



**Department of Public Works
Engineering Division**

W240N3065 Pewaukee Road • Pewaukee, WI 53072

Phone: (262) 691-0804 • Fax: (262) 691-5729

Email: publicworks@pewaukee.wi.us

**PUBLIC WORKS COMMITTEE
MEETING NOTICE AND AGENDA**

Thursday, July 27, 2023

4:00 PM

City Hall Common Council Chambers
W240N3065 Pewaukee Road Pewaukee, WI 53072

-
1. Call to Order and Pledge of Allegiance
 2. Public Comment - Please limit your comments to 2 minutes. If further time for discussion is needed, please contact your local Alderperson prior to the meeting.
 3. Discussion and Action Regarding the Minutes of April 27, 2023
 - 3.1. Discussion and action regarding the minutes of the April 27, 2023 meeting
 4. Communications
 - 4.1. Discussion and possible action regarding access for the Village of Pewaukee Assisted Living Facility on the corner of Swan Road and Pewaukee Road.
 5. Water and Sewer Division
 - 5.1. Discussion and possible action regarding PFAS Levels at Well #8
 - 5.2. Discussion and possible action regarding Gun Club Lift Station design.
 - 5.3. Discussion on the submitted 2022 Annual Compliance Maintenance Annual Report.
 6. Engineering Division
 - 6.1. Discussion and possible action regarding the Quiet Zone studies at the intersections of Green Road, Duplainville Road, and Watertown Road.
 - 6.2. Discussion and possible action regarding the GIS Implementation and Asset Management Software selection.
 - 6.3. Discussion and possible action regarding utility extension to Shady Lane and Shady Nook.
 7. Public Comment - Please limit your comments to 2 minutes. If further time for discussion is needed, please contact your local Alderperson prior to the meeting.
 8. Adjournment

Magdelene Wagner
Director of Public Works

July 27, 2023

NOTICE

It is possible that members of other governmental bodies of the municipality may be in attendance to gather information that may form a quorum. At the above stated meeting, no action will be taken by any governmental body other than the governmental body specifically referred to above in this notice.

Any person who has a qualifying disability under the Americans with Disabilities Act that requires the meeting or materials at the meeting to be in an accessible format must contact the DPW Main Office, at (262) 691-0804 by 12:00 p.m. the Tuesday prior to the meeting so that arrangements may be made to accommodate your request.

**CITY OF PEWAUKEE
PUBLIC WORKS COMMITTEE AGENDA ITEM 3.1.**

DATE: July 27, 2023

DEPARTMENT: PW - Water/Sewer

PROVIDED BY:

SUBJECT:

Discussion and action regarding the minutes of the April 27, 2023 meeting

BACKGROUND:

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

4/27/2023 Minutes

In Attendance

Mayor Bierce, Alderman Wamser, Committee Members: M. Kreiter, D. Swan, J. Tormey

Also in Attendance

Director of Public Works, M. Wagner, Chief Engineer-Utilities R. Wirtz, Chief Engineer-Streets & Developments M. Gabbey, Utility Manager J. Mueller, DPW Administrative Assistant S. Smaxwill

1. Call to Order and Pledge of Allegiance

Mayor Bierce called the meeting to order at 4:00 p.m. and requested everyone stand for the Pledge of Allegiance.

2. Public Comments - None

3. Discussion and Action Regarding the Minutes of March 9, 2023

A motion was made and seconded (D. Swan, J. Tormey) to approve the March 9, 2023 minutes.

Motion Passed: 5-For, 0-Against

4. Communications

4.1. Department of Public Works Building is nearing completion. Tentative Open House scheduled for May 11, 2023, from 11:30 am to 1:30 pm.

Ms. Wagner reported that the new DPW garage received occupancy and staff is moving in equipment. The garage should be in full operation within the next two weeks.

A tentative Open House is scheduled for May 11, 2023, from 11:30 a.m. to 1:30 p.m. to tour the facility. City staff, DPW, Plan Committee and Common Council members will be invited to attend. An email invitation will be sent out in the next few days with additional information.

The new garage is located on the corner of Duplainville Road and Green Road behind the old fire station.

5. Water and Sewer Division

5.1. Discussion and possible action regarding recommendation to award the proposal to 120 Water to create a Lead & Copper Rule Revisions (LCRR) Service Line Inventory as required by EPA regulations.

Ms. Mueller reported that despite our efforts during the past few months, Utility staff has not had much success in creating the required lead and copper service line pipe inventory as directed by the Environmental Protection Agency (EPA).

Ms. Mueller stated she attended a meeting with 120 Water, a company that works with municipalities to help create the required database. Considering all the work that needs to happen in the next several months, she found the information helpful and the proposal costs reasonable. She said that staff is looking for approval from the committee to take it to Council. This was not budgeted, but she feels there is room in the budget to cover the costs.

Mayor Bierce asked if staff was met with resistance from homeowners. Ms. Mueller stated no, the main issue was that we ran out of meters and had supply chain issues with obtaining meters in a timely manner. The other struggle we are having is how to create the database in a manner that complies with EPA requirements. 120 Water will create the database and compile the information for us. They are currently working with municipalities all around the country to get this information together and to the EPA by the deadline of October 2024. The Utility does not have the staff or time to devote to this project full-time, and we cannot hire someone to do the amount of work this will require for what 120 Water is proposing.

Ms. Mueller feels that we can compile enough information for the EPA to complete Phase I of the project by providing the necessary customer database and identifying the properties that we know do not have lead service lines. The properties that we cannot verify visually or have incomplete data for will still be included in the initial database, but will be involved in the second phase, where we will complete the database and go verify the unknowns. The EPA considers all unknown properties as lead service lines until they are verified that they are not.

120 Water can work with us all the way through the whole process, though she hopes we can get a lot of the work done in the next few years.

Mr. Tormey was impressed with the proposal and questioned if there was room in budget. Ms. Mueller stated \$13,000 should not be too large of an amount to overcome.

Mr. Kreiter asked if we are unable to get it done in a year would money be put in the budget for next year? Ms. Mueller said yes, she feels that it will be unlikely that we get enough of the database completed this year to submit to the EPA. 120 Water has the experience and ability to get this information put together in time for us to fully comply with EPA requirements. Ms. Mueller stated that once we obtain the majority of the data through as-built information, assessor's information, and permitting information, we will know more. And, because we are a newer utility constructed in the late 1970's, the bulk of our customer properties will be excluded from the 1940-60's lead service lines. The older homes are where we will need to build the rest of the database from information we can't get internally. 120 Water has postcard mailers and can reach out to homeowners to complete some of the data for us so we won't have to get into all of the homes.

Mayor Bierce asked why a homeowner wouldn't want to participate in the program? Ms. Mueller replied it's usually because people don't have time. We can adjust our work hours for the workday, but not on weekends or late evenings at this point. There is also a general government mistrust, our already heavy workloads, and supply chain issues that have contributed to the lost time in getting this done.

Mr. Swan asked how far do we go back with our customers having lead pipes? Ms. Mueller doesn't know that information. She said that not everyone on a private well is connected to municipal water. We are not looking at private wells, just our municipal water system. Initially, we were attempting to complete multiple items at once during these home inspections - the meter change, the pipe inventory, the DNR's cross connection check, and private well piping. By obtaining all this information during one visit, it would help the customer and we would collect the information required for the next 10-20 years. But what the pipe material from a lateral would be except for by the construction timeframe, she doesn't know.

A motion was made and seconded (J. Tormey, M. Kreiter) to award the proposal to 120 Water to create a Lead & Copper Rule Revisions (LCRR) Service Line Inventory as required by EPA regulations. Motion Passed: 5-For, 0-Against.

5.2. Discussion on Well #1 motor failure update.

Ms. Mueller reported that the Well #1 motor failure was on the part of the motor manufacturer. She stated this was warranty work and we have not received a bill for any of the repairs.

Mr. Swan asked what caused it? Ms. Mueller replied that the manufacturer said that they need to improve their stator design.

Mr. Tormey asked if this motor failed repeatedly? Ms. Mueller said yes, they did cover another one under warranty. He asked if they would all be manufacturer's defects? Ms. Wagner replied all but the first one, and they have not admitted to the second one and have not covered it under warranty yet.

Alderman Wamser asked if we will be reimbursed for labor? Ms. Mueller said that we hired a contractor and have not paid anything on this warranty at all. She plans to go back to the manufacturer and have a discussion with them regarding the previous motors.

6. Engineering Division

6.1. Discussion and possible action regarding the intersection of Lindsay Road and Pewaukee Road (STH 164) and possible signals.

Ms. Wagner reported on Mr. Swan's request for further discussion with the Wisconsin Dept of Transportation (WDOT) about putting traffic signals at the intersection of Lindsay Road and Pewaukee Road (STH 164). She mentioned a previous discussion she had with the WDOT in a planning meeting where they indicated that the city did not meet the warrants to have those improvements done as part of this resurfacing project.

