNAROUND.

3. STAKES ARE NOT TO PROTRUDE THROUGH LOGS, BUT RATHER PLACED ON THE DOWNSLOPE SIDE AT A 45 DEGREE ANGLE SO AS TO "PINCH" THE LOG TIGHT TO THE GROUND SURFACE

02 C500 SEDIMENT CONTROL LOGS
(NO SCALE)



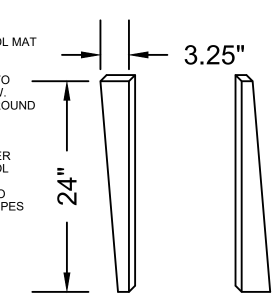
NOTES:

PROVIDE NECESSARY EXCAVATION AT LOCATION WHERE SITE CONDITIONS REQUIRE SHAPING OF A DITCH TO PROVIDE A PROPER TYPE OF AREA FOR INSTALLATION OF WOOD EXCELSIOR MAT FOR SPECIAL DITCH CONTROL.

ENSURE GROUND SURFACE ADJACENT TO ANY CHANNELS IS SHAPED TO FACILITATE NATURAL DRAINAGE INTO THE PROTECTED AREA.

USE ALL EXCAVATED MATERIAL TO FILL LOW AREAS, GULLIES, BACKSLOPE SCOURS, AND OTHERWISE FACILITATE THE FREE FLOW OF SURFACE WATER INTO THE CHANNEL AS DIRECTED BY THE ENGINEER. ALIGNMENT SHOULD BE SMOOTH AND AVOID ABRUPT CHANGES.

1. INSTALL ANCHOR SLOT AT THE BEGINNING (UPSTREAM END) OF ALL EROSION CONTROL MAT INSTALLATIONS.
2. WOODEN "DEAD STOUT STAKES" SHALL BE PLACED AT 24" SPACING PERPENDICULAR TO FLOW AND 48" SPACING PARALLEL TO FLOW. STAPLES SHALL BE PLACED PER NOTE 3 AROUND WOODEN STAKES
3. PLACE STAPLES ALTERNATELY IN ROWS APPROXIMATELY 24 INCHES APART. APPROXIMATELY 30 STAPLES REQUIRED PER SQUARE (100 SQ.-FT.) OF EROSION CONTROL MAT.
4. SPACE CHECK SLOTS IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN 50 FEET OF SLOPES OF MORE THAN 4%.



DEAD STOUT STAKES

NOTES:

1) SHALL BE DERIVED FROM HARDWOOD SPECIES OR APPROVED EQUAL.

2) DRIVE TO 1" ABOVE GRADE OR REFUSAL, AS DETERMINED BY ENGINEER, AND CUT OFF STAKE AT 1" ABOVE GRADE.

3) DEAD STOUT STAKES USED IN CONJUNCTION WITH ALL DeKoWe EROSION CONTROL BLANKET APPLICATIONS.

03 C500 EROSION CONTROL BLANKET
(NO SCALE)

EOR water ecology community
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PLSLWD

FECL3 TREATMENT BUILDING RETROFIT
SCOTT COUNTY, JORDAN, MN

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT PRIOR LAKE, MN 55372

DETAILS

SHEET C500

Plot Date: 09/10/2024

COUPLING TYPE	PIPE DIMENSIONS: PIPE CORRUGATION (IN.)	PIPE DIMENSIONS: PIPE SIZE I.D. (IN.)	BAND - MINIMUMS: W OR A (IN.)	BAND - MINIMUMS: BAND THICKNESS (IN.) (SEE NOTE 4 SHEET 3 OF 3)	BAND CONNECTING METHOD: BAR & STRAP: STRAP THICKNESS (IN.)	BAND - ANGLE: ANGLE DIMENSIONS (IN.)	BOLTS NO.	BOLTS SIZE (IN.)	ANGLE TO BAND: RIVETS NO.	RIVETS SIZE (IN.)	SPOT WELDS NO.	SPOT WELDS SIZE (IN.)
STANDARD JOINTS												
UNIVERSAL BAND (DIMPLED)	2-2/3 X 1/2	THRU 36	12	0.052 (18 GA.)		2 X 2 X 3/16	3	1/2	3	3/8	3	1/2
		42 THRU 60	12	0.052 (18 GA.)		2 X 2 X 3/16	3	1/2	3	3/8	5	1/2
		THRU 72	12	0.052 (18 GA.)	0.079 (14 GA.)							
		78 THRU 84	16-1/4	0.079 (14 GA.)	DBL. 0.079 (14 GA.)							
ANNULAR OR HELICAL BAND	2-2/3 X 1/2	THRU 36	7	0.052 (18 GA.)		2 X 2 X 3/16	2	1/2	3	3/8	3	1/2
		42 THRU 60	12	0.052 (18 GA.)		2 X 2 X 3/16	3	1/2	3	3/8	5	1/2
		66 THRU 84	12	0.052 (18 GA.)		2 X 2 X 3/16	4	1/2	5	3/8	5	1/2
	3 X 1 & 5 X 1	36 THRU 60	14	0.052 (18 GA.)		2 X 2 X 3/16	3	1/2	3	3/8	5	1/2
		60 THRU 120	14	0.052 (18 GA.)		2 X 2 X 3/16	4	1/2	5	3/8	5	1/2
WING CHANNEL BAND ①	2-2/3 X 1/2	THRU 60	12	0.052 (18 GA.)		2 X 2 X 3/16	3	1/2	3	3/8	5	1/2
		THRU 72	12	0.052 (18 GA.)	0.079 (14 GA.)							
		78 THRU 84	12	0.079 (14 GA.)	0.109 (12 GA.)							
	3 X 1 & 5 X 1	36 THRU 84	12	0.052 (18 GA.)	0.079 (14 GA.)							
		90 THRU 120	12	0.052 (18 GA.)	0.109 (12 GA.)							
CHANNEL BAND	2-2/3 X 1/2	THRU 42	3/4	0.079 (14 GA.)		2 X 2 X 5/16	1	1/2			②	1/2
		48 THRU 54	3/4	0.079 (14 GA.)		2 X 2 X 5/16	1	1/2			②	1/2
		THRU 54	3/4	0.079 (14 GA.)	0.079 (14 GA.)							
		60 THRU 66	3/4	0.079 (14 GA.)	0.079 (14 GA.)							
		60 THRU 72	1	0.109 (12 GA.)	0.079 (14 GA.)							
SEMI-CORRUGATED BAND	2-2/3 X 13	THRU 54	10-1/2	0.052 (18 GA.)		1-1/2 X 2-1/2 X 3/16	1	1/2			3	1/2
		THRU 72	10-1/2	0.052 (18 GA.)	0.079 (14 GA.)							
		78 THRU 84	10-1/2	0.079 (14 GA.)	0.109 (12 GA.)							
	3 X 1 & 5 X 1	36 THRU 84	10-1/2	0.052 (18 GA.)	0.079 (14 GA.)							
		90 THRU 120	10-1/2	0.079 (14 GA.)	0.109 (12 GA.)							
POSITIVE JOINTS												
UNIVERSAL BAND (DIMPLED)	2-2/3 X 1/2	THRU 36	12	0.064 (16 GA.)		2 X 2 X 3/16	3	1/2	3	3/8	5	1/2
		THRU 36	12	0.064 (16 GA.)	0.079 (14 GA.)							
		42 THRU 60	16-1/4	0.064 (16 GA.)	DBL. 0.079 (14 GA.)							
ANNULAR OR HELICAL BAND	2-2/3 X 1/2	THRU 36	12	0.064 (16 GA.)		2 X 2 X 3/16	3	1/2	3	3/8	5	1/2
		42 THRU 60	12	0.064 (16 GA.)		2 X 2 X 3/16	3	1/2	3	3/8	5	1/2
		42 THRU 60	12	0.064 (16 GA.)		2 X 2 X 5/16	3	1/2	5	3/8		
		66 THRU 84	24	0.064 (16 GA.)		2 X 2 X 5/16	5	1/2	7	3/8		
	3 X 1 & 5 X 1	36 THRU 60	14	0.064 (16 GA.)		2 X 2 X 3/16	3	1/2	3	3/8		
		36 THRU 60	14	0.064 (16 GA.)		2 X 2 X 5/16	3	1/2	5	3/8		
		66 THRU 120	25	0.064 (16 GA.)		2 X 2 X 5/16	5	1/2	9	3/8		
WING CHANNEL BAND ①	2-2/3 X 1/2	THRU 60	12	0.064 (16 GA.)		2 X 2 X 5/16	3	1/2	5	3/8		
		THRU 48	12	0.064 (16 GA.)	0.079 (14 GA.)							
		42 THRU 48	12	0.064 (16 GA.)	0.109 (12 GA.)							
		54 THRU 60	12	0.064 (16 GA.)	DBL. 0.079 (14 GA.)							
		66 THRU 84	12	0.109 (12 GA.)	DBL. 0.109 (12 GA.)							
	3 X 1 & 5 X 1	36 THRU 78	12	0.064 (16 GA.)	DBL. 0.079 (14 GA.)							
		84 THRU 96	12	0.079 (14 GA.)	DBL. 0.079 (14 GA.)							
		102 THRU 120	12	0.109 (12 GA.)	DBL. 0.109 (12 GA.)							
CHANNEL BAND	2-2/3 X 1/2	THRU 24	3/4	0.079 (14 GA.)	0.079 (14 GA.)							
		30 THRU 42	3/4	0.079 (14 GA.)	0.079 (14 GA.)							
		30 THRU 42	1	0.109 (12 GA.)	0.079 (14 GA.)							
		48 THRU 54	1	0.109 (12 GA.)	0.079 (14 GA.)							
SEMI-CORRUGATED BAND	2-2/3 X 1/2	THRU 48	10-1/2	0.064 (16 GA.)	0.079 (14 GA.)							
		42 THRU 48	10-1/2	0.064 (16 GA.)	0.109 (12 GA.)							
		54 THRU 60	10-1/2	0.064 (16 GA.)	DBL. 0.079 (14 GA.)							
		66 THRU 84	10-1/2	0.109 (12 GA.)	DBL. 0.109 (12 GA.)							
	3 X 1 & 5 X 1	36 THRU 66	10-1/2	0.064 (16 GA.)	DBL. 0.079 (14 GA.)							
		72 THRU 84	10-1/2	0.079 (14 GA.)	DBL. 0.079 (14 GA.)							
		90 THRU 120	10-1/2	0.109 (12 GA.)	DBL. 0.109 (12 GA.)							

GAGE SIZE

18 GA	= 0.0516"
16 GA	= 0.0635"
14 GA	= 0.0785"
12 GA	= 0.1084"

NOTES:

① IF CHANNEL HEIGHT IS GREATER THAN CORRUGATION HEIGHT, ANGLE MAY BE NOTCHED TO FIT AND WELDED OR DOUBLE BAR AND STRAP REQUIRED.

② SEE SHEET 2 OF 3.

APPROVED FEBRUARY 22, 2021

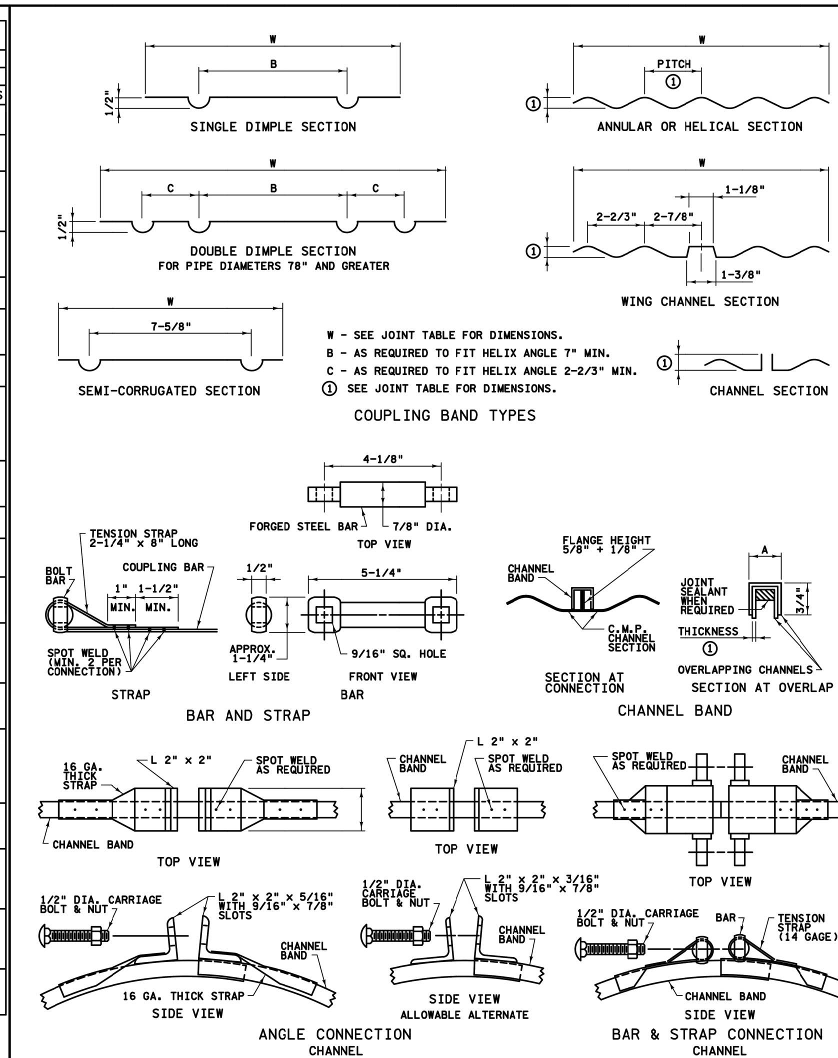
STATE DESIGN ENGINEER

STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION

CORRUGATED STEEL PIPE COUPLING BAND

SPECIFICATION REFERENCE 3226

STANDARD PLATE NO. 3221D 1 OF 3



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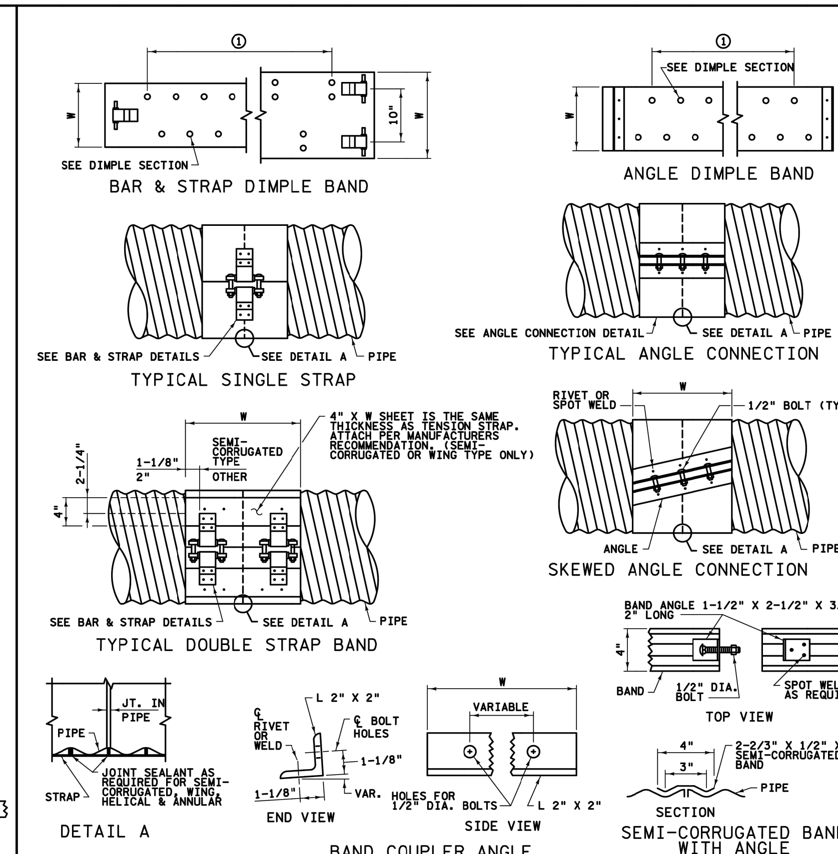
CORRUGATED STEEL PIPE COUPLING BAND

SPECIFICATION REFERENCE 3226

STANDARD PLATE NO. 3221D 2 OF 3



NOTES:

USE THE SAME BASE METAL FOR CONNECTING BANDS AS REQUIRED FOR CULVERT PIPE.

USE CONNECTING BANDS AND HARDWARE THAT ARE GALVANIZED OR ALUMINIZED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

FOR PIPE ARCHES, USE THE SAME WIDTH BAND AS FOR ROUND PIPE OF EQUAL PERIPHERY.

COUPLING BANDS MAY BE THREE NUMERICAL THICKNESSES LIGHTER THAN THAT USED FOR THE PIPE, BUT NOT LESS THAN 18 GAGE (0.052") THICK.

FOR ALL BAR & STRAP CONNECTING BANDS, USE A 7/8" BAR DIA. WITH A YIELD STRENGTH OF 32,000 P.S.I. FOR USE WITH STRAP THICKNESS OF 0.079" & 45,000 P.S.I. FOR USE WITH STRAP THICKNESS OF 0.109". USE 1/2" DIA. CONNECTING BOLTS.

LAP BANDS ON AN EQUAL PORTION OF EACH OF THE CULVERT SECTIONS TO BE CONNECTED.

FOR HELICALLY CORRUGATED COUPLING BANDS, ORIENT THE CONNECTION ANGLES PARALLEL TO PIPE AXIS WHEN SLOTTED BOLT HOLES ARE USED TO ALLOW ADJUSTMENT TO HELIX ANGLE.

TWO PIECE BAND REQUIRED FOR PIPE GREATER THAN 42" DIA.

ALTERNATE ANGLE CONSTRUCTION, SUCH AS DIE-FORMED ANGLE VS. HOT ROLLED ANGLE AND SLIGHT ANGLE CONFIGURATION MODIFICATIONS, MAY BE USED WHEN APPROVED BY THE OFFICE OF MATERIALS AND ROAD RESEARCH.

① EIGHT SPACES AS REQUIRED TO FIT HELIX ANGLE.

APPROVED FEBRUARY 22, 2021

STATE DESIGN ENGINEER

STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION

CORRUGATED STEEL PIPE COUPLING BAND

SPECIFICATION REFERENCE 3226

STANDARD PLATE NO. 3221D 3 OF 3

05 / C501

CORRUGATED STEEL PIPE COUPLING BAND

(NO SCALE)

EOR water ecology community
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PLSLWD

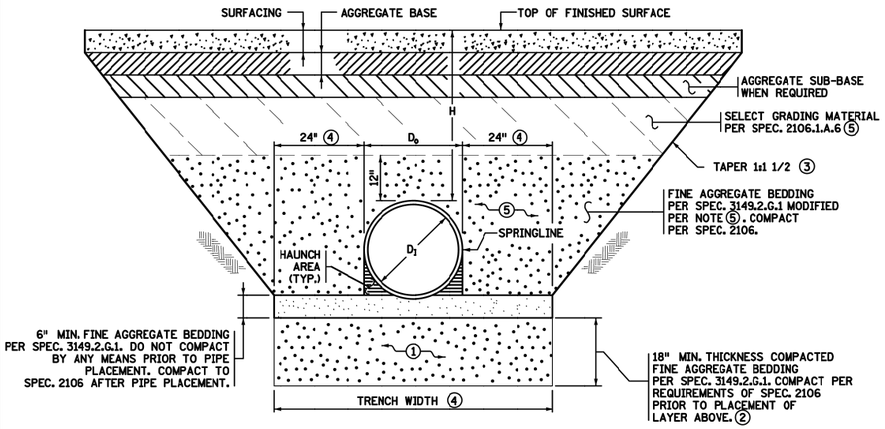
FECL3 TREATMENT BUILDING RETROFIT

SCOTT COUNTY, JORDAN, MN

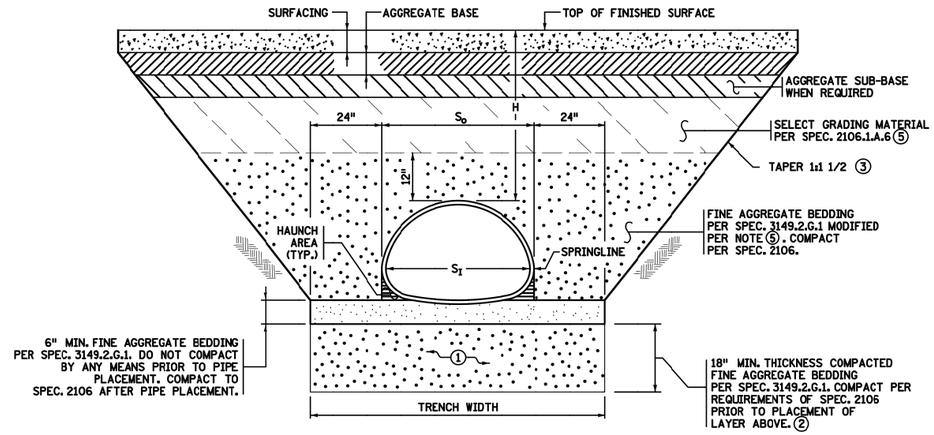
PRIOR LAKE SPRING LAKE WATERSHED DISTRICT PRIOR LAKE, MN 55372

DETAILS

SHEET C501



STANDARD FLEXIBLE PIPE CULVERT BEDDING



STANDARD FLEXIBLE PIPE ARCH CULVERT BEDDING

PLASTIC PIPE WITH H > 10 FT. ④

PIPE DIA.	TRENCH WIDTH (FEET)
12"	5'-2"
15"	5'-6"
18"	5'-9"
24"	6'-6"
30"	8'-0"
36"	9'-6"
42"	11'-0"
48"	12'-6"

-LEGEND-

D_i = INSIDE DIAMETER OF ROUND PIPE (INCHES).
D_o = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
S_i = INSIDE SPAN OF PIPE-ARCH (INCHES).
S_o = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
H = FILL COVER HEIGHT OVER PIPE (FEET).

= UNDISTURBED SOIL

= COMPACTED BEDDING

= LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

CONSTRUCTION SEQUENCE

1. PLACE AND COMPACT 18" OF FINE AGGREGATE BEDDING TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL (SPEC. 3149.2.G.1) TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE HAUNCH UNDER THE PIPE). THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE TO 12" ABOVE TOP OF PIPE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.
9. PIPE INSTALLATION MAY REQUIRE THE USE OF RESTRAINTS, WEIGHTING OR OTHER APPROVED METHODS IN ORDER TO HELP MAINTAIN GRADE AND ALIGNMENT.

NOTES

STANDARD BEDDING FOR FLEXIBLE PIPE CULVERTS WITHOUT TREATMENTS.

METAL ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.

PLASTIC ENTRANCE CULVERTS REQUIRE BEDDING PER SPEC. 2501.3.C.4. BEDDING COSTS FOR PLASTIC ENTRANCE CULVERTS WILL BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.

FLEXIBLE PIPE INCLUDES METAL AND PLASTIC MATERIAL SUCH AS CORRUGATED POLYPROPYLENE (PP) AND CORRUGATED POLYETHYLENE (CP).

UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.

WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.

CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.

EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.

EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.

ALL SLOPES SHOWN AS (V) : (H).

PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.

PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501.

PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24 INCHES OR GREATER BETWEEN STRINGS OF PIPE.

① IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE PER 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3 FT., ALL AT NO ADDITIONAL COST.

② FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.

③ OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)

④ USE THERMOPLASTIC PIPE TABLE FOR TRENCH WIDTHS FOR THERMOPLASTIC PIPES WITH MORE THAN 10 FT. OF FILL OVER THE PIPE.

⑤ MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF PIPE IS 3" FOR METAL PIPES AND 1" FOR THERMOPLASTIC PIPES.

LEAD EXPERT OFFICE	KEVIN WESTERN, STATE BRIDGE ENGINEER	STANDARD CULVERT BEDDING FOR FLEXIBLE PIPE (WITHOUT TREATMENTS)	APPROVED: 01-18-2019 REVISED:	THOMAS STYRBICKI, STATE DESIGN ENGINEER	STANDARD PLAN 5-297.440 — 1 OF 1
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	
			TRUNK HWY.	TOTAL SHEETS	

01 C502 CULVERT BEDDING
(NO SCALE)

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

KYLE D. CRAWFORD DATE: 09/10/2024 LICENSE #54906

DATE	NO.	DESCRIPTION
09/10/2024	1	DRAFT ISSUED FOR BID
	2	
	3	
	4	
	5	
	6	

DESIGNED BY: KDC
DRAWN BY: BKC
CHECKED BY: XXX
EOR JOB #758-0179

PLSLWD

FECL3 TREATMENT BUILDING RETROFIT

SCOTT COUNTY, JORDAN, MN

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT PRIOR LAKE, MN 55372

DETAILS

SHEET C502

Plot Date: 09/10/2024
Drawing name: X:\clients_wd\00758_pls\wd\0179_fec3_site_improvements\09_GIMS\dwg\Sheets\758-0179_Details.dwg
Xrefs: : Images: .\image xref\611 G:\CAD\Blocks\611logo .\image xref\GSOCLogo_2019 .\image xref\iowa-one-call x:\clients_wd\00758_pls\wd\0145_sutton_lk_iesf_fs\09_gims\Images\PLSLWD

General Notes:
1. Drawings are provided for general layout information. All dimensions, locations, and existing system information shall be field verified.
2. All piping shall be installed such as to not conflict with operation of the new overhead door.
3. Note that North direction is down on sheet.
4. No pipes shall be installed as to penetrate through the tank manhole
5. Each piping system shall be tested for at least one hour with no loss of pressure. Piping shall be tested at 1-1/2 times the working pressure or as otherwise noted in the drawings. The test medium shall be water for all lines except as otherwise noted.
6. Submittals are required for all items (see specifications).

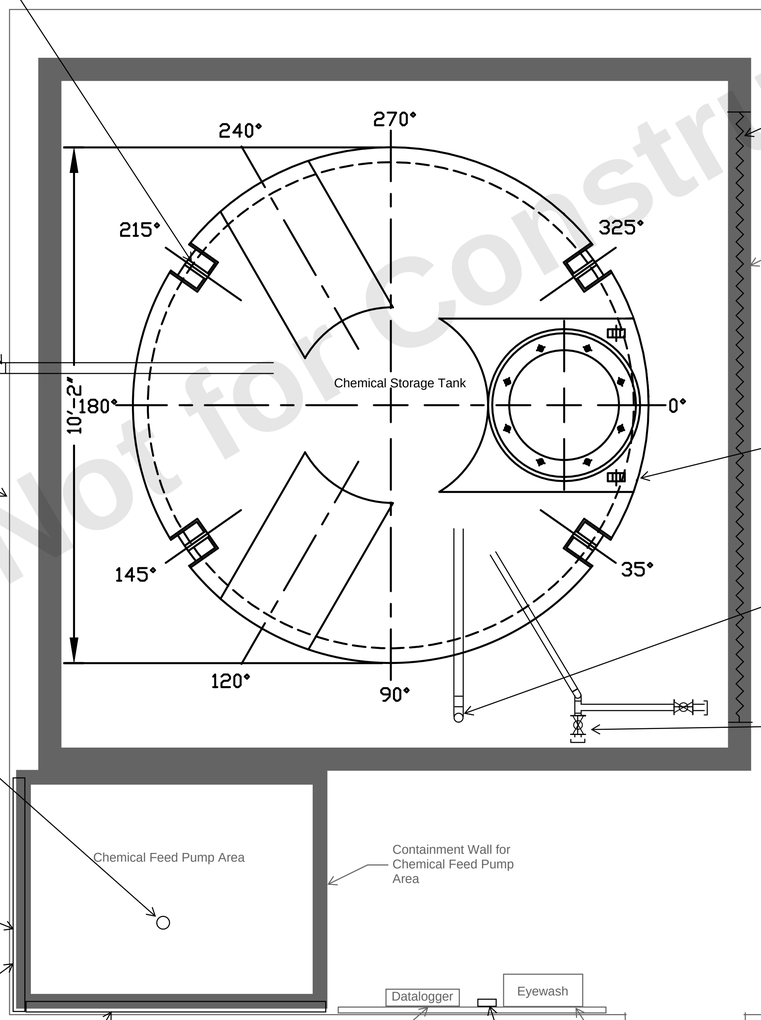
Note that the manufacturer's approximate drawing for the tank has been used. Refer to manufacturer for additional information on tank and tank details.

Demolish West side of concrete containment wall to allow for installation of new chemical storage tank. Keep in place a short 6" curb for containment of small spills. Smooth and coat newly exposed concrete to create finished surface and prevent re-bar corrosion, with appropriate coating according to specification section 09 96 00. (Submittal required and must be approved by Engineer)

Create opening for overhead door (See structural sheets). Install overhead door. Some conduit may require relocation to allow for install and operation of overhead door. Contractor shall make all necessary modifications to allow for installation of a complete and operable system.

Replace existing vent piping with 3" SCH 80 PVC vent piping to outside of building. Extend vent through wall. Support all piping appropriately (see specifications). Terminate with inverted "U" covered with 24 Mesh non-metallic Screen (that will not corrode due to Ferric Chloride) suitable to prevent rodent/insect entry. Seal wall penetration to prevent rodent/insect entry. (Submittal required and must be approved by Engineer)

Inspect metal building and seal all small holes permanently to prevent rodent/insect entry, particularly at penetration points, vents, and otherwise. Cover all vents with 24 Mesh non-metallic Screen (that will not corrode due to Ferric Chloride) suitable to prevent rodent/insect entry. (Submittal required and must be approved by Engineer)



Remove existing chemical storage tank and replace with new double wall tank.
Existing tank will have some residual Ferric Chloride inside that shall be properly handled and disposed of by the Contractor.
New tank shall be PolyProcessing SAFE-Tank Double Wall Tank, 3150 gallon capacity, 10'2" Diameter, 8' 1.5" height
Note that no penetrations shall be made into the tank below the water line. No pipe penetrations shall be made into the manway lid. Manway lid shall be able to close properly and fully. Follow all tank manufacturer recommendations.
All pipe penetrations into the tank shall be prefabricated by the tank manufacturer. Contract shall coordinate locations and sizes of all pipe penetrations into the top of the tank with the tank manufacturer and this plan shall be approved by the engineer by submittal. (Submittal required and must be approved by Engineer)

Install 3" SCH 80 PVC Overflow pipe. "P trap" of overflow pipe shall be within 12" of north side of containment wall and opening of trap shall be at the same height as the containment wall to allow for ease of filling trap with water. Support pipe appropriately (See specifications). See schematic on sheet P2

Remove existing fill piping and connection. Replace with new 2" SCH 80 PVC piping with 2" PVC Ball Valve and quick connect. All piping (including connection point) shall be located inside the containment area so that any potential minor spills fall within the containment. New piping shall be routed across ceiling and shall enter tank from top and extend to within 3" of the bottom of the interior of the tank. Support all piping appropriately (see specifications). Follow all tank manufacturer recommendations. See schematic.

Cut drain pipe located inside chemical feed pump containment area flush with ground and seal with water tight plug (submittal required and must be approved by Engineer)

Chemical Feed Pump, Piping, and Related Items
1. Chemical feed pump has been recently replaced (as of July 2024) with with new Watson Marlow Qdos60 (no replacement needed). However, pump shall be reinstalled on the wall mounted panel, as described below and shown in the schematics.
2. Remove and dispose of existing tubing, piping, valves, gages, calibration chamber, and pressure switch.
3. Replace all piping and flexible tubing inside the building with new SCH 80 PVC including all tubing between pump and chemical storage tank. No flexible tubing shall remain.
4. Suction piping (between pump and tank) shall be 1/2" SCH 80 PVC. Discharge piping shall be 1" SCH 80 PVC (connects from discharge of pump to a union located on the North wall (This pipe then exits the building on the north side and connects to a 1" PVC pipeline that extends underground).
5. Note that new PVC piping that draws suction from tank shall penetrate and enter from top of the tank and extend to within 1/2" of the bottom of the interior of the tank. Follow all tank manufacturer recommendations. High points in piping shall be kept to a minimum. All high points in piping shall include a tee and ball valve to allow for manual air release (See schematic for layout). Keep use of fittings such as bends to a minimum. Avoid use of 90 degree bends and instead use two 45 degree fittings at bends. See piping schematic for layout on sheet P2.
6. Piping routing shall be clean and organized. Final route shall be approved by Engineer prior to install (submittal required).
7. Support all piping appropriately (see specifications).
8. All piping shall be pressure/leak tested by Contractor to 50 PSI.
9. See schematic on sheet P2 for piping arrangement and all new valves, gages, and equipment.