Mr. Swan asked for additional information on how they made that determination. Ms. Wagner said she reached out to WDOT engineers and was told that it was based on their warrant analysis from 2021 traffic counts. The city did meet one warrant, but it was not sufficient for the WDOT to include it in this project. Mr. Swan asked what that warrant was? Ms. Wagner included the analysis in the packet and referenced "Condition B. Interruption of Continuous Traffic". The city was told that we could request signals at that intersection, but we would have to pay 100% of the cost of the signal improvements for the intersection. And, any agreements to that end would have to be in place by early this summer to be included as part of this project. Ms. Wagner said that given this is not in our jurisdiction, she needs some direction from the committee if they want to pursue this further.

Ms. Wagner provided the crash rates Mr. Swan requested, which were a total of 16 reported crashes in the last five years.

Mr. Tormey suggested we alert the Village that there is a problem. He is in favor of Alternative 4, to notify the Village of the status of the problem and then it's between the Village and the state. He feels if we pay for this, we are setting a dangerous precedent.

Ms. Wagner said the Village is aware that there is a problem at that intersection but has not advocated for anything. She said that we can ask them, but feels their response will be that if you want it, you pursue it.

Mr. Tormey said that even though the traffic would warrant signals, the state can't do it because it is a resurfacing project. Ms. Wagner agreed.

Ms. Wagner reported that she didn't realize the intersection wasn't part of the city because she was thinking that it was split between the city and the village.

Mr. Swan stated he would like this pursued further. He asked for the Mayor and Village President to make the request to the state to see if they would change their position. He asked for an official recommendation from this committee. He feels the state should pay for it. The committee discussed the different alternatives and agreed to Mr. Swan's request.

A motion was made and seconded (J. Tormey, D. Swan) directing the Mayor to approach the Village President, and speak with the State to pay for the signals with the help of the Village and the City. Motion Passed: 5-For, 0-Against

7. Highway Division

7.1. Discussion and possible action regarding City Entrance signs.

Ms. Wagner provided the committee with a few options to choose from on the style of the 30 entrance signs that will be posted throughout the city. There were two font options to choose from, one with all block lettering and one with script and block lettering. There were also two with different size options to choose from, either 18x30" or 24x30".

After discussing the various options, the committee approved the 18x30" sign, with the combination of the script and block letter style, with the top line above "Welcome" removed.

8. Public Comments - None

9. Adjournment

The committee agreed to combine the May 25th and June 22nd committee meetings into one meeting scheduled for June 8, 2023, at 4:00 p.m.

A motion was made and seconded (M. Kreiter, J. Tormey) to adjourn the meeting at 4:40 p.m. Motion Passed: 5-For, 0-Against.

Respectfully Submitted,

Magdelene Wagner
Director of Public Works

**CITY OF PEWAUKEE
PUBLIC WORKS COMMITTEE AGENDA ITEM 4.1.**

DATE: July 27, 2023

DEPARTMENT: Public Works

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion and possible action regarding access for the Village of Pewaukee Assisted Living Facility on the corner of Swan Road and Pewaukee Road.

BACKGROUND:

Mr. Swan requested this item be placed on the agenda for discussion.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

CITY OF PEWAUKEE
PUBLIC WORKS COMMITTEE AGENDA ITEM 5.1.

DATE: July 27, 2023

DEPARTMENT: PW - Water/Sewer

PROVIDED BY: Jane Mueller, Utility Manager

SUBJECT:

Discussion and possible action regarding PFAS Levels at Well #8

BACKGROUND:

The Department of Natural Resources (DNR) required the Utility to sample for PFAS at each entry point into the water system in the 2nd quarter monitoring for 2023. The wells and **entry points were sampled on May 23rd. Test results were received via email on June 14th.

On June 19th I received a phone call from Jesse Jensen, our regional DNR Field Supervisor. The DNR was highly concerned about the level of PFAS compounds found in Well #8. They stated that the combination of the levels of compounds triggered an elevated **Hazard Index** that was established by the Department of Health Services (DHS).

City staff met with the DNR on June 21st to discuss the elevated levels of PFAS identified. The DNR staff explained that a Tier II Public Notice was triggered due to the elevated Hazard Index. This requires that a notice goes out to the customer base/public within 30 days from the DNR Tier II notification letter to the City. We are required to use the language and template provided by the DNR. The information in the Public Notice hinged on whether the Utility would take the well out of service or provide a quarterly notice to customers alerting them of the exceedance of the Hazard Index. These actions are required even though the City of Pewaukee is not in violation of any current PFAS or PFOA federal or state drinking water standards or regulations.

The Environmental Protection Agency (EPA) is actively conducting sampling around the country and analyzing the health concerns of many of the PFAS and PFOA compounds. (The EPA is typically the agency that determines drinking water contaminants and limits.) However, in Wisconsin the DHS has determined the health risk to the public, and the State has adopted the Hazard Index to protect public health. You can find more information on their website at www.dhs.wisconsin.gov.

City staff met with the consultant who is working on our Water facility plan to discuss our options for Well #8. The discussion resulted in staff taking the well out of service until further testing is conducted and a treatment system can be identified and installed. This will likely be a 24–36 month process at a rough estimate of \$2.75M to \$3M. Further evaluation is needed, which will provide more refined costs.

Attached is the Public Notice that will be mailed to our customers the week of July 17th, along with the DNR Tier II notification letter and the water monitoring results from the 2nd quarter 2023 PFAS monitoring. We will also be updating the City website to include information on PFAS as well as links to the DNR and DHS websites where consumers can find more information on PFAS.

**Entry Points are pump stations where the water from two wells are blended together. The entry point sample is the

blended water sample.

FINANCIAL IMPACT:

Initial estimates range from \$2.75M to \$3M. Estimates will be refined in the future as preliminary engineering work takes place.

RECOMMENDED MOTION:

ATTACHMENTS:

Description

PFAS Public Notice

Pewaukee City PFAS Letter-DNR

Northern Lakes PFAS Test Results

AWWA Supplemental information PFAS Info



**Department of Public Works
Water & Sewer Utility**

W240N3065 Pewaukee Road • Pewaukee, WI 53072
Phone: (262) 691-0804 • Fax: (262) 691-5729
Email: publicworks@pewaukee.wi.us

Important Information About Your Drinking Water

On May 23, 2023, the City of Pewaukee Water & Sewer Utility collected water samples from the City's drinking water well entry points and tested them for perfluoroalkyl and polyfluoroalkyl substances (PFAS). PFAS are a group of human-made chemicals that have been used in many products since the 1950s. Test results received at the end of June indicated that some PFAS compounds were found in Well #8 that are above the Wisconsin Department of Health Services (DHS) health advisory levels. PFAS levels in the other wells are either not detected or are below levels of health concern.

At this time, the health risk is low. The City of Pewaukee Water & Sewer Utility (Utility) is not in violation of any drinking water standards or regulations and has proactively taken actions to protect the health of its customers. **On June 21, 2023, the Utility shut off Well #8.** The Utility is only using water from the 10 wells with levels below the DHS health advisory/hazard Index guidance levels (when necessary, water from Well #5 with the radium contamination is used). **People and businesses can continue to use the water from the City of Pewaukee municipal water system.**

What is being done to correct the issue?

In addition to taking Well #8 out of service, the City of Pewaukee will be working with our consultants to determine the appropriate treatment process to remove the contaminants from Well #8. There are few treatment options to choose from. We will pilot test different treatment options to determine which treatment will offer the best long-term, most cost-effective process for removal of the contaminants.

What are per- and polyfluoroalkyl substances (PFAS)?

Per- and polyfluoroalkyl substances are a large group of human-made chemicals that are resistant to heat, water, and oil. These chemicals have been used for decades in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food paper wrappings, personal care products, fire-fighting foams, and metal plating (coating of cookware). PFAS have been found at low levels both in the environment and in blood samples of the general U.S. population.

How are people exposed to PFAS and why are they harmful?

The main way people are exposed to PFAS is by drinking water or eating food containing them. PFAS chemicals do not easily absorb into the skin so contact with water that contains PFAS poses a very low health risk.

Several studies have examined possible relationships between levels of PFAS in blood and harmful health effects in people. However, most of these studies analyzed only a small number of chemicals, and not all PFAS have the same health effects. This research suggests that high levels of certain PFAS may increase cholesterol levels, decrease how well the body responds to vaccines, and reduced fertility in women. Some other studies have indicated that high levels of certain PFAS may increase the risk of thyroid disease, increase the risk of serious conditions like high blood pressure, or pre-eclampsia in pregnant women and lower infant birth weights.

How does PFAS get into the drinking water?