P

PLAN VIEW - NOT TO SCALE

Install HDPE, PVC, or polyethylene sheets on North and East walls, of adequate thickness to accommodate all required equipment, between wall and all piping/equipment to protect metal walls from potential splashes or drips of chemical. Panels shall extend down to the concrete containment area and shall be installed such as to direct any liquid flow into the containment area. Joints between panels and connecting to the concrete containment area shall be sealed with high performance silicone caulk. (Submittal required and must be approved by Engineer)

District staff recently completed replacement of system electronics, including new radar sensor at weir, cables from weir sensor to building, data logger/controller, digital tank readout, and tank level sensor. Therefore no replacement is needed.
A radar level measurement system has also been installed on the chemical storage tank with a readout within the building. The radar sensor shall be reinstalled above the new chemical storage tank by the Contractor.

An existing 120V outlet is located in this approximate location. Replace existing receptacle with Water Resistant (WR) and GFCI receptacle. Install an additional 120V duplex receptacle (for a total of four outlets). New receptacle shall be Water Resistant (WR) and GFCI.

Note that the Owner is installing a new heated jacket for the existing eyewash(Speakman GravityFlo Freeze Protected Jacket. Model: SE-4930. Consists of two 220W Pads). The heated jacket will be plugged into the new 120V outlet.

N

DATE	BY	REVISION	DATE
	PEO		
	PEO		

DESIGNED:
DRAWN:
CHECKED:
LAST UPDATE: 9/3/24

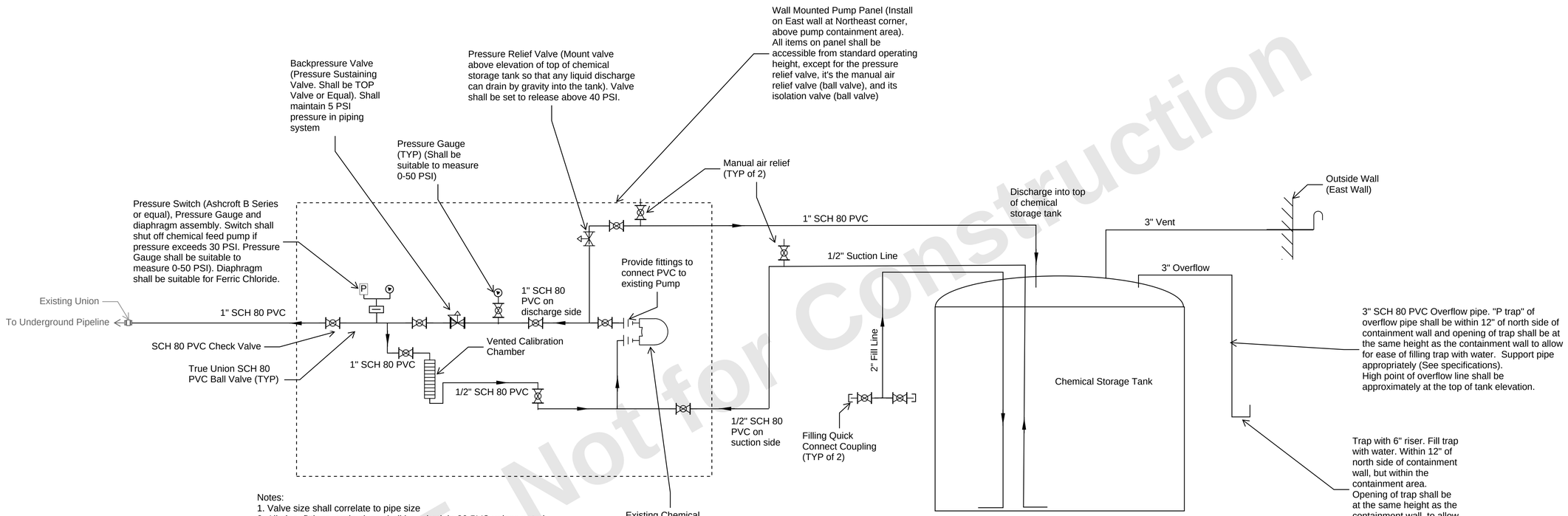
Purpose Associates
Ames, Iowa 50010
Phone: (515)809-2020
info@purposeas.com

PURPOSE

Plan View
Chemical Feed System Improvements
Prior Lake Spring Lake Watershed District (PLSLWD)

PROJECT NO.

SHEET
P1



Notes:
1. Valve size shall correlate to pipe size
2. All pipe, fittings, and valves shall be schedule 80 PVC unless noted otherwise. Solvent cement shall be approved for use with Ferric Chloride and shall be IPS 724 or approved equivalent.
3. Contractor shall provide miscellaneous fittings as required for a complete and operable system.
4. All piping, valves, equipment, etc. shown on schematic shall be new/replaced except for chemical feed pump or if noted otherwise.

1 System Schematic - Not to Scale

DATE	BY	REVISION

DESIGNED: PEO
DRAWN: PEO
CHECKED:
LAST UPDATE: 9/3/24

Purpose Associates
Ames, Iowa 50010
Phone: (515)809-2020
info@purposeas.com

PURPOSE

System Schematic
Chemical Feed System Improvements
Prior Lake Spring Lake Watershed District (PLSLWD)

PROJECT NO.

SHEET
P2

DESIGN CRITERIA

1. STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH 2020 MINNESOTA STATE BUILDING CODE (IBC 2018) AND SUBSEQUENT REFERENCE STANDARDS.
2. RISK CATEGORY: II
3. SUPERIMPOSED DEAD LOADS:

ROOF	TYPICAL	10 PSF

4. SNOW:

GROUND SNOW	50 PSF
SNOW EXPOSURE FACTOR	1.0
THERMAL FACTOR	1.2
SLOPE FACTOR(S)	1.0
IMPORTANCE FACTOR	1.0
FLAT-ROOF SNOW	35 PSF
RAIN-ON-SNOW SURCHARGE	5 PSF
DESIGN SNOW	35 PSF
BUILDING IS UNHEATED	

5. WIND:

BASIC WIND SPEED	V_{ULT} = 109 MPH
EXPOSURE CLASS	B
INTERNAL PRESSURE COEFFICIENT, GCpi	± 0.18

6. WIND:

BASIC WIND SPEED	V_{ULT} = 109 MPH	
EXPOSURE CLASS	B	
INTERNAL PRESSURE COEFFICIENT, GCpi	± 0.18	
WALL COMPONENTS:	ZONE 4	ZONE 5
A = 200 SF	-21.2 PSF	-22.6 PSF
A = 50 SF	-23.3 PSF	-26.8 PSF
A ≤ 20 SF	-25.7 PSF	30.4 PSF

C & C NOTES:

a. THE PRESSURES LISTED ARE IN ACCORDANCE IBC CBC AND ASCE 7, AND THE DESIGN FORCES USED BY THE SUBCONTRACTOR FOR A SPECIFIC APPLICATION ARE THE RESPONSIBILITY OF THE SUBCONTRACTOR.
b. WIND PRESSURES ARE ULTIMATE DESIGN LEVEL.
c. SEE ASCE 7 FOR ZONE DEFINITIONS AND EXTENT OF ZONES.
d. SUBMIT DESIGN CALCULATIONS SIGNED AND SEALED BY A LICENSED ENGINEER IN THE PROJECT'S JURISDICTION FOR ANY DESIRED MODIFICATION TO THE STATED PRESSURES.

GENERAL

1. DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONNEL AND PROPERTY ON AND AROUND THE JOBSITE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, GUYS, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES. TEMPORARY BRACING, SHORING, GUYING, ETC. SHALL AVOID EXCESSIVE STRESSES AND HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. THE STRUCTURE SHOULD NOT BE CONSIDERED STABLE UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK THAT DEVIATES FROM OR IS PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR THE DESIGN PROFESSIONALS.
3. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS AND FOR DETERMINING SEQUENCES OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKERS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO: FALSEWORK, FORMWORK, STAGING, BRACING, AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE DESIGN PROFESSIONALS SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
4. ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO BID SUBMITTAL, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.
5. STRUCTURAL SUBSTITUTIONS MAY BE ALLOWED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. SUPPLIER SHALL PROVIDE SIGNED AND SEALED DESIGN CALCULATIONS OR SUITABLE PRODUCT LITERATURE FOR THE COMPONENTS. ALL PRODUCT SUBSTITUTIONS SHALL INCLUDE A CODE EVALUATION REPORT SPECIFIC TO THE BUILDING CODE LISTED IN THE DESIGN CRITERIA.
6. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL CONSTRUCT THE WORK SO IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DESIGN.
7. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
8. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE-SCALE OVER SMALL-SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSION WITH ARCHITECT.
9. TYPICAL DETAILS SHALL APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
10. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR DETAILS, CONDITIONS, PITS, TRENCHES, PADS, DEPRESSIONS, ROOF / FLOOR OPENINGS, TOP OF WALL ELEVATIONS, SLEEVES, ITEMS TO BE EMBEDDED OR ATTACHED TO STRUCTURAL ELEMENTS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS. FOR THESE NON-STRUCTURAL ELEMENTS SHOWN ON STRUCTURAL DRAWINGS, THEY ARE FOR GENERAL INFORMATION ONLY.
11. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPE, INSERTS, AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
12. PROVIDE TEMPORARY BLOCKOUTS AND TEMPORARY OPENINGS IN THE STRUCTURE AS REQUIRED TO PERMIT INSTALLATION OF ALL WORK. BLOCKOUTS AND TEMPORARY OPENINGS SHALL BE LOCATED, CONFIGURED, DETAILED, AND INFILLED IN A MANNER THAT ALTERS NEITHER THE STRENGTH OF THE STRUCTURAL FRAMING NOR THE STRENGTH OF CONNECTIONS. INFILL ALL BLOCKOUTS AND TEMPORARY OPENINGS USING THE MATERIALS SPECIFIED FOR THE FRAMING AT THE LOCATIONS WHERE THE BLOCKOUTS AND OPENINGS OCCUR. SUBMIT DRAWINGS INDICATING THE LOCATIONS, DIMENSIONS, AND DETAILS OF ALL PROPOSED BLOCKOUTS AND OPENINGS AND DETAILS INDICATING THE MANNER IN WHICH THE BLOCKOUTS AND OPENINGS WILL BE INFILLED.
13. NO HOLES, NOTCHES, BLOCK-OUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
14. PENETRATIONS IN CONCRETE SHALL BE CAST-IN-PLACE AND SHALL NOT BE PERMITTED EXCEPT AS SHOWN IN THE STRUCTURAL DRAWINGS.
15. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, CONTRACTOR SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH FIELD CONDITIONS, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPE OF EQUIPMENT, ETC. THE PROPOSAL SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK.
16. ELEMENTS SUCH AS NON-BEARING PARTITIONS, ETC. ATTACHED TO AND/OR SUPPORTED BY THE STRUCTURE SHALL TAKE INTO ACCOUNT DEFLECTIONS AND OTHER STRUCTURAL MOVEMENTS. THE STRUCTURAL FRAMING WAS DESIGNED TO LIMIT DRIFT AND DEFLECTION OF THE STRUCTURAL SYSTEM TO LESS THAN THE MAXIMUM PERMITTED DEFLECTIONS LISTED IN THE BUILDING CODE. THE CONTRACTOR SHALL COORDINATE THE WORK OF OTHER TRADES TO ACCOMMODATE THESE DEFLECTIONS AND TO ACCOMMODATE CONSTRUCTION TOLERANCES.

SUBMITTALS

1. SUBMITTALS ARE:
   a. STEEL FABRICATION AND MISCELLANEOUS METALS
2. SUBMITTALS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ENGINEER. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND REVIEW BY THE ARCHITECT SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE DESIGN PROFESSIONALS.
3. SUBMITTALS SHALL BE REVIEWED BY THE DESIGN PROFESSIONALS FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. NOTATIONS MADE BY THE DESIGN PROFESSIONALS ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS.
4. FOR ADDITIONAL INFORMATION ON REQUIRED SUBMITTALS, SEE INDIVIDUAL MATERIAL SECTIONS.

EXISTING CONDITIONS / DEMOLITION

1. EXISTING CONDITIONS:
   a. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. CONTRACTOR TO VERIFY EXISTING INFORMATION, DIMENSIONS, AND SIZES AS REQUIRED TO COMPLETE THEIR WORK. WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE ENGINEER SO PROPER CLARIFICATION MAY BE MADE. MODIFICATION OF CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT
2. ALL DEMOLITION SHALL BE CARRIED OUT IN SUCH A WAY TO PREVENT DAMAGE TO EXISTING ELEMENTS WHICH ARE TO REMAIN.
3. ALL ELEMENTS WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF NEW WORK.
4. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS OF EXISTING STRUCTURE AND SITES THAT ARE AFFECTED BY NEW WORK BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
5. ALL CONSTRUCTION IS NEW UNLESS IDENTIFIED AS EXISTING, "(E)". THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT. NEW SLABS ARE TO BE AT THE SAME ELEVATIONS AS ADJACENT EXISTING SLABS UON. FOUNDATION ELEVATIONS OR COLUMN LENGTHS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.
6. REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.
7. SHORING:
   a. SHORING DRAWINGS AND CALCULATIONS BY OTHERS, AS REQUIRED, ARE NOT INCLUDED IN THIS PACKAGE. SHORING DRAWINGS AND STRUCTURAL CALCULATIONS SHALL BE PROVIDED BY CONTRACTOR FOR REVIEW.
   b. SHORING / UNDERPINNING OF EXISTING BUILDINGS OR IMPROVEMENTS SHALL BE PROVIDED BEFORE EXISTING SUPPORTING WALLS, SLABS, FOUNDATIONS, PAVEMENT, ETC. ARE CUT, MODIFIED, OR REMOVED.
   c. SHORING DOCUMENTS, IF REQUIRED, WILL BE PREPARED AS A DEFERRED DESIGN AND SUBMITTED TO HCAI FOR REVIEW AND APPROVAL. SHORING WORK WILL NOT COMMENCE UNTIL SHORING DOCUMENTS HAVE RECEIVED HCAI APPROVAL.

STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "DETAILING FOR STEEL CONSTRUCTION" AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM STANDARDS AS NOTED BELOW:

WIDE FLANGE SHAPES	ASTM A992	Fy = 50 KSI
OTHER ROLLED SHAPES	ASTM A36	Fy = 36 KSI
PIPE SECTIONS	ASTM A53, GR B	Fy = 35 KSI
HSS SECTIONS, ROUND	ASTM A500, GR C	Fy = 46 KSI
HSS SECTION, SQ/RECT	ASTM A500, GR C	Fy = 50 KSI
BASE AND CONNECTION PLATES	ASTM A36 A572	Fy = 36 50 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A325	Fv = 120 KSI
HIGH STRENGTH TWIST-OFF BOLTS	ASTM F3125, GR F1852	Fv = 120 KSI
HEAVY HEX NUTS	ASTM A563	
WASHERS	ASTM F436	
HEADED STUD ANCHORS	ASTM A108, TYPE B	
ELECTRODES FOR ARC WELDING	AWS 5.1, E70XX	

3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". SEE DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.
4. ALL BOLTED CONNECTIONS SHALL BE GRADE A325N BEARING TYPE BOLTS UON. ALL BOLTS SHALL BE INSTALLED TO A MINIMUM "SNUG TIGHT" CONDITION UON.
5. FULLY TENSIONED HIGH STRENGTH BOLTS AND SLIP CRITICAL HIGH STRENGTH BOLTS SHALL USE TENSION-CONTROL "TWIST-OFF" BOLTS OR BE INSTALLED USING THE TURN OF THE NUT METHOD.
6. WELD LENGTHS INDICATED ON THE DRAWINGS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE WELD LENGTH IS NOT SPECIFIED, PROVIDE WELD ALONG ENTIRE INTERSECTION OF THE JOINED PARTS. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM WELD SIZE AS SPECIFIED IN AISC 360, TABLE J2.4.
7. ALL WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE AND CERTIFICATION IN THE TYPES OF WELDING INDICATED. WELDERS SHALL HAVE BEEN RECENTLY QUALIFIED AS PRESCRIBED IN "QUALIFICATION PROCEDURES" OF THE AMERICAN WELDING SOCIETY (AWS).
8. BEAMS SHALL BE CAMBERED UPWARD WHERE SHOWN ON THE DRAWINGS. WHERE NO UPWARD CAMBER IS INDICATED, ANY MILL CAMBER SHALL BE DETAILED UPWARD IN THE BEAMS.
9. SPLICING OF STEEL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE, AND CONNECTION TO BE MADE.
10. ALL STEEL EXPOSED TO WEATHER OR AS NOTED ON PLAN SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 G60. [ENGR NOTE: UTILIZE G60 FOR TYPICAL APPLICATIONS. USE G90 FOR COASTAL AND/OR DE-ICING SALT EXPOSURE.] ABRADED AREAS TO BE TOUCHED UP WITH COLD GALVANIZING COMPOUND IN ACCORDANCE WITH ASTM A780.
11. ALL GALVANIZED HOLLOW SECTIONS SHALL HAVE WELDED CAP PLATES TO SEAL EXPOSED ENDS.
12. CUTS, HOLES, OPENINGS, ETC., REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OR TORCHING OF HOLES, CUTS, AND OTHER FIELD MODIFICATIONS SHALL NOT BE ALLOWED, EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.
13. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC. FOR MISCELLANEOUS STEEL NOT DETAILED SPECIFICALLY ON THE STRUCTURAL DRAWINGS.
14. GROUT FOR BASE AND BEARING PLATES SHALL BE A NON-SHRINK, NON-METALLIC PRODUCT. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 7000 PSI. INSTALL GROUT PRIOR TO APPLYING SIGNIFICANT LOADING TO MEMBER.
15. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR REVIEW AND APPROVAL BEFORE FABRICATION.
16. ALL WELDING ELECTRODES SHALL BE E70XX UON. WELDING ELECTRODES FOR ASTM A913, GR65 MEMBERS AND THEIR CONNECTIONS SHALL BE E80XX.

POST-INSTALLED ANCHORS

1. BASIS OF DESIGN ANCHORS:

INSTALLATION CONDITION	ANCHOR TYPE
EXPANSION ANCHORS INTO CONCRETE	HILTI KWIK BOLT TZ2 (ESR-4266)
SCREW ANCHORS > 1/4"Ø INTO CONCRETE	HILTI KWIK HUS-EZ (ESR-3027)
ADHESIVE ANCHORS INTO CONCRETE	HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 AND HIT-Z ROD (ESR-4868) or HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 AND HAS-E THREADED ROD (ESR-4868) or HILTI SAFE-SET SYSTEM w/ HIT-RE 500 V3 AND HAS-E THREADED ROD (ESR-3814) FOR ALL ADHESIVE ANCHORS, HOLES SHALL BE HAMMER DRILLED AND HOLES MAY BE DRY OR WATER SATURATED
EXPANSION ANCHORS INTO GROUTED CMU	HILTI KWIK TZ2 (ESR-4561)
SCREW ANCHORS > 1/4"Ø INTO GROUTED CMU	HILTI KWIK HUS-EZ (ESR-3056)
SCREW ANCHORS ≤ 1/4"Ø INTO CONCRETE OR GROUTED CMU	HILTI KWIK-CON II+
ADHESIVE ANCHORS IN GROUTED CMU OR SOLID BRICK	HILTI HIT-HY 270 SYSTEM w/ HAS-E THREADED ROD (ESR-4143)
ADHESIVE ANCHORS INTO HOLLOW CMU, BRICK OR MULTI-WYTHE BRICK WALLS	HILTI HIT-HY 270 SYSTEM w/ HAS-E THREADED ROD AND APPROPRIATE SCREEN TUBE (ESR-4144)
ADHESIVE DOWELING FOR ANCHORING REINFORCING BARS INTO (E) CONCRETE	HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 ADHESIVE (ESR-4868) Or HILTI SAFE-SET SYSTEM w/ HIT-RE 500 V3 ADHESIVE (ESR-3814)
POWDER-ACTUATED FASTENERS (PAF's) IN CONCRETE	HILTI X-U FASTENERS (ESR-2269)

2. BASIS OF DESIGN ANCHORS:

INSTALLATION CONDITION	ANCHOR TYPE
EXPANSION ANCHORS INTO CONCRETE	SIMPSON STRONG-BOLT 2 (ESR-3037)
SCREW ANCHORS > 1/4"Ø INTO CONCRETE	SIMPSON TITEN HD (ESR-2713)
ADHESIVE ANCHORS INTO CONCRETE, NEW AND EXISTING	SIMPSON SET-3G w/ GR55 THREADED ROD (ESR-4057) or SIMPSON AT-XP w/ GR55 THREADED ROD (ESR-5026) FOR ALL ADHESIVE ANCHORS, HOLES SHALL BE HAMMER DRILLED AND HOLES MAY BE DRY OR WATER SATURATED
EXPANSION ANCHORS INTO GROUTED CMU	SIMPSON STRONG-BOLT 2 (IAPMO UES ER-240)
SCREW ANCHORS > 1/4"Ø INTO GROUTED CMU	SIMPSON TITEN HD (ESR-1056)
SCREW ANCHORS ≤ 1/4"Ø INTO CONCRETE OR GROUTED CMU	SIMPSON TITEN TURBO (CONCRETE: IAPMO UES ER-712) (MASONRY: IAPMO UES ER-716)
ADHESIVE ANCHORS IN GROUTED CMU OR SOLID BRICK	SIMPSON SET-XP w/ GR55 THREADED ROD (IAPMO UES ER-256)
ADHESIVE ANCHORS INTO HOLLOW CMU, BRICK OR MULTI-WYTHE BRICK WALLS	SIMPSON SET-XP w/ GR55 THREADED ROD (IAPMO UES ER-256)
POWDER-ACTUATED FASTENERS (PAF's) IN CONCRETE	SIMPSON PDPA (ESR-2138)

3. ALTERNATIVE ANCHORS MAY BE USED IF APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION VERIFYING PROPOSED ALTERNATIVE ANCHORS WILL PROVIDE THE SAME OR GREATER LOAD-CARRYING CAPACITY AS THE SPECIFIED ANCHORS. THE CONTRACTOR SHALL SUBMIT EVALUATION REPORTS. EACH ANCHOR CONFIGURATION SHALL BE EVALUATED AND COMPARED TO THE SPECIFIED ANCHOR.
4. CRACKED CONCRETE IS ASSUMED FOR ALL ANCHORAGE DESIGN CONDITIONS UNLESS IT CAN BE DEMONSTRATED THROUGH ENGINEERING ANALYSIS THAT THE CONCRETE REMAINS UNCRACKED DURING THE GOVERNING ULTIMATE LOAD STATE.
5. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
6. THE CONTRACTOR SHALL ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE. THE STRUCTURAL ENGINEER SHALL RECEIVE DOCUMENTATION VERIFYING ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF INSTALLING ANCHORS.
7. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPROVED CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR EQUIVALENT. THE ACCEPTABILITY OF CERTIFICATIONS OTHER THAN THE ACI/CRSI ADHESIVE INSTALLER CERTIFICATION WILL BE DETERMINED BY THE STRUCTURAL ENGINEER.
8. CONCRETE SHALL HAVE ACHIEVED DESIGN STRENGTH PRIOR TO INSTALLING POST-INSTALLED ANCHORS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS CURED FOR A MINIMUM OF 21 DAYS.
9. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
10. POST-INSTALLED ANCHORS AND DOWELS SHALL BE INSTALLED IN A MANNER THAT DOES NOT DAMAGE REINFORCING STEEL, CONDUIT OR OTHER EMBEDDED ITEMS. REINFORCING STEEL SHALL BE LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. PLATES AND BRACKETS THROUGH WHICH ANCHORS WILL BE INSTALLED SHALL NOT BE FABRICATED UNTIL AFTER REINFORCING STEEL IS LOCATED AND ANCHOR LOCATIONS ARE ADJUSTED. CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER TO OBTAIN ALTERNATIVE ANCHOR LAYOUT WHERE ANCHORS MUST BE RELOCATED TO AVOID INTERFERENCE WITH REINFORCING STEEL.
11. ADHESIVE ANCHORING SYSTEMS ARE PERMITTED TO BE USED FOR INSTALLATION OF REINFORCING STEEL INTO EXISTING CONCRETE ONLY WHERE SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS OR WITH APPROVAL FROM THE STRUCTURAL ENGINEER. LOCATIONS WHERE REINFORCING STEEL WAS INCORRECTLY PLACED OR MISSED SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
12. WHERE POST-INSTALLED MECHANICAL ANCHOR EMBEDMENT DEPTHS ARE SPECIFIED, THOSE DEPTHS ARE THE REQUIRED MINIMUM NOMINAL EMBEDMENT DEPTHS. WHERE MECHANICAL ANCHOR EMBEDMENT DEPTHS ARE NOT INDICATED, THE ANCHORS SHALL BE INSTALLED TO THE MAXIMUM EMBEDMENT DEPTH NOTED IN THE MANUFACTURER'S PRODUCT TECHNICAL GUIDE.
13. ADHESIVE ANCHORS SHALL BE INSTALLED WITH A MINIMUM 6" EMBEDMENT DEPTH UON.
14. ANCHORS SHALL BE QUALIFIED FOR USE IN CRACKED CONCRETE UNDER EARTHQUAKE LOADING IN ACCORDANCE WITH ACI 355.2 (MECHANICAL ANCHORS) OR ACI 355.4 (ADHESIVE OR EPOXY ANCHORS).
15. QUALIFICATION OF ANCHORS SHALL INCLUDE THE TESTING AND EVALUATION OF ANCHORS BY AN INDEPENDENT TESTING AND EVALUATION AGENCY ACCREDITED UNDER ISO/IEC 17025 CONFORMING TO THE REQUIREMENTS OF ISO/IEC 17011. THE INTERNATIONAL CODE COUNCIL EVALUATION SERVICE (ICC-ES) SHALL SERVE AS THE DEFAULT TESTING AGENCY UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.
16. THE ICC EVALUATION SERVICE REPORT (ESR) SHALL BE IN CONFORMANCE WITH THE ICC-ES CRITERIA AS INDICATED.
17. ANCHORAGE OF NONSTRUCTURAL DESIGNATED SEISMIC SYSTEMS WITH SEISMIC QUALIFICATIONS IN ACCORDANCE WITH ASCE 7 SECTION 13.2.2 SHALL CONFORM TO THE CERTIFICATE OF COMPLIANCE FOR THE DESIGNATED SYSTEM.

TESTING, INSPECTIONS, AND OBSERVATIONS

1. THE STRUCTURAL ENGINEER DOES NOT PROVIDE INSPECTIONS OF CONSTRUCTION. STRUCTURAL ENGINEER MAY MAKE PERIODIC OBSERVATIONS OF THE CONSTRUCTION. SUCH OBSERVATIONS SHALL NOT REPLACE REQUIRED INSPECTIONS BY THE GOVERNING AUTHORITIES OR SERVE AS "SPECIAL INSPECTIONS" AS MAY BE REQUIRED BY CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.
2. SEE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR TESTING AND INSPECTION REQUIREMENTS OF NON-STRUCTURAL COMPONENTS.
3. DUTIES OF THE INSPECTION AGENCY PER IBC CHAPTER 17:
   a. SUBMIT A PROPOSED TESTING AND INSPECTION PROGRAM TO THE OWNER, THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF WORK.
   b. PERFORM ALL TESTING AND INSPECTION REQUIRED PER APPROVED TESTING AND INSPECTION PROGRAM.
   c. FURNISH INSPECTION REPORT TO THE BUILDING OFFICIAL, THE OWNER, THE ARCHITECT, STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR. THE REPORTS SHALL BE COMPLETED AND FURNISHED WITHIN 48 HOURS OF INSPECTED WORK.
   d. SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTION AGENCY'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
4. SPECIAL INSPECTIONS AND TESTS ARE REQUIRED FOR MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN CHAPTER 17 OF THE IBC OR IN STANDARDS REFERENCED BY THE IBC. THESE ITEMS INCLUDE:
   a. POST-INSTALLED ANCHORS - INSPECTION
5. THE FOLLOWING WORK SHALL BE INSPECTED BY THE SPECIAL INSPECTOR UNLESS SPECIFICALLY WAIVED BY THE BUILDING OFFICIAL.

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - FABRICATION			
1. FABRICATION FACILITY			X
2. CONNECTION ERECTION AND ASSEMBLY	X	X	
3. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - ERECTION			
1. STRUCTURAL STEEL ERECTION	X	X	
2. CONNECTION ERECTION AND ASSEMBLY	X	X	
3. PRETENSIONED AND SLIP-CRITICAL BOLTS/JOINTS USING TURN-OF-NUT METHOD WITHOUT MATCHMAKING OF CALIBRATED WRENCH METHODS OF INSTALLATION	X	X	
4. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
5. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X
6. SHEAR STUD PLACEMENT	X	X	
7. BEAM CAMBER (IN-PLACE)	X		

1 DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORTS NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER BOLTING - MINIMUM INSPECTION				
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	TABLE C-N5.6-3	N/A

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER WELDING - MINIMUM INSPECTION				
1. WELDS CLEANED	O	O	TABLE C-N5.4-3	5.29.1
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P	TABLE C-N5.4-3	6.5.1
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA	P[2]	P[2]	TABLE C-N5.4-3	6.5.3
a. CRACK PROHIBITION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(1)
b. WELD/BASE-METAL FUSION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(2)
c. CRATER CROSS-SECTION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(3)
d. WELD PROFILES	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(4), 5.24
e. WELD SIZE	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(6)
f. UNDERCUT	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(7)
g. POROSITY	P[2]	P[2]		TABLE 6.1(8)
4. ARC STRIKES	P	P	TABLE C-N5.4-3	5.28
5. K-AREA[3]	P[2]	P[2]	TABLE C-N5.4-3	N/A
6. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES	P	P	TABLE C-N5.4-3	5.16, 6.5.2 (& SEE AISC 360 SECT. J1.6)
7. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	5.9, 5.30
8. REPAIR ACTIVITIES	P	P[2]	TABLE C-N5.4-3	6.5.3, 5.25
9. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	TABLE C-N5.4-3	6.5.4, 6.5.5
10. PLACEMENT OF REINFORCING OR CONTOURING FILLET WELDS (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	6.5.4, 6.5.5

1 FOLLOWING PERFORMANCE OF THIS INSPECTION TASK FOR TEN WELDS TO BE MADE BY A GIVEN WELDER, WITH THE WELDER DEMONSTRATING UNDERSTANDING OF REQUIREMENTS AND POSSESSION OF THE SKILLS TO VERIFY THESE ITEMS, THE PERFORM DESIGNATION OF THIS TASK SHALL BE REDUCED TO OBSERVE, AND THE WELDER SHALL PERFORM THIS TASK. SHOULD THE INSPECTOR DETERMINE THE WELDER HAS DISCONTINUED PERFORMANCE OF THIS TASK, THE TASK SHALL BE RETURNED TO PERFORM UNTIL SUCH TIME AS THE INSPECTOR HAS RE-ESTABLISHED ADEQUATE ASSURANCE THE WELDER WILL PERFORM THE INSPECTION TASKS LISTED.

2 DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORT NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

3 WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3" OF THE WELD. THE VISUAL INSPECTION SHALL BE PERFORMED NO SOONER THAN 48 HOURS FOLLOWING COMPLETION OF THE WELDING.

SHEET SIZE IS 42" x 30". IF SHEETS ARE PRINTED ON DIFFERENT SIZE SHEET SCALE MUST BE ADJUSTED. SEE SCALE BAR IN TITLE BLOCK.