PFAS can get into drinking water when products containing them are used or spilled on the ground or into lakes and rivers, as well as manufacturing and disposal. PFAS moves easily through the groundwater getting into lakes or rivers used as a source of drinking water supplies or for private drinking water supplies. PFAS in the air can also end up in rivers and lakes used for drinking water.

If you have any questions regarding City of Pewaukee drinking water or testing, please contact Jane Mueller, Utility Manager at (262) 691-0804.

General PFAS Questions: Visit the Department of Natural Resources website:
<https://dnr.wisconsin.gov/topic/PFAS>

Health-Related Questions: Contact the Wisconsin Department of Health Services Bureau of Environmental and Occupational Health at (608) 266-1120 or
<https://www.dhs@wisconsin.gov>.

Additional information about PFAS and related health risks can be found on the DHS website at <https://www.dhs.wisconsin.gov/chemical/pfas.htm>.



June 26, 2023

Jane Mueller – Superintendent
City of Pewaukee Water Utility
W240 N3065 Pewaukee Rd.
Pewaukee, WI 53072

PWSID#: 26802149
Region: Southeast Region
County: Waukesha
File Code: 3300

SUBJECT: **Tier 2 Public Notification Requirement.** Public Notification Required Due to Detection of Per- and Polyfluoroalkyl Substances (PFAS) in Excess WI Department of Health Services Recommended Groundwater Standards.

Dear Jane Mueller:

Results from PFAS samples taken at Entry Point (EP) 8 reported to the Wisconsin Department of Natural Resources (department, DNR) on June 14, 2023, indicate the presence of PFAS in exceedance of Wisconsin Department of Health Services (DHS) recommended groundwater standards and/or of DHS hazard index guidance which is a tool that assesses risk based on mixtures of PFAS compounds.

- The hazard index (HI) for EP 8 was 1.7. The standard is 1.0. The individual PFHxS level was of 47 ppt which is higher than the DHS individual recommended standard of 40 ppt. Based on the levels found, the department is requiring The City of Pewaukee Water Utility (Utility) to post a Tier 2 public notification, per Wis. Adm. Code s. NR 809.950(3)(c)5.

The Utility is not in violation of federal or state drinking water standards. The department considers DHS's recommended groundwater standards and hazard index guidance as levels of contamination above which the public water system must inform the public of the public health situation and consider taking voluntary action to protect public health and reduce exposure to PFAS contaminants from drinking water sources. The DHS recommended groundwater standards and hazard index guidance are set at levels to protect all people, including the most sensitive populations, from negative health effects linked to PFAS compounds. The department is requiring the Tier 2 Public Notice to inform Utility costumers of the recent sampling results and actions the Utility has taken or plans to take to address the situation.

Public Notification Requirements:

The attached notice(s) meets all the public notification content requirements. One is if you choose to take EP 8 offline (EP 8 inactive) and the other is if you choose to not take EP 8 offline (EP 8 active). You can add information or change the formatting, but do not change any of the text in the notice. Fill in all the highlighted areas with the appropriate information and issue the notice to all effected customers.

- Notification must be made to all persons served by your system by mail or direct delivery to all customers and by any other method approved by the department.
- The notice should be delivered as soon as practical but must be delivered within 30 days of the date of this letter.

- A copy of the completed notice issued must be sent to our office within 10 days of the date of issuance. Remember to sign and date the copy.
- This public notice must be re-issued every 90 days as long as the situation exists.
- If you develop your own notice, it must include the information required in Wis. Adm. Code s. NR 809.954, and the health effects language approved or provided by DHS and a certification statement that you have fully complied with the public notification regulations.
- If 5% or more of the population served by your system consists of non-English speaking consumers, the public notice must contain information in the appropriate language(s).
- If EP 8 is taken offline and later placed back online, the department shall be notified to determine if a different public notice is needed.

Voluntary Follow-up Corrective Action:

Additional voluntary actions which you can consider implementing may include the following:

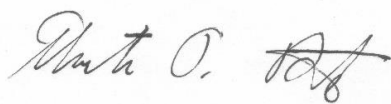
- Consider inactivating wells exceeding DHS recommendations from service if capacity needs allow.
- Provide pre-notification of this notice to any critical water users in your service area.
- Contact local or county health agencies to discuss health impacts of PFAS.
- Begin evaluating interim and long-term options to reduce PFAS levels in water system.

Additional Information:

- DHS PFAS standards/information: <https://www.dhs.wisconsin.gov/chemical/pfas.htm>
- DNR PFAS standards/information: <https://dnr.wisconsin.gov/topic/DrinkingWater/NR809.html>
- Funding for PFAS removal projects is available from the state Safe Drinking Water Loan Program, and this funding program does include the potential for principal forgiveness. More information on the DNR web site at: <https://dnr.wisconsin.gov/aid/EIF.html>. Other funding sources may also be available to your system.

If you have any questions, please contact me at 262-765-0912 or Thanintr.Ratarasarn@wisconsin.gov.

Sincerely,



Thanintr Ratarasarn, MS, PE
Water Supply Engineer

Encl. Public Notice with Certification

Cc: Michael Thompson – Southeast Region Secretary’s Director
Adam DeWeese – DG/5
Kyle Burton – DG/5
Jesse Jensen – DG Southeast Region



City of Pewaukee	Project: Quarterly PFAS & Radioactivity
W240 N3065 Pewaukee Road	Project Number: 2023 WDNR Drinking Water Requirements
Pewaukee, WI 53072	Project Manager: Jane Mueller
	Reported: 6/14/23 7:53
	Work Order: WB02991

Sample Summary

Descriptions of all qualifiers listed throughout this report can be found on the Qualifiers and Definitions Page.

Lab ID	Sample	Matrix	Sample Type	Qualifiers	Date Sampled	Date Received
WB02991-01	EP1 (PFAS)	DW			5/23/23 8:30	5/23/23 10:45
WB02991-03	EP2 (PFAS)	DW			5/23/23 8:20	5/23/23 10:45
WB02991-05	EP5 (PFAS)	DW			5/23/23 9:10	5/23/23 10:45
WB02991-07	EP8 (PFAS)	DW			5/23/23 9:50	5/23/23 10:45
WB02991-08	EP8 FB (PFAS)	DW			5/23/23 9:50	5/23/23 10:45
WB02991-09	EP200 (PFAS)	DW			5/23/23 9:30	5/23/23 10:45
WB02991-11	EP300 (PFAS)	DW			5/23/23 8:05	5/23/23 10:45
WB02991-13	EP400 (PFAS)	DW			5/23/23 10:25	5/23/23 10:45
WB02991-15	EP500 (PFAS)	DW			5/23/23 10:05	5/23/23 10:45
WB02991-16	EP500 FB (PFAS)	DW			5/23/23 10:05	5/23/23 10:45

Analysis Qualifiers:

LabNumber	Analysis	Qualifier
WB02991-01	537.1 Perfluorinated Chemicals by LC/MS/MS	FBNA
WB02991-03	537.1 Perfluorinated Chemicals by LC/MS/MS	FBNA
WB02991-05	537.1 Perfluorinated Chemicals by LC/MS/MS	FBNA
WB02991-09	537.1 Perfluorinated Chemicals by LC/MS/MS	FBNA
WB02991-11	537.1 Perfluorinated Chemicals by LC/MS/MS	FBNA
WB02991-13	537.1 Perfluorinated Chemicals by LC/MS/MS	FBNA

Cancelled Tests:

Lab ID	Sample	Analysis	Cancelled	Initials
WB02991-02	EP1 FB (PFAS)	Perfluorinated Chemicals by EPA Method 537.1 FB	5/30/23 10:24	CSC
WB02991-04	EP2 FB (PFAS)	Perfluorinated Chemicals by EPA Method 537.1 FB	5/30/23 10:24	CSC
WB02991-06	EP5 FB (PFAS)	Perfluorinated Chemicals by EPA Method 537.1 FB	5/30/23 10:24	CSC
WB02991-10	EP200 FB (PFAS)	Perfluorinated Chemicals by EPA Method 537.1 FB	5/30/23 10:25	CSC
WB02991-12	EP300 FB (PFAS)	Perfluorinated Chemicals by EPA Method 537.1 FB	5/31/23 12:09	CSC
WB02991-14	EP400 FB (PFAS)	Perfluorinated Chemicals by EPA Method 537.1 FB	5/30/23 10:25	CSC



Northern Lake Service Inc.