MATERIAL LEGEND

MATERIAL LEGEND:

- CONCRETE
- CONCRETE - EXISTING
- EARTH
- GRAVEL OR GRANULAR FILL
- GROUT OR DRYPACK OR SAND
- CMU OR MASONRY
- METAL / COLD-FORM STUD
- WOOD / STUD
- PRECAST CONCRETE
- STEEL
- OTHER/SPECIALTY

STRUCTURAL SHEET INDEX

SHEET NUMBER	SHEET NAME
S000	GENERAL NOTES
S100	FOUNDATION PLAN, SECTION AND DETAILS
GRAND TOTAL: 2	

EOR water ecology community

FeCl3 Treatment Building Retrofit
18059 Langford Boulevard, Jordan, MN 55352

Prior Lake Spring Lake Watershed District

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The FUTURE. Built Smarter www.imegcorp.com
12755 HIGHWAY 55
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MINNEAPOLIS, MN 55441
P: 763-545-9196 F: 763-541-0056
PROJECT #24005150.00

PROFESSIONAL SEAL

CONSULTANT
(MAY BE USED FOR ANY OTHER REQUIREMENT IF THERE IS NO CONSULTANT)

KEY PLAN

AGENCY APPROVAL

PRELIMINARY NOT FOR CONSTRUCTION

DISCLAIMER

0 1 2 3
REF. SCALE IN INCHES PROJECT #24005150.00

REVISIONS

No.	Date	Revision / Issue

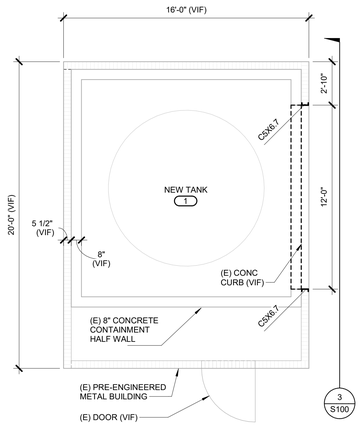
SHEET INFORMATION

Issue	90% OWNER REVIEW
Date	9/3/2024
Project #	24005150.00
Drawn	JGP
Checked	SDS
Approved	SDS

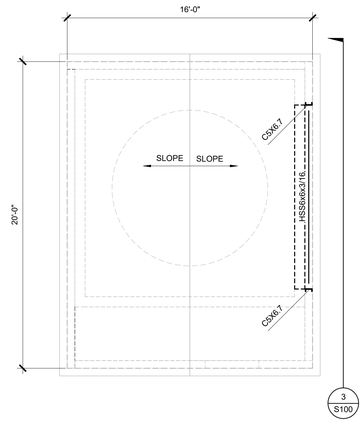
SHEET TITLE
GENERAL NOTES

SCALE
Scale: 12" = 1'-0"

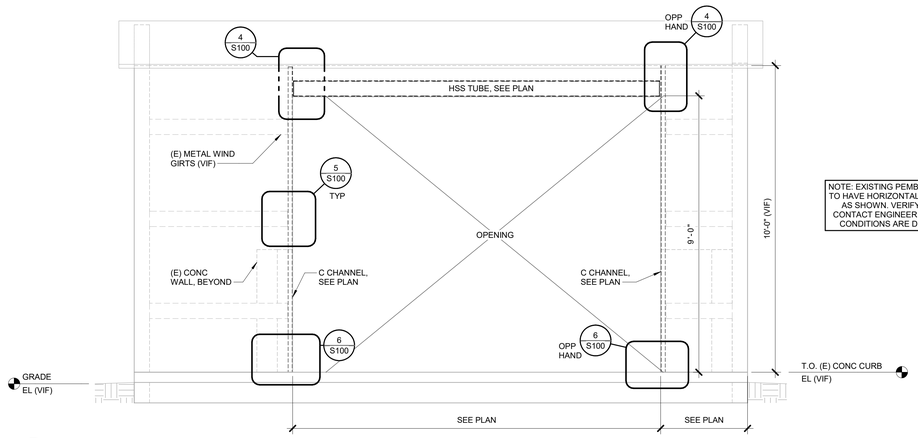
SHEET NUMBER
S000



1 SHED PLAN VIEW
1/4" = 1'-0"

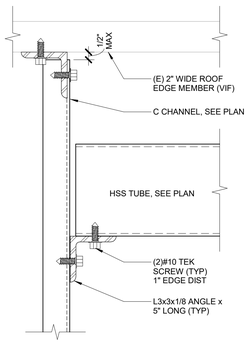


2 ROOF FRAMING PLAN
1/4" = 1'-0"

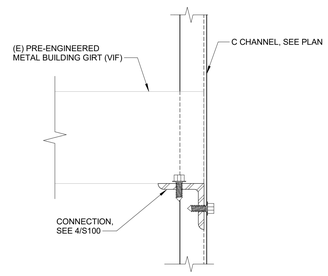


NOTE: EXISTING PEMB IS ASSUMED TO HAVE HORIZONTAL WIND GIRTS AS SHOWN. VERIFY IN FIELD. CONTACT ENGINEER IF EXISTING CONDITIONS ARE DIFFERENT.

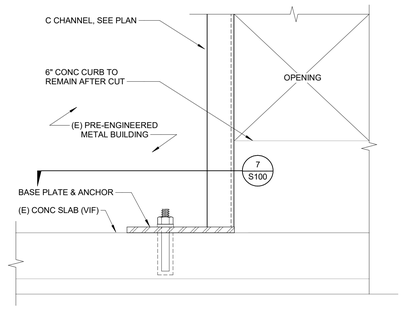
3 OVERHEAD DOOR ELEVATION
1/2" = 1'-0"



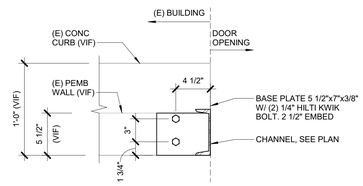
4 SECTION
3" = 1'-0"



5 SECTION
3" = 1'-0"



6 SECTION
3" = 1'-0"



7 SECTION
1 1/2" = 1'-0"

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GENERAL PLAN NOTES:

1. VERIFY ALL DIMENSIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTOR TO VERIFY UNDERGROUND UTILITIES LOCATIONS, EXISTING MECHANICAL AND ELECTRICAL INSIDE OF BUILDING.
4. INFORMATION SHOWN ON PLAN WAS PROVIDED BY OTHERS AND TO BE VERIFIED PRIOR TO CONSTRUCTION OR FABRICATION.
5. CONTRACTOR TO LOCATE AND VERIFY EXISTING PRE-ENGINEERED METAL BUILDING STRUCTURE INCLUDING WALL AND ROOF FRAMING.

KEY PLAN NOTES: (#)

1. NEW 122" DIAMETER TANK BY OTHERS. SUPPORT OF NEW TANK AND ATTACHMENT AS PER MANUFACTURES RECOMMENDATIONS.

EOR water ecology community

FeCl3 Treatment Building Retrofit

18059 Langford Boulevard, Jordan, MN 55352

Prior Lake Spring Lake Watershed District

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PROJECT #24005150.00

PROFESSIONAL SEAL

CONSULTANT
(MAY BE USED FOR ANY OTHER REQUIREMENT IF THERE IS NO CONSULTANT)

KEY PLAN

AGENCY APPROVAL

PRELIMINARY NOT FOR CONSTRUCTION

DISCLAIMER

0 1 2 3
REF. SCALE IN INCHES PROJECT #24005150.00

REVISIONS

No.	Date	Revision / Issue

SHEET INFORMATION

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Drawn	JGP
Checked	SDS
Approved	SDS

SHEET TITLE

FOUNDATION PLAN, SECTION AND DETAILS

SCALE

Scale: As indicated

SHEET NUMBER

S100

Ferric Chloride Site Improvements
Draft Bid EOPC
Prepared by EOR, Inc. 09/11/2024

Item	MnDOT Reference #	Unit	Estimated	Estimated Unit Cost	Extended Cost
Mobilization	2021.501	LS	1.00	10,000.00	$ 10,000.00
Salvage 24" CMP Apron	2104.502	EA	2.00	250.00	$ 500.00
Common Excavation	2105.607	CY	42.00	40.00	$ 1,680.00
Common Borrow (LV)	2105.607	CY	107.00	50.00	$ 5,350.00
Aggregate Surfacing (CV) Class 5	2118.507	CY	117.00	65.00	$ 7,605.00
Aggregate Base (CV) Class 5	2211.507	CY	26.00	55.00	$ 1,430.00
24" CS Pipe Culvert	2501.503	LF	35.00	70.00	$ 2,450.00
Vehicular Gate	2557.502	EA	1.00	3,500.00	$ 3,500.00
Install Sign "PRIVATE DRIVE, NO TURNAROUND"	2564.502	EA	2.00	400.00	$ 800.00
Erosion Control Supervisor	2573.501	LS	1.00	3,000.00	$ 3,000.00
Sediment Control Log Type Compost	2573.503	LF	196.00	3.00	$ 588.00
Topsoil Borrow	2574.507	CY	4.00	55.00	$ 220.00
Rolled Erosion Prevention Category 25	2575.504	SY	427.00	7.00	$ 2,989.00
Seeding	2575.505	ACRE	0.15	12,000.00	$ 1,800.00
Seed Mixture STR (26 lbs/acre)	2575.508	LB	4.00	680.00	$ 2,720.00
Treatment Piping, Tank & Appurtenances		LS	1.00	57,480.00	$ 57,480.00
Replace Chemical Feed Tubing		LS	1.00	5,040.00	$ 5,040.00
Seal Rodent/Insect Holes in Building		LS	1.00	700.00	$ 700.00
Remove West Wall of Containment and Install Garage Door		LS	1.00	15,400.00	$ 15,400.00
			Construction Totals	**Refined Total**	**$ 123,252.00**

CONSTRUCTION CONTINGENCY	**10.00%**	**$**	**12,325.20**
PLANNING AND ENGINEERING	**12.00%**	$	14,790.24
PERMITTING AND APPROVALS	**5.00%**	$	6,162.60
BIDDING AND CONSTRUCTION ADMIN	**5.00%**	$	6,162.60
PROFESSIONAL FEES TOTAL		**$**	**27,115.44**
TOTAL PROJECT COST		**$**	**162,692.64**
ESTIMATED ACCURACY RANGE* **	**-4.0%**	**$**	**156,184.93**
	6.5%	**$**	**173,267.66**

***This **draft bid-level (Class 1, 50 to 100% design completion per ASTM E 2516-06)** cost estimate is based on draft bid-level 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 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 -4% to +6.5%.** 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.

PARAMETERS FOR ACCURACY RANGE

Estimate Class	LEVEL OF PROJECT DEFINITION (% ENGINEERING Complete)	ACCURACY RANGE
5	0% to 2%	-25% to +40%
4	1% to 15%	-15% to +25%
3	10% to 40%	-10% to +15%
2	30% to 70%	-7.5% to +7.5%
1	50% to 100%	-4% to +6.5%

PARAMETERS FOR CONSTRUCTION CONTINGENCY

PHASE OF PROJECT	PERCENTAGE ENGINEERING COMPLETED	APPLICABLE CONSTRUCTION CONTINGENCY PERCENTAGE (%)
FUNDING, SCOPE AND BUDGET	0 TO 5%	30.00%
SCHEMATIC DESIGN	5% TO 15%	25.00%
PRELIMINARY	15% TO 60%	20.00%
FINAL	60% TO 100%	10.00%
CONSTRUCTION	100%	5.00%
***THIS PROJECT PHASE		

SECTION 09 96 00

HIGH PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. The work required under this section shall include all labor, material, equipment (including ladders, scaffolds and cloths), together with all services necessary for and incidental to field painting and finishing of all finish surfaces, as indicated on the Drawings and in the Painting Schedule located at the end of this specification section.

B. This section does not apply to factory or shop painting and finishing work specified in other specification sections. Surfaces left unfinished, as required in other sections, shall be field painted or finished as a requirement of this contract and as detailed in the Painting Schedule.

C. The Painting Contractor shall examine other sections of the specifications and shall become thoroughly familiar with all provisions regarding painting requirements.

D. Paint shall include emulsions, enamels, sealers and similar coatings.

E. The Contractor shall apply each coating in accordance with these specifications and the paint manufacturer's recommendations. The coating shall be applied at the specified thickness. All paint shall be applied in strict accordance with the manufacturer's recommendations regarding minimum and maximum surface, air temperatures, and humidity required for each application.

1.2 QUALITY ASSURANCE

A. The Painting Contractor shall be fully experienced, reputable and qualified, and regularly engaged in the application of industrial grade coating systems.

B. Workmanship and materials shall be of the highest quality.

C. The Painting Contractor shall be experienced in the application of the specified coatings for a minimum of five years on projects of similar size and complexity of work. Documentation of such experience may be requested after the bid has been submitted.

1.3 SUBMITTALS

A. Submit Shop Drawings including complete manufacturer’s product data in accordance with Section 01 30 00 for all materials. Provide the Material Safety Data Sheet (MSDS) that documents the product’s volatile organic compounds (VOC’s) content for each product intended to be used, including the altered product after it has been thinned on site, if recommended by the Manufacturer.

1.4 DELIVERY, STORAGE, AND HANDLING

A. All paint materials must be delivered in the original containers, with the seals unbroken and labels intact 10 days prior to start of painting for the Engineer's inspection.

B. All materials used on the job will be stored in a single place designated by the Owner. Such storage place shall be kept neat and clean, and all damage to it or its surroundings shall be corrected by the Contactor. Any oily rags, waste and other such materials must be removed every night, and every precaution shall be taken to avoid the danger of fire.

C. All materials shall be stored in accordance with the manufacturer’s recommendations.

PART 2 - PRODUCTS

2.1 GENERAL

A. Materials used throughout shall be the product of one manufacturer only and shall be the first line and top grade materials produced by the manufacturer selected. All materials shall be applied in strict conformance with the manufacturer's standard specifications for the materials and surfaces involved.

B. All colors for finish paint materials shall be as selected by the Owner from the manufacturer's standard colors or any inter-mix thereof as required to produce an acceptable hue.

C. All paints coming in contact with water intended for human consumption, either raw or treated, shall be approved by the National Sanitation Foundation NSF 61 Standard.

2.2 MANUFACTURERS

A. All materials specified herein are manufactured by:
1. Tnemec Company, Inc.
2. Sherwin-Williams.
3. Or Pre-approved equal.

2.3 COATINGS

A. Type 1 - Polyamidoamine Epoxy
1. Coating shall abrasion resistant and shall be suitable for suitable for immersions and resistant to chemical contact exposure.
2. Finish: Satin
3. Minimum volume solids: 69.0 +/- 2.0%
4. Allowable products, exterior areas:
   a. Tnemec Series L69 Hi-Build Epoxoline II
   b. Sherwin-Williams Macropoxy 646-100, B58 Series

B. Type 2 - Modified Aliphatic Amine Epoxy
1. Coating shall be a high build, ceramic-like coating that provides excellent protection and easy cleaning. Coating shall provide excellent resistance to abrasion, staining and to many chemicals.
2. Finish: High gloss
3. Minimum volume solids: 80.0 +/-2.0%
4. Allowable products:
   a. Tnemec Series 104 H.S. Epoxy
   b. Sherwin-Williams ProIndustrial Waterborne Catalyzed Epoxy, B73 Series

C. Type 3 - Reserved

D. Type 4 - Aliphatic Acrylic Polyurethane
1. Coating shall be highly resistant to abrasion, wet conditions, corrosive fumes and exterior weathering. Coating shall contain an ultraviolet light absorber
2. Finish: Semi-gloss
3. Minimum volume solids: 71.0 +/- 2.0%
4. Allowable products:
   a. Tnemec Series 750 UVX
   b. Sherwin-Williams HiSolids Polyurethane 100, B65 Series

E. Type 5 - Aliphatic Moisture Cured Urethane
   1. Extremely hard, chemical resistant floor coating with superb flow characteristics. Coating shall provide excellent resistance to abrasion, wet conditions, corrosive fumes and chemical contact.
   2. Finish: Clear Gloss
   3. Minimum volume solids: 92 +/- 2.0%, clear mixed
   4. Allowable products:
      a. Tnemec Series 248 EverThane

F. Type 6 - Acrylic Emulsion
   1. Decorative, high build protection against weather, driving rain, industrial fumes and freeze-thaw conditions. Coating shall provide resistance against mildew growth.
   2. Finish: Matte
   3. Minimum volume solids: 43.0 +/- 2.0%
   4. Tnemec Series 180 W.B. Tneme-Crete

G. Type 7 - Acrylic Emulsion
   1. Water based coating with excellent color retention. Good protection for most surfaces in moderately severe exposure applications.
   2. Finish: Matte
   3. Minimum volume solids: 43.0 +/- 2.0%
   4. Allowable products:
      a. Tnemec Series 6 Tneme-Cryl
      b. Sherwin-Williams DTM Acrylic, B66 Series

H. Type 8 – Silicone Aluminum
   1. Heat resistant coating rated for continuous temperatures of up to 1200 degrees F.
   2. Minimum volume solids: 25.0 +/- 2%
   3. Allowable products:
      a. Sherwin-Williams SilverBrite Silicon Aluminum, B59 Series

I. Type 9 - Moisture Cure Urethane
   1. A two component moisture cured zinc-rich primer, NSF Certified.
   2. Finish: Greenish-Gray
   3. Minimum volume solids: 63.0 +/- 2.0%
   4. Allowable products:
      a. Tnemec Series 94 H20
      b. Sherwin-Williams Corothane I Galvapac 100 VOC, B65

J. Type 10 - Polyamidoamine Epoxy
   1. Coating shall be abrasion resistant and suitable for potable water contact.
   2. Finish: Satin
   3. Minimum volume solids: 69.0 +/- 2.0%
   4. Allowable products:
      a. Tnemec Series L140 PotaPox Plus
      b. Sherwin-Williams Macropoxy 646-100 PW, B58 Series

K. Type 11 - Waterborne Modified Polyamine Epoxy Primer
   1. Coating shall be suitable as a primer for concrete floors.
   2. High solids (100% mixed), moisture tolerant epoxy
   3. Allowable products:
      a. Tnemec Series 201 Epoxoprime

L. Type 12 - Modified Polyamine Epoxy Glaze
   1. Coating shall be suitable as a second coat plaster/gypsum wallboard.

2. Finish – Semi-Gloss or Eg-Shel.
3. Allowable products:
    a. Tnemec Series 287 Enviro-Pox
    b. Sherwin-Williams Zero VOC Waterborne Catalyzed Epoxy

M. Type 13 – Waterborne Epoxy
1. Coating shall be suitable as a second coat for plaster/gypsum wallboard.
2. Finish – Semi-Gloss or Eg-Shel
3. Allowable products:
    a. Tnemec Series 287 Enviro-Pox
    b. Sherwin-Williams Zero VOC Waterborne Catalyzed Epoxy

N. Type 14 - Water-based Cementitious Epoxy
1. Water-based epoxy coating that is low odor and low VOC
2. Finish: 1288 Off-White
3. Minimum volume solids: 65%
4. Allowable products:
    a. Tnemec Series 1224 Epoxoline WB

O. Type 15 - Fluid-applied acrylic insulation coating
1. Thermal insulating coating
2. Finish: Matte, 1278 Insulation Yellow
3. Minimum volume solids: 76 +/- 2.0%
4. Allowable products:
    a. Tnemec Series 971 Aerolon Acrylic

P. Type 16 - Fluid-applied acrylic insulation coating
1. Water-based, low VOC, High Dispersion Pure acrylic polymer coating providing excellent long term protection in both interior/exterior exposures.
2. Finish: Gloss
3. Minimum volume solids: 40.0 +/- 2.0%
4. Allowable products:
    a. Tnemec Series 1028T Enduratone with Thermal Glass Beads

2.4 OTHER PRODUCTS

A. Filler and Surfacer - Modified Amine Epoxy
1. Non-shrinking, trowel grade filler and surfacer with high bond strength and outstanding resistance to abrasion, impact, wet conditions, corrosive fumes and chemical contact.
2. Minimum volume solids: 100%
3. Allowable products:
    a. Tnemec Series 215 Filler and Surfacer
    b. Sherwin-Williams SteelSeam FT910

B. Primers:
1. Latex Primer – allowable products:
    a. Tnemec Series 6 Tneme-Cryl at 225 sf/gal
    b. Sherwin-Williams DTM Acrylic Primer/Finish at 150 sf/gal
2. Epoxy Primer – allowable products:
    a. Tnemec Series 151 Elasto-Grip at 300 sf/gal
    b. Sherwin-Williams ProMar 200 Zero VOC Latex at 350 sf/gal

PART 3 - EXECUTION

3.1 GENERAL

A. Environmental Conditions:

1. All coatings shall be applied in accordance with the manufacturer's recommendations regarding temperature, humidity and other environmental factors.
2. Perform work only if the temperature is above 50ºF.
3. Provide, operate and maintain supplemental heating if required to maintain temperatures above 50ºF.
4. Do not perform work when surfaces are damp.
5. Do not perform exterior work during rainy or frosty weather.

B. Preparation:

1. Protection of items to remain unpainted:
   a. The Painting Contractor shall not only protect his work at all times, but shall also protect all adjacent work and materials.
   b. Hardware, hardware accessories, machined surfaces, plates, lighting fixtures, fire detection elements and similar items in contact with painted surfaces and not to be painted shall be removed, masked or otherwise protected prior to surface preparation and painting operations.
   c. Exposed radiator covers shall be removed to permit the complete painting.
2. General surface preparation:
   a. Surface preparation shall be verified in accordance with SSPC-Vis 1, ICRI, and ASTM Standards.
   b. Except for areas requiring abrasive blasting, all metal surfaces shall be first washed with mineral spirits to remove any dirt or grease before applying materials. Where rust or scale is present, it shall be wire brushed or sandpapered clean before painting.
   c. All galvanized metal surfaces shall be chemically treated with a compound designed for this purpose, such as "Clean N Etch" or equivalent, in accordance with manufacturer's directions for use, before applying the first coat of paint.
   d. Plastic pipe shall be hand sanded and solvent wiped prior to the first coat of paint.
   e. Concrete and masonry surfaces to be painted shall be prepared by removing efflorescence, chalk, dust, dirt, grease, oil, asphalt, tar, excessive mortar, and mortar droppings, and by roughening to remove glaze. Surface deposits of free iron shall be removed prior to painting.
   f. If concrete, metal or any other surface to be finished cannot be put in proper condition for finishing by the customary cleaning and sand blasting operations, the Contractor shall immediately notify the Engineer in writing, or assume responsibility for and rectify any unsatisfactory finish that results.

C. Paint Application:

1) All necessary sealing of holes, cracks, and other voids shall be done before the first coat, with sealant of a color to match that of the finish. Sealant shall be brought flush with the adjoining surface in a neat and workmanlike manner.
2) Spray application of paints will not be permitted, except as specified or unless specific approval has been secured in writing from the Engineer and unless the surfaces and materials are entirely suitable to this type of application as proven by on-the-job demonstration.
3) Where thinning is necessary, only the products of the manufacturer furnishing the paint, and for the particular purpose, shall be allowed, and all such thinning shall be done strictly in accordance with the manufacturer's instructions.
4) Where two or more coats are specified, the first coat shall be tinted a minimum of three shades lighter than the color specified, and progressively to the final coat.
5) Additional coats of paint shall not be applied nor shall units be returned to service until paints are thoroughly dry/cured.

6) Application rates:
   a) Metal and plastic surfaces: Each coat of paint shall be applied at the rate specified by the manufacturer to achieve the minimum dry mil thickness required.
   b) Concrete and masonry surfaces: Application rates will vary according to surface texture. However, in no case shall the manufacturer's stated coverage rate be exceeded.
   c) Dry film thickness shall be verified in accordance with SSPC-PA 2. Deficiencies or excesses in film thickness shall be corrected by the application or removal of an additional coat(s) of paint.
7) Where conditions are other than normal because of the weather or because painting must be done in confined spaces, longer drying times will be necessary.
8) Finished surfaces:
   a) All finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks and variations in color, texture and finish.
   b) The hiding shall be complete, and each coat shall be so applied as to produce film of uniform thickness.
   c) Special attention shall be given to insure that all surfaces including edges, corners, crevices, welds, and rivets receive a film thickness equivalent to that of adjacent painted surfaces.
   d) Metal or wood surfaces adjacent to surfaces to receive water-thinned paints shall be primed and/or touched up prior to the application of water-thinned paints.
   e) A protective and decorative finish shall be achieved for all porous surfaces.
   f) Finished surfaces shall be protected at all times until final acceptance of the project. The Contractor shall be responsible for the satisfactory repair of any damaged surface.
9) Where interior or exterior metal is primed in the mill or shop, the material shall, in every case, be that specified for such surfaces and shall be used in accordance with the manufacturer's directions for the first or prime coat.

D. Clean-Up:
   1. Upon completion of the work, Contractor shall remove all paint and varnish spots from the floors, glass and other surfaces.
   2. All rubbish and accumulated materials shall be removed from the premises, and the work areas shall be brought to a clean, orderly and acceptable condition.

3.2 PAINTING SYSTEMS - GENERAL

A. Surface preparation recommendations indicated below may vary depending on surface condition when equipment is ready for painting. For example, cast iron fittings and pipes when painted in a new condition before any rusting or corrosion forms do not require blasting. SSPC SP-1 Solvent Cleaning is acceptable. Contractor shall notify the Engineer of varying surface conditions and consult the manufacturer to confirm conditions or recommend alternate surface preparation.

B. Spreading rates listed below are given at manufacturer's recommended “theoretical” coverage and shall be adjusted by the Contractor for specific textures and conditions. Under no circumstances will the dry film thickness be less than as specified.

   Chromium plate, stainless steel, aluminum, galvanized steel and monel metal shall not be painted or finished except as otherwise indicated.

C. No request for substitution will be considered which decreases the film thickness designated and/or the number of coats to be applied, or which offers a change from the general type of coatings specified.

3.3 PAINTING SYSTEMS - EXTERIOR WORK

A. The following painting systems shall be used in all exterior areas that may be exposed to direct sunlight.

B. Non-galvanized, ferrous metals - structural steel, metal tanks, pipes (including cast and ductile iron), valves, equipment and miscellaneous fabrications:
   1. Non-immersion surfaces:
      a. Surface Preparation: SSPC-SP6 Commercial Blast Cleaning
      b. 1st Coat: Type 1 Coating at 3.0 dry mils
      c. 2nd Coat: Type 1 Coating at 3.0 dry mils
      d. 3rd Coat: Type 4 Coating at 3.0 dry mils
   2. Immersion surfaces (frequently wet due to condensation, splash, spray or immersion):
      a. Surface Preparation: SSPC-SP10 Near White Blast Cleaning
      b. 1st Coat: Type 1 Coating at 5.0 dry mils
      c. 2nd Coat: Type 1 Coating at 5.0 dry mils
      d. 3rd Coat: Type 4 Coating at 3.0 dry mils

C. Plastic and fiberglass (FRP) - pipe and miscellaneous fabrications:
   1. All surfaces:
      a. Surface Preparation: Hand Sand and Solvent Wipe
      b. 1st Coat: Type 1 Coating at 3.0 dry mils
      c. 2nd Coat: Type 4 Coating at 2.5 dry mils

D. Concrete and masonry:
   1. Non-immersion surfaces:
      a. Surface Preparation:
         1) Level protrusions and mortar spatter.
         2) Concrete must cure for 28 days before coating.
         3) Brush-off sandblast (ASTM D4259) to remove all form oil, lacquer, curing compound, grease, loose concrete, laitance, soluble salts, dirt, and other contaminants.
         4) All tie holes and defects shall be filled with Filler and Surfacer product.
      b. 1st Coat: Type 6 Coating at 125 sq.ft./gal
      c. 2nd Coat: Type 6 Coating at 125 sq.ft./gal
      d. If the coating is sprayed onto the surface, it shall mechanically be worked into the substrate (back rolling) immediately after being sprayed.
   2. Immersion surfaces (frequently wet due to condensation, splash, spray or immersion):
      a. Surface Preparation:
         1) Level protrusions and mortar spatter.
         2) Concrete must cure for 28 days before coating.
         3) Brush-off sandblast (ASTM D4259) to remove all form oil, lacquer, curing compound, grease, loose concrete, laitance, soluble salts, dirt, and other contaminants.
         4) All tie holes and defects shall be filled with Filler and Surfacer product.
      b. 1st Coat: Type 10 Coating at 180 sq.ft./gal
      c. 2nd Coat: Type 10 Coating at 180 sq.ft./gal

3.4 PAINTING SYSTEMS - INTERIOR WORK

A. The following painting systems shall be used in all interior areas.

B. Non-galvanized, ferrous metals - structural steel, metal tanks, pipes (including cast and ductile iron), valves, equipment and miscellaneous fabrications:
   1. Non-immersion surfaces, mild exposure areas (INCLUDES NEW PIPING):
      a. Surface Preparation: SSPC-SP6 Commercial Blast Cleaning
      b. 1st Coat: Type 1 Coating at 3.0 dry mils

c. 2nd Coat: Type 1 Coating at 3.0 dry mils

2. Non-immersion surfaces, mild exposure areas (INCLUDES EXISTING PIPING):
   a. Surface Preparation: SSPC-SP3 Power Tool Cleaning
   b. Spot prime rusted areas with Series 135 Chembuild at 4.0 dry mils
   c. 1st Coat: Type 1 Coating at 3.0 dry mils
   d. 2nd Coat: Type 1 Coating at 3.0 dry mils
3. Non-immersion surfaces, severe exposure areas:
   a. Surface Preparation: SSPC-SP6 Commercial Blast Cleaning
   b. 1st Coat: Type 1 Coating at 4.0 dry mils
   c. 2nd Coat: Type 1 Coating at 5.0 dry mils
   d. 3rd Coat Type 1 Coating at 5.0 dry mils
4. Immersion surfaces (frequently wet due to condensation, splash, spray or immersion except potable water immersion):
   a. Surface Preparation: SSPC-SP10 Near White Blast Cleaning
   b. 1st Coat: Type 1 Coating at 5.0 dry mils
   c. 2nd Coat: Type 1 Coating at 5.0 dry mils
5. Immersion surfaces (frequently wet due to condensation, splash, spray or immersion in potable water):
   a. Surface Preparation: SSPC-SP10 Near White Blast Cleaning
   b. 1st Coat: Type 9 Coating at 3.0 dry mils
   c. 2nd Coat: Type 10 Coating at 5.0 dry mils
   d. 3rd Coat: Type 10 Coating at 5.0 dry mils

C. Plastic and fiberglass (FRP) - pipe and miscellaneous fabrications:
1. All Surfaces:
   a. Surface Preparation: Hand Sand and Solvent Wipe
   b. 1st Coat: Type 1 Coating at 3.0 dry mils

D. Porous Concrete Product, Masonry:
1. Non-immersion surfaces, mild or severe exposure areas:
   a. Surface Preparation:
      1) Level protrusions and mortar spatter.
      2) Concrete or mortar must cure for 28 days before coating.
      3) Brush-off sandblast (ASTM D4259) to remove all form oil, lacquer, curing compound, grease, loose concrete, laitance, soluble salts, dirt, and other contaminants.
      4) All tie holes and defects shall be filled with Filler and Surfacer product.
   b. 1st Coat: Type 2 Coating at 100 sq.ft./gal
   c. 2nd Coat: Type 2 Coating at 100 sq.ft./gal
2. Immersion surfaces (frequently wet due to condensation, splash, spray or immersion):
   a. Surface Preparation:
      1) Level protrusions and mortar spatter.
      2) Concrete must cure for 28 days before coating.
      3) Brush-off sandblast (ASTM D4259) to remove all form oil, lacquer, curing compound, grease, loose concrete, laitance, soluble salts, dirt, and other contaminants.
      4) All tie holes and defects shall be filled with Filler and Surfacer product.
   b. 1st Coat: Type 10 Coating at 100 sq.ft./gal
   c. 2nd Coat: Type 10 Coating at 100 sq.ft./gal

E. Dense Concrete Products, Cast-in-Place and precast concrete (not floors)
1. Non-immersion surfaces, mild or severe exposure areas:
   a. Surface Preparation:
      1) Level protrusions.