Northern Lake Service, Inc • 400 N Lake Ave • Crandon, WI 54520
800-278-1254 • www.nlslab.com

City of Pewaukee	Project: Quarterly PFAS & Radioactivity	Reported:	Work Order:
W240 N3065 Pewaukee Road	Project Number: 2023 WDNR Drinking Water Requirements	6/14/23 7:53	WB02991
Pewaukee, WI 53072	Project Manager: Jane Mueller		

Sample: EP1 (PFAS)

WB02991-01 (DW) Sampled: 05/23/23 08:30

Sample Results

Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosafiuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		0.30	0.98		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.36	1.2		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.40	1.4		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.46	1.6		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.39	1.3		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	ND		0.29	0.98		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.32	1.1		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.23	0.75		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		0.43	1.5		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	ND		0.46	1.6		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.45	1.5		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		0.48	1.6		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		0.30	0.98		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluorotridecanoic acid (PFTDA)	ND		0.42	1.4		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.29	0.98		ng/L	5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFHxA	86%		Limits: 70-130%				5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-HFPoDA	84%		Limits: 70-130%				5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFDA	84%		Limits: 70-130%				5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) d5-NEFOSAA	81%		Limits: 70-130%				5/26/23 5:10	5/27/23 14:50	RAW	EPA 537.1, Rev 2.0	2



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City of Pewaukee W240 N3065 Pewaukee Road Pewaukee, WI 53072			Project: Quarterly PFAS & Radioactivity Project Number: 2023 WDNR Drinking Water Requirements Project Manager: Jane Mueller			Reported: 6/14/23 7:53		Work Order: WB02991			
Sample: EP2 (PFAS) WB02991-03 (DW) Sampled: 05/23/23 08:20											
Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosasulfuro-3-oxaundecane-1-sulfonic acid (11Cl-PF30UdS)	ND		0.31	1.0		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.37	1.2		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.41	1.4		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEUFOSAA)	ND		0.47	1.6		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
N-methyl perfluorooctanesulfonamidoacetic acid (NMEFOSAA)	ND		0.40	1.3		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	ND		0.30	1.0		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.23	0.77		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		0.44	1.5		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	ND		0.47	1.6		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.46	1.5		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		0.49	1.6		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		0.31	1.0		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluorotridecanoic acid (PFTiDA)	ND		0.43	1.4		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.30	1.0		ng/L	5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFHxA	85%		Limits: 70-130%				5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-HFPODA	85%		Limits: 70-130%				5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFDA	87%		Limits: 70-130%				5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) d5-NEUFOSAA	82%		Limits: 70-130%				5/26/23 5:10	5/27/23 15:16	RAW	EPA 537.1, Rev 2.0	2



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City of Pewaukee W240 N3065 Pewaukee Road Pewaukee, WI 53072		Project: Quarterly PFAS & Radioactivity Project Number: 2023 WDNR Drinking Water Requirements Project Manager: Jane Mueller		Reported: 6/14/23 7:53		Work Order: WB02991					
Sample: EPS (PFAS)											
WB02991-05 (DW) Sampled: 05/23/23 09:10											
Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosafuoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		0.30	0.98		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.36	1.2		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.40	1.4		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.46	1.6		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
N-methyl perfluorooctanesulfonamidoacetic acid (NMFOSAA)	ND		0.39	1.3		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	ND		0.29	0.98		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.32	1.1		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.23	0.75		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		0.43	1.5		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	ND		0.46	1.6		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.45	1.5		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		0.48	1.6		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		0.30	0.98		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluorobridgedecanoic acid (PFTiDA)	ND		0.42	1.4		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.29	0.98		ng/L	5/26/23 5:10	5/27/23 15:42	RAW	EPA 537.1, Rev 2.0	2
Limits: 70-130%											
Surrogate: (SURR) C13-PFHxA	86%		Limits: 70-130%								
Surrogate: (SURR) C13-HFPoDA	82%		Limits: 70-130%								
Surrogate: (SURR) C13-PFDA	88%		Limits: 70-130%								
Surrogate: (SURR) d5-NEFOSAA	85%		Limits: 70-130%								



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City of Pewaukee	Project: Quarterly PFAS & Radioactivity	Reported:	Work Order:
W240 N3065 Pewaukee Road	Project Number: 2023 WDNR Drinking Water Requirements	6/14/23 7:53	WB02991
Pewaukee, WI 53072	Project Manager: Jane Mueller		

Sample: EP8 (PFAS)

WB02991-07 (DW) Sampled: 05/23/23 09:50

Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosafuoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	ND		0.31	1.0		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
4,9-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.37	1.2		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.41	1.4		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.47	1.6		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
P-methyl perfluorooctanesulfonamidoacetic acid (NMFOSAA)	ND		0.40	1.3		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	21		0.30	1.0		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.23	0.77		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	5.4		0.44	1.5		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	26		0.47	1.6		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	47		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.46	1.5		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	5.5		0.49	1.6		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	5.3		0.31	1.0		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluorotridecanoic acid (PFTTDA)	ND		0.43	1.4		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.30	1.0		ng/L	5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFHxA	84%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-HFPoDA	82%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFDA	84%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) d5-NEFOSAA	83%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:08	RAW	EPA 537.1, Rev 2.0	2



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City of Pewaukee W240 N3065 Pewaukee Road Pewaukee, WI 53072		Project: Quarterly PFAS & Radioactivity Project Number: 2023 WDNR Drinking Water Requirements Project Manager: Jane Mueller		Reported: 6/14/23 7:53		Work Order: WB02991					
Sample: EP8 FB (PFAS) WB02991-08 (DW) Sampled: 05/23/23 09:50											
Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosasulfuro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUDS)	ND		0.32	1.0		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecasulfuro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	ND		0.35	1.1		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.39	1.2		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.43	1.5		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.49	1.7		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
p-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.42	1.4		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	ND		0.31	1.0		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.34	1.1		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.24	0.80		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		0.46	1.6		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	ND		0.49	1.7		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	ND		0.35	1.1		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.48	1.6		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		0.51	1.7		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		0.32	1.0		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.35	1.1		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluorobitricanoic acid (PFTtDA)	ND		0.45	1.5		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.31	1.0		ng/L	6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFHxA	91%		Limits: 70-130%				6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-HFPoDA	88%		Limits: 70-130%				6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFDA	91%		Limits: 70-130%				6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) d5-NEFOSAA	88%		Limits: 70-130%				6/4/23 12:02	6/5/23 19:24	RAW	EPA 537.1, Rev 2.0	2



City of Pewaukee W240 N3065 Pewaukee Road Pewaukee, WI 53072			Project: Quarterly PFAS & Radioactivity Project Number: 2023 WDNR Drinking Water Requirements Project Manager: Jane Mueller			Reported: 6/14/23 7:53		Work Order: WB02991			
Sample: EP200 (PFAS) WB02991-09 (DW) Sampled: 05/23/23 09:30											
Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosafuoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUDS)	ND		0.32	1.0		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	ND		0.35	1.1		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.38	1.2		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.42	1.4		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.48	1.6		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
n-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.41	1.3		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	0.56	J	0.31	1.0		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.23	0.79		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		0.45	1.5		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	ND		0.48	1.6		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	ND		0.35	1.1		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.47	1.5		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		0.50	1.6		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		0.32	1.0		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.35	1.1		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluorotridecanoic acid (PFTDA)	ND		0.44	1.4		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.31	1.0		ng/L	5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SUUR) C13-PFHxA	84%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SUUR) C13-HFPoDA	83%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SUUR) C13-PFDA	86%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SUUR) d5-NEFOSAA	82%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:34	RAW	EPA 537.1, Rev 2.0	2



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City of Pewaukee		Project: Quarterly PFAS & Radioactivity			Work Order:						
W240 N3065 Pewaukee Road		Project Number: 2023 WDNR Drinking Water Requirements			WB02991						
Pewaukee, WI 53072		Project Manager: Jane Mueller			Reported:						
					6/14/23 7:53						
Sample: EP300 (PFAS)											
WB02991-11 (DW) Sampled: 05/23/23 08:05											
Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosaffluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	ND		0.32	1.0		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		0.35	1.1		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.38	1.2		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.42	1.4		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.48	1.6		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
1-methyl perfluorooctanesulfonamidoacetic acid (NMFOSAA)	ND		0.41	1.3		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	0.98	J	0.31	1.0		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.34	1.1		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.23	0.79		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		0.45	1.5		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	1.4	J	0.48	1.6		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	1.7		0.35	1.1		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.47	1.5		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		0.50	1.6		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		0.32	1.0		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.35	1.1		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluorobridecanoic acid (PFTiDA)	ND		0.44	1.4		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.31	1.0		ng/L	5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFHxA	100%		Limits: 70-130%				5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-HFPDA	98%		Limits: 70-130%				5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFDA	101%		Limits: 70-130%				5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) d5-NEFOSAA	90%		Limits: 70-130%				5/29/23 13:15	5/31/23 0:52	RAW	EPA 537.1, Rev 2.0	2