2) Concrete must cure for 28 days before coating.
3) Brush-off sandblast (ASTM D4259) to remove all form oil, lacquer, curing compound, grease, loose concrete, laitance, soluble salts, dirt, and other contaminants.
4) All tie holes and defects shall be filled with Filler and Surfacer product.

b. 1st Coat: Type 2 Coating at 180 sq.ft./gal
c. 2nd Coat: Type 2 Coating at 180 sq.ft./gal

2. Immersion surfaces (frequently wet due to condensation, splash, spray or immersion):
a. Surface Preparation:
1) Level protrusions.
2) Concrete must cure for 28 days before coating.
3) Brush-off sandblast (ASTM D4259) to remove all form oil, lacquer, curing compound, grease, loose concrete, laitance, soluble salts, dirt, and other contaminants.
4) All tie holes and defects shall be filled with Filler and Surfacer product.

b. 1st Coat: Type 10 Coating at 180 sq.ft./gal
c. 2nd Coat: Type 10 Coating at 180 sq.ft./gal

F. Concrete Floors (where scheduled to be painted)
1. Non-immersion surfaces, mild or severe exposure areas:
a. Surface Preparation:
1) Shot-blast or mechanically abrade to remove contaminants (Reference SSPC-SP13, ICRI CSP 3 through 9).
2) All holes and defects shall be filled with Filler and Surfacer product.

b. 1st Coat: Type 11 Coating at 200 sq.ft./gal
c. 2nd Coat: Type 12 Coating at 200 sq.ft./gal
d. 3rd Coat: Type 5 Coating at 400 sq.ft./gal

3.5 PAINTING SYSTEMS - MISCELLANEOUS SURFACES

A. Copper pipe and tubing, including fittings and valves:
1. All surfaces:
a. Surface Preparation: SSPC-SP1 Solvent Cleaning and mechanically profile surface.
b. 1st Coat: Type 1 Coating at 4.0 dry mils
c. 2nd Coat: Type 1 Coating at 5.0 dry mils
d. 3rd Coat (exterior surfaces only): Type 1 Coating at 3.0 mils

B. Insulated Pipe
1. All surfaces:
a. Surface Preparation: Surface shall be clean and dry
b. 1st Coat: Type 7 Coating at 2.5 dry mils
c. 2nd Coat: Type 7 Coating at 2.5 dry mils

C. Engine Exhaust Piping and Heat Exchangers (temperatures up to 1200°F):
1. All exterior surfaces:
a. 1st Coat: Type 8 Coating at 1.5 dry mils
b. 2nd Coat: Type 8 Coating at 1.5 dry mils

D. Wood Products:
1. Natural wood finish: Polyurethane semi-gloss varnish with compatible stain. Two (2) coats varnish in accordance with manufacturer's instructions (materials not supplied by Tnemec). Natural wood finish, or clear wood finish products, shall have a VOC of less than 275 g/L.
2. Painted Finish:
a. Surface Preparation: Surface shall be clean and dry
b. 1st Coat: Type 7 Coating at 2.5 dry mils

c. 2nd Coat: Type 7 Coating at 2.5 dry mils

E. Plaster/Gypsum Wallboard:
1. Non-immersion surfaces, mild exposure areas:
a. Surface Preparation: Surface shall be clean and dry
b. 1st Coat: Type 7 Coating at 220 sf/gal
c. 2nd Coat: Type 7 Coating at 220 sf/gal
2. Non-immersion surfaces, severe exposure areas:
a. Surface Preparation: Surface shall be clean and dry
b. 1st Coat: Epoxy Primer (See 2.04.B)
c. 2nd Coat: Type 13 Coating at 160 sf/gal
d. 2nd Coat: Type 13 Coating at 160 sf/gal

F. Air Piping on Discharge of Aeration Blower:
1. All surfaces:
a. Surface Preparation: Surface shall be clean and dry
b. 1st Coat: Type 14 Coating at 5.0 to 7.0 mil
c. 2nd Coat: Type 15 Coating at 40 to 50 mil
d. 2nd Coat: Type 16 Coating at 3.0 to 5.0 mil

3.6 PROCESS STRUCTURE LABELING

A. Interior walls shall be labeled to indicate name of tank, channel or pit which is adjacent on the other side of the wall. Similar labels shall be applied on sidewalks and catwalks to indicate the name and identification number of the structure.

B. Stencil letters height shall be 3 inches and shall be black or white, as appropriate for best contrast. If stencils are used they shall be provided to the owner.

3.7 COLOR CODING

A. The following lists the color schemes to be used in painting piping, fittings, valves and appurtenances, unless these colors do not match the color scheme of the existing piping systems. In this case, match the existing piping colors insofar as possible. Tnemec standard color numbers are included in parenthesis.

1. Water Lines:

a. Raw water	Dark Olive Green (91GN Balsam)
b. Settled or Clarified Water	Aqua (10GN Aqua Sky)
c. Finished or Potable Water	Dark Blue (78BL Old Glory Blue)
d. Backwash Waste	Light Brown (74BR Clay)
e. Lime Sludge	Dark Brown (84BR Weathered Bark)

2. Chemical Lines:

a. Alum or Primary Coagulant	Orange (04SF Safety Orange)
b. Ammonia	White (00WH)
c. Carbon Slurry	Black (35GR Black)
d. Caustic	Yellow with Green Band (03SF Bright Yellow)
e. Chlorine (Gas and Solution)	Yellow (03SF Bright Yellow)
f. Fluoride	Light Blue with Red Band (25 BL Fountain Bleu)
g. Lime Slurry	Light Green (09SF Safety Green)
h. Ozone	Yellow with Orange Band (03SF Bright Yellow)
i. Phosphate Compounds	Light Green with Red Band (09SF Safety Green)
j. Polymer or Coagulant Aids	Orange with Green Band (04SF Safety Orange)
k. Potassium Permanganate	Violet (Purple Rain/Safety 14SF)
l. Soda Ash	Light Green with Orange Band (09SF Safety Green)
m. Sulfuric Acid	Yellow with Red Band (03SF Bright Yellow)

n.	Sodium Bisulfate (ite)	Orange with Red Band (04SF Safety Orange)
o.	Sulfur Dioxide	Light Green with Yellow Band (09SF Safety Green)

3. Wastewater Process Lines:

a.	Raw, Grit or Pretreated Sewage	Medium Green (09SF Safety Green)
b.	Return or Waste Sludge (RAS/WAS)	Medium Brown (68BR Twine)
c.	Digested Sludge	Dark Brown (84BR Weathered Bark)
d.	Sewer (Sanitary or Drain)	Dark Grey (34GR Deep Space)
e.	Plant Effluent Water	Light Blue with White Bands (25BL Fountainbleu)

4. Other Lines:

a.	Non-Potable Water	Light Blue (25BL Fountainbleu)
b.	Potable Water (hot or cold)	Dark Blue (78BL Old Glory Blue)
c.	High Pressure Compressed Air	Dark Green (08SF Hunter Green)
d.	Process Air	Light Green (09SF Safety Green)
e.	Digester Gas	Red (06SF Safety Red)
f.	Natural Gas	Red with White Bands (06SF Safety Red)
g.	Ethylene glycol	Olive Green (110GN Clover)
h.	Hot water heating system	Light Blue with Red Bands (25BL Fountainbleu)

i. When scheduled for painting (see Painting Schedule below), electrical conduit, HVAC duct and plumbing vent lines shall be painted to match adjacent ceiling or wall surfaces after first cleaning and abrading the surfaces.

3.8 PAINTING SCHEDULE

A. New Work

1. Piping - All new exposed pipe, fittings, valves, pipe hangers/supports and appurtenances.
2. Steel doors and frames, window frames, and lintels.
3. Equipment - All new equipment in any building or structure, and any outside equipment of a material requiring paint, including HVAC equipment.
4. All exposed structural steel, except stainless steel, including exposed precast connections.

B. Existing Work

1. Touch up walls, ceilings, piping, equipment and other surfaces exposed by construction or damaged as a result of it. This shall include newly exposed and damaged surfaces where partial removal of walls is required. Touch up paint shall match color of existing paint to the satisfaction of the Owner.
2. Where demolition of existing reinforced concrete results in exposed reinforcing steel, the steel surface shall be coated as an exterior, immersion surface.

END OF SECTION

SECTION 40 05 00

PROCESS PIPING MATERIALS AND METHODS

PART 1 - GENERAL

1.01 SCOPE

A. This section covers piping materials and methods for chemical feed and related piping. Note that not all of the below sections will be relevant to the current project.

1.02 RELATED SECTIONS

A. 40 05 07 – Hangers and Supports for Process Piping

1.03 GENERAL

A. Materials: All materials shall be new, full weight, and of the best quality with the same brand or manufacturer used for each class of material or equipment. The Contractor shall be responsible for the safety and good condition of materials and equipment installed until final acceptance by the Engineer. After acceptance, the guarantee requirements shall apply. All materials shall be stored to prevent damage or weathering prior to installation.

B. Workmanship: All materials and equipment shall be installed in a neat and workmanlike manner by skilled craftsmen in their trade. The installation of any materials and equipment not meeting these standards may be rejected by the Engineer and shall be removed and reinstalled to meet these standards at no additional cost to the Owner.

C. Pipe Schedule - This specification section is a general specification covering materials which may or may not be part of or allowed for this project. Reference the end of Part 3 of this specification for the pipe schedule. Piping not listed may be covered under another specification.

1.04 SUBMITTALS

A. Shop drawing submittals shall be submitted in accordance with the submittals specification for all process pipe and accessories specified herein.

1.05 VERIFICATION OF DRAWINGS

A. The contract drawings indicate the required size and general arrangement for all piping and equipment. Locations shall be verified in the field by the Contractor. Valves and fittings shall be of such dimensions to allow for the installation of this piping. If it is necessary to change the location of any work due to interference with other work, the Contractor shall consult with the Engineer before making any changes.

B. The Contractor shall determine and be responsible for the proper locations and character of all anchor bolts, inserts, hangers, chases, sleeves and other openings in the construction for the piping and mechanical equipment.

PART 2 - PRODUCTS

2.01 NSF APPROVED MATERIALS

A. All components and chemicals in contact with raw, partially treated, or treated water during construction and operation shall be certified per NSF 60 (chemicals) or NSF 61 (components).

B. These requirements are in accordance with Ten States Standards (2012) 3.2.4.5.a. If NSF-certified materials or components are not reasonably available, the use of non-NSF-certified materials or components will be allowed provided that they can be shown to not pose a contamination risk.

2.02 PIPE MATERIALS

A. General: All pipe and fittings shall conform to the sizes indicated on the drawings and materials and strength indicated on drawings or specified herein. See other applicable sections of the specifications for additional information. Materials and procedures not specifically listed herein may be approved for use in specific applications on this project, if prequalification procedures listed in the Instructions to Bidders and Submittals section is followed.

B. Potable Water, Non-Potable Water and Process Piping - Pressure Lines

1. Iron Pipe And Fittings:
   a. Unless otherwise stated, ductile iron pipe shall conform to applicable sections of ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51. Ductile iron or cast iron fittings shall conform to ANSI/AWWA C110/A21.10 or shall be compact fittings conforming to ANSI/AWWA C110/A21.10.
   b. All buried ductile iron pipe shall be provided with polyethylene tube protection installed in accordance with ANSI/AWWA C105/A21.5, Method A.
2. Plastic Pipe and Fittings:
   a. All polyvinyl chloride (PVC) pressure pipe shall be Type 1, Schedule 80 material conforming to ASTM Specification D-1785, commercial standard CS-207 and bear the National Standard Foundation (NSF) Seal of approval. Fittings shall be flanged or solvent welded and made of the same material as the pipe. Threaded fittings may only be used with prior approval of the Engineer and shall be held to a minimum. Fittings shall conform to ASTM D2464 and D2467.
   b. Buried PVC
      i. Buried PVC pressure pipe for sizes 2” through 3” shall be SDR 21, Class 200 per ASTM D2241. Plastic fittings shall be of the same material and the same strength class as the pipe. Plastic fittings shall be of the same material and the same strength class as the pipe.
      ii. Buried PVC pressure pipe for sizes 4” to 12” inclusive shall be Type 1, Grade 1, with minimum DR-18 150 psi rating conforming to AWWA C900. PVC pressure pipe for sizes 14” to 48” inclusive shall by Type 1, Grade 1, with a minimum DR-25 165 psi rating conforming to AWWA C905. Ductile iron fittings shall be used and shall have the same strength class or higher.
   c. All pipe and fittings shall carry the NSF seal.
   d. CPVC piping shall be Schedule 80 conforming to ASTM F441 bearing the NSF seal. Fittings shall conform to ASTM F439.
3. Steel Pipe and Fittings:
   a. Welded and seamless steel pipe shall be used where indicated on the plans or in the specifications and shall conform to ASA Specification B36.10. All steel pipe shall have standard wall thickness, unless noted otherwise, conforming to ASTM Designation A53 for pipe 12 inches and less. Unless otherwise noted,

pipe 2 ½ inches and smaller in diameter shall be threaded, and pipe 3 inches in diameter and larger shall be welded, flanged or connected by sleeve type couplings.

b. Large steel pipe shall conform to AWWA C200. Flanges and fittings shall conform to AWWA C207. Field welding of steel pipe shall conform to AWWA C206.

4. Stainless Steel Pipe & Fittings:
   a. Stainless steel pipe shall be used where indicated in the piping schedule or on the Drawings. Stainless steel piping may be substituted for other process piping following Engineer approval.
   b. All stainless steel pipe shall be extra low carbon (0.03% max.), Grade 316L. Unless otherwise indicated on the Drawings, stainless steel pipe shall be schedule 10S minimum.
   c. Rolled Pipe: Pipe with diameters 12 inches and larger shall conform to ASTM A-778. Pipe with diameters less than 12 inches shall conform to ASTM A312, ANSI B36.19
   b. Cast Fittings: Conforming to ASTM A778, ANSI B36.19 & ANSI B16.9
   c. Fabricated Pipe: From sheet conforming to ASTM A240
   d. Fabricated Fittings: From sheet conforming to ASTM A240
   e. Fitting dimensions conform to ANSI B16.9; Flanges: Welded or Slip-ring (Van-Stone) with drilling conforming to ANSI B16.9.
5. Fiberglass Reinforced Plastic Pipe & Fittings:
   a. Fiberglass reinforced plastic (FRP) pipe and fittings as manufactured by Smith Fiberglass Products, Fibercast, or approved equal may be used on non-potable water or wastewater processes as identified on the plans or in these specifications. The pipe shall be in compliance with ASTM D2996 or D2997 and contain a resin-rich liner with minimum cured thickness of 30 mils.
   b. Specific pipe type and size, fittings, and adhesives shall be dependent upon the application, material, operating pressure and temperature. The manufacturer shall guarantee the selected product performance in the specific application prior to approval for use.
6. Reinforced Concrete Pipe: Reinforced concrete pressure pipe shall conform to the applicable standards of AWWA C300, C301, C302, and C303.
7. Copper Tubing: Copper tubing shall be ASTM B88, Type K for buried or submerged installations and Type L for piping inside structures or buildings. Buried piping shall have flared fittings and interior piping shall have soldered fittings.

C. Process Air Piping System - Low Pressure: Piping, fittings, and installation for low pressure air (less than 20 psi) shall be as follows and as indicated on the piping schedule.

1. Process Air pipe and fittings shall be standard or light wall steel pipe for all above ground installations.
2. Piping 6-inches and larger shall conform to AWWA C200 – “Steel Water Pipe 6-inches and Larger”, ASTM A139. Piping smaller than 6-inches shall conform to ASTM A139.
3. Pipe joints:
   a. Joints shall be flanged or welded unless otherwise indicated on the drawings.
   b. Welded joints shall be in accordance with AWWA C206. Butt welds shall be used for all welded joints in line pipe assemblies and in the fabrication of bends and other specials. Fillet welds shall be used for flange attachment.
   c. Flanged joints shall be in accordance with AWWA C207. Contractor shall coordinate diameter and drilling of flanges furnished in the piping with the flanges for the valves, blowers, and other equipment to be installed in the piping.

i. Provide insulating flanges for connections to dissimilar pipes. Type E (full face) gasket (rated for 250 degrees F), phenolic laminate insulating washers and mylar bolt insulating sleeves.

4. Pipe and fittings shall be shop primed on the exterior with no lining.
5. Adequate provisions for thermal expansion shall be as specified under 3.07 – Thermal Expansion of Pipes.

D. Pipe Coatings and Linings:

1. Coatings:
   a. The exterior surfaces of all interior and exterior exposed cast iron, ductile iron and steel pipe and fittings shall be shop primed. Paint systems for exposed piping shall conform to Section 09 96 00.
   b. Exterior surfaces of all buried cast iron, ductile iron and steel pipe and fittings shall be coated with an asphaltic coating approximately one mil thick.
   c. Cold applied tape coatings for special sections, connections, and fittings for steel pipelines shall conform to AWWA C209.
   d. The exterior surfaces of all stainless steel piping and fittings shall be passivated.
2. Linings:
   a. All cast iron, ductile iron and steel pipe and fittings shall be lined with cement mortar, unless specifically indicated otherwise on the Drawings or in the piping schedule.
      i. Cement mortar lining shall conform to ANSI/AWWA C104/A21.4 for cast and ductile iron.
   b. AWWA C205 shall apply for steel pipe cement mortar lining. Coal-tar lining for steel pipe shall conform to AWWA C203.
   c. All stainless steel pipe and fittings shall be unlined.
   d. Where indicated on the drawings or in the piping schedule, ductile iron pipe shall be glass lined.
      i. The glass lining shall be vitreous material which is hard, smooth, and continuous. It shall be applied to properly prepared pipe and fittings using accepted industry standards, and shall be tested per applicable ASTM, NACE and SSPC standards.
      ii. The lining material shall consist of vitreous and inorganic material applied to the internal surfaces that have been prepared by blasting. The lining shall be applied in a minimum of two (2) coats, separately applied and separately fired. The items shall be exposed to a maturing temperature of approximately 1400 degrees F., at which point the vitreous and inorganic materials melt and fuse to the base metal, forming an integral molecular bond with the base metal surface. Subsequent coatings shall be processed in a similar manner, forcing an integral molecular bond with the base coat. The entire finished coating shall be a minimum of 10 mils (.010") as tested with a micro test or other acceptable dry film thickness gauge. The finished lining shall be able to withstand a strain of 0.001 inch/inch (the yield point of the base metal) without damage to the glass. The lining shall be of a light, bright color to allow visual detection of defects more easily prior to electronic holiday detection testing.
      iii. The lining shall have a hardness of 5-6 on the MOHS scale, and a density of 2.5-3.0 grams per cubic centimeter as measured by ASTM D-792. The glass lining shall be capable of withstanding an instantaneous thermal shock of 350 degrees F differential without crazing, blistering or spalling. It shall be resistant to corrosion of between pH 3 and pH 10 at 125 degrees F. There shall be no visible loss of surface gloss to the lining after immersing a

production sample in an 8% sulfuric acid solution at 148 degrees F. for a period of 10 minutes. When tested according to ASTM C-283, it shall show a weight loss of not more than 3 milligrams per square inch.

iv. Per the recommended industry standards under ASTM D-5162-01, NACE RP 0188-99, and SSPC Coating Manual, Volume 1, Section XIV, the glass lining shall be tested by "low voltage, wet sponge, non-destructive holiday detection unit", with only isolated voids permitted due to casting anomalies. Test procedure and acceptance criteria shall be per the attachment "MP-9.2, Porcelain Enamel Continuity Testing", and documentation shall be furnished with each shipment of material listing the test results by identifying "mark" or "tag" numbers.

v. The finished glass lined pipe shall not deviate more than 0.0125 inch per foot of length from a centerline perpendicular to the square pipe end or flange face.

vi. The applicator shall have a minimum of 5 years of successful experience in the application of high temperature glass and porcelain coatings

vii. All handling and/or lifting of glass lined pipe and fittings must be done on the exterior only. Avoid lifting internally with hooks, forks or chains at any time.

viii. Tapping shall be done prior to glass lining.

ix. Glass lining shall be VITCO SG-14, Fast Fabricators/ Waterworks Manufacturing MEH-32, or approved equivalent.

e. Where indicated on the drawings or in the piping schedule, ductile iron pipe fittings shall be lined with fusion bonded epoxy.

i. Fusion bonded epoxy linings shall conform to ANSI/AWWA C116/A21.16 for ductile iron fittings.

E. Joint Materials: Joints for the various pipe materials shall be in accordance with the following requirements and the manufacturers recommendation for the specific application.

1. Cast Iron Pipe or Ductile Iron Pipe Joints:

a. Push-on and Mechanical joints shall conform to ANSI/AWWA C111/A21.11, except gaskets shall be neoprene or other synthetic rubber. Natural rubber will not be acceptable. Restrained push-on joints shall be American "Flex-Ring", "Lok-Ring", or "Lok-Fast"; U.S. Pipe "TR Flex"; Griffin "Snap-Lok"; Clow "Super-Lock"; or equivalent. Megalug restrained joint devices as manufactured by EBAA, or equal, shall be acceptable for restraining buried piping. Other restraining devices using set screws bearing on the pipe wall shall not be acceptable.

b. Grooved couplings and fittings may be used in lieu of flanged joints and shall meet the requirements of ANSI/AWWA C606. Couplings and fittings shall be Victaulic "Style 31", Grinnell "Figure 7001", or equal. Pipes shall have grooved ends conforming to AWWA C606, Table 5, for rigid joints. Coupling gasket shall be molded synthetic rubber conforming to ASTM Specification A47, Grade 32510.

c. Flanged joints and fittings shall be flat faced and conform to ANSI Specifications B16.1, Class 125 or ANSI/AWWA C115/A21.15. All bolts and nuts for flanged connections shall be 304 stainless steel. Anti-seize thread lubricant shall be liberally applied to the threaded portions of all stainless steel bolts during assembly. Flange coupling adapters may be used only at locations approved by the Engineer, or where indicated on the drawings. Flange coupling adapters shall be series 2100 Megaflange as manufactured by EBAA, or equal.

2. PVC Pipe Joints:

a. Joints shall be integral bell, bell and spigot type, elastomeric gasketed joints for 4 inches through 12 inches buried piping. Gaskets shall conform to ASTM F477, synthetic rubber. Natural rubber will not be acceptable. Solvent cement joints shall conform to ASTM D2564.

b. Gaskets used in flanged joints shall be full face gaskets of chemical-resistant elastomeric material suitable for the specified service.

3. FRP Pipe Joints:

a. FRP joints shall be adhesive bonded or flanged. Adhesive joints shall be integral bell and spigot, tapered end and spigot, or socket joints with suitable adhesive. Flanged fittings shall be flat faced and conform to ASA Specifications B16.1, Class 125. Gaskets shall be 1/8" thick full-face type suitable for the intended service and conform to ASTM F477. Natural rubber gaskets will not be acceptable.

b. All joint preparation, cutting, and jointing operations shall comply with the pipe manufacturer's recommendations. Joints shall be suitable for periodic steam cleaning at 250°F and 14 psi for durations of four (4) hours.

4. Stainless Steel Pipe Joints: Stainless steel pipe joints shall be buttwelded, flanged, or grooved. Flanged or grooved ends shall be used for connections to valves and equipment, and where indicated on the drawings. Flanges shall be provided for minimum ½ inch thickness stainless steel plate with ANSI B16.9, Class 150 diameter and drilling. Connecting hardware shall be 316 stainless steel and flange gaskets suitable for the intended service.

F. Gas Piping System: Piping, fittings and installation for natural gas shall be as follows:

1. Pipe and fittings shall be welded steel, black malleable iron, ASTM D2513 polyethylene, or fiberglass reinforced plastic as required by the local utility and local plumbing codes.

2. Fittings - On lines 2 inches and smaller, fittings shall be 150 pound black malleable iron screwed fittings manufactured in accordance with American Standard B16.3. On lines 2 ½ inches and larger, fittings shall be screwed or welded at the Contractor's discretion. Welded fittings shall be made of carbon steel conforming to ASTM specifications A-234, Grade B, and American Standard B16.9. Weld-O-Lets and Thread-O-Lets may be used in place of tees in pipe 2 ½ inches and larger when reducing one or more sizes. FRP and polyethylene fittings shall be in accordance with manufacturer recommendations.

3. Gas pipe installed underground shall be protected with a factory applied yellow, polyethylene coating. The coating shall have a minimum thickness as follows: 1.5" dia or less - 0.025"; 2" to 2.5" dia. - 0.030"; 3" to 4" dia. - 0.035"; 5" to 8" dia. - 0.040". Field coated pipe shall be cleaned by shot blasting, a prime coating applied immediately after cleaning, coated to an average 3/32 inch with coat tar enamel and reinforced with 20 mil glass fabric and spirally wrapped with 50 pound Kraft paper. Fittings and welds shall be cleaned and then coated completely with polyethylene adhesive tape, Johns-Manville Trantex E-12 or equal, spirally wound with tape lapped one-half of the tape width.

4. Cathodic protection shall be accomplished by the installation of 17 pound magnesium anodes buried below the piping with anode lead wires attached to the piping by Thermite welding, soldering or groundwater connectors. Connection underground shall be coated with mastic as specified for fittings. Furnish one anode for each 200 feet of buried pipe or part thereof.

G. Small Diameter And Special Pipe Fittings:

1. Cast iron screwed pipe fittings shall be 125 pound and 250 pound fittings conforming to ANSI B16.4.
2. Malleable iron screwed pipe fittings shall be 150 pound and 300 pound fittings conforming to ANSI B16.3.
3. Unions shall be ground joint bronze to iron seat, malleable iron union, threads conforming to ANSI B2.1 and material conforming to ASTM A47, Grade 32510 for 150 pounds WSP and 300 pounds WOG non-shock service.
4. Flanges shall be 125 pound standard cast iron or malleable iron conforming to ANSI B16.1 and 250 pound extra heavy cast iron or malleable iron.
5. Fittings, flanges and unions shall be galvanized when used with galvanized pipe.
6. Gaskets - All flanged joints in high temperature piping shall have “Cranite” or corrugated metallic ring gaskets, not less than 1/6 inch thick, one gasket to each joint. One side of the gasket shall be painted with graphite and oil before being put in place. All gaskets shall extend the full available diameter inside of bolt holes and no part shall extend inside of piping.
7. Insulating Flanges and Unions - Insulating flanges or unions shall be installed at all connections between ferrous and non-ferrous piping materials or piping and equipment. Cathodic protection by gaskets shall provide complete insulation. Unions and flanges shall be as manufactured by Capitol Manufacturing Co., Epco Sales Co., or approved equivalent.
8. Welding Fittings and Forged Steel Flanges - All welding fittings and flanges shall be manufactured in the U.S.A. and shall conform to standards as follows:
   a. Welding fittings shall conform to ASTM Specification A-234-WPB and ANSI Standard B16.9 and B16.28 and shall be of grade B carbon steel. Materials used in manufacture shall conform to ASTM A-106B for pipe, A-212A for plate, A105-11 for forgings and ASTM A-107, Grade 1025 for bar stock. Manufacturer shall conform to ASTM A-234B and ASME Boiler and Pressure Vessel Code. Each fitting shall be permanently marked with manufacturer's name or trademark, size, wall thickness or schedule number and material grade identification. Shaped nipples or fish mouth fittings will not be permitted. Weld-O-Lets or Thread-O-Lets may be used in place of tees in pipe 2 ½ inches and larger when reducing one or more sizes.
   b. Weld-O-Lets, Thread-O-Lets, Nip-O-Lets, and Sock-O-Lets shall be carbon steel fittings as manufactured by Bonney Forge and Tool Works, in reducing sizes conforming to ASTM A-105, Grade L, and installed in accordance with manufacturer's recommended procedure.
   c. Forged steel flanges shall conform to ASTM Specification A-181 for 150 pound and 300 pound and ASTM A-105 for 400 pound pressure ratings and ANSI Standard B16.5. Flanges shall have raised face with spiral serrated finish. Material shall be forged carbon steel conforming to ASTM A-181, Grade 1 or 2. Flange markings shall be similar to markings on weld fittings. Flanges shall be of the welding neck type wherever possible. When conditions indicate the use of slip-on flanges, they may be used provided welds are made on both the inside and outside of the flange.
9. Brazolets may be used as takeoffs from copper headers in lieu of tees. Brazolets shall be silver brazed.
10. FRP Pipe Outlets - Small branch connections on FRP piping shall be installed using a Tee and blind flange or a suitable saddle outlet. Tapping of the pipe wall will not be permitted.

H. Compressed Air Piping (High Pressure):

1. Piping, fittings, and installation for high pressure air (20-100 psi) shall be as follows and as indicated in the piping schedule.
2. Pipe and fittings shall be standard weight steel Type F (CW) with threaded joints, or copper Type K with soldered joints or with brazed joints for sizes above NPS 2.

2.03 PIPE ACCESSORIES

A. Flexible Couplings: A flexible coupling shall be provided where indicated on the drawings and on the piping discharge from each piece of mechanical equipment. The coupling shall be Metraflex "100HT" or Metraflex "100C" for reducing couplings with retaining ring, gusset plate, and control rod, or equivalent. The coupling shall be of the size, material, temperature rating, and pressure rating required for the indicated service. Adequate anchorage shall be provided on each side of the flexible coupling to prevent unnecessary pipe movement.

B. Restrained Joint Couplings: Restrained joint couplings shall be EBAA Iron Series 3800, or equivalent. Gaskets shall be oil-resistant synthetic rubber suitable for the indicated service. The mechanical couplings shall prevent axial separation and shall be installed in strict accordance with manufacturer's recommendations. A space of at least ½ inch and not more than 1 inch shall be left between the pipe ends. All assembly bolts shall be uniformly tightened so that the coupling is free from leaks and all parts of the coupling are square and symmetrical with the pipe.

C. Flanged Coupling Adapters: Flanged coupling adapters shall be used where indicated on the drawings. Other locations require Engineer approval. Flange coupling adapters shall be Series 2100 Megaflange as manufactured by EBBA, or approved equal.

PART 3 - EXECUTION

3.01 PIPE CONSTRUCTION PROCEDURES

A. Workmanship: All work shall be performed by skilled workmen in accordance with generally accepted standards of good practice. Work which, in the opinion of the Engineer, does not conform to these standards will be rejected and shall be removed and redone until work has been performed in an acceptable manner. Piping runs shall be true to building lines and plumb except where expressly indicated otherwise.

B. Cleaning: All piping materials shall be installed free of dirt, scale, rust, excess oil, grease or other compounds. Steel and copper piping sections before installation shall be stood on end and rapped sharply to loosen cuttings and other foreign materials from the interior. After installation, open ends of piping systems shall be temporarily plugged. Foreign matter accumulating in or on the piping as a result of fabrication and erection work shall be removed as the work progresses. Special cleaning as required for critical services, e.g., oxygen, freon, etc., shall be carried in accordance with applicable codes and standards.

C. Openings in pipes, drains, fittings and equipment shall be kept covered or plugged to prevent accumulation of debris in systems.

D. Piping shall be free of traps, sags and bends. Piping shall be drainable at low points in the systems.

E. Installation: Install piping to maintain headroom and keep passageways clear. Offset to maintain the required clearances and conform to architectural and structural features of the building. Run

parallel and straight with adjacent walls or ceilings to present a uniform appearance. Maintain spacing to accommodate insulation.

F. All rough-in shall be set to dimensions furnished by manufacturers.

G. Pipe shall be cut using measurements taken at the site and not from the drawings. All necessary provisions shall be taken in laying out piping to provide for expansion and contraction.

H. Stuffing box leakage from water sealed pumps shall be piped to the nearest point of drainage collection.

I. Street elbows, bushings and long screw fittings shall not be used.

J. Main and Risers: All piping shall be continuous between fittings wherever possible, as short lengths and couplings will not be permitted.

L. Unions and Flanges: Provide unions or flanges to all connections to equipment for dismantling of piping. Provide unions at connections to screwed body control valves.

M. Copper, brass pipe and chromed, polished, or painted connections from fixtures shall not show tool marks.

N. Underground Piping: Underground piping shall have a 66 inch minimum bury. No metal piping for any service shall be installed in or below cinders or in locations which are conducive to rapid corrosive action, nor shall any metal conduits be so installed. Pipe shall be protected from lateral movement by placing the specified pipe embedment material. Under no circumstances shall pipe be laid in water, and no pipe shall be laid under unsuitable weather or trench conditions.

3.02 FORCE MAIN INSTALLATION

A. Force main piping shall be installed in accordance with AWWA C600. Pipe and fittings shall be carefully handled to avoid damage. Pipe and fittings which have been damaged or have damaged linings shall be replaced. All pipe coating which has been damaged shall be repaired by the Contractor before the pipe is installed. Pipe and fittings shall be carefully examined for cracks and other defects immediately before installation, and all defective pipe and fittings shall be removed from the site of the work.

B. Piping shall be laid to the lines and grades indicated on the drawings. All joints shall be made in strict accordance with their respective manufacturer's specifications. Copies of said specifications shall be available to the Engineer by the Contractor. Maximum permissible joint deflection shall be in accordance with AWWA C600.

3.03 JOINTS AND CONNECTIONS

A. Screwed piping shall be fabricated using sharp cutting, threading and reaming tools which maintain proper thread dimensions and produce standard thread engagement. Pipe shall be properly reamed after cutting. Joints shall be made with graphite and oil lubricant, or other lubricating type compounds when approved by the Engineer. Sealing or adhesive type compounds shall not be used and all work assembled with such compounds will be rejected.

B. Solder joint piping shall be cut square using roller type tube cutter; ends shall be burred, re-sized and polished to "bright" metal; fitting sockets shall be cleaned; heat indicating flux shall be applied to tube end; joint shall be assembled and uniformly heated to proper temperature;

solder or brazing alloy shall be melted by contact with tube and fitting not being exposed to flame; solder application shall stop as soon as joint flows full.

C. Solvent weld joints shall be square cut and full insertion in full accordance with procedures recommended by the manufacturer.

D. Joints in buried piping shall be mechanical joint or push-on type unless otherwise indicated on the drawings or specified. Bells on wall castings shall be mechanical joint type with tapped holes for tie rods or stud bolts.

E. Mechanical joints and push-on type joints shall be carefully assembled in accordance with the manufacturer's recommendations. Joints shall be lubricated immediately before the joint is completed.

F. Flanged fittings shall be assembled by tightening bolts at a uniform rate to ensure uniform compression of the gasket. When bolting flanged joints, one flange shall be free to move in any direction to prevent unnecessary stress in the flanges. When connecting flanged pipe to equipment, special care shall be taken to prevent transfer of stresses to the equipment flanges.

G. Other types of joints shall be as discussed elsewhere, as recommended by the manufacturer and as approved by the Engineer.

3.04 WELDING

A. Pipe welding shall comply with the provisions of the latest revision of the applicable code, whether ASME Boiler and Pressure Vessel Code, ANSI Code for Pressure Piping, or state or local requirements as may supersede codes specified herein.

B. Boiler external piping shall comply with the provisions of the latest revision of Section 1 of the ASME Boiler and Pressure Code; Section IV, Heating Boilers; Section VIII, Pressure Vessels as applicable to this project.

C. Nonboiler external piping shall comply with the latest revision of the ANSI Code for Pressure Piping, Section 1, B31.1 Power Piping; Section II, Fuel Gas Piping, B31.2; Section V, Refrigeration Piping, B31.5, as applicable to this project.

D. Before any welding is performed, the Contractor shall submit to the Engineer, a copy of his welding procedure qualification record as required by Section IX of the ASME Boiler and Pressure Vessel Code.

E. Before any welder shall perform any pipe welding, the Contractor shall submit to the Engineer, a copy of the manufacturer's record of welder or welding operator qualification tests as required by Section IX, ASME Boiler and Pressure Vessel Code.

F. Each manufacturer or contractor shall be responsible for the quality of welding done by his organization and shall repair or replace any work not in accordance with these specifications.

G. Field welding of stainless steel piping shall not be allowed.

3.05 PIPE SLEEVES

A. Provide pipe sleeves for all pipes that pass through foundations, walls, slabs, floors, ceilings, partitions, or other building construction.

B. All sleeves which are installed in a vertical position shall be constructed of not less than No. 24 gauge galvanized sheet steel. All sleeves which are installed in a horizontal position shall be constructed of standard weight steel pipe, sized to leave at least ½ inch clear space all around the pipe passing through same. Sleeves for insulated piping shall be sized for overall outside diameter of insulation, and insulation shall not be interrupted.

C. Sleeves through all floors shall be extended 2 inches above finished floor except where sleeve is within a curbed area.

D. Sleeves in exterior building walls below grade shall be sealed watertight with approved elastic caulking compound between the sleeve and the pipe or modular rubber sealing elements to make a weatherproof installation.

E. Seal openings between pipe and sleeve to prevent air migration through sleeve.

F. Seals for all process pipes installed in horizontal walls shall be link seal bolted modular rubber sealing elements as manufactured by Thunderline or as detailed on the drawings.

G. Cast iron wall castings shall be provided where force main piping passes through concrete walls and at other locations indicated on the drawings. Wall castings shall be mechanical joint with water stop and tapped holes. Holes shall be sized for connecting piping and shall be provided with removable plugs. The bolt holes on the wall casting shall straddle the top center line of the casting to align with the connecting piping. The top center line shall be marked on the wall casting at the foundry.

3.06. ESCUTCHEONS

A. Where exposed rods or pipes, insulated or bare, pass through floors, walls, or ceilings, they shall be fitted with neat, heavy, spun or stamped steel escutcheons, firmly secured to the rods or pipes. Escutcheons shall be of sufficient outside diameter to cover amply the sleeved openings of pipes. On gas piping, escutcheons shall be of sufficient inside diameter to surround both the pipe and the sleeve, and the sleeve shall project beyond the escutcheon into the room at least 1/8 inch. Escutcheons shall have a nickel plated finish. Escutcheons shall be firmly anchored in place.

3.07 THERMAL EXPANSION OF PIPES

A. Swing joints, turns, expansion loops, expansion joints, guides, anchors, and long offsets shall be provided wherever indicated on the drawings and wherever necessary to allow for expansion of piping within the building. Pipes and fittings which break due to rigid connections shall be removed and replaced at no additional expense to the Owner.

B. Anchorage shall be provided to resist thrust and force expansion and contraction movement to occur at expansion joints, loops, or elbows, and as required to prevent excessive stresses and movement at couplings. Pipe guides shall be installed at expansion joints and as recommended by the manufacturer.

C. Thermal expansion and anchorage shall be provided for the full range of temperature extremes. FRP piping may be anchored to force expansion within the piping system as recommended by the manufacturer.

3.08 THRUST RESTRAINT

A. All exposed piping with mechanical couplings, push-on or mechanical joints, or similar joints subject to internal pressure shall be restrained to prevent separation of the joints. All push-on and mechanical joint tees, Y-branches, bends exceeding 10 degrees, and plugs which are installed in buried piping shall be restrained joint for preventing movement of the pipe caused by the application of the specified hydrostatic pressure. Use of concrete or other blocking shall not be acceptable for buried pipe applications.

B. It shall be the Contractor's responsibility to determine the anchorage required to support the fitting size and internal pressure. Any damage caused by faulty anchorage shall be the responsibility of the Contractor.

C. Restrained joint pipe lengths shall be as indicated in the following table. Not all piping sizes or pressures may be listed

Required Length of Restrained Joint Pipe Upstream & Downstream of Fitting (ft)*

Pipe Size	150 psi				100 psi				≤50 psi			
	90˚ Bend	45˚ Bend	Tee (branch)	Capped End	90˚ Bend	45˚ Bend	Tee (branch)	Capped End	90˚ Bend	45˚ Bend	Tee (branch)	Capped End
4"	13'	6'	1'	39'	9'	4'	1'	26'	5'	2'	1'	13'
6"	19'	8'	1'	56'	13'	5'	1'	37'	7'	3'	1'	19'
8"	24'	10'	1'	73'	16'	7'	1'	49'	8'	4'	1'	25'
12"	34'	15'	1'	104'	23'	10'	1'	69'	12'	5'	1'	35'
14"	39'	17'	1'	119'	26'	11'	1'	79'	13'	6'	1'	40'

*Assumptions: Type 3 laying conditions, Clay 1 soil designation, 5.0' cover, 1.5 Safety Factor, poly-wrapped pipe, 20' length between first joints on either side of tee on the run.

3.09 PIPE IDENTIFICATION

A. All process piping shall be labeled.

3.10 TESTING

A. All piping systems shall be tested for pressure and leakage as specified herein. All specified tests shall be made by and at the expense of the Contractor in the presence, and to the satisfaction of the Engineer. All necessary testing equipment and materials including meters, sectionalizing valves, gauges, and anchorage shall be furnished and all tests shall be made by and at the expense of the Contractor and at such time as acceptable to the Engineer.

B. Piping shall be tested at 1-1/2 times the working pressure, or as otherwise noted in the drawings, but not less than 50 psi. Each piping system shall be tested for at least one hour with no loss of pressure. The test medium shall be water for all lines except as otherwise noted.

C. Before testing, the pipe, fittings, and appurtenances shall be adequately secured and braced to resist the loads incurred during testing. Each section tested shall be slowly filled with water, care being taken to expel all air from the pipe. The Contractor shall be responsible for providing

adequate means to expel air from the pipe for testing. Test pressures shall be applied by means of a force pump sized to provide and maintain the required pressure without interruption during the test. Leakage may be determined by loss of pressure, soap solution, or other positive and accurate means acceptable to the Engineer. All fixtures, devices, or other accessories which are to be connected to the lines which would be damaged if subjected to the test pressure shall be disconnected and the ends of the branch lines plugged or capped as required for the test.

D. Force Main Testing:

1. All 3 inch diameter and larger piping shall be tested in accordance with Section 4 of AWWA C600 and as follows. The required pressure as measured at the point of lowest elevation shall be applied for not less than one hour and all pipe, fittings, and joints shall be carefully examined for defects and leaks.
2. After the pressure test is passed, the Contractor shall conduct the leakage test as outlined in AWWA C600. The duration of the test shall be at least two hours and the leakage shall be equal to or less than that indicated in the referenced standard. All leaks in excess of the amount indicated shall be eliminated and the defective materials replaced at the Contractor's expense. The repaired system shall be retested until each section passes.

E. Gas and Air Piping Testing: All gas piping systems shall be air tested at 50 psi using compressed air. Leakage may be determined by loss of pressure, soap solution, or other positive means acceptable to the Engineer. All joints in piping shall remain tight and free from leaks for a 24 hour test period. Any leaks shall be repaired, and the tests repeated.

F. Leakage: All piping shall be watertight and free from leaks. Each leak which is discovered within the correction period specified in the General Conditions shall be repaired by and at the expense of the Contractor.

3.11 INSTALLATION AND WORKMANSHIP

A. All equipment and piping shall be installed complete, utilizing competent workmen, so that the complete installation will function properly, and reflect a high quality of workmanship. All material shall be new, undamaged, and conform to the latest standards listed.

B. Contractor shall cooperate with other trades to avoid interference in the installation of this work. Install all equipment and systems so as not to delay progress of construction, and correlate with other trades to avoid delay. Should differences of opinion develop, the Engineer's decision will be final.

C. Keep premises clean and orderly during installation of this work, and remove rubbish periodically and as may be directed by the Engineer. Upon completion of this part of the project, remove all dirt, debris, tools, scaffolding, and other construction items under this Contractor's control or caused by his work.

3.12 PIPING SCHEDULE

A. For this project, pipe approved for use for the various services are indicated below; other materials require Engineer pre-approval. Where specifically identified on the drawings, the drawings take precedence.

B. Where ductile iron is specified for exposed piping, stainless steel may be used following approval by the Engineer.

Piping Schedule for Materials Specified Under Section 40 05 00						
Service	**Materials**	**Class**	**Joints**	**Coatings**	**Linings**	**Insulation**
Chemical Feed Piping	PVC/CPVC	Sch 80	Solvent Welded or Flanged	None	None	None

END OF SECTION

SECTION 40 05 07
HANGERS AND SUPPORTS FOR PROCESS PIPING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. All materials shall be new, full weight, and of the best quality with the same brand or manufacturer used for each class of material or equipment. The Contractor shall be responsible for the safety and good condition of materials and equipment installed until final acceptance by the Engineer. After acceptance, the guarantee requirements shall apply. All materials shall be stored to prevent damage or weathering prior to installation.

B. All materials and equipment shall be installed in a neat and workmanlike manner by skilled craftsmen in their trade. The installation of any materials and equipment not meeting these standards may be rejected by the Engineer and shall be removed and reinstalled to meet these standards at no additional cost to the Owner.

C. This section generally covers supports and anchors for chemical feed process piping.

1.02 SUBMITTALS

A. Shop drawing submittals shall be submitted in accordance with the submittals section for any special pipe, supports, anchors, or accessories specified herein.

1.03 VERIFICATION OF DRAWINGS

A. The contract drawings indicate the required size and general arrangement for all piping and equipment. Locations shall be verified in the field by the Contractor. Valves and fittings shall be of such dimensions to allow for the installation of this piping. If it is necessary to change the location of any work due to interference with other work, the Contractor shall consult with the Engineer before making any changes.

B. The Contractor shall determine and be responsible for the proper location and character of all anchor bolts, inserts, hangers, chases, sleeves and other openings in the construction for the piping and mechanical equipment.

1.04 PIPE SUPPORTS AND ANCHORS

A. In certain locations, pipe supports and anchors have been indicated on the drawings, but no attempt has been made to indicate every pipe support and anchor. It shall be the Contractor's responsibility to provide a complete system of pipe supports, pipe expansion joints, and suitable anchorage for all piping in accordance with the requirements set forth herein. Additional pipe supports may be required adjacent to expansion joints, couplings, or valves.

B. All piping shall be rigidly supported and anchored so that there is no movement or visible sagging between supports.

C. Contact between dissimilar metals shall be prevented by using like materials or rubber or vinyl coated materials. Threaded hot rolled carbon steel rod shall conform to ASTM A-107. All

support components shall conform to Manufacturer's Standardization Society Specification SP-58.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Structure attachments shall be Grinnell (Anvil International), F & S Central Manufacturing, or approved equivalent.

1. To Concrete: Use Grinnell Figure 281 wedge type concrete insert for loads up to 1200 pounds or Grinnell Figure 282 Universal concrete for loads up to 1430 pounds.
2. To Steel: User Grinnell Figure 87 C-Clamp with retaining clip for pipe 2 inches and smaller. Use Grinnell Figure 229 beam clamp for pipe 2½ inches and larger.

B. Intermediate Attachments: Continuous threaded rod may be used wherever possible. No chain, wire or perforated strap shall be used.

C. Pipe attachments shall be Grinnell (Anvil International), F & S Central Manufacturing, or approved equivalent.

1. All pipe attachments shall be malleable or wrought iron, except as specified herein or indicated on the drawings, split ring hangers with vertical turnbuckle adjustment, Grinnell Figure 115 or Grinnell Figure 260 clevis hanger.
2. When thermal expansion in excess of 1/2 inch axially is anticipated, use Grinnell Figure 174 adjustable swivel pipe roll or Grinnell Figure 271 pipe roll stand, or equivalent. Where pipe is insulated, use a pipe covering protection saddle in conjunction with the roll device.
3. For copper tubing, use Grinnell Figure CT-65 clevis hanger.
4. For cast iron pipe, use Grinnell Figure 260 clevis hanger.
5. All pipe attachments and supports in the chemical rooms and pipe trenches shall be 316 stainless steel.
6. For vertical pipe, use Grinnell Figure 261.

D. Spring Hangers:

1. For pipe sizes 2 inches and less, where vertical movements up to ¾ inch are expected, use Grinnell Figure 247 light duty spring hanger.
2. For pipe sizes larger than 2", use Grinnell Figure G-268 spring hanger.

E. Hanger Sizing:

1. Hangers shall be pipe size for bare pipes.
2. Hangers shall be insulation O.D. size for all insulated lines.

F. Fabricated or concrete supports and anchorage can be provided if acceptable to Engineer or as indicated on the drawings.

PART 3 - EXECUTION

3.01 INSTALLATION PROCEDURE:

A. Installation-Horizontal Piping:

1. Hangers shall adequately support the piping system no matter what the material. They shall be located near or at changes in piping direction and concentrated loads. They shall provide vertical adjustment to maintain pitch required for proper drainage. They shall allow for expansion and contraction of the piping. Hangers shall be fastened to building structural members wherever practical.
2. Horizontal steel or iron piping shall be supported as below:

PIPE SIZE	ROD DIAMETER	MAXIMUM SPACING (m)
Up to 1 ¼"	3/8"	8 Ft.
1 ½ and 2"	3/8"	10 Ft.
2 ½ and 3"	1/2"	12 Ft.
4" and 5"	5/8"	15 Ft.
6" and 8"	3/4"	17 Ft.
10" and 12"	7/8"	22 Ft.
14" and 16"	1"	26 Ft.
18" and 20"	1 ¼"	28 Ft.
24"	1 ½"	30 Ft.

3. Horizontal lines of copper tubing shall be supported as below:

NORMAL TUBING SIZE	ROD DIAMETER	MAXIMUM SPACING
Up to 1"	3/8"	6 Ft.
1 ¼ and 1 ½"	3/8"	8 Ft.
2"	3/8"	9 Ft.
2 ½"	1/2"	9 Ft.
3" and 4"	1/2"	10 Ft.

4. Cast iron soil pipe shall be supported as follows. Support fittings to maintain alignment.

PIPE SIZE	ROD DIAMETER	MAXIMUM SPACING
2" thru 5"	3/8"	Each Joint
6" thru 10"	1/2"	Each Joint
12" thru 15"	5/8"	Each Joint

5. Plastic or fiberglass pipe shall be supported as recommended by the manufacturer to prevent sags and provide for expansion. Supports shall be provided for the intended service conditions including elevated temperatures.

B. Vertical Piping Installation: Support vertical piping as indicated on the drawings and support cast iron soil pipe at every floor and support steel and copper pipe at every other floor.

C. Trapeze hangers may be used to support three or more parallel pipes. Trapeze design and application shall be subject to approval by the Engineer and shall incorporate adjustment features specified for ring or clevis hangers.

D. Piping near the floor shall be supported from side wall or floor by approved wrought iron pipe brackets, stanchions or hangers, in such a manner as to maintain its alignment while making suitable provisions for necessary expansion.

E. Where pipes or conduits of different contractors may possibly be racked on the same supporting structure, each contractor shall cooperate with the others involved to properly locate the supporting members and shall furnish a proportionate share of the labor and materials involved in the installation.

3.02 ANCHORAGE OF PIPING

A. Anchorage shall be provided to resist thrust and force expansion and contraction movement to occur at expansion joints, loops, or elbows, and as required to prevent excessive stresses and movement at couplings. Pipe guides shall be installed at expansion joints and as recommended by the manufacturer.

B. Thermal expansion and anchorage shall be provided for the full range of temperature extremes. FRP piping may be anchored to force expansion within the piping system as recommended by the manufacturer.

3.03 INSTALLATION AND WORKMANSHIP

A. All equipment, pipe supports and anchors shall be installed complete, utilizing competent workmen, so that the complete installation will function properly, and reflect a high quality of workmanship. All material shall be new, undamaged, and conform to the latest standards listed.

B. Contractor shall cooperate with other trades to avoid interference in the installation of this work. Install all equipment and systems so as not to delay progress of construction, and correlate with other trades to avoid delay. Should differences of opinion develop, the Engineer's decision will be final.

C. Keep premises clean and orderly during installation of this work, and remove rubbish periodically and as may be directed by the Engineer. Upon completion of this part of the project, remove all dirt, debris, tools, scaffolding, and other construction items under this Contractor's control or caused by his work.

END OF SECTION

SECTION 40 05 51

PROCESS VALVES AND PIPE ACCESSORIES

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Section includes process valves, actuators, valve appurtenances, and piping accessories. Note that not all paragraphs below may be relevant to the current project.

B. Furnish and install all valves for the complete control of all process risers, branches, each group of fixtures, and as indicated on the drawings. Valves shall have gear, chain or special operators where indicated on the drawings. In general, the location of the principal valves is indicated on the drawings. In addition to these valves, however, the following specifications shall apply:
   1. It is intended that valves be furnished where required for proper servicing, isolation in connections at all equipment, in all supply and return mains at their sources, in branches from mains or risers, and in branches to groups of two or more fixtures.
   2. All such valves shall be arranged for easy access and operation.

C. This specification section is a general specification covering materials which may not be part or allowed for this project.

1.2 RELATED SECTIONS

A. Section 40 05 00 – Process Piping Materials and Methods

B. Section 40 05 07 – Hangers and Supports for Process Piping

1.3 SUBMITTALS

A. Shop drawing submittals shall be submitted in accordance with the submittals specification section for all valves, gates, and accessories specified herein.

B. The manufacturer's operation and maintenance instructions shall be submitted per the submittals specification section.

1.4 VERIFICATION OF DRAWINGS

A. The contract drawings indicate the required size and general arrangement for all piping and equipment. Locations shall be verified in the field by the Contractor.

B. Valves and fittings shall be of such dimensions to allow for the installation of this piping. If it is necessary to change the location of any work due to interference with other work, the Contractor shall consult with the Engineer before making any changes.

C. The Contractor shall determine and be responsible for the proper locations and character of all anchor bolts, inserts, hangers, chases, sleeves and other openings in the construction for the piping and mechanical equipment.

PART 2 - PRODUCTS

2.1 NSF APPROVED MATERIALS

A. All components and chemicals in contact with raw, partially treated, or treated water during construction and operation shall be certified per NSF 60 (chemicals) or NSF 61 (components).

B. These requirements are in accordance with Ten States Standards (2012) 3.2.4.5.a. If NSF-certified materials or components are not reasonably available, the use of non-NSF-certified materials or components will be allowed provided that they can be shown to not pose a contamination risk.

2.2 MATERIALS

A. All materials shall be new, full weight, and of the best quality with the same brand or manufacturer used for each class of material or equipment. The Contractor shall be responsible for the safety and good condition of materials and equipment installed until final acceptance by the Engineer. After acceptance, the guarantee requirements shall apply. All materials shall be stored to prevent damage or weathering prior to installation.

B. Special materials of construction shall be provided for the intended application, anticipated environment, chemicals in the lines, or operating temperatures above or below ambient. Any conflict between this requirement and what is called for in the drawings and specifications shall be called to the Engineer's attention as soon as possible.

C. Where indicated, valves shall be provided with locking mechanisms to allow for suitable lockout with paddle lock or loop in open or closed position.

D. Valves over 7 feet above the operating floor (measured to centerline of the valve) shall be equipped with chainlever or chainwheel adapters and chain as to allow convenient and safe operation. Operating chains shall be hot dip galvanized carbon steel. Access shall be through access panels where applicable.

E. Refer to individual valve specification paragraphs.

2.3 PIPING ACCESSORIES

A. Piping accessories shall be provided and installed as indicated on the drawings and as specified herein. Accessories may include the following items.

B. Sight Flow Indicators: Flow indicators shall be W.E. Anderson Model No. 100 by Dwyer Instruments, Inc. or approved equivalent. The flow indicators shall have bronze construction with glass windows. Flow of liquid shall cause rotation of a plastic spinner visible behind the glass window. The flow indicator shall be of the size and materials suitable for the anticipated flow and pressure ranges.

C. Pressure Gauges:

1. Pressure gauges (liquid service) shall be 4 1/2” size low internal volume spiral/helical coil Bourbon tube type with solid front and rear blowout. Gauges shall conform to ASME B40.1 - Grade 2A or better and have a 0.5% accuracy. Indicating range shall be through approximately 270 degrees. Gauges shall be Dwyer Instruments, Inc. Spirahelic Series 7000, Ashcroft Type 1279, or equivalent. Gauges shall be suitable for the installation conditions and pressure range up to 160 psi, or as designated on the drawings. Pressure range for each gauge shall be as applicable for the intended service.
2. Pressure gauges (gas/air service) shall be 4 1/2” size. Gauges shall have an accuracy of 0.5% and suitable for operation from 20 to 250 degrees F. Indicating range shall be through approximately 270 degrees. Gauges shall be Dwyer Instruments, Ashcroft, or equivalent. Gauges shall be suitable for the installation conditions and pressure range up to 15 psi, or as indicated on the drawings. Pressure range for each gauge shall be as applicable for the intended service.

3. A suitable gauge isolator shall be provided where gauges will be connected to process water, chemical, or sludge lines. The isolator shall be provided with a removable diaphragm of a material that is compatible with the chemical being used. Each isolator and diaphragm seal and the gauge served shall be factory assembled, filled with a suitable fluid, and calibrated as a unit.
4. Pressure gauges for gas/air service shall be mounted with a snubber.
5. All gauges and diaphragm seals shall be installed in the vertical upright position at locations easily accessible for viewing. Direct tapping of pipe walls for installation of gauge connections will not be permitted. Provide tees or welding fittings where necessary to permit installation.

D. Variable Area Rotameters/Flowmeter: Variable area flowmeters shall be of the direct reading type, with solid acrylic meter body, 316 stainless steel float, stainless steel stops, stainless steel end fittings, and scale hot pressed into acrylic body. Flow meters shall be provided with a needle control valve and be sized with a flow range suitable for the intended use. Variable area rotameters shall be Dwyer Series VF, or equivalent. If flow range requires model VFC (up to 20 gpm or 100 SCFM), an external throttling valve (globe), for water service, or needle valve, for air service, shall be installed prior to the flow meter.

E. Solenoid Valves: Solenoid valves shall be ASCO Red Hat II (molded epoxy enclosure with integral ½" conduit hub). Valves shall be 120 Volt, 60 Hz, single phase, solenoid valves (NO/NC as determined by the Engineer). Solenoid valves shall be Class 1, Division 1 rated in areas indicated on the drawings or specified as Class 1, Division 1 (explosion proof).

F. Air Stations: Air stations shall be provided at the locations indicated on the drawings and shall consist of a ½-inch ball valve and a W.W. Grainger No. 3X688 coulper for air hose connection.

G. Sample Taps: Sample taps shall be provided at the locations indicated on the drawings. Sample taps shall be brass or stainless steel, as indicated on the drawings, hose bibs with no exterior threads with a smooth inner discharge opening, USA BlueBook Catalog No. 45325 or equivalent.

H. Drain Stops: Drain stops shall be Crane #8-345, Lunkenheimer #981 or equivalent, brass compression stops.

2.4 FLOOR STAND SUPPORTS

A. Floor stands shall be firmly supported either by a wall brace or by structural members. The Contractor shall determine the means of supporting all floor stands.

2.5 EXTENSION STEMS

A. Extension stems and stem guides shall be furnished and installed where specified, indicated on the drawings, or otherwise required for proper valve operation. Extension stems shall be of solid steel, except where noted otherwise on the drawings, and shall be not smaller in diameter than the stem of the valve actuator shaft or 1 inch. Extension stems shall be connected to the valve actuator (floorstand, electric actuator, etc.) by means of a Lovejoy "Type D" single universal joint with grease-filled protective boot. All stem connections shall be pinned.

B. Stem guides shall be of cast iron construction, bronze bushed, and adjustable in two directions. Other materials may be specified on the drawings. Stem guide spacing shall not exceed 10 feet or 100 times the stem diameter, whichever is less. The extension stem shall have a collar pinned to the stem and the collar shall bear against the top stem thrust guide. The top stem guide shall be designed to support the weight of the extension stem.

C. Provide a valve stem extension for all buried valves. The extension stem shall be installed within 2 feet, but not closer than 6 inches, of the surface. Stem diameters shall be as recommended by manufacturer for each valve, but not less than 1 inch.

D. Provide all extension stems with a 2 inch AWWA operating nut with centering washer and direction plate if no actuator is indicated. USA Bluebook Stock #'s 75206, 75207, and 75214 or equal.

2.6 FLOOR BOXES

A. Where openings through concrete slabs are provided for key operation of valves with the operating nut in or below the slab, such openings shall be provided with a cast iron floor box complete with cover. Each floor box shall be of the depth required for installation in the slab indicated on the drawings. Where the operating nut is in the slab, the stem shall have a guide to maintain the nut in the center of the box; where below the slab, the opening in the bottom of the box shall permit passage of the operating key.

2.7 VALVE BOXES

A. Each buried valve shall be provided with a screw type valve box in unpaved areas and a slide type valve box in paved areas (asphalt or concrete). Valve boxes shall be cast iron and suitable for the depth of the cover required by the drawings. Not more than one extension will be allowed with each valve box. Valve boxes shall not be less than 5 inches in inside diameter, shall have a minimum thickness at any point of 3/16 inch, and shall be provided with a suitable cast iron base and cover. Cast iron parts shall have an asphalt coating finish. The valve box cover shall be cast iron with a relevant label (WATER, SEWER, AIR, etc.).

B. Each valve box shall be centered directly over the valve/gear operator it serves, with the top of the box brought flush with the finished grade. After placing in proper position, earth shall be placed around the valve box and thoroughly tamped on each side of the box to maintain correct alignment.

PART 3 - EXECUTION

3.1 INSTALLATION AND WORKMANSHIP

A. All valves and piping accessories shall be installed complete, utilizing competent workmen, so that the complete installation with function properly, and reflect a high quality of workmanship. All materials shall be new, undamaged, and conform to the latest standards listed. The installation of any materials and equipment not meeting these standards may be rejected by the Engineer and shall be removed and reinstalled to meet these standards at no additional cost to the Owner.

B. Contractor shall cooperate with other trades to avoid interference in the installation of this work. Install all equipment and systems so as not to delay progress of construction, and correlate with other trades to avoid delay. Should differences of opinion develop, the Engineer's decision will be final.

C. Keep premises clean and orderly during installation of this work, and remove rubbish periodically and as may be directed by the Engineer. Upon completion of this part of the project, remove all dirt, debris, tools, scaffolding, and other construction items under this Contractor's control or caused by his work.

D. Unless otherwise permitted by the Engineer, all eccentric plug valves shall be INSTALLED WITH THE SHAFT HORIZONTAL AND THE PLUG IN THE UPPER HALF OF THE VALVE BODY. Valves in sewage, sludge, or scum service shall be installed with the seat on the upstream side.

END OF SECTION

SECTION 46 30 00
CHEMICAL FEED SYSTEMS

PART 1 - GENERAL

1.01 SCOPE OF WORK.

A. The Contractor shall furnish, install, and place in satisfactory operating condition the following complete chemical feed systems as indicated on the drawings and as specified herein.
   a. One (1) ferric chloride feed system

B. The ferric chloride feed system shall include, but not be limited to: one (1) double wall chemical storage tank, one (1) wall-mounted pump panel and all appurtenances specified or otherwise required for proper operation.

1.02 ALLIED WORK SPECIFIED ELSEWHERE.

A. 40 05 00 - Piping Materials and Methods

B. 40 05 51 - Process Valves and Pipe Accessories

1.03 DRAWING/SUBMITTAL REQUIREMENTS

A. The manufacturer's submittal shall be in accordance with the submittals section and shall include the following as a minimum:

   1. Typical cross-sectional drawings and literature to fully describe the details of the equipment being furnished.
   2. A list of spare parts recommended for start-up and 1 year maintenance purposes.

B. The manufacturer shall submit the following drawings/documents for Owner's review prior to fabrication: Outline and assembly drawings of all furnished equipment including: overall dimensions, installation requirements, estimated weights of all furnished equipment, power supplies, wiring diagrams, external connection wiring, list of all instruments and controls and miscellaneous related accessories.

C. Operation and maintenance manuals shall be submitted in accordance with the submittals section for all materials and equipment.

D. Owner's review of any manufacturer's document does not relieve the manufacturer of the responsibility for equipment design and operability nor constitute permission for the manufacturer to deviate from any requirements in this specification unless specifically agreed upon in writing.

1.04 COORDINATION.

A. Suppliers shall prepare system installation drawings, schematics, interconnecting diagrams and other data required for complete system description. The supplier and contractor shall verify that each system component is compatible with all other components of the system, that all pipe materials and sizes are appropriate, and that all devices necessary for a properly functioning system have been provided.

B. Equipment furnished and installed under this section shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with drawings, specifications, engineering data, instructions, and recommendations of the equipment manufacturer unless exceptions are noted by the Engineer.

C. Each item shall be furnished and installed complete with all mechanical and electrical equipment required for proper operation, all components indicated on the drawings or specified, and all additional materials or construction required by the system design.

1.05 MANUFACTURER'S WARRANTY

A. The chemical feed systems shall be the responsibility of a single manufacturer or supplier who shall provide a minimum two (2) year warranty for all the chemical feed equipment specified under this section unless noted otherwise in these specifications. The warranty period shall be from the date of Substantial Completion.

1.06 SERVICE CONDITIONS

A. The chemical feed systems shall include automatically powered, automatically adjusted feed from chemical pumps. The chemical feed systems shall discharge to the treatment equipment or piping as indicated on the drawings. The source water temperature will vary from approximately 40° F to 80 ° F.

B. The ferric chloride feed system shall be designed to feed 30-40% liquid ferric chloride.

PART 2 - PRODUCTS

2.01 NSF APPROVED MATERIALS

A. All components and chemicals in contact with raw, partially treated, or treated water during construction and operation shall be certified per NSF 60 (chemicals) or NSF 61 (components).

B. These requirements are in accordance with Ten States Standards (2012) 3.2.4.5.a. If NSF-certified materials or components are not reasonably available, the use of non-NSF-certified materials or components will be allowed provided that they can be shown to not pose a contamination risk.