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City of Pewaukee W240 N3065 Pewaukee Road Pewaukee, WI 53072			Project: Quarterly PFAS & Radioactivity Project Number: 2023 WDNR Drinking Water Requirements Project Manager: Jane Mueller			Reported: 6/14/23 7:53		Work Order: WB02991			
Sample: EP400 (PFAS)											
WB02991-13 (DW) Sampled: 05/23/23 10:25											
Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosasulfuro-3-oxaundecane-1-sulfonic acid (11CI-PF30UdS)	ND		0.32	1.0		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecasulfuro-3-oxanonane-1-sulfonic acid (9CI-PF30NS)	ND		0.35	1.1		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.38	1.2		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.42	1.4		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.48	1.6		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
n-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.41	1.3		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	0.37	J	0.31	1.0		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.23	0.79		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		0.45	1.5		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	ND		0.48	1.6		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	0.66	J	0.35	1.1		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.47	1.5		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		0.50	1.6		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		0.32	1.0		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.35	1.1		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluorotridecanoic acid (PFTtDA)	ND		0.44	1.4		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.31	1.0		ng/L	5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2

Surrogate: (SURR) C13-PFHxA	82%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-HFPtDA	80%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFDA	87%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) d5-NEFOSAA	86%		Limits: 70-130%				5/26/23 5:10	5/27/23 16:59	RAW	EPA 537.1, Rev 2.0	2



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City of Pewaukee W240 N3065 Pewaukee Road Pewaukee, WI 53072				Project: Quarterly PFAS & Radioactivity Project Number: 2023 WDNR Drinking Water Requirements Project Manager: Jane Mueller				Reported: 6/14/23 7:53				Work Order: WB02991			
Sample: EP500 (PFAS) WB02991-15 (DW) Sampled: 05/23/23 10:05															
Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code				
Semi-Volatiles															
11-chloro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUDS)	ND		0.31	1.0		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.37	1.2		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.41	1.4		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.47	1.6		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
p-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		0.40	1.3		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorobutanesulfonic acid (PFBS)	3.9		0.30	1.0		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorodecanoic acid (PFDA)	ND		0.33	1.1		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorododecanoic acid (PFDoA)	ND		0.23	0.77		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluoroheptanoic acid (PFHpA)	1.3	J	0.44	1.5		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorohexanoic acid (PFHxA)	5.5		0.47	1.6		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorohexanesulfonic acid (PFHxS)	13		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorononanoic acid (PFNA)	ND		0.46	1.5		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorooctanoic acid (PFOA)	1.5	J	0.49	1.6		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorooctanesulfonic acid (PFOS)	2.6		0.31	1.0		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorotetradecanoic acid (PFTA)	ND		0.34	1.1		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluorotridecanoic acid (PFTtDA)	ND		0.43	1.4		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
perfluoroundecanoic acid (PFUnA)	ND		0.30	1.0		ng/L	5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
Limits: 70-130%												RAW	EPA 537.1, Rev 2.0	2	
Surrogate: (SURR) C13-PFHxA	91%		Limits: 70-130%				5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
Surrogate: (SURR) C13-HFPoDA	86%		Limits: 70-130%				5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
Surrogate: (SURR) C13-PFDA	88%		Limits: 70-130%				5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				
Surrogate: (SURR) d5-NEFOSAA	87%		Limits: 70-130%				5/26/23 5:10	5/27/23 17:25	RAW	EPA 537.1, Rev 2.0	2				



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City of Pewaukee W240 N3065 Pewaukee Road Pewaukee, WI 53072			Project: Quarterly PFAS & Radioactivity Project Number: 2023 WDNR Drinking Water Requirements Project Manager: Jane Mueller			Reported: 6/14/23 7:53			Work Order: WB02991		
Sample: EP500 FB (PFAS) WB02991-16 (DW) Sampled: 05/23/23 10:05											
Analyte	Result	Qualifier	LOD	LOQ	MCL	Units	Date Prepared	Date Analyzed	Analyst	Method	Lab Cert Code
Semi-Volatiles											
11-chloroicosafuoro-3-oxaundecane-1-sulfonic acid (11CI-PF30UD5)	ND		0.32	1.0		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF30NS)	ND		0.35	1.1		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		0.39	1.2		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
hexafluoropropylene oxide dimer acid (HFPO DA)	ND		0.43	1.5		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
N-ethyl perfluorooctanesulfonamidoacetic acid (NEFOSAA)	ND		0.49	1.7		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
n-methyl perfluorooctanesulfonamidoacetic acid (NMFOSAA)	ND		0.42	1.4		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorobutanesulfonic acid (PFBS)	ND		0.31	1.0		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorodecanoic acid (PFDA)	ND		0.34	1.1		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorododecanoic acid (PFDoA)	ND		0.24	0.80		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluoroheptanoic acid (PFHpA)	ND		0.46	1.6		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanoic acid (PFHxA)	ND		0.49	1.7		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorohexanesulfonic acid (PFHxS)	ND		0.35	1.1		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorononanoic acid (PFNA)	ND		0.48	1.6		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanoic acid (PFOA)	ND		0.51	1.7		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorooctanesulfonic acid (PFOS)	ND		0.32	1.0		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorotetradecanoic acid (PFTA)	ND		0.35	1.1		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluorotridecanoic acid (PFTiDA)	ND		0.45	1.5		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
perfluoroundecanoic acid (PFUnA)	ND		0.31	1.0		ng/L	6/4/23 12:02	6/5/23 19:50	RAW	EPA 537.1, Rev 2.0	2
Surrogate: (SURR) C13-PFHxA Limits: 70-130%											
Surrogate: (SURR) C13-HFPoDA Limits: 70-130%											
Surrogate: (SURR) C13-PFDA Limits: 70-130%											
Surrogate: (SURR) d5-NEFOSAA Limits: 70-130%											



City of Pewaukee W240 N3065 Pewaukee Road Pewaukee, WI 53072	Project: Quarterly PFAS & Radioactivity Project Number: 2023 WDNR Drinking Water Requirements Project Manager: Jane Mueller	Reported: 6/14/23 7:53	Work Order: WB02991
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List of Certifications

Code	Description	Number	Expires
2	NLS (Crandon) WDNR Laboratory ID No.	721026460	8/31/23



City of Pewaukee	Project: Quarterly PFAS & Radioactivity	Reported:	Work Order:
W240 N3065 Pewaukee Road	Project Number: 2023 WDNR Drinking Water Requirements	6/14/23 7:53	WB02991
Pewaukee, WI 53072	Project Manager: Jane Mueller		

Qualifiers and Definitions

Item	Definition
FBNA	The field sample had no detects, therefore the corresponding trip blank/field reagent blank was not analyzed.
J	Result is between LOD and LOQ and considered to be within a region of less-certain quantitation.
ND	Analyte NOT DETECTED at or above the LOD or MRL.
LOD	Limit of Detection.
LOQ	Limit of Quantitation.
NA	Not Applicable.
Dry	Dry Weight Basis.
Wet	Wet Weight Basis.
% Dry	Equal to: (mg/kg dry) / 10000.
1000 ug/L	Equal to: 1 mg/L.
MCL	Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.
RPD	Relative Percent Difference.
%REC	Percent Recovery.
Source	Sample that was matrix spiked or duplicated.

All LOD/LOQs adjusted to reflect preparation volumes, dilutions, and/or solids content.

Correcting PFAS Myths: Misperceptions Risk Higher Clean-up Costs for Water Ratepayers



Regulating forever chemicals, also known as per- and polyfluoroalkyl substances (PFAS), presents enormous challenges for lawmakers and regulators due to their unique characteristics.

In the stampede to address this complex issue, Congress and EPA have often applied faulty cost projections to remediation, ignored or downplayed input from the water sector, and created policies that hamper accountability as part of regulations that will inevitably determine who pays for the clean-up of harmful PFAS pollution. New, fact-based regulations that trace back the history of PFAS must be crafted to hold the real polluters accountable.

Forever chemicals have been used in various industrial and consumer products for decades. They are resistant to heat, water, and oil, making them ideal for applications such as firefighting foam, non-stick coatings, waterproofing materials, and more. The extensive use of PFAS in numerous industries makes it difficult to control their release and prevent further contamination.

Complex regulatory landscape – Regulating forever chemicals is complicated due to the wide range of PFAS compounds with different properties and potential risks. US EPA is on a path to implement regulations and guidelines for specific PFAS compounds, instead of taking a more comprehensive approach. Many states are also moving ahead with different PFAS regulations that are separate from what is happening at the federal level. This lack of harmonized regulations will lead to inconsistencies in holding PFAS polluters accountable and enforcing effective control measures.

Treatment and remediation – Removing PFAS from drinking water sources and as part of the wastewater treatment and stormwater management process is technically challenging and costly. Conventional treatment methods like filtration and activated carbon adsorption are not always effective in completely removing PFAS from water. Developing efficient and scalable treatment technologies is crucial to mitigate the ongoing contamination and ensure safe drinking water supplies.

Given the persistence, bioaccumulation and potential health risks associated with forever chemicals, the Water Coalition Against PFAS – a group of leading associations representing every corner of the water sector (drinking water, wastewater, stormwater, and rural utilities) believes that correcting the myths of PFAS and addressing the regulatory challenges is vital to protecting human health and the environment effectively.