2.02 CHEMICAL STORAGE TANKS

A. The storage tanks for all chemicals listed in this specification shall be high density crosslink polyethylene (XLHDPE) or high density linear polyethylene (HDLPE), be compatible with the chemicals being stored, and shall be NSF 61 certified for chemical storage. The storage tanks shall meet the applicable requirements of ASTM D1998-97 Type I or Type II tanks, minimum specific gravity of 1.9.

B. The tank shall be of the double wall vertical cylinder closed top type with threaded cap or manway and flat bottom, with integrated containment. Tank shall be supported on the concrete floor as indicated on the drawings and specified herein.

C. No tank fittings shall be installed below the water level

D. After complete installation, the tank shall be tested by filling with water to the top access manhole and allowed to stand for not less than 24 hours. If any leaks are present, the tank must be replaced to the Engineer's satisfaction. Leaks in piping outside the tank shall be repaired. This shall include all flanged connections, if any are present. Any new tank or repaired connections must again be tested t the Engineer's satisfaction.

E. The tanks shall be provided with molded in volume markings for volume level indication, or other approved labeling method. Volume markers/labels shall be maximum one gallon increments or minimum practical increment for larger tanks.

F. For all chemical storage tanks, the manufacturer shall provide a written guarantee that the vessel material is suitable for containment of chemical stored and provide a 3-year warranty. The warranty shall be included with the submittal drawings for review.

G. A summary of the chemical tank volumes for the bulk storage and day tanks is listed below:

Chemical	*Storage Tank*			
	No. of Tanks	Volume *(gal.ea.)*	Approx. Outer Diameter	Approx. Height
1. Ferric Chloride	1	3150	10'2"	8'1.5"

H. Manufacturer shall be Poly Processing, or engineer approved equivalent.

2.03 Pump Accessories

A. Feed pump accessories: Necessary pump accessories shall be provided to allow for manual control. Feed pump shall be designed to take suction from a chemical tank and feed solutions to the chemical application points. All feed pump accessories shall be constructed of corrosion-resistant materials compatible with the chemical to be pumped.

1. Provide adapters for connecting to process line PVC tubing and miscellaneous accessories as shown on the drawings or as required for a complete installation
2. Provide adequately sized calibration chamber for installation on each chemical feed line constructed of corrosion resistant materials compatible with the liquid being pumped. The calibration chambers shall be graduated in ml/min and gph suitable for the intended feed rates.
3. Provided adjustable-pressure, diaphragm-type back-pressure/anti-siphon valves for each chemical feed system as indicated on the drawings.
4. Each pump shall be provided with an in-line, adjustable-pressure, diaphragm-type pressure relief valve.
5. Each pump shall be provided with the necessary power and control cable or cables required to provide for operation and communication as described in this section.

B. Pump Wall Mount Panels: Pumps, valves, piping, and accessories shall be mounted on a panel/skid that shall be mounted to the wall as indicated on the drawings. The panels shall be constructed of welded PVC or polyethylene and be of adequate size to accommodate all the required equipment.

C. Power supply: 120V, 60 Hz, single phase. Contractor is responsible for ensuring the pump can be connected to power. This may involve lengthening the power cable, following all manufacturer recommendations, or installing a new Water Resistant (WR) GFCI receptable.

2.04 MISCELLANEOUS ACCESSORIES

A. Provide two (2) 2" quick connect chemical tank fill connections as shown on the drawings located above and inside of the existing concrete containment wall, and constructed of corrosion resistant materials compatible with chemical.

B. Provide chemical feed PVC piping in sizes indicated on the drawings. Piping shall be PVC and shall be compatible with the chemical carried. Piping shall be rated for adequate pressure and temperature indicated on the drawings or specified herein. Piping shall be rated for a minimum of 75 psi at 73° F. The use of fittings shall be minimized.

C. Provide miscellaneous accessories as indicated on the drawings, which may include but is not limited to: Pressure Sustaining Valves, Pressure Relief Valves, Calibration Columns, etc.

2.05 SAFETY EQUIPMENT

A. One chemical handling safety equipment kit shall be provided. The kit shall include, but not be limited to, chemical splash goggles, dust and mist respirator, rubber gloves, and rubber apron, all packed in a suitable carrying case.

1. One emergency escape breathing system shall be provided for the chemical feed system in storage cases to provide complete respiratory protection from toxic gases to allow escape from a contaminated or oxygen deficient atmosphere. The breathing system shall include a clear anti-fog hood, connecting breathing tube, lightweight air cylinder, and carrying pouch. The system shall provide adequate air supply for a 5 minute time period.

2.6 CONTROLS

A. The chemical feed pump shall be reconnected to the existing datalogger control system that is already installed.

PART 3 – EXECUTION

3.01 INSTALLATION/START-UP

A. The Contractor shall provide the services of a factory-employed service technician who shall adequately inspect the installation and test the equipment furnished under this Contract and instruct the Owner's operating personnel in its maintenance and operation. The services of the technician shall be provided as follows:

1. A minimum of one (1) trips for one (1) days to supervise initial start-up and operation

and instruct the Owner's personnel in proper operation and maintenance of the equipment.

3.02 TESTING

A. Start-up Report:

1. Upon completion of his work, the manufacturer's field technician shall submit to the Engineer, two (2) copies of a written report outlining the equipment start-up, names of owner personnel trained and a listing of any deficiencies of equipment or materials as a result of his inspection, adjustments, corrections, repairs and start-up. The report shall include descriptions of the inspection, adjustments, corrections and repairs made, and shall certify that the equipment:

   a. Has been installed per manufacturer's requirements.
   b. Has been started and placed on line.
   c. Has been tested per manufacturer's instructions.
   d. Operator personnel have been instructed and trained.
   e. Verify pumping rates through calibration test
   f. Test that the pressure switch operates correctly

3.03 INSTALLATION

A. Installation shall be governed by the Contract Documents showing general dimensions and construction details. Installation will be modified as required to suit actual equipment furnished at no additional cost to the Owner.

END OF SECTION

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT
Financial Report - Cash Basis
January 1, 2024 Through August 31, 2024

Reflects bills paid through August 31, 2024

Program Element		2024 Source of Funds					2024 Actual Results		
		2024 Levy	Budget Reserve	Grant Funds/Fees	Budget Adjustment	2024 Budget	August 2024	YTD	YTD % of Budget
	General Fund (Administration)								
	Revenues								
	Property Taxes	$ 252,000	$ -	$ -		$ 252,000	$ -	$ 128,597	51%
	Interest	-	-	9,000		9,000	-	4,902	54%
	Total Revenues	**$ 252,000**	**$ -**	**$ 9,000**	**$ -**	**$ 261,000**	**-**	**133,499**	51%
	Expenditures								
	Administrative Salaries and Benefits	$ 145,000	$ -	$ -		$ 145,000	9,760	96,322	66%
	703 · Telephone, Internet & IT Support	7,000	-	9,000		16,000	1,132	8,485	53%
	702 · Rent	27,500	-	-		27,500	2,459	20,592	75%
	706 · Office Supplies	8,000	-	-		8,000	1,528	4,460	56%
	709 · Insurance and Bonds	13,000	-	-		13,000	-	11,893	91%
	670 · Accounting	33,500	-	-		33,500	1,740	18,259	55%
	671 · Audit	10,500	-	-		10,500	-	10,500	100%
	903 · Fees, Dues, and Subscriptions	1,500	-	-		1,500	-	1,147	76%
	660 · Legal (not for projects)	6,000	-	-		6,000	1,991	5,373	90%
	General Fund (Administration) Expenditures	**$ 252,000**	**$ -**	**$ 9,000**		**$ 261,000**	**18,609**	**177,031**	68%
	Net Change in General Fund	**-**	**-**	**-**	**-**	**-**	**(18,609)**	**(43,532)**	

No assurance is provided on this statement. See selected information.

PRIOR LAKE SPRING LAKE WATERSHED DISTRICT

Financial Report - Cash Basis

January 1, 2024 Through August 31, 2024

Reflects bills paid through August 31, 2024

Program Element		2024 Source of Funds					2024 Actual Results		
		2024 Levy	Budget Reserve	Funds/Fees	Budget Adjustment	2024 Budget	August 2024	YTD	YTD % of Budget
	Implementation Fund								
	Revenues								
	Property Taxes	$ 1,697,000	$ -	$ -		$ 1,697,000	-	865,967	51%
	Grants/Fees	-	-	34,000	75,000	109,000	-	45,935	42%
	Interest	-	-	61,000		61,000	8,473	87,915	144%
	Sales/Other	-	-	-		-	3,045	39,795	#DIV/0!
	Budget Reserves	-	$ 468,500	-	54,856	523,356	-	-	0%
	Total Revenues	**$ 1,697,000**	**$ 468,500**	**$ 95,000**	**$ 129,856**	**$ 2,390,356**	**11,518**	**1,039,611**	43%
	Expenditures								
	Program Salaries and Benefits (not JPA/MOA)	$ 490,500	$ -	$ -	$ (5,000)	$ 485,500	**35,944**	**290,974**	60%
Water Qual	550 Public Infrastructure Partnership Projects	$ -	$ -	$ -	$ -	$ -	-		#DIV/0!
Water Qual	550 - Buck Stream				$ 223,400	$ 223,400	-	46	0%
Water Qual	550 - Swamp Lake				$ 61,000	$ 61,000	-	40,015	66%
Water Qual	611 Farmer-led Council	55,000	-	-		55,000	17,488	30,368	55%
Water Qual	611 Cost-Share Incentives	68,000	-	-		68,000	14,356	22,890	34%
Water Qual	611 Highway 13 Wetland, FeCl system & Desilt, O&M	244,000	-	61,000		305,000	12,718	51,848	17%
Water Qual	611 Carp Management	96,500	-	-		96,500	5,098	25,817	27%
Water Qual	611 Spring Lake Demonstration Project Maintenance	1,200	-	-		1,200	-		0%
Water Qual	611 Alum Internal Loading Reserve	230,000	-	-	-	230,000	-		0%
Water Qual	611 Fish Stocking	2,000	-	-		2,000		2,500	125%
Water Qual	637 District Monitoring Program	84,500	-	-		84,500	6,054	22,731	27%
Water Qual	626 Planning and Program Development	27,500	-	-		27,500	567	12,990	47%
Water Qual	626 LGU Plan Review	-	4,000	-		4,000	-	832	21%
Water Qual	626 Engineering not for programs	20,000	-	-		20,000	1,612	10,844	54%
Water Qual	648 Permitting and Compliance	57,000	-	5,000		62,000	8,273	24,775	40%
Water Qual	648 Update MOAs with cities & county	-	5,000	-		5,000	-		0%
Water Qual	648 BMP and easement inventory & inspections	25,000	-	2,000	20,875	47,875	6,113	20,354	43%
Water Qual	626 Upper Watershed Projects	194,000	442,000	-	(209,400)	426,600	6,288	58,202	14%
Water Qual	626 District Plan Update	-	2,500			2,500	-	185	7%
	WQ TOTAL	**$ 1,104,700**	**$ 453,500**	**$ 68,000**	**$ 95,875**	**$ 1,722,075**	**78,568**	**324,398**	19%
Water Storage	550 District-wide Hydraulic & Hydrologic model	$ 5,000	$ -	$ -		$ 5,000	-	-	0%
Water Storage	626 Comprehensive Wetland Plan Update	35,500			-	35,500	-	-	0%
	WS TOTAL	**$ 40,500**	**$ -**	**$ -**	**$ -**	**$ 40,500**	**-**	**-**	0%
AIS	611 Aquatic Vegetation Mgmt	2,000	-	$ 12,000	$ 3,500	$ 17,500	17,455	17,455	100%
AIS	637 Automated Vegetation Monitoring (BioBase)	$ 1,300	-	-		1,300	-	-	0%
AIS	637 Aquatic Vegetation Surveys	15,500	-	-	(3,500)	12,000	-		0%
AIS	637 Boat inspections on Spring, Upper & Lower Prior	19,000	-	15,000	-	34,000	-	18,403	54%
	AIS TOTAL	**37,800**	**-**	**27,000**	**-**	**64,800**	**17,455**	**35,858**	55%
Ed & Out	652 Education and Outreach Program	$ 23,500	$ 15,000	$ -		$ 38,500	2,617	24,928	65%
	E&O TOTAL	**$ 23,500**	**$ 15,000**	**$ -**	**$ -**	**$ 38,500**	**$ 2,617**	**$ 24,928**	65%
	PLOC Contribution		**$ -**	**$ -**	**$ 38,981**	**$ 38,981**	**-**	**38,981**	100%
	Debt Payment Reserve		**-**	**-**		**-**	-	-	#DIV/0!
	Total Implementation Fund	**$ 1,697,000**	**$ 468,500**	**$ 95,000**	**$ 129,856**	**$ 2,390,356**	**134,584**	**715,139**	30%
	Net Change in Fund Balance Implementation Fund	**-**	**-**	**-**	**-**	**-**	**(123,066)**	**324,473**	

	Grant Funds/Fees Anticipated				2024 Budget
	Interest Income (general fund & Implementation fund)			$ 70,000	$154,070,000
	648 New Easement Acquisition Fees			5,000	11,005,000
Water Qual	**648 Easement amendment/violations fees**			2,000	4,402,000
AIS	**611 Aquatic Vegetation Mgmt. (Scott County)**			27,000	59,427,000
	Total Grant Funds/Fees Anticipated			**$ 104,000**	##########

Budget Summary

Fund Sources/Fund Expenditures	2024 Levy	Budget Reserves	Grants/Rev	Amendments	Budget Total	2023 Levy	Levy Increase	% Increase
General Fund	$ 252,000		$ 9,000	$ -	$ 261,000	249,200		
Implementation Fund	$ 1,697,000	$ 468,500	$ 95,000	$ -	$ 2,260,500	1,670,736		
Total Fund Sources	**$ 1,949,000**	**$ 468,500**	**$ 104,000**	**$ -**	**$ 2,521,500**	**1,919,936**	**$ 29,064**	**1.5%**
Expenditures								
General Fund					261,000			
Implementation Fund					2,390,356			
Total Expenditures					**2,651,356**			

Fund Balance Commitments/Assingments		2024 (Budget)				
		12-31-23 Bal	Additions	Reductions	Amendments	12-31-24 Bal
	611 Alum Internal Loading Reserve	$ 700,000	$ 230,000	$ -	$ -	$ 930,000
	626 Upper Watershed Projects	$ 442,000	$ 194,000	$ (636,000)	$ -	$ -
	Debt Payment Reserve	$ 180,000	$ -	$ -	$ -	$ 180,000
		$ 1,322,000	**$ 424,000**	**$ (636,000)**	**$ -**	**$ 1,110,000**

No assurance is provided on this statement. See selected information.

PLSLWD Monthly Treasurers Report Treasurer: Christian Morkeberg

Account balances as of 8/31/24

4M Fund (Checking Account)	$	1,814,289
4M Fixed Income	$	1,899,200
Total Uncleared Transactions	$	-
SUBTOTAL	**$**	**3,713,489**

RESTRICTED/COMMITTED FUNDS		
Restricted - Permit Deposits, etc. (350 & 360)	$	120,026
Restricted - PLOC Contingency Reserve (850)	$	263,097
Restricted - PLOC O&M Funds (830)	$	174,886
Committed - Alum Internal Loading Reserve	$	700,000
Committed - Upper Watershed Fund Balance	$	442,000
Committed - Debt Payment	$	180,000
TOTAL DISTRICT/PLOC RESTRICTED OBLIGATIONS	**$**	**1,880,009**

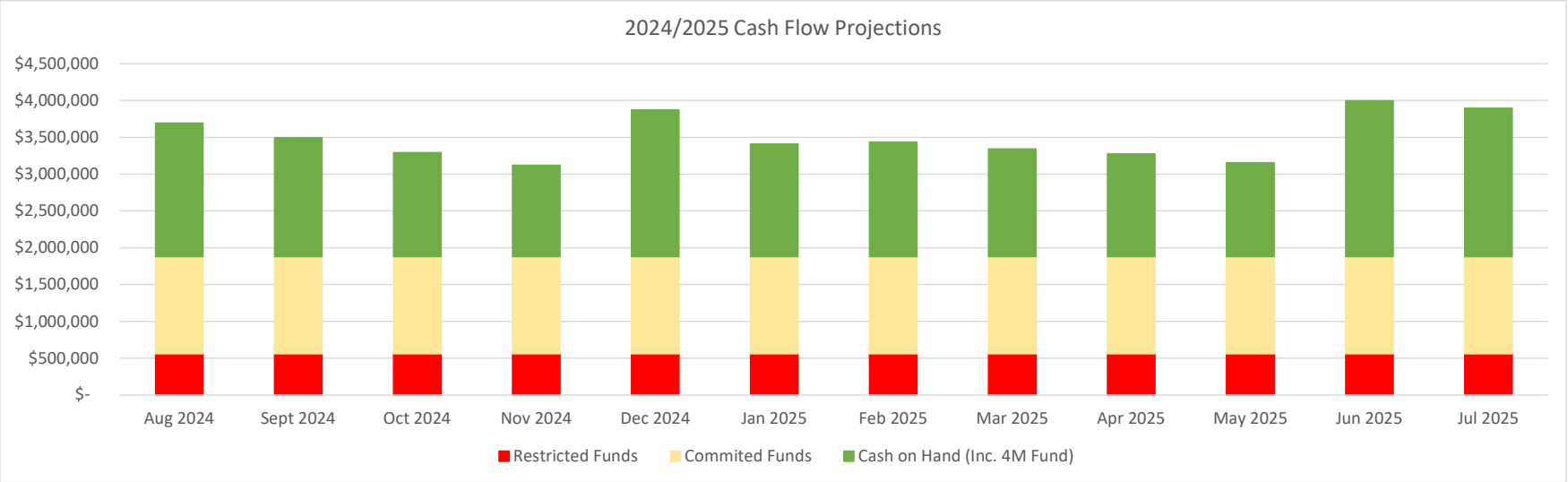
Available cash at end of August 2024	**$**	**1,833,481**

69.2% of 2024 Amended Budget

No assurance is provided on this statement. See selected information.

Cash Flow Chart

Month (End of Month)	Aug 2024	Sept 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025	Jul 2025
Restricted Funds	$ 558,009	$ 558,009	$ 558,009	$ 558,009	$ 558,009	$ 558,009	$ 558,009	$ 558,009	$ 558,009	$ 558,009	$ 558,009	$ 558,009
Commited Funds	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000	$ 1,322,000
Cash on Hand (Inc. 4M Fund)	$ 1,814,244	$ 1,613,486	$ 1,412,729	$ 1,238,972	$ 1,992,651	$ 1,530,142	$ 1,556,184	$ 1,463,769	$ 1,395,098	$ 1,276,777	$ 2,117,649	$ 2,015,001
Total Cash on Hand	$ 3,694,253	$ 3,493,495	$ 3,292,738	$ 3,118,981	$ 3,872,660	$ 3,410,151	$ 3,436,193	$ 3,343,778	$ 3,275,107	$ 3,156,786	$ 3,997,658	$ 3,895,010



Draft Amounts subject to chanbge during audit preparation

No assurance is provided on these financial statements. See selected information

PLSL Watershed District

Cash Minimum Balance Alert $ 150,000

	Aug 2024	Sept 2024	Oct 2024	Nov 2024	Dec 2024	2024 Total	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025	Jul 2025	Total Jan-Jul 2025
Cash on hand (beginning of month)	$ 3,895,010	$ 3,713,489	$ 3,625,469	$ 3,449,981	$ 3,283,993		$ 3,659,456	$ 3,410,151	$ 3,153,796	$ 2,897,441	$ 2,690,622	$ 2,533,441	$ 3,355,010	
Cash Receipts														
Property Tax Levy	$ -	$ -	$ -	$ -	$ 888,576	$ 888,576	$ 7,050	$ -	$ -	$ -	$ -	$ 1,060,424	$ -	$ 1,067,474
BWSR WBIF	-	104,968	-	-	-	104,968	-	-	-	-	83,974	-	-	83,974
Grants - Other	-	-	-	27,000	75,000	102,000	-	-	-	-	9,500	-	-	9,500
PLOC Contributions	-	-	-	-	-	-	-	-	108,125	32,436	-	-	-	140,561
Interest Income	8,473	8,000	25,500	8,000	25,500	84,547	7,000	7,000	7,000	24,100	12,700	24,500	12,700	82,300
Other Receipts	8,000	375	375	375	375	42,713	375	375	375	375	375	375	375	2,250
Total Cash Reciepts	$ 16,473	$ 113,343	$ 25,875	$ 35,375	$ 989,451	$ 1,222,804	$ 14,425	$ 7,375	$ 115,500	$ 56,911	$ 106,549	$ 1,085,299	$ 13,075	$ 1,386,059
Total Cash Available	$ 3,911,483	$ 3,826,832	$ 3,651,344	$ 3,485,356	$ 4,273,444		$ 3,673,881	$ 3,417,526	$ 3,269,296	$ 2,954,352	$ 2,797,171	$ 3,618,740	$ 3,368,085	
Cash Paid Out														
Salaries and Per Diems	$ 45,704	$ 47,300	$ 47,300	$ 47,300	$ 47,300	$ 301,913	$ 53,800	$ 53,800	$ 53,800	$ 53,800	$ 53,800	$ 53,800	$ 53,800	$ 322,800
Office Expense, Audit, Accounting	6,979	7,708	7,708	7,708	7,708	42,352	9,960	9,960	9,960	9,960	9,960	9,960	9,960	59,760
PLSLWSD Program Costs	116,368	136,505	136,505	136,505	136,505	726,369	164,303	164,303	164,303	164,303	164,303	164,303	164,303	985,818
PLOC Contribution						-			108,125		-	-	-	108,125
PLOC Operations	3,729	9,850	9,850	9,850	9,850	52,533	10,667	10,667	10,667	10,667	10,667	10,667	10,667	64,002
Debt Service						-	25,000	25,000	25,000	25,000	25,000	25,000	25,000	150,000
Other Disbursements	$ 25,213					25,213								-
Subtotal	$ 197,994	$ 201,363	$ 201,363	$ 201,363	$ 201,363	$ 1,123,168	$ 263,730	$ 263,730	$ 371,855	$ 263,730	$ 263,730	$ 263,730	$ 263,730	$ 1,690,505
Cash on Hand (end of month)	$ 3,713,489	$ 3,625,469	$ 3,449,981	$ 3,283,993	$ 4,072,081		$ 3,410,151	$ 3,153,796	$ 2,897,441	$ 2,690,622	$ 2,533,441	$ 3,355,010	$ 3,104,355	

Draft amounts subject to change during audit

No assurance is provided on these financial statements

PLSLWD
Cost Analysis
Year to Date 08/31/2024

	Year to Date 08/31/2024 Amount	% of total
Program staff costs	**290,974**	**32.6%**
Consultants		
EOR	81,324	
Blue Water Science	6,600	
Hawkins, Inc.	20,596	
WSB & Associates	20,889	
Scott Soil and Water Cons.	95,854	
RMB Environmental Labs	13,312	
HDR Engineering Inc.	18,008	
Waterfront Resorations	15,526	
PLM	10,747	
Vessco	6,090	
	288,947	**32.4%**
Hard costs, exclusive of prog staff & consultant costs	96,237	
	96,237	**10.8%**
Overhead and Administration		
Staff costs	96,322	
Audit/Accounting/Legal	34,132	
Other admin overhead	39,741	
IT Support (Rymark)	6,836	
	177,031	**19.8%**
Bonds payments	**-**	**0.0%**
PLOC Contribution	38,981	**4.4%**
Expenses excluding PLOC expenses per manager report	**892,170**	**100.0%**

No assurance is provided on this statement. See selected information.
This statement omits required disclosures.
This statement is prepared on the cash basis of accounting.

WORKSHOP MEETING MINUTES
Tuesday, August 20, 2024
Prior Lake City Hall
4:00 PM

Members Present:	Bruce Loney, Frank Boyles, Ben Burnett, Christian Morkeberg, Matt Tofanelli
Staff & Consultants Present:	Joni Giese, District Administrator Emily Dick, Water Resources Project Manager Jeff Anderson, Water Resources Program Coordinator Danielle Studer, Water Resources Specialist Carl Almer, District Engineer, EOR
Others Present:	Loren Hanson, Citizen Advisory Committee Lisa Quinn, Spring Lake Township Justin Hanson, Board of Water and Soil Resources Jan Voit, Minnesota Watersheds Jody Brennan, Scott County

The meeting was called to order at 4:00 PM.

Prior Lake Outlet Pipelining Funding Award
District Staff announced the successful award of the MPCA Stormwater Resiliency Implementation Grant for the Prior Lake Outlet Pipelining Project. The award was for the maximum award of 90% of eligible costs (up to $856,243.28). A ten percent match, and all ineligible funds, will need to be covered by the Prior Lake Outlet Channel Cooperators. The match is expected to be between $95,000 and $124,000. Depending on contractor and engineer capacity, construction is expected in this winter or next.

Jan Voit, Executive Director, Minnesota Watersheds and Justin Hanson, Assistant Director for Regional Operations, Minnesota Board of Water and Soil Resources (BWSR) Introduction
Jan Voit and Justin Hanson each gave introductions to their respective organization's roles in watershed management. Minnesota Watersheds is the organizing body of member Watershed Districts and Water Management Organizations statewide. One of Minnesota Watershed's

functions is lobbying for the collectively selected annual platform at the capitol. Board of Water and Soil Resources provides services and resources to the organizations in the statewide management of soil and water. Managers proposed some questions and potential changes.

Minnesota Watershed Resolutions Process

Jan Voit provided an overview of the Minnesota Watershed Resolution Process. The process starts with a request for submissions of proposed resolutions from member watershed organizations. After review and recommendations by the MN Watersheds resolution committee, and voting by MN Watershed members, the MN Watersheds legislative committee will recommend 2025 legislative priorities in collaboration with MN Watersheds' lobbyist. Those recommendations are brought forward to the Minnesota Watershed's Board of Directors for adoption. The District managers proposed some ideas such as streamlined consultant selection, improved DNR permitting, streamlining wetland restoration process for watershed districts, limiting wake boat activities, and increasing flexibility in Open Meeting Law. If the District was interested in submitting a resolution, it will need to craft and submit resolutions by October 1st. Potential resolutions will be brought to the September meeting for Board consideration. If there are existing resolutions that the District would like to elevate, it is recommended that it is resubmitted. The board directed Administrator Giese to prepare draft resolutions on these topics for review and discussion at the September board meeting.

2025 Budget Draft

District Administrator Giese presented a draft budget to the Board of Managers for discussion. The draft budget was constructed without the knowledge of awarded grant funding for the Prior Lake Outlet (PLOC) Pipelining. The proposed budget includes a 6% increase in the levy. Other Watershed Districts are typically around a 5% levy increase at this stage of 2025 budgeting. The levy set in September establishes the maximum levy for 2025, although it can be further refined and reduced until December's final levy resolution. The current draft assumes bonding for the maintenance excavation of the Geis wetland at $700,000 based on interest and payment period assumptions. Based on assumptions, the debt payment reserve would currently be sufficient for the first year of bond payments without additional levy. A revised budget will be brought forward to the Board in subsequent meetings, and be presented to the Citizen Advisory Committee for consideration. At the last Citizen Advisory Committee (CAC) meeting, CAC members expressed supports for Education and Outreach funds, which staff feels the current proposal adequately covers.

A motion was made and seconded to approve the inclusion of the local match required for the MPCA grant funding for the PLOC pipelining project, as well as the typical PLOC operation and maintenance expenses for the 2025 PLOC Work Plan and Budget. The motion passed 5-0.

District Office Space

The District is currently based out of Prior Lake Fire Station #2 due to the flooding of the City's basement. There was interest in understanding if the City can refuse the District from coming back into City Hall or lease renewal next year.

Prior Lake Outlet Structure Operations: An Introduction

District Administrator presented a continuation of a primer to the Outlet Structure. The District holds a permit from the DNR to operate the Outlet Structure. In 2010 the Outlet Structure was redesigned to accommodate a low flow gate, a zigzag weir, and overall greater capacity to discharge. The District is limited to a discharge rate of 65 cfs through its permit. The pipe only reaches this full capacity at high lake elevations. There are different management "zones" stated in the Management Policy and Operating Procedures (MPOP) which identify how the District may utilize the outlet structure at different elevations and time periods. Under the current MPOP, the low flow gate can only be operated in Zones 2 and 3. The was some confusion on whether the Board previously authorized PLSLWD to make operating decisions regarding the use of the low flow gate. Giese will review previous board meeting minutes to confirm whether or not authorization was provided on a one-time or on-going basis.

Administrator Report

- The state requires that state employees attend a Tribal State Relations training. If there are extra spaces they may be made available to Watershed District staff and board members. Two local upcoming trainings are offered at Treasure Island October 23-24, and Shakopee Mdewakanton Sioux Community November 14-15. Registration opens on September 4th, and if Board Members are interested they are requested to notify the District Administrator.
- Scott County Association for Leadership & Efficiency (SCALE) legislative priorities are being discussed, and the Watershed District is requested to submit one collective response. The Board supported the proposed legislative priorities excepting the cannabis proposal. An additional proposal for improvement of open meeting laws was added.
- Scott County Association for Leadership & Efficiency (SCALE) is funding a committee to investigate whether a shared employee benefit program between Scott County, cities within Scott County and the Prior Lake-Spring Lake Watershed District would be cost effective and desirable. The benefits of creating an employee benefit pool can be seen in more reliable healthcare costs and control in benefits. The District could maintain its high deductible plan and program setup within the pool. A governance structure for the pool would need to be developed, and carefully considered, as the District currently is the smallest employer within the pool. The District is currently in a pool of employers with less than ten employees. Administrator Giese will research the rate increases of the small employer pool to inform District decision making. If the District is interested, a commitment period is expected. It is now expected that further research will be conducted, with pools to start in 2026 or 2027.

Liaison Updates

<u>District Partner Reports</u>

- *Scott SWCD*- Assisting over 50 landowners, 40 planned/implemented projects in the District. SWCD was awarded cost share funds in the WBIF funds. Continue easement inspections with more accurate GPS equipment. Hosted landowner meeting for CD-13 as the Ditch Authority to discuss maintenance.
- *Spring Lake Township*- Confirmed the Township contributions to the Swamp Iron Enhanced Sand Filter and Lakeridge Stormwater Study.
- *Scott County*- Working on budget and legislative priorities. Jody has applied for the Clean Water Council seat.

<u>Manager Liaison Reports</u>

- *CAC*- Discussed budget, supportive of Education and Outreach.
- *Scott SWCD*- None.
- *Lower Minnesota Watershed District*- Hosting a barge tour on September 10th of the Minnesota River.
- *Sand Creek Township*- None.
- *Spring Lake Township*- None.
- *Scott WMO*- None.
- *Shakopee*- None.
- *SCALE*- None.
- *Scott County*- None.
- *Metro Watersheds*- None.
- *PLOC Cooperators*- Discussed budget.
- *Farmer-Led Council*- None.

Respectfully Submitted,
Emily Dick
8/20/2024

REGULAR MEETING MINUTES
Tuesday, August 20th, 2024
Prior Lake City Hall
6:00 PM

Members Present:	Bruce Loney, Christian Morkeberg, Matt Tofanelli, Ben Burnett
Staff & Consultants Present:	Joni Giese, District Administrator Jeff Anderson, Water Resources Coordinator Emily Dick, Water Resources Project Manager Carl Almer, EOR, District Engineer
Others Present:	Lisa Quinn, Spring Lake Township Elana Spotz and Son

- **1.0 CALL TO ORDER & PLEDGE OF ALLEGIANCE:**
  The meeting was called to order by President Loney at 6:05 pm, and everyone present recited the Pledge of Allegiance.

- **2.0 PUBLIC COMMENT**
  - Elana Spotz attended in person after sending a letter last month. She wanted to express her support for alum treatment for Fish Lake. One concern she had was that the currently cloudy water is scarier for kids with epilepsy. Her son also talked about his desire for a more transparent lake.

  - **PUBLIC HEARING – Prior Lake-Spring Lake Watershed District Stormwater Pollution Prevention Plan**
    - Motion to open the public hearing by Manager Burnett; 2nd by Manager Tofanelli; passed 4-0. The public hearing opened at 6:08 pm.
    - Administrator Giese presented the Annual description and background.
    - No public comments were provided to the Board.
    - Motion to close the public hearing by Manager Tofanelli; 2nd by Manager Burnett; passed 4-0.