PFAS Myth #1

The cost to clean up forever chemicals can be easily borne by water sector utilities and their customers

New research from the water sector and state regulators indicate that the costs to address PFAS will be much higher than Congress and EPA anticipate. These figures represent new estimates, which show that PFAS clean-up costs are actually much higher than current EPA projections being used to inform PFAS regulation in the pipeline. If nothing is done, these costs will ultimately be paid for by drinking water, clean water, and rural water utility providers and their customers – meaning that the American public will essentially be subsidizing the private, for-profit companies that made and profited from PFAS chemicals.

Drinking Water – According to a report commissioned by the American Water Works Association (AWWA) and prepared by Black & Veatch, **drinking water utilities will need to invest more than \$50 billion to install and operate treatment technology over the next 20 years in order to comply with new PFAS standards.** Additional analysis by Hazen & Sawyer estimates that a hazardous substance designation for PFOA and PFOS under CERCLA could add another \$3.5 billion per year in disposal costs for the water sector.

Wastewater – New information from a survey conducted by the National Association of Clean Water Agencies (NACWA) suggests that **operational costs for individual clean water utilities will increase by up to 60% as a direct result of new PFAS regulations.** Total amounts can vary from utility to utility and depend on the specific regulations implemented. Additionally, [a recent study](#) from Minnesota showed total wastewater costs to remove PFAS to be between \$14 and \$28 billion over 20 years in that state alone. Extrapolating this number to a national level, it is clear that wastewater utilities alone are looking at tens of billions of dollars a year in additional costs to address PFAS – all of which must be passed on to ratepayers.

Various technologies can be employed for PFAS remediation, and once the remediation technology is chosen, the design and construction of treatment systems come into play. This includes designing the system layout, purchasing necessary equipment, and constructing the infrastructure required for the treatment process. The complexity and scale of the treatment system can significantly influence the overall costs.

PFAS remediation will also require long-term operation and maintenance of drinking water and wastewater treatment systems to ensure effective and continuous treatment. This will involve regular monitoring, system maintenance, replacement of consumables (such

as activated carbon filters), and disposal of waste generated during the treatment process. The costs associated with ongoing operation and maintenance can be substantial, particularly for large-scale and long-term remediation projects.

The disposal of PFAS-contaminated waste posed a much larger cost consideration. The generated waste during remediation needs to be properly managed and disposed of in accordance with applicable regulations. Also, the treatment and disposal of PFAS-contaminated waste can be expensive due to the specialized processes and facilities required.

Finally, compliance with relevant legal and regulatory requirements can add to the overall clean-up costs. This includes obtaining necessary permits, complying with waste management regulations, and meeting reporting obligations.

The bottom line is that PFAS clean-up costs for water sector utilities – which never produced nor profited from PFAS in the first place – will be substantial, especially for large-scale or long-term remediation projects.

PFAS Myth #2

New EPA regulations will help clean water utilities to curtail costs associated with PFAS remediation

Instead of helping the water sector with the growing PFAS clean-up cost burden, a new rule proposal from EPA created to identify PFAS substances in drinking water may wind up shifting the financial burden even more onto clean water utilities and ratepayers.

EPA's new piecemeal approach will set new regulations for six PFAS compounds, including the two leading chemicals, perfluorooctanoic acid (PFOA) and perfluorobutane sulfonic acid (PFOS). With the new rule in place, water utilities will need to monitor for all six chemicals and treat water if concentrations exceed the maximum contaminant level (MCL). Water industry experts agree that implementing a new federal MCL will require additional treatment technology, which will result in added costs for utilities.

A broad-based cost projection by EPA, pegged to the new rule, estimates the annual cost for PFAS clean-up could be anywhere between \$772 million to \$1.2 billion, with economic benefits between \$908 million and \$1.2 billion. Even with such a wide-ranging estimate, leading water associations vehemently disagree with this assessment.

In March 2023, the American Water Works Association (AWWA) released new information showing the national cost for treatment systems to remove PFOA and PFOS to levels by the EPA rule would exceed \$3.8 billion annually. The EPA rule as proposed would require more than 5,000 water systems to develop new water sources or install advanced treatment technologies. Another 2,500 water systems in states with established standards would need to adjust their existing PFAS treatment systems.

As for accountability, the Water Coalition Against PFAS believes the proposed hazardous substance designation of PFOS and PFOA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is intended to uphold a "polluter pays" principle, whereby those responsible for releasing hazardous substances into the environment are held liable for the cost of cleaning up contaminated sites. However, absent a statutory exemption from PFAS liability for water sector utilities, polluters will continue to pass these costs on to American households and families, effectively creating a "public pays" principle under CERCLA.

Experts from across the water sector have expressed concerns to EPA, but the Agency believes it does not have the authority to provide any formal legal shield, leaving water systems with potential protection from EPA that would be formalized through a policy memorandum, at best.

For this reason, the only viable option for water systems and ultimately the public is for Congress to provide a statutory exemption from PFAS liability for water sector utilities under CERCLA.

PFAS Myth #3

Drinking water, wastewater and stormwater utilities are sources or "polluters" of PFAS

The responsibility for cleaning up PFAS is currently being shared among various stakeholders, including government agencies, the water sector, and occasionally the private sector companies that created them, which often creates a misperception among policymakers and the public that utilities are point sources for PFAS. **Despite this shared responsibility and the optics of it for lawmakers and the public, drinking water and clean water utilities themselves do not produce forever chemicals.**

PFAS compounds are discharged into water bodies as part of industrial processes or from manufacturing facilities. They can also be discharged from industrial facilities into municipal sewer systems. Additionally, PFAS chemicals are discharged from homes, where they can be found in all kinds of domestic products, into sewer systems. Wastewater treatment facilities then become passive receivers of these chemicals, which they have no role in producing or profiting from. There is no current technology that can feasibly and affordably remove PFAS during the wastewater treatment process, and the chemicals are ultimately discharged from wastewater treatment plants to local receiving water bodies.

If these water bodies serve as sources of drinking water, the PFAS can be taken up by water utilities during the treatment process. In addition, PFAS can contaminate groundwater due to releases, accidental spills, or improper disposal practices. Water utilities that rely on groundwater sources may unintentionally extract water containing PFAS and subsequently distribute it to consumers.

For these reasons, water utilities strive to provide safe drinking water to consumers and are subject to new regulatory standards for water quality. As awareness about PFAS contamination increases, water utilities will be responsible for implementing more complex measures to detect, monitor, and treat PFAS in their water supplies to ensure compliance with regulations and minimize consumer exposure.

Bearing in mind the obligation of the water sector to ensure clean water and to protect public health and the environment, the industries that have historically used PFAS or are directly responsible for dangerous contamination must be expected to contribute to the clean-up costs. That's why industries that manufactured or used PFAS-containing products, such as chemical manufacturers, textile manufacturers, and manufacturers of firefighting foam, must be held financially responsible for clean-up efforts.

It's important to note that the allocation of clean-up costs can vary depending on the jurisdiction and specific circumstances of each PFAS contamination case. The legal and regulatory framework, along with the level of government involvement and the ability to identify responsible parties, can significantly impact the distribution of financial responsibility.

PFAS MYTH #4

Water utilities – and the communities they serve – will not be saddled with legal liability for PFAS cleanups

When it comes to PFAS cleanups, environmentalists, members of Congress, and the US EPA all say the same thing: polluters should pay to get these "forever chemicals" out of our water and off our lands. And, in theory, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – the federal statute designed to make responsible parties pay for cleanups of hazardous substances – is a good tool to achieve that goal. The reality of

CERCLA liability, however, is much more complicated. Clean water utilities collect, manage, treat, and sustainably reuse the billions of gallons of wastewater and stormwater and tons of biosolids generated throughout the country each day. These services are foundational for our modern society, but they also often fall within CERCLA's broad categorizations of "disposal" and "releases," and therefore can lead to clean water utilities being incongruously labeled as CERCLA "potentially responsible parties" (PRPs).

On the flip side, the chemical companies that created PFAS and profited from their sale often do not – in the legalese of CERCLA – ultimately "dispose" of them, but instead sell them as a "useful product." Ironically, this fact may allow the biggest "polluters" of them all – PFAS manufacturers – to escape paying for clean-ups conducted under CERCLA. In other words, CERCLA may lead to the very communities that have suffered from PFAS pollution paying for its clean-up through increased utility bills, while polluters with teams of lawyers skirt legal liability and get around paying their fair share.

EPA has indicated that it will use its CERCLA enforcement discretion to go after polluters and help shield utilities from this outcome. Public utilities appreciate this, and EPA can provide some relief under CERCLA using its discretion. But in spite of what environmentalists may say, these protections have holes big enough for PFAS manufacturers to drive trucks through, because CERCLA provides third parties – including polluters – with statutory rights to bring suits and foist cleanup costs on any PRP, like water utilities. In many cases, EPA can't do anything to stop it. And utilities make juicy targets. They are reliable sources of funding that polluters are more than willing to use to defray their own costs.