  - **PUBLIC HEARING – Capital Improvement Project: Swamp Lake Iron Enhanced Sand Filter**
    - Motion to open the public hearing by Manager Burnett; 2nd by Manager Tofanelli; passed 4-0. The public hearing opened at 6:12 pm.

- Emily Dick presented the description and summary of the project.
- No public comments were provided to the Board.
- Motion to close the public hearing by Manager Burnett; 2nd by Manager Tofanelli; passed 4-0.

- **PUBLIC HEARING – Capital Improvement Project: Ferric Chloride Site Improvements**
  - Motion to open the public hearing by Manager Tofanelli; 2nd by Manager Morkeberg; passed 4-0. The public hearing opened at 6:16 pm.
  - Emily Dick presented the description and summary of the project.
  - No public comments were provided to the Board.
  - Motion to close the public hearing by Manager Tofanelli; 2nd by Manager Morkeberg; passed 4-0.

- **3.0 APPROVAL OF AGENDA**
  - Agenda changes: None
  - Motion to approve agenda by Manager Burnett; 2nd by Manager Tofanelli; passed 4-0.

- **4.0 OTHER OLD/NEW BUSINESS**

4.1 Programs & Projects Update

- Staff provided a report of its many activities in the preceding month and some upcoming events.
  1. Jeff Anderson gave updates regarding the temporary move to Prior Lake Fire Station #2; Prior Lake Level is 902.49; we lose 0.2" per day due to evaporation; The channel flowing into Prior Lake from Spring Lake is running at 13.5 cfs.
  2. The Low-Flow gate was closed on July 22.
  3. After a recently reported fish kill on Spring Lake, a Dissolved Oxygen Report was conducted, and it was found to be in the okay or normal range and not in a bad range.
  4. Several goldfish (100+) have been found in the lakes. Please DO NOT dump unwanted goldfish in MN lakes; they are not native species.
  5. FeCl update: The old pump failed and was replaced; other updates will be starting soon. The TH 13 wetland has accumulated sediment for the past several years to 9,500 cubic yards (the same as 3 Olympic pools). This needs to be dredged.
  6. The Buck Stream Stabilization project is moving forward.

4.2 Authorization to Proceed with Ferric Chloride Feedline Locating Request for Quotes and Contracting

- Emily Dick presented the need and background for this.
- Motion to authorize staff to issue a Request for Quotes and enter into a contract with a successful quote related to the Ferric Chloride feedline locating, for a fee not to exceed $15,000; by Manager Morkeberg; 2nd by Manager Tofanelli; passed 4-0.

4.3 EOR Scope of Services: PLOC Low Flow Gate Standard Operating Procedures

- Motion to approve the EOR Scope of Services to prepare the PLOC Low Flow Gate standard operating procedures by Manager Morkeberg; 2nd by Manager Burnett; passed 4-0.

4.4 EOR Scope of Services: Desilt Pond Outlet & High-flow Bypass Improvement Feasibility Study

- Jeff Anderson presented the project summary and details. Goal: more efficiency in treated water throughput. 2012 was the last "cleaning" of the desilt pond.
- Q&A with Jeff Anderson and Carl Almer.
- Motion to approve the EOR Scope of Services for the Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study NTE $51K; split into Task 1 and Task 2; if Task 1 is completed (up to $22K) and need is as anticipated, then Task 2 can be started; by Manager Tofanelli; 2nd by Manager Burnett; passed 4-0.

- **5.0 TREASURER'S REPORT**

Treasurer Morkeberg summarized the financial information contained in the packet, including:

5.1 Monthly Financial Reports

- Financial Report
- Treasurers Report
- Cash Flow Projections
- Cost Analysis

- **6.0 CONSENT AGENDA**
  - The consent agenda is considered as one item of business. It consists of routine administrative items or items not requiring discussion. Items can be removed from the consent agenda at the request of the Board member, staff member, or a member of the audience.
    - 6.1 Meeting Minutes – July 16, 2024, Board Workshop
    - 6.2 Meeting Minutes – July 16, 2024, Board Meeting
    - 6.3 Meeting Minutes – June 27, 2024, Special Joint CAC/Board Meeting
    - 6.4 Meeting Minutes – May 30, 2024, CAC Meeting
    - 6.5 Claims List and Bank Purchase Card Expenditures Summary
    - 6.6 EOR Scope of Services: Spring Lake Post-Alum Treatment Sediment Core Analysis
    - Removed by Mgr. Loney: 6.7 EOR Scope of Services: Swamp Iron Enhanced Sand Filter
    - 6.8 2025 Watershed-Based Implementation Fund Grant Agreement
    - Motion to approve consent agenda by Manager Burnett; 2nd by Manager Tofanelli; Passed 4-0.

- 6.7 EOR Scope of Services: Swamp Iron Enhanced Sand Filter
  - Manager Loney had a question about why we switched consultants for the project.
  - Staff reported that EOR's total cost is expected to be $105K through final design and bid. This is 20% of the original construction estimate.
  - Motion to approve EOR Scope of Services: Swamp Iron Enhanced Sand Filter by Manager Burnett; 2nd by Manager Tofanelli; Passed 4-0.

- **7.0 UPCOMING MEETING/EVENT SCHEDULE:**
  - Farmer Led Council in August.
  - Board of Managers Workshop, Tuesday, September 17, 2024, 4:00 pm (Prior Lake City Hall – Parkview Conference Room)
  - Board of Managers Meeting, Tuesday, September 17, 2024, 6:00 pm (Prior Lake City Hall – Council Chambers)
  - CAC Meeting, Thursday, September 26, 2024, 6:00 pm (Spring Lake Township – Town Hall)

- **8.0 ADJOURNMENT**
  - Motion to adjourn by Manager Burnett; 2nd by Manager Tofanelli; passed 4-0.
  - Meeting adjourned at 7:26 pm.

Respectfully Submitted,
Ben Burnett, PLSLWD Secretary, 9/9/24.

Patty Dronen - Administrative Assistant | CLA - accountant | Christian Morkeberg, Treasurer

9/17/2024

Prior Lake Spring Lake Watershed District
Claims list for Invoice Payments due for the prior month

Managers will consider approving this claims list - Staff payroll and benefits, Manager per diems, and Health insurance premiums have already been paid via ACH transfers. After the managers vote, two Managers will approve individual payments via BILL within three days of the meeting for approved claims. Then, staff will release payment via BILL to the claims list parties.

Vendor	Invoice Link	Description	Amount
1. Watershed District Projects (excluding staff payroll)			
EOR	x	FeCl Site & Desilt Pond Monitoring	$ 624.00
		General Engineering	$ 988.00
		Upper Watershed Projects Support	$ 572.00
		Buck Stream Stabilization	$ 1,965.50
		Hwy 13 (Geis Wetland) Survey	$ 52.00
		FeCl Site Improvements	$ 8,215.40
		Permitting	$ 3,536.00
		BMP Easements	$ 260.00
		Rule Revisions	$ 52.00
Rocket Mortgage	x	Rocket Mortgage Easement processing fee	$ 500.00
Valley Surveying Co. PA	x	Boundary Survey Project 11551	$ 3,400.00
Kisters	x	WISKI database support	$ 5,400.00
Waterfront Restorations	x	August Watercraft Inspector	$ 3,282.11
SmithPartners		Water Resources Plan	$ 1,560.20
WSB	x	Carp Management - July 2024	$ 5,694.00
RMB	x	Ferric Monitoring - July-August	$ 3,753.00
	x	Ferric Monitoring - June-July	$ 2,502.00
RMB	x	Watershed Monitoring - July-August	$ 4,075.00
	x	Watershed Monitoring - June	$ 3,097.00
Xcel Energy	x	Utilities	$ 16.37
HDR Inc.	x	Website Project Mgmt. and Support	$ 726.08
CLA		Bill.com fees	$ 157.00
		Subtotal	**$ 50,427.66**
2. Outlet Channel - JPA/MOA (excluding staff payroll)			
EOR		2024 PLOC Engineering Assistance	$ 312.00
		2024 PLOC Vegetation Maintenance	$ 923.76
		2024 PLOC XP-SWMM Updates	$ 1,729.00
CLA		PLOC Accounting	$ 1,755.00
		Subtotal	**$ 4,719.76**
3. Payroll, Office and Overhead			
ADP Manager Per Diems			$ 505.73
ADP Staff Payroll			$ 21,348.98
ADP Taxes & Benefits			$ 18,563.98
NCPERS	x	October Premiums	$ 96.00
Reliance Standard	x	September LTD and STD Premiums	$ 939.71
HealthPartners	x	September Health Insurance Premiums	$ 7,266.49
City of Prior Lake	x	Rent (October 2024)	$ 2,458.64
CLA	x	Monthly Accounting (August)	$ 1,975.00
		Technology and Client Support Fee	$ 204.85
		Monthly Payroll Processing Fees	$ 367.00
Smith Partners	x	General Legal Services	$ 322.80
Rymark	x	September Billing (7 workstations)	$ 912.45
MetroSales	x	Contract base rate September-October	$ 155.00
StarTribune	x	Public Notices - July	$ 158.00
		Public Notices - August	$ 158.00
US Bank		July 26-August 25 Billing	$ 4,070.91
		Subtotal	**$ 59,503.54**
		TOTAL	**$ 114,650.96**

Prior Lake-Spring Lake Watershed District
US Bank Transactions through 8/25/2024

Trans Date	Merchant Name	Amount	Receipt Link	Staff Approval	Class	Customer	Expense	Description
7/25/2024	Prior Lake Hardware	$ 41.30	x	Jeff Anderson	611 Operations & Maintenance	h Mgmt - Equipment, Storage & Maintenar	876 Field Equipment & Maintenance	Tool box, Clamp
7/25/2024	Edelweiss Bakery	$ 22.22	x	Joni Giese	626 Planning	Planning and Program Development	902 Meals and Lodging	
7/26/2024	Ironclad Storage	$ 260.00	x	Jeff Anderson	611 Operations & Maintenance	Fish Mgmt - Equipment, Storage &	876 Field Equipment & Maintenance	Equipment storage
7/29/2024	BCS	$ 65.00	x	Danielle Studer	652 Education & Outreach	Events/Tours	903 Dues, Fees, Subscriptions	Fall Community Fest Registration
7/30/2024	Amazon	$ 8.09	x	Patty Dronen	405 General Fund		706 Office Supplies	Mouse
8/1/2024	Office Max/Depot	$ 62.56	x	Emily Dick	405 General Fund		710 Office Expense Other	Office flood, Paper, Printing, Cutting for FLC invites
8/2/2024	Amazon	$ 43.99	x	Patty Dronen	405 General Fund		706 Office Supplies	Copy Paper
8/4/2024	Verizon	$ 30.08	x	Jeff Anderson	648 Regulation	Easement Inspections & violations	876 Field Equipment & Maintenance	Cell data
8/4/2024	Amazon	$ 250.98	x	Jeff Anderson	637 Monitoring & Research	Equipment Storage & Maintenance	876 Field Equipment & Maintenance	Truck equipment
8/1/2024	Decals.com	$ 58.61	x	Patty Dronen	637 Monitoring & Research	Equipment Storage & Maintenance	876 Field Equipment & Maintenance	Truck Decals
8/1/2024	Holiday Stations	$ 66.43	x	Zach Nagel	637 Monitoring & Research	Equipment Storage & Maintenance	801 Gas, Mileage	Boat Gas
8/1/2024	Holiday Stations	$ 70.74	x	Zach Nagel	637 Monitoring & Research	Equipment Storage & Maintenance	801 Gas, Mileage	Truck Gas
8/2/2024	Holiday Stations	$ 76.79	x	Jeff Anderson	637 Monitoring & Research	Equipment Storage & Maintenance	801 Gas, Mileage	Truck Gas
8/5/2024	O'Reilly	$ 34.67	x	Jeff Anderson	637 Monitoring & Research	Equipment Storage & Maintenance	876 Field Equipment & Maintenance	Jumper cables
8/6/2024	Prior Lake Rental	$ 2,126.43	x	Jeff Anderson	637 Monitoring & Research	Equipment Storage & Maintenance	876 Field Equipment & Maintenance	2-Month Truck Rental
8/6/2024	Amazon	$ 325.45	x	Jeff Anderson	637 Monitoring & Research	Equipment Storage & Maintenance	876 Field Equipment & Maintenance	Truck Construction Site Lights
8/8/2024	Holiday Stations	$ 67.36	x	Zach Nagel	637 Monitoring & Research	Equipment Storage & Maintenance	801 Gas, Mileage	Truck Gas
8/13/2024	USPS	$ 112.00	x	Patty Dronen	405 General Fund		701 Postage	Postcard stamps
8/9/2024	Microsoft	$ 4.99	x	Patty Dronen	626 Planning	Planning and Program Development	903 Dues/Fees/Subscriptions	Software
8/15/2024	Davannis	$ 66.40	x	Patty Dronen	PLOC 839	PLOC Administrative Expenses	902 Meals and Lodging	PLOC Lunch
8/15/2024	GoDaddy - 2 Years	$ 46.34	x	Patty Dronen	405 General Fund		703 Telephone, Internet & IT support	
8/20/2024	PayPal-Canva	$ 14.99	x	Patty Dronen	626 Planning	Planning and Program Development	903 Dues/Fees/Subscriptions	software
8/20/2024	Jimmy Johns	$ 84.93	x	Patty Dronen	626 Planning	Planning and Program Development	902 Meals and Lodging	Board Manager meal
8/23/2024	Adobe	$ 111.57	x	Patty Dronen	626 Planning	Planning and Program Development	903 Dues/Fees/Subscriptions	Software
8/24/2024	Google	$ 19.99	x	Patty Dronen	626 Planning	Planning and Program Development	903 Dues/Fees/Subscriptions	Annual fee for cloud file storage
	TOTAL	**$ 4,071.91**						

PLSLWD Board Staff Report
September 11, 2024

Subject |	Revised EOR Scope of Services: Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study
Board Meeting Date |	September 17, 2024 **Item No:** 6.4
Prepared By |	Jeff Anderson, Water Resources Coordinator
Attachments |	a) EOR Scope of Services: Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study (9/9/2024) b) EOR Scope of Services: Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study (9/9/2024) – redlined version
Proposed Action |	Motion to approve the EOR Scope of Services for the Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study, dated 9/9/2024

Background

This EOR Scope of Services: Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study work order was originally presented and discussed during the August 20, 2024, board meeting. The board of managers conditionally approved the proposed action with a check-in after task one that would allow discussion on the value of moving to task two.

Discussion

Staff felt the results of task one alone wouldn't provide board managers with enough material to make an informed decision to continue to task two or to stop based on the original work order deliverables. Staff worked with EOR to revise the scope of work by shifting elements from task two to task one that will include an analysis of potential modifications and preliminary estimates of increased performance.

Recommendation

Motion to approve the EOR Scope of Services for the Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study, dated 9/9/2024.

Budget Impact

The total cost associated with proposed activity remains at $51,000 and is covered under budget item 611-Ferric Chloride System Assessment. The estimated cost of task one is now $26,600, an increase from $22,200 which was estimated in the original Scope of Services.

SCOPE OF SERVICES

DESILT POND OUTLET & HIGH FLOW BYPASS IMPROVEMENT FEASIBILITY STUDY

PLSLWD	
CLASS:	611 Highway 13 Wetland, FeCl system & Desilt, O&M
PROJECT:	Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study

EOR			
JOB:	00758-0181		
PHASE:	N/A	TASK:	N/A

START DATE: 9/18/2024 END DATE: 4/30/2025

TOTAL PROJECT BUDGET: $51,000

OVERVIEW OF PROJECT SCOPE: The Desiltation Pond is one of the earliest PLSLWD projects, constructed in 1978, originally designed to decrease County Ditch 13 sediment deposition into Spring Lake. With excavation of the Highway 13 Wetland and construction of the FeCl3 Treatment System, completed in 1998, the Desiltation Pond was enhanced to serve as the iron-bound phosphorus flocculation basin for the overall treatment system. Since then, the Desiltation Basin has been periodically excavated to restore flocculant storage capacity and two additional low-flow outlet pipes were installed but the basin's primary outlet (grouted riprap) has not been improved.

In 2010, in light of the MPCA concerns and overall cost-benefit questions raised by the District, the Board ordered a study to assess the water quality benefit and cost-effectiveness of the FeCl3 Treatment System (based on past monitoring data and the then, current state of the system). The results of the *Ferric Chloride Treatment System Evaluation* (EOR, October 7, 2010) concluded that operation of the system provided a significant water quality benefit, that the Desiltation Pond needed maintenance, and that a high-flow bypass could be incorporated without significantly decreasing performance if all flows 30 cfs or less continued to pass through the Desiltation Pond. This study also recommended investigating outlet improvements to prevent rough fish (carp) migration to reduce resuspension of floc.

In 2013, the overall FeCl3 Treatment System was modified to address MPCA permit reissuance requirements by installation of an inlet control pipe to the Desiltation Pond, relocation of the FeCl3 injection point to the inlet control pipe, and construction of a high-flow bypass weir to prevent resuspension of accumulated floc by high flows. As-builts completed after these modifications identified construction deficiencies (departures from design). All deficiencies were rectified in 2014 with the exception that the high-flow bypass westerly elevation, built 0.3-feet too low, remained as constructed.

The purpose of this scope of services is to assess the performance of the system in its current hydraulic condition and assess options for modification of the Desiltation Pond outlet and/or high-flow bypass to:

1. decrease bypass of the Desiltation Pond to increase treatment and phosphorus load reduction,
2. decrease resuspension of floc due to carp passage/occupation, and
3. improve the ability to accurately monitor discharge from the Desiltation Pond.

This assessment is included in the District's 2020-2030 Water Resources Management Plan in Section IV.B.2.5 on Page 83 as excerpted below.

> **Desiltation Pond Outlet Improvement**: Develop outlet structure improvement concept plan options to enhance flow capacity and monitoring capability and consider implementation with future maintenance excavation project.

The following sections outline the project team, anticipated tasks, hours, costs, and schedule to advance this feasibility study and provide recommendations for consideration of system improvements.

PROJECT TEAM

PLSLWD	
PROJECT LEAD:	Jeff Anderson, Water Resources Coordinator
OTHER STAFF:	Joni Giese, District Administrator Emily Dick, Water Resources Project Manager
EOR	
PROJECT LEAD:	Carl Almer (50)
OTHER STAFF:	Cecilio Olivier (10), Joey Casteneda (8), Kyle Crawford (18), Ryan Fleming (26), Ellen Kimlinger (20), Paul Nation (70), Bill Yu (120)

SUMMARY OF TASKS

TASK 1: Existing Condition Performance Assessment	
GOAL:	Understand current system performance and potential to improve efficiency.
SUMMARY:	Due to the inability to accurately monitor discharge from the Desiltation Pond outlet and high-flow bypass, assessment of performance of the existing FeCl3 Treatment System has assumed that all flow 30-cfs or less, as measured at the Highway 13 weir (Station CD-2), is treated with FeCl3. This assumption is an oversimplification of the system's hydraulics. For instance, flow through a pipe varies with the elevation of water (head). In addition, high water levels on Spring Lake influence the hydraulics of the system (i.e., the relative percent of flow through the Desiltation Pond versus the high-flow bypass can vary based on the tailwater influence of Spring Lake). In order to more precisely assess the existing systems performance, survey data will be collected to model the hydraulic conditions of the built system including the Desiltation Pond outlet cross-section, low-flow outlet pipe inverts and sizes, inlet pipe inverts and overflow berm cross-section, and the high-flow bypass weir cross-section. This information will be used to update the hydraulics of the District's PCSWMM model. In addition, monitored flow data (Station CD-2 from 2015-2024) will be processed to create annual input hydrographs to complete long-term simulations of measured flows. This will allow for accurate calculation of the

volume treated versus the volume bypassed. This analysis will also account for tailwater influence when the elevation of Spring Lake is high.

Based on the results of this modeling, EOR will prepare a technical memorandum summarizing the modeling methods and characterizing the existing system performance (volume treated and P-load reduction). This will form a baseline to compare potential system modifications. In addition, EOR will complete a sensitivity analysis of the hydraulics of the system to identify what changes could lead to the greatest increase in performance. The sensitivity analysis will include a summary table of potential modifications including preliminary estimates of increased performance.

Included in this task are routine communications with District staff, one meeting to review findings, and one round of technical memorandum revisions to per District staff input.

DELIVERABLES:
1) Existing conditions basemap
2) Draft and Final technical memo (existing conditions assessment and potential modifications increased performance estimates)

TIMELINE: September – December, 2024

ESTIMATED COSTS: $26,600

CONDITIONAL TASK 2: Modification Options Analysis

GOAL: Evaluate options to improve efficiency.

SUMMARY: This task includes further investigation and vetting of options to improve system performance, decrease resuspension of floc, and improve the ability to monitor flows. These options will consider alteration of the Desiltation Pond outlet, alteration of the high-flow bypass, and alteration of both structures in combination. Likely modification options include increasing the Desiltation Pond outlet capacity (increased width, lower elevation, alternate construction materials), decreasing the high-flow bypass capacity (increased weir elevation, decreased width, multi-stage design) and various combinations of the aforementioned modifications. These options will be modeled and compared to the treatment performance of existing conditions. Preliminary cost ranges will be estimated for each option and a preferred option will be recommended based on a cost-benefit analysis. Included in this task are routine communications with District staff, one meeting to receive input on potential options before modeling work is completed, and one round of technical memorandum revisions to per District staff input.

DELIVERABLES:
1) 30% Sketch Plan for preferred option
2) SEQ and opinion of probable cost for preferred option
3) Draft and Final technical memo (including options analysis)

TIMELINE: January – April, 2025

ESTIMATED COSTS: $24,400

ESTIMATED COST SUMMARY

DESCRIPTION		HOURS/ QUANTITY	ESTIMATED COST
TASK 1:	Existing Condition Performance Assessment	170	$26,600
TASK 2:	Desiltation Pond Outlet & HFB Modification Options Analysis	152	$24,400
EXPENSES:	Equipment rental Mileage Other	****Included in the above estimated costs****	
		TOTAL	**$51,000**

NOTE: Actual costs may differ from the estimated task costs, but the project must not exceed the TOTAL.

ASSUMPTIONS: The estimated cost summary for the execution of the tasks in this Scope of Services is based upon the following assumptions:

1) Outlet modification options analysis will be constrained by avoidance of MNDNR no-rise and FEMA CLOMR/LOMR proceedings and maintaining minimum settling times and a minimum of Desiltation Pond detention time of 4-hours.

SIGNATURES:

The services described in this Scope of Services are being provided in accordance with the Master Services Consulting Agreement between PLSLWD and EOR dated January 17, 2024. Any changes to the project team, tasks, deliverables, timeline, or total cost will require a signed amendment/update to this Scope of Services.

Prior Lake-Spring Lake Watershed District		Emmons & Olivier Resources, Inc.	
Signature:		Signature:	
Name:	Joni Giese	Name:	Carl K. Almer
Title:	District Administrator	Title:	Water Resources Lead
Date:		Date:	9/9/2024

SCOPE OF SERVICES

DESILT POND OUTLET & HIGH FLOW BYPASS IMPROVEMENT FEASIBILITY STUDY

PLSLWD		EOR		
CLASS:	611 Highway 13 Wetland, FeCl system & Desilt, O&M	JOB:	00758-0181	
PROJECT:	Desilt Pond Outlet & High-Flow Bypass Improvement Feasibility Study	PHASE:	N/A	TASK: N/A

START DATE: 9/18/2024 END DATE: ~~34~~/~~31~~30/2025

TOTAL PROJECT BUDGET: $51,000

OVERVIEW OF PROJECT SCOPE: The Desiltation Pond is one of the earliest PLSLWD projects, constructed in 1978, originally designed to decrease County Ditch 13 sediment deposition into Spring Lake. With excavation of the Highway 13 Wetland and construction of the FeCl3 Treatment System, completed in 1998, the Desiltation Pond was enhanced to serve as the iron-bound phosphorus flocculation basin for the overall treatment system. Since then, the Desiltation Basin has been periodically excavated to restore flocculant storage capacity and two additional low-flow outlet pipes were installed but the basin's primary outlet (grouted riprap) has not been improved.

In 2010, in light of the MPCA concerns and overall cost-benefit questions raised by the District, the Board ordered a study to assess the water quality benefit and cost-effectiveness of the FeCl3 Treatment System (based on past monitoring data and the then, current state of the system). The results of the *Ferric Chloride Treatment System Evaluation* (EOR, October 7, 2010) concluded that operation of the system provided a significant water quality benefit, that the Desiltation Pond needed maintenance, and that a high-flow bypass could be incorporated without significantly decreasing performance if all flows 30 cfs or less continued to pass through the Desiltation Pond. This study also recommended investigating outlet improvements to prevent rough fish (carp) migration to reduce resuspension of floc.

In 2013, the overall FeCl3 Treatment System was modified to address MPCA permit reissuance requirements by installation of an inlet control pipe to the Desiltation Pond, relocation of the FeCl3 injection point to the inlet control pipe, and construction of a high-flow bypass weir to prevent resuspension of accumulated floc by high flows. As-builts completed after these modifications identified construction deficiencies (departures from design). All deficiencies were rectified in 2014 with the exception that the high-flow bypass westerly elevation, built 0.3-feet too low, remained as constructed.

The purpose of this scope of services is to assess the performance of the system in its current hydraulic condition and assess options for modification of the Desiltation Pond outlet and/or high-flow bypass to:

1. decrease bypass of the Desiltation Pond to increase treatment and phosphorus load reduction,
2. decrease resuspension of floc due to carp passage/occupation, and
3. improve the ability to accurately monitor discharge from the Desiltation Pond.

This assessment is included in the District's 2020-2030 Water Resources Management Plan in Section IV.B.2.5 on Page 83 as excerpted below.

> **Desiltation Pond Outlet Improvement**: Develop outlet structure improvement concept plan options to enhance flow capacity and monitoring capability and consider implementation with future maintenance excavation project.

The following sections outline the project team, anticipated tasks, hours, costs, and schedule to advance this feasibility study and provide recommendations for consideration of system improvements.

PROJECT TEAM

PLSLWD	
PROJECT LEAD:	Jeff Anderson, Water Resources Coordinator
OTHER STAFF:	Joni Giese, District Administrator Emily Dick, Water Resources Project Manager
EOR	
PROJECT LEAD:	Carl Almer (50)
OTHER STAFF:	Cecilio Olivier (10), Joey Casteneda (8), Kyle Crawford (18), Ryan Fleming (26), Ellen Kimlinger (20), Paul Nation (70), Bill Yu (120)

SUMMARY OF TASKS

TASK 1: Existing Condition Performance Assessment	
GOAL:	Understand current system performance and potential to improve efficiency.
SUMMARY:	Due to the inability to accurately monitor discharge from the Desiltation Pond outlet and high-flow bypass, assessment of performance of the existing FeCl3 Treatment System has assumed that all flow 30-cfs or less, as measured at the Highway 13 weir (Station CD-2), is treated with FeCl3. This assumption is an oversimplification of the system's hydraulics. For instance, flow through a pipe varies with the elevation of water (head). In addition, high water levels on Spring Lake influence the hydraulics of the system (i.e., the relative percent of flow through the Desiltation Pond versus the high-flow bypass can vary based on the tailwater influence of Spring Lake). In order to more precisely assess the existing systems performance, survey data will be collected to model the hydraulic conditions of the built system including the Desiltation Pond outlet cross-section, low-flow outlet pipe inverts and sizes, inlet pipe inverts and overflow berm cross-section, and the high-flow bypass weir cross-section. This information will be used to update the hydraulics of the District's PCSWMM model. In addition, monitored flow data (Station CD-2 from 2015-2024) will be processed to create annual input hydrographs to complete long-term simulations of measured flows. This will allow for accurate calculation of the

volume treated versus the volume bypassed. This analysis will also account for tailwater influence when the elevation of Spring Lake is high.

Based on the results of this modeling, EOR will prepare a technical memorandum summarizing the modeling methods and characterizing the existing system performance (volume treated and P-load reduction). This will form a baseline to compare potential system modifications. In addition, EOR will complete a sensitivity analysis of the hydraulics of the system to identify what changes could lead to the greatest increase in performance. The sensitivity analysis will include a summary table of potential modifications including preliminary estimates of increased performance.

~~-~~Included in this task are routine communications with District staff, one meeting to review findings, and one round of technical memorandum revisions to per District staff input.

DELIVERABLES:
1) Existing conditions basemap
2) Draft and Final technical memo (existing conditions assessment ~~only~~and potential modifications increased performance estimates)

TIMELINE: September – December, 2024

ESTIMATED COSTS: $~~22,200~~26,600

CONDITIONAL TASK 2: ~~Outlet~~ Modification Options Analysis

GOAL: Evaluate options to improve efficiency.

SUMMARY: This task includes further investigation and vetting of ~~investigating~~ options to improve system performance, decrease resuspension of floc, and improve the ability to monitor flows. These options will consider alteration of the Desiltation Pond outlet, alteration of the high-flow bypass, and alteration of both structures in combination. Likely modification options include increasing the Desiltation Pond outlet capacity (increased width, lower elevation, alternate construction materials), decreasing the high-flow bypass capacity (increased weir elevation, decreased width, multi-stage design) and various combinations of the aforementioned modifications. These options will be modeled and compared to the treatment performance of existing conditions. Preliminary cost ranges will be estimated for each option and a preferred option will be recommended based on a cost-benefit analysis. Included in this task are routine communications with District staff, one meeting to receive input on potential options before modeling work is completed, and one round of technical memorandum revisions to per District staff input.

DELIVERABLES:
1) 30% Sketch Plan for preferred option
2) SEQ and opinion of probable cost for preferred option
3) Draft and Final technical memo (including options analysis)

TIMELINE: January – ~~March~~April, 2025

ESTIMATED COSTS: $~~28,800~~24,400

ESTIMATED COST SUMMARY

DESCRIPTION		HOURS/ QUANTITY	ESTIMATED COST
TASK 1:	Existing Condition Performance Assessment	~~140~~170	$~~22,200~~26,600
TASK 2:	Desiltation Pond Outlet & HFB Modification Options Analysis	~~182~~152	$~~28,800~~24,400
EXPENSES:	Equipment rental Mileage Other	****Included in the above estimated costs****	
		TOTAL	**$51,000**

NOTE: Actual costs may differ from the estimated task costs, but the project must not exceed the TOTAL.

ASSUMPTIONS: The estimated cost summary for the execution of the tasks in this Scope of Services is based upon the following assumptions:

1) Outlet modification options analysis will be constrained by avoidance of MNDNR no-rise and FEMA CLOMR/LOMR proceedings and maintaining minimum settling times and a minimum of Desiltation Pond detention time of 4-hours.

SIGNATURES:

The services described in this Scope of Services are being provided in accordance with the Master Services Consulting Agreement between PLSLWD and EOR dated January 17, 2024. Any changes to the project team, tasks, deliverables, timeline, or total cost will require a signed amendment/update to this Scope of Services.

Prior Lake-Spring Lake Watershed District		Emmons & Olivier Resources, Inc.	
Signature:		Signature:	
Name:	Joni Giese	Name:	Carl K. Almer
Title:	District Administrator	Title:	Water Resources Lead
Date:		Date:	~~8~~/~~8~~9/9/2024

PLSLWD Board Staff Report
September 11, 2024

Subject |	Lake Ridge Stormwater Study Request for Proposals	
Board Meeting Date |	September 17, 2024	**Item No:** 6.5
Prepared By |	Emily Dick	
Attachments |	Draft Lake Ridge Stormwater Study Request for Proposals	
Proposed Action |	Make a motion to authorize the Request for Proposals for the Lake Ridge Stormwater Study.	

Background

The District, with the technical expertise of EOR, completed an updated Fish Lake Management Plan (FLMP) in 2023. The updated FLMP identified that both internal and external loading were sources of excess phosphorus in the Fish Lake system. The plan provided recommendations for both internal and external load reduction projects. The 2024 budget includes $100,000 for implementation of projects in the Fish Lake watershed. The Board approved an initial Fish Lake implementation approach in March 2024. The implementation approach focused on external load projects. One identified project was the Lake Ridge Stormwater Study.

Discussion

After the Board approved the 2024 implementation approach for Fish Lake, convening partners elected to allocate Watershed Based Implementation Funds (up to $30,000) to support the projects identified in the approach. Additionally, Spring Lake Township Supervisors voted to contribute $7,500 to the Lake Ridge Stormwater Study. In order to initiate this work, District Engineer and staff have prepared a draft Request for Proposals to seek consultants to carry out the study. Ideally, the selected consulting firm would conduct the study Winter 2024/Spring 2025 in preparation for recommendations of retrofits to be included in the 2026 budgeting process.