Bottom line: absent action from Congress to change the way CERCLA works in the context of PFAS, there is a significant risk that clean water utilities and the public they serve will be burdened with the costs of PFAS cleanups and legacy pollution, not polluters.

PFAS Myth #5

New technologies being developed will mitigate PFAS clean-up costs for the water sector in the future

While the field is still evolving, policymakers have started to focus on innovative technologies for PFAS remediation. To address PFAS in drinking water, the water sector is working to implement advanced treatment processes to remove or reduce PFAS concentrations, ensuring the provision of clean and safe drinking water to consumers. **However, new technologies are not a silver bullet for the utilities, and they can be very expensive. Also, the cost of remediation technologies can vary dramatically, depending on the extent of contamination, the selected remediation method, and the scale of the project.**

Advanced oxidation processes (AOPs) involve the use of chemical reactions to break down and destroy PFAS compounds. Techniques such as ultraviolet (UV) light, ozone, or hydrogen peroxide are applied to generate highly reactive radicals that can degrade PFAS molecules. AOPs have shown effectiveness in treating PFAS-contaminated water, although further research is needed to optimize the process and ensure complete degradation.

Electrochemical methods use an electric current to induce reactions that can degrade or remove PFAS compounds. Electrochemical oxidation and electrocoagulation are two approaches that have been investigated for PFAS remediation. These techniques can be effective in treating both water and soil contaminated with PFAS.

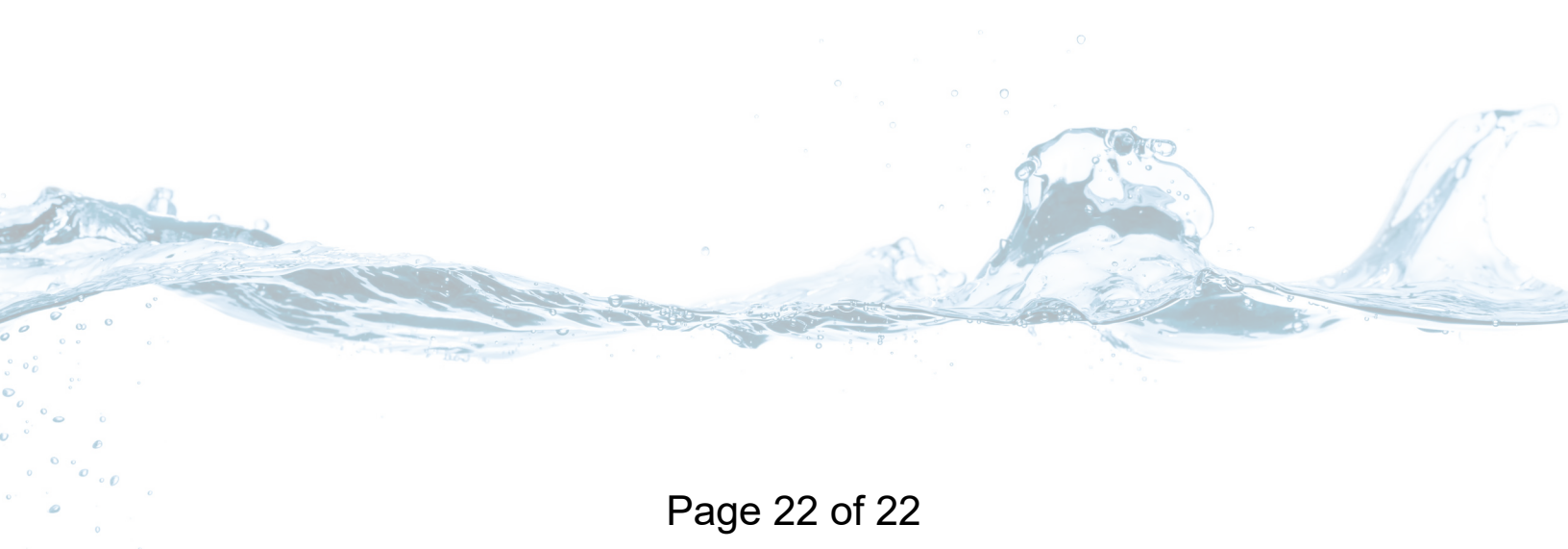
Researchers are developing novel adsorbent materials specifically designed to capture PFAS from water sources. These materials have high affinity and selectivity for PFAS, allowing for efficient removal. Examples include modified clays, activated carbon-based materials, and nanomaterials. Research efforts focus on enhancing adsorption capacity, stability, and cost-effectiveness of these materials.

Membrane-based separation processes, such as reverse osmosis (RO) and nanofiltration (NF), have been effective in removing PFAS from contaminated water. These technologies work by selectively rejecting PFAS compounds while allowing clean water to pass through. Advances in membrane materials and processes aim to improve PFAS removal efficiency and reduce energy consumption.

It's worth noting that while these technologies show promise, each has its own limitations, and their effectiveness may depend on the specific PFAS compounds, concentrations, and site conditions. Continued research and development are essential to optimize these technologies and make them commercially viable for large-scale PFAS clean-up efforts.

Other cost factors to consider include research and development efforts. Investing in innovation and improving the efficiency and effectiveness of existing technologies can help reduce overall expenses. PFAS remediation also obviously requires perpetual operation and maintenance to ensure effective treatment. The costs associated with operating treatment systems, including energy, chemicals, consumables, and personnel, can be substantial, particularly for long-term remediation projects.

Lawmakers and media must work to debunk the common myths associated with PFAS so that Americans from all walks of life understand who is responsible and what must transpire to fix this massive problem. While the costs associated with PFAS remediation can be significant, it's important to weigh them against the potential risks of contamination to human health and the environment. That's why Congress and EPA must work together and listen to water industry experts to ensure that the American public is not forever on the hook for cleaning-up forever chemicals.



CITY OF PEWAUKEE
PUBLIC WORKS COMMITTEE AGENDA ITEM 5.2.

DATE: July 27, 2023

DEPARTMENT: PW - Water/Sewer

PROVIDED BY: Jane Mueller, Utility Manager

SUBJECT:

Discussion and possible action regarding Gun Club Lift Station design.

BACKGROUND:

The Gun Club Lift Station has been in service since the mid-1980's. The lift station covers the largest sewer service area of the City, collecting sewage from areas to the north Five Fields subdivision to I-94 to the south, the Canadian National R/R to the east, and the lands directly west on STH 164. The flows averages 1 mgd. The lift station consists of a buried steel dry well pump chamber with 3–60 HP pumps. The lift station contains a small service elevator that transports employees and equipment 30 feet below grade.

The lift station was upgraded in 2007 to remove the old semi-buried generator and fuel tank. This upgrade converted the lift station to the building today. The prefabricated building included a generator and controls with variable speed drives to help manage the sewage flows.

Despite regular maintenance, the life of the steel structure is seeing the end of its service life. We have experienced many challenges with capacity issues, maintenance issues related to rags and grease, and worn pumps that can become air bound when the flows become turbulent.

Utility staff asked the consultant who prepared our facility plan to undertake the preparation of a replacement lift station for the Gun Club site. Attached is a summary of the plan document for your review. A full set of plans can be provided for your review if you would like to see it.

The new lift station will be an all-concrete structure rather than buried steel. The wet well will have two chambers that will operate in tandem, but with the ability to isolate each section for maintenance. Each chamber will have two submersible sewage pumps. The interior of the building will house the valve vault and piping that will be in the “basement” of the structure. The first floor will include a generator, a motor control center, and a bathroom.

FINANCIAL IMPACT:

Initially, staff was planning to obtain a Clean Water Fund Loan for this project. However, due to the restrictions on the purchase of supplies and equipment, we felt that that we would be able to manage the costs and the completion of this project using a conventional loan or possibly savings.