Recommendation

Staff recommends that the Board make a motion to authorize the Request for Proposals for the Lake Ridge Stormwater Study.

Budget Impact

The cost associated with the proposed activity is covered under budget item 626/Upper Watershed Projects/Fish Lake Management Plan, and is additionally supported by Spring Lake Township ($7,500) and Watershed Based Implementation Funding, if needed.

REQUEST FOR PROPOSALS
FOR PROFESSIONAL ENGINEERING SERVICES
Prior Lake-Spring Lake Watershed District
Lake Ridge Estates Stormwater Retrofit Feasibility Study

SECTION 1: GENERAL INFORMATION

Acceptance of Proposal Contents

The contents of this RFP will be included as part of the contractual obligations if a contract ensues. All information in the proposal is subject to disclosure under the provisions of Minnesota Statutes Chapter 13 – Minnesota Government Data Practices Act.

PROJECT OVERVIEW

Purpose

The Prior Lake-Spring Lake Watershed District (PLSLWD) is leading a feasibility study, in partnership with Spring Lake Township (Twsp), to assess the performance of four (4) stormwater ponds in the Lake Ridge Estates neighborhood northeast of Fish Lake and to explore pond maintenance and retrofit options to reduce watershed phosphorus loading to Fish Lake. The impetus of this feasibility study is the Fish Lake Management Plan (EOR, 2023), which can be reviewed at https://www.plslwd.org/application/files/7817/1414/8898/FishLakeMP_12212023.pdf.

Organizational Background

The PLSLWD was formed on March 4, 1970, at the request of local residents through a citizen's petition, primarily for the purposes of managing the water levels of Spring and Prior Lake. The PLSLWD encompasses 42 square miles in Scott County, MN. Water in the PLSLWD flows mainly from the southwest to the northeast through Spring, Upper Prior and Lower Prior Lakes, and then north through the Prior Lake Outlet Channel to the Minnesota River near Valley Fair.

The mission of the PLSLWD is to manage and preserve the water resources of the District to the best of our ability using input from our communities, sound engineering practices, and our ability to efficiently fund beneficial projects which transcend political jurisdictions.

Background

Fish Lake was added to the MPCA impaired waters list in 2002 for aquatic recreation due to excessive nutrients. Past attempts to determine the phosphorus loading dynamics in Fish Lake have varied considerably, from suggesting watershed loading is the primary source of phosphorus to the lake to pointing towards internal phosphorus loading as the primary driver. The 2023 Fish Lake Management Plan concluded that watershed loading, while seemingly improving, is still contributing a large portion of the phosphorus load to Fish Lake, and that this along with the large input from internal loading is causing the impaired status of the lake. This feasibility study is one of several implementation projects focused on reducing loading (see Figure 1 for context and Figure 2 for the location of the ponds to be assessed.

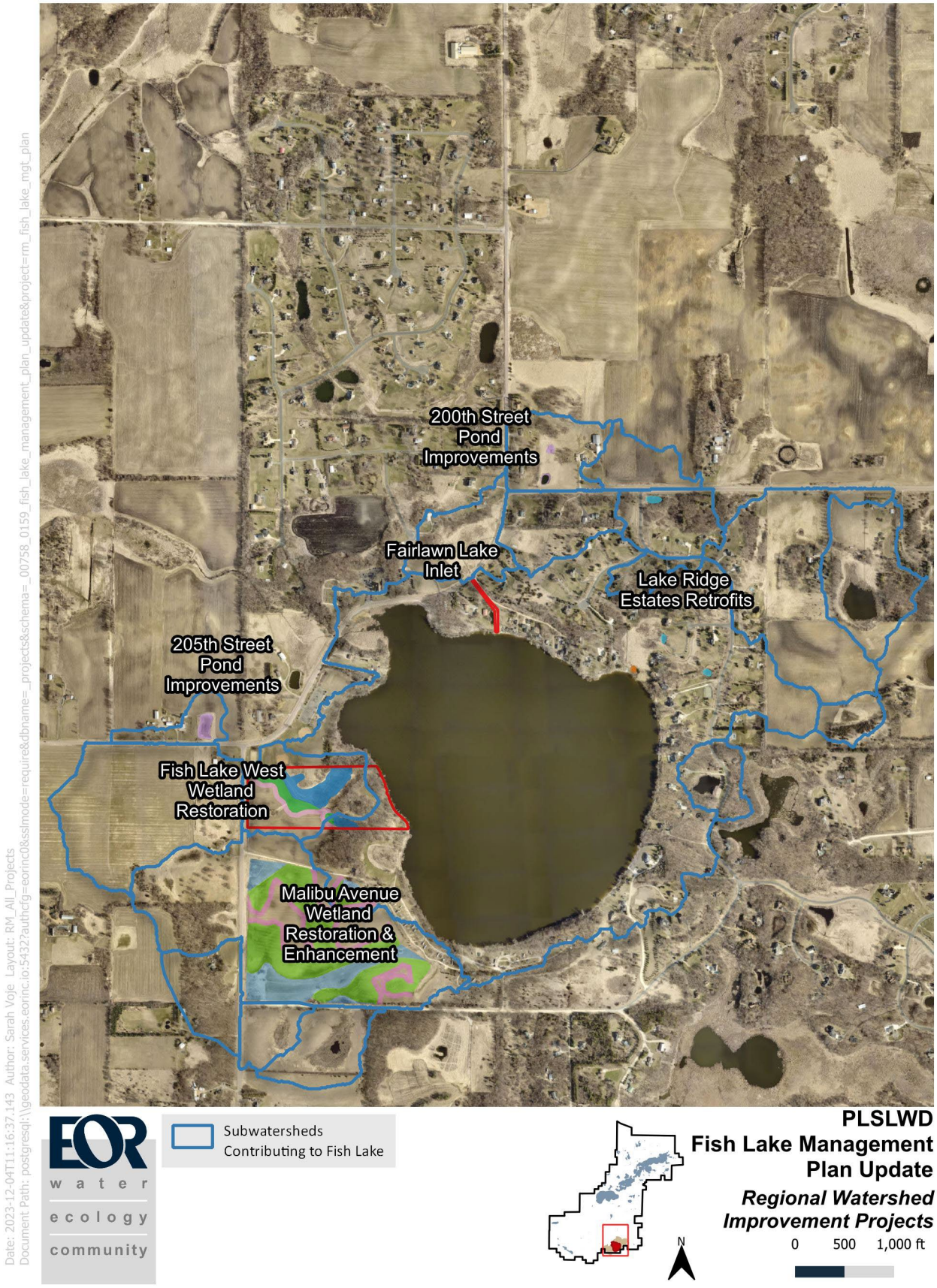


Figure 1. Fish Lake Watershed Improvement Projects

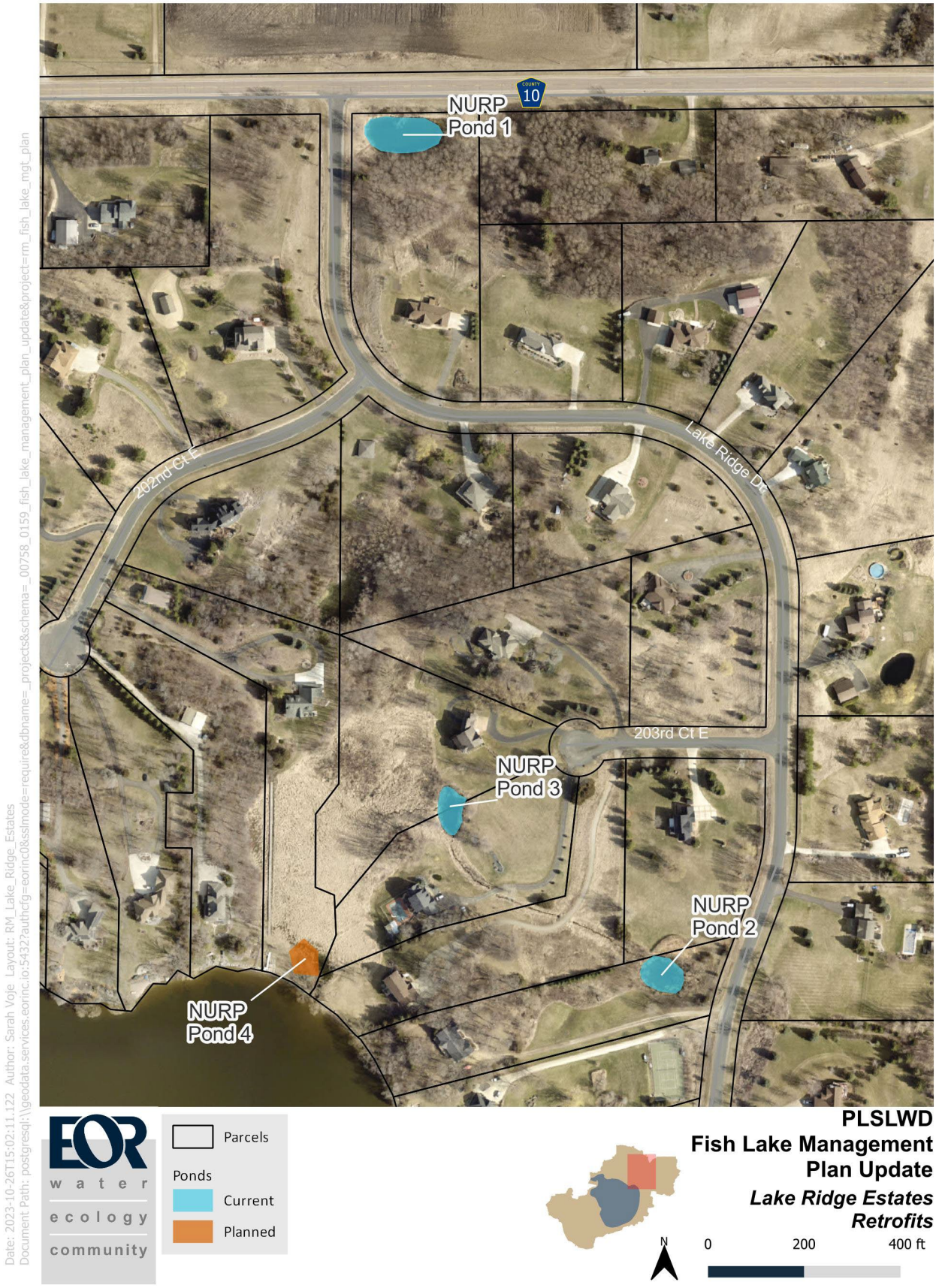


Figure 2. Lake Ridge Estates Stormwater Pond Locations

SECTION 2: OVERALL SCOPE OF SERVICES

The Consultant will conduct a feasibility study for maintenance and retrofit of the four (4) existing/planned stormwater ponds in Lake Ridge Estates, for the purpose of maximizing phosphorus removal. The feasibility study will consider the original design of the ponds and develop at least 3 maintenance/retrofit alternatives per basin. Innovative ideas are encouraged, utilizing the latest research to maximize capture of phosphorus. This study will be led by the Consultant with support from PLSLWD Staff and the District Engineer. PLSLWD staff will coordinate partner engagement.

The following section contains example work tasks for the feasibility study. Responses to this RFP are not constrained by this example. Alternate scopes of work will be considered if the approach and work plan is capable of achieving the goals stated in the purpose of this RFP. The following are general work tasks that shall be included in the Consultant's bid.

1. **Stormwater Retrofit Assessment**
    a. *Background Data Review*
    This task includes Consultant familiarization with the study area, data available from the Fish Lake Management Plan, the original development construction plans (if available), and extents of drainage and utility easements. Consultant shall conduct an initial kickoff meeting with PLSLWD staff to review available data, identify data gaps, and review overall project schedule and milestones.

    b. *Field Reconnaissance & Survey*
    Field reconnaissance including survey of easement topography, basin bathymetry, and basin outlet structures shall be completed as needed to assess the performance of the existing ponds and to inform the feasibility of potential basin retrofits. In addition, the Consultant shall collect and analyze sediment samples for toxicological analysis (following *Managing Stormwater Sediment Best Management Practices Guidance, MPCA, 2017,* as amended and/or any other MPCA Municipal Stormwater Program guidance) to inform sediment disposal requirements and costs.

    c. *Existing Conditions Performance*
    This task includes developing hydrologic/hydraulic models and water quality models for each basin to determine watershed pollutant loading and assess existing conditions phosphorus load reduction performance.

    d. *Retrofit Cost-Benefit & Prioritization*
    This task includes development of at least 3 alternatives for maintenance and retrofit of each of the four ponds. Alterantives shall include preliminary engineer's opinion of probable costs and estimates of phosphorus load reduction. Prioritization and selection of a preferred retrofit option at each of the four ponds shall be completed in consultation with District staff and partners before advancing to concept design plans.

    e. *Concept Design for Preferred Alternative*
    This task includes development of concept plans (design schematics) for the

preferred alternative at each of the four ponds, preparation of refined engineer's opinion of probable costs and estimated phosphorus load reduction, and identification of assumptions and additional data needs for furthering of design.

f. Feasibility Study (Report)
This task includes preparation of a preliminary draft feasibility study for review and comment by District and Township staff, a 95% draft feasibility study, and the final feasibility study. Assume two rounds of revisions and transmittal of all project materials (survey data, GIS, models, analyses, and final report electronically to PLSLWD).

2. Meetings

For the duration of this project, the Consultant shall plan for routine coordination with PLSLWD staff and plan for attendance and presentation at District meetings (Board, Twsp., and Citizen Advisory Committee). The Consultant shall include a minimum of two District meetings in its work tasks and budget.

TARGET PROJECT SCHEDULE

This timeline is subject to change, based on feedback from the Consultant, with concurrence from the PLSLWD. However, the Project must be fully completed by July 1, 2025.

- September 25, 2024 – RFP question due.
- October 2, 2024 – Proposals due.
- October 15, 2024 – PLSLWD Board authorization to enter into an agreement with the consultant and proceed with work.
- November 1, 2024 – Contracting complete. Project Kickoff meeting.
- April 30, 2025 – All study deliverables complete.

SECTION 3: PROPOSALS

The proposal shall contain the type of information summarized below and shall be limited to 10 pages.

Proposal Format

The submittal should follow the Table of Contents listed below:

1. General Information
2. Project Understanding
3. Proposed Project Team and Experience
4. Work Tasks and Proposed Schedule
5. Any Additional Information as Needed
6. Total Consultant Cost

A brief description of each section is included below.

1. General Information
   General information and a brief history of the Consultant's firm. Include similar information on key subconsultants, if any, proposed for the project.

2. Project Understanding
   A summary of the Consultant's understanding of the work.

3. Proposed Project Team and Experience
   - Identify the key project team members and describe their specific roles on the project. Include key team members from subconsultant firms if any.
   - Include one-page resumes only for key members of the project team.
   - Describe relevant experience and provide information on at least three (3) reference projects completed in the last five (5) years. Provide contact information for references.
   - Include specific descriptions of proposed team members' roles on reference projects.

4. Work Tasks and Proposed Schedule
   A proposed schedule from project initiation to final completion of construction. The schedule should include a list of key work tasks, key milestones and approximate dates, and deliverables. The target schedule listed in Section 2 should be understood as a guide for an ideal project completion. Consultant should submit a proposed schedule that is reflective of workload and ability to complete the work.

5. Additional Information
   Include any other information believed to be pertinent but not specifically requested elsewhere in this RFP.

6. Total Consultant Cost

   The consultant cost should be broken out as follows:

   a. Proposed costs for each work task for the project as listed in Section 2.
   b. Hourly rates for all consultant employees who are expected to work on this project. These rates shall be the agreed upon costs for any additional services requested by the District, above what is detailed in the scope of this RFP.
   c. Reimbursable costs including detail of service or item and applicable charge per unit.
   d. Not to Exceed cost for the project.

   Proposals that do not include a 'Not to Exceed' cost will be disregarded with no further consideration.

SECTION 4: CONSULTANT SELECTION

Proposals will be reviewed and evaluated by a team of District staff ("Project Team") on the basis of the following criteria:

1. Consulting firm and key project staff experience with similar projects. In addition to

understanding technical issues and having sound technical/engineering expertise, the Consultant must also have an awareness and understanding of the social/political issues that can surround projects of this nature and must possess the personal and leadership skills necessary to navigate the project through the public process.

2. Proven successful management of projects of this nature is required.
3. Proven history in successfully completing similar projects on time and within budget. Successful experience of both the firm itself and the individual team members will be considered.
4. Proposed approach to completing the project.
5. Proposed consultant cost.

Following review of the Proposals, the Project Team may ask Consultants to make a presentation. Upon conclusion of the evaluation process, the Project Team will make a recommendation to the Board of Managers regarding the selection a Consultant to negotiate a contract with the District as follows:

1. If, for any reason, a firm is not able to commence the services in that firm's Proposal within 30 days of the award, the District reserves the right to contract with another qualified firm.
2. The District shall not be liable for any expenses incurred by the Consultant prior to the signing of a contract including, but not limited to, the proposal preparation, attendance at interviews, or final contract negotiations.
3. The Proposal must be signed in ink by an official authorized to bind the Consultant to its provisions that will be included as part of an eventual contract. The Proposal must include a statement as to the period during which the Proposal remains valid. This period must be at least 90 days from the date of the submittal.
4. The District reserves the right to reject any and all Proposals or to request additional information from any or all of the proposing firms.

SECTION 5: CONTRACT TERMS AND CONDITIONS

Upon selection of a Consultant, an Agreement shall be entered into by the District and the Consultant. It is expected that the Agreement will provide for compensation for actual work completed on a not to exceed basis, and the following conditions:

1. Deletions of specific itemized work tasks will be at the discretion of the District. Payment or reimbursement shall be made based on tasks that have been satisfactorily completed. Billing that exceeds the not to exceed amount will not be compensated unless a contract amendment has been approved in advance by the District.
2. The District shall retain ownership of all documents, plans, maps, reports, and data prepared under this proposal. In addition to being provided with hard copy and digital documents throughout the project, upon completion the consultant shall supply the District with files in their original format (Word documents, AutoCAD, GIS, HydroCAD, etc.).
3. If, for any reason, the Consultant is unable to fulfill the obligations under the contract in a timely and proper manner, the District shall reserve the right to terminate the contract by written notice. In this event, the firm shall be entitled to just and equitable compensation for any satisfactory completed work tasks, as determined by the Project Team.

4. The Consultant shall not assign or transfer any interest in the contract without prior written consent of the District.
5. The Consultant shall maintain comprehensive general liability insurance in accordance with coverages listed in the attached Prior Lake-Spring Lake Watershed District Professional Services Agreement Template.
6. The Consultant shall defend, indemnify and hold harmless Prior Lake-Spring Lake Watershed District, its officials, employees and agents, from any and all claims, causes of action, lawsuits, damages, losses or expenses, including attorney fees, arising out of or resulting from the Consultant's (including its officials, agents, subconsultants or employees) performance of the duties required under the contract, provided that any such claim, damages, loss or expense is attributable to bodily injury, sickness, diseases or death or injury to or destruction of property including the loss of use resulting therefrom and is caused in whole or in part by any negligent act or omission or willful misconduct of Consultant.
7. The Consultant contract shall be governed by the laws of the State of Minnesota.
8. Invoices submitted to the District shall include a detailed breakdown of staff members and hours charged, a description of the work completed, mileage, etc. chargeable for the invoice period.
9. If there is a conflict between this section and the terms of the final professional services agreement, the professional services agreement shall prevail.
10. The attached professional services agreement template shall serve as the basis for contract negotiations.

SECTION 6: CONCLUSION AND SUBMITTAL

Any requests for additional information that may be needed for the preparation of the proposal should be directed via email to Danielle Studer at dstuder@plslwd.org and Emily Dick at edick@plslwd.org by September 25, 2024. No responses will be provided for questions received after that time.

A list of all questions received, and the Project Team's responses will be provided to all persons or firms who were solicited for RFP submission.

Please provide an electronic (pdf) copy of the Proposal for the evaluation process. Proposals must be e-mailed to dstuder@plslwd.org and edick@plslwd.org.

Proposals will be accepted until October 2, 2024, 4:30 p.m.

Attachments:

- Professional Services Agreement Template

Items highlighted in Green are required by statute

TEMPLATE - PROFESSIONAL SERVICES AGREEMENT (current 1-9-24)

AGREEMENT BETWEEN
PRIOR LAKE – SPRING LAKE WATERSHED DISTRICT and
[CONSULTANT]

[Project Title]

This agreement is entered into by the Prior Lake – Spring Lake Watershed District, a public body with powers set forth at Minnesota Statutes chapters 103B and 103D (PLSLWD), and [CONSULTANT], a Minnesota corporation (CONSULTANT). In consideration of the terms and conditions set forth herein and the mutual exchange of consideration, the sufficiency of which hereby is acknowledged, PLSLWD and CONSULTANT agree as follows:

1. Scope of Work

CONSULTANT will perform the work described in the [DATE] Scope of Services attached as Exhibit A (the "Services"). Exhibit A is incorporated into this agreement and its terms and schedules are binding on CONSULTANT as a term hereof. PLSLWD, at its discretion, in writing may at any time suspend work or amend the Services to delete any task or portion thereof. Authorized work by CONSULTANT on a task deleted or modified by PLSLWD will be compensated in accordance with paragraphs 5 and 6. Time is of the essence in the performance of the Services.

2. Independent Contractor

CONSULTANT is an independent contractor under this agreement. CONSULTANT will select the means, method and manner of performing the Services. Nothing herein contained is intended or is to be construed to constitute CONSULTANT as the agent, representative or employee of PLSLWD in any manner. Personnel performing the Services on behalf of CONSULTANT or a subcontractor will not be considered employees of PLSLWD and will not be entitled to any compensation, rights or benefits of any kind from PLSLWD.

3. Subcontract and Assignment

CONSULTANT will not assign, subcontract or transfer any obligation or interest in this agreement or any of the Services without the written consent of PLSLWD and pursuant to any conditions included in that consent. PLSLWD consent to any subcontracting does not relieve CONSULTANT of its responsibility to perform the Services or any part thereof, nor in any respect its duty of care, insurance obligations, or duty to hold harmless, defend and indemnify under this agreement.

4. Duty of Care; Indemnification

CONSULTANT will perform the Services with due care and in accordance with national standards of professional care. CONSULTANT will hold harmless and indemnify PLSLWD, its board members, employees and agents from any and all actions, costs (including reasonable attorney fees), damages and liabilities of any nature to the extent due to CONSULTANT's failure to exercise professional care. CONSULTANT will defend PLSLWD, its board members, employees and agents from any and all actions, costs, damages and liabilities of any nature arising from; and hold each such party harmless, and indemnify it, to the extent due to: (a) CONSULTANT's negligent or

otherwise wrongful act or omission, or breach of a specific contractual duty other than the duty of professional care; or (b) a subcontractor's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty owed by CONSULTANT to PLSLWD, other than the duty of professional care. For any claim subject to this paragraph by an employee of CONSULTANT or a subcontractor, the indemnification obligation is not limited by a limitation on the amount or type of damages, compensation or benefits payable by or for CONSULTANT or a subcontractor under workers' compensation acts, disability acts or other employee benefit acts.

5. Compensation

PLSLWD will compensate CONSULTANT for the Services on [an hourly OR a lump-sum] basis and reimburse for direct costs in accordance with Exhibit A. Invoices will be submitted monthly for work performed during the preceding month. Payment for undisputed work will be due within 30 days of receipt of invoice. Direct costs not specified in Exhibit A will not be reimbursed except with prior written approval of the PLSLWD administrator. Subcontractor fees and subcontractor direct costs, as incurred by CONSULTANT, will be reimbursed by PLSLWD at the rate specified in PLSLWD's written approval of the subcontract.

[The total payment for each task will not exceed the amount specified for that task in Exhibit A.] The total payment for the Services will not exceed [$_____]. Total payment in each respect means all sums to be paid whatsoever, including but not limited to fees and reimbursement of direct costs and subcontract costs, whether specified in this agreement or subsequently authorized by the administrator.

CONSULTANT will maintain all records pertaining to fees or costs incurred in connection with the Services for six years from the date of completion of the Services. CONSULTANT agrees that any authorized PLSLWD representative or the state auditor may have access to and the right to examine, audit and copy any such records during normal business hours.

6. Termination; Continuation of Obligations

This agreement is effective when fully executed by the parties and will remain in force until [DATE] unless earlier terminated as set forth herein.

PLSLWD may terminate this agreement at its convenience, by a written termination notice stating specifically what prior authorized or additional tasks or services it requires CONSULTANT to complete. CONSULTANT will receive full compensation for all authorized work performed, except that CONSULTANT will not be compensated for any part performance of a specified task or service if termination is due to CONSULTANT's breach of this agreement.

Insurance obligations; duty of care; obligations to defend, indemnify and hold harmless; document-retention requirements; and the obligation to cooperate in assigning intellectual property will survive the completion of the Services and the term of this agreement.

7. No Waiver

The failure of either party to insist on the strict performance by the other party of any provision or obligation under this agreement, or to exercise any option, remedy or right herein, will not waive or relinquish such party's rights in the future to insist on strict performance of any provision,

condition or obligation, all of which will remain in full force and affect. The waiver of either party on one or more occasion of any provision or obligation of this agreement will not be construed as a waiver of any subsequent breach of the same provision or obligation, and the consent or approval by either party to or of any act by the other requiring consent or approval will not render unnecessary such party's consent or approval to any subsequent similar act by the other.

Notwithstanding any other term of this agreement, PLSLWD waives no immunity in tort. This agreement creates no right in and waives no immunity, defense or liability limit with respect to any third party.

8. Insurance

At all times during the term of this Agreement, CONSULTANT will have and keep in force the following insurance coverages:

A. General: $1.5 million, each occurrence and aggregate, covering CONSULTANT's ongoing and completed operations on an occurrence basis and including contractual liability.

B. Professional liability: $1.5 million each claim and aggregate. Any deductible will be CONSULTANT's sole responsibility and may not exceed $50,000. Coverage may be on a claims-made basis, in which case CONSULTANT must maintain the policy for, or obtain extended reporting period coverage extending, at least three (3) years from completion of the Services.

C. Automobile liability: $1.5 million combined single limit each occurrence coverage for bodily injury and property damage covering all vehicles on an occurrence basis.

D. Workers' compensation: in accordance with legal requirements applicable to CONSULTANT.

CONSULTANT will not commence work until it has filed with PLSLWD a certificate of insurance documenting the required coverages and naming PLSLWD as an additional insured for general liability, along with a copy of the additional insured endorsement establishing coverage for CONSULTANT's ongoing and completed operations as primary coverage on a noncontributory basis. The certificate will name PLSLWD as a holder and will state that PLSLWD will receive written notice before cancellation, nonrenewal or a change in the limit of any described policy under the same terms as CONSULTANT.

9. Compliance with Laws

CONSULTANT will comply with all applicable laws and requirements of federal, state, local and other governmental units in connection with performing the Services and will procure all licenses, permits and other rights necessary to perform the Services.

In performing the Services, CONSULTANT will ensure that no person is excluded from full employment rights or participation in or the benefits of any program, service or activity on the ground of race, color, creed, religion, age, sex, disability, marital status, sexual orientation, public

assistance status or national origin; and no person who is protected by applicable federal or state laws, rules or regulations against discrimination otherwise will be subjected to discrimination.

10. Data and Information

All data and information obtained or generated by CONSULTANT in performing the Services, including documents in hard and electronic copy, software, and all other forms in which the data and information are contained, documented or memorialized, are the property of PLSLWD. CONSULTANT hereby assigns and transfers to PLSLWD all right, title and interest in: (a) its copyright, if any, in the materials; any registrations and copyright applications relating to the materials; and any copyright renewals and extensions; (b) all works based on, derived from or incorporating the materials; and (c) all income, royalties, damages, claims and payments now or hereafter due or payable with respect thereto, and all causes of action in law or equity for past, present or future infringement based on the copyrights. CONSULTANT agrees to execute all papers and to perform such other proper acts as PLSLWD may deem necessary to secure for PLSLWD or its assignee the rights herein assigned. [Define and exclude instruments of service, as appropriate]

PLSLWD may immediately inspect, copy or take possession of any materials on written request to CONSULTANT. On termination of the agreement, CONSULTANT may maintain a copy of some or all of the materials except for any materials designated by PLSLWD as confidential or non-public under applicable law, a copy of which may be maintained by CONSULTANT only pursuant to written agreement with PLSLWD specifying terms.

11. Data Practices; Confidentiality

If CONSULTANT receives a request for data pursuant to the Data Practices Act, Minnesota Statutes chapter 13 (DPA), that may encompass data (as that term is defined in the DPA) CONSULTANT possesses or has created as a result of this agreement, it will inform PLSLWD immediately and transmit a copy of the request. If the request is addressed to PLSLWD, CONSULTANT will not provide any information or documents, but will direct the inquiry to PLSLWD. If the request is addressed to CONSULTANT, CONSULTANT will be responsible to determine whether it is legally required to respond to the request and otherwise what its legal obligations are, but will notify and consult with PLSLWD and its legal counsel before replying. Nothing in the preceding sentence supersedes CONSULTANT's obligations under this agreement with respect to protection of PLSLWD data, property rights in data or confidentiality. Nothing in this section constitutes a determination that CONSULTANT is performing a governmental function within the meaning of Minnesota Statutes section 13.05, subdivision 11, or otherwise expands the applicability of the DPA beyond its scope under governing law.

CONSULTANT agrees that it will not disclose and will hold in confidence any and all proprietary materials owned or possessed by PLSLWD and so denominated by PLSLWD. CONSULTANT will not use any such materials for any purpose other than performance of the Services without PLSLWD written consent. This restriction does not apply to materials already possessed by CONSULTANT or that CONSULTANT received on a non-confidential basis from PLSLWD or another party. Consistent with the terms of this section 11 regarding use and protection of confidential and proprietary information, CONSULTANT retains a nonexclusive license to use the materials and may publish or use the materials in its professional activities. Any CONSULTANT duty of care

under this agreement does not extend to any party other than PLSLWD or to any use of the materials by PLSLWD other than for the purpose(s) for which CONSULTANT is compensated under this agreement.

12. PLSLWD Property

All property furnished to or for the use of CONSULTANT or a subcontractor by PLSLWD and not fully used in the performance of the Services, including but not limited to equipment, supplies, materials and data, both hard copy and electronic, will remain the property of PLSLWD and returned to PLSLWD at the conclusion of the performance of the Services, or sooner if requested by PLSLWD. CONSULTANT further agrees that any proprietary materials are the exclusive property of PLSLWD and will assert no right, title or interest in the materials. CONSULTANT will not disseminate, transfer or dispose of any proprietary materials to any other person or entity unless specifically authorized in writing by PLSLWD.

Any property including but not limited to materials supplied to CONSULTANT by PLSLWD or deriving from PLSLWD is supplied to and accepted by CONSULTANT as without representation or warranty including but not limited to a warranty of fitness, merchantability, accuracy or completeness. However, CONSULTANT's duty of professional care under paragraph 4, above, does not extend to materials provided to CONSULTANT by PLSLWD or any portion of the Services that is inaccurate or incomplete as the result of CONSULTANT's reasonable reliance on those materials.

13. Notices

Any written communication required under this agreement to be provided in writing will be directed to the other party as follows:

To PLSLWD:

Administrator
Prior Lake - Spring Lake Watershed District
4646 Dakota Street SE
Prior Lake MN 55372

To CONSULTANT:

[Authorized Representative
Organization
Address]

Either of the above individuals may in writing designate another individual to receive communications under this agreement.

14. Choice of Law; Venue

This agreement will be construed under and governed by the laws of the State of Minnesota. Venue for any action will lie in Scott County.

15. Whole Agreement

The entire agreement between the two parties is contained herein and this agreement supersedes all oral agreements and negotiations relating to the subject matter hereof. Any modification of this agreement is valid only when reduced to writing as an amendment to the agreement and signed by the parties hereto. PLSLWD may amend this agreement only by action of the Board of Managers acting as a body.

IN WITNESS WHEREOF, intending to be legally bound, the parties hereto execute and deliver this agreement.

CONSULTANT

By_____ Date: _____

Its_____

PRIOR LAKE -SPRING LAKE WATERSHED DISTRICT

By_____ Date: _____

Its_____

Items highlighted in Green are required by statute

Exhibit A
Scope of Services