Estimate of costs: \$5M

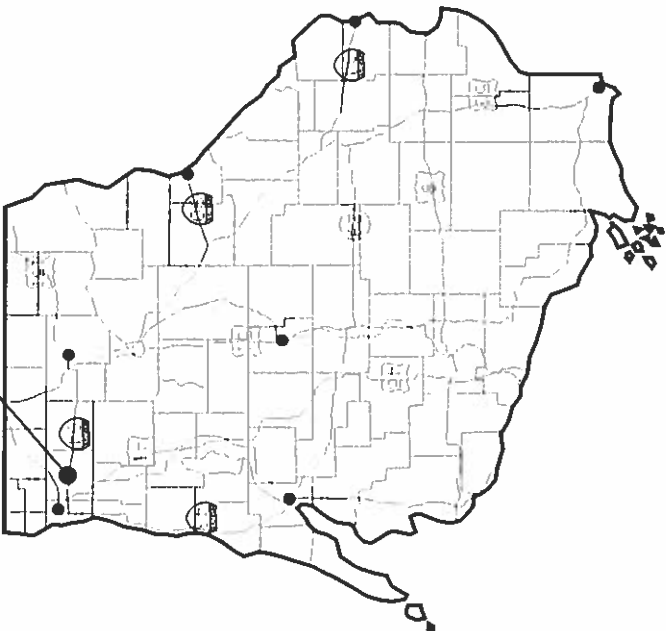
RECOMMENDED MOTION:

ATTACHMENTS:

Description

Gun Club Plans 90%

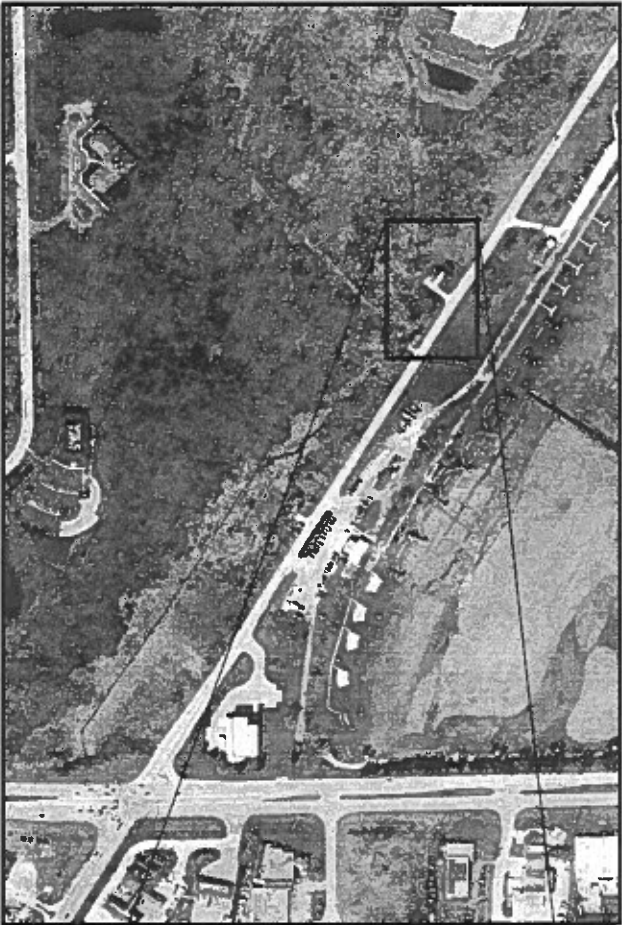
GUN CLUB PUMPING STATION DESIGN
FOR THE
CITY OF PEWAUKEE
PEWAUKEE, WI
90% REVIEW - 7/7/2023



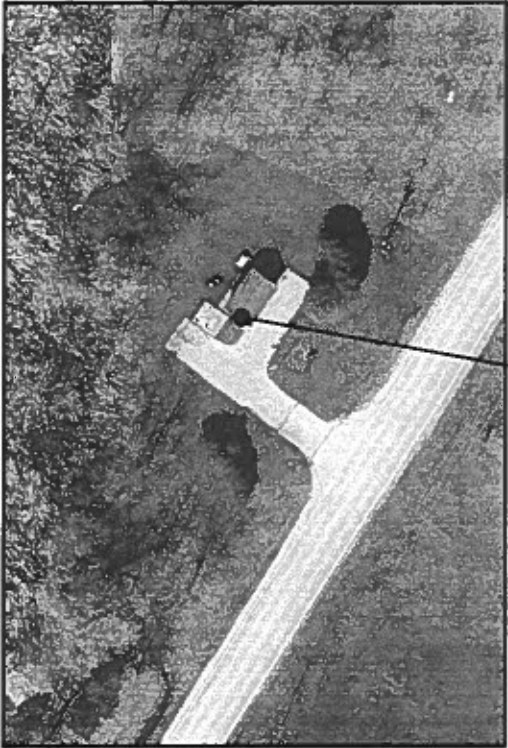
PROJECT LOCATION

910 West Wingra Drive
Madison, WI 53715
608-251-4843
608-251-8655 fax
www.strand.com

CONTRACT 2-2023



PROJECT LOCATION MAP



GUN CLUB PUMPING STATION
N23 W23327 WATERTOWN ROAD
WAUKESHA, WI 53188

BENCHMARK TABLE			
B.M. NO.	ELEVATION	DESCRIPTION	
B.M. 100	845.7	C&S&M NEW BOTTOM VENT	
B.M. 101	847.35	TOP NOT RATIO	

NO.		REVISIONS	DATE:
1		90% REVIEW	7/7/2025

SITE LOCATION PLAN

GUN CLUB PUMPING STATION DESIGN

CITY OF PEWAUKEE

PEWAUKEE, WI

JOB NO.

4421.015

PROJECT MGR.

RANDY LANGER



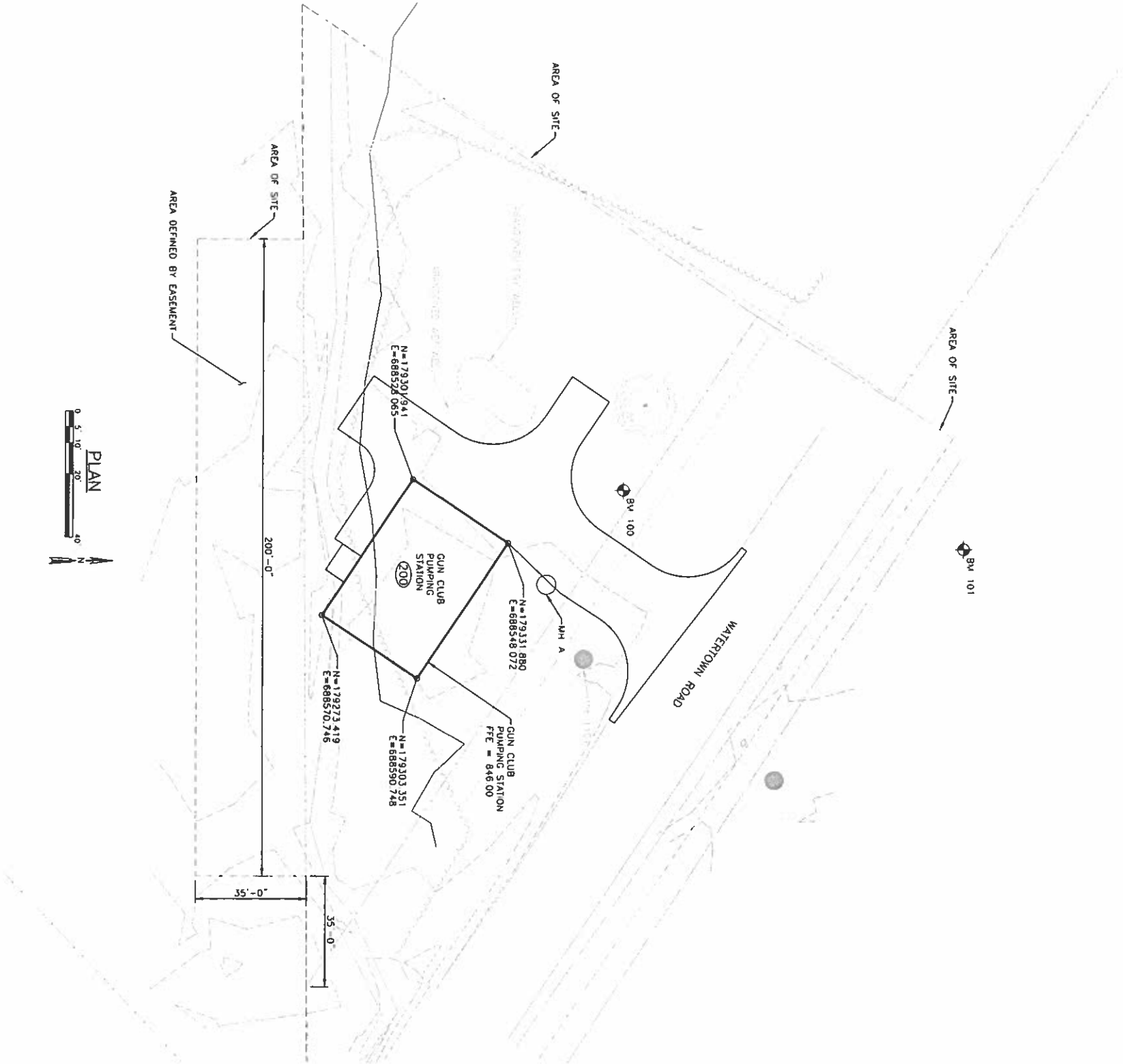
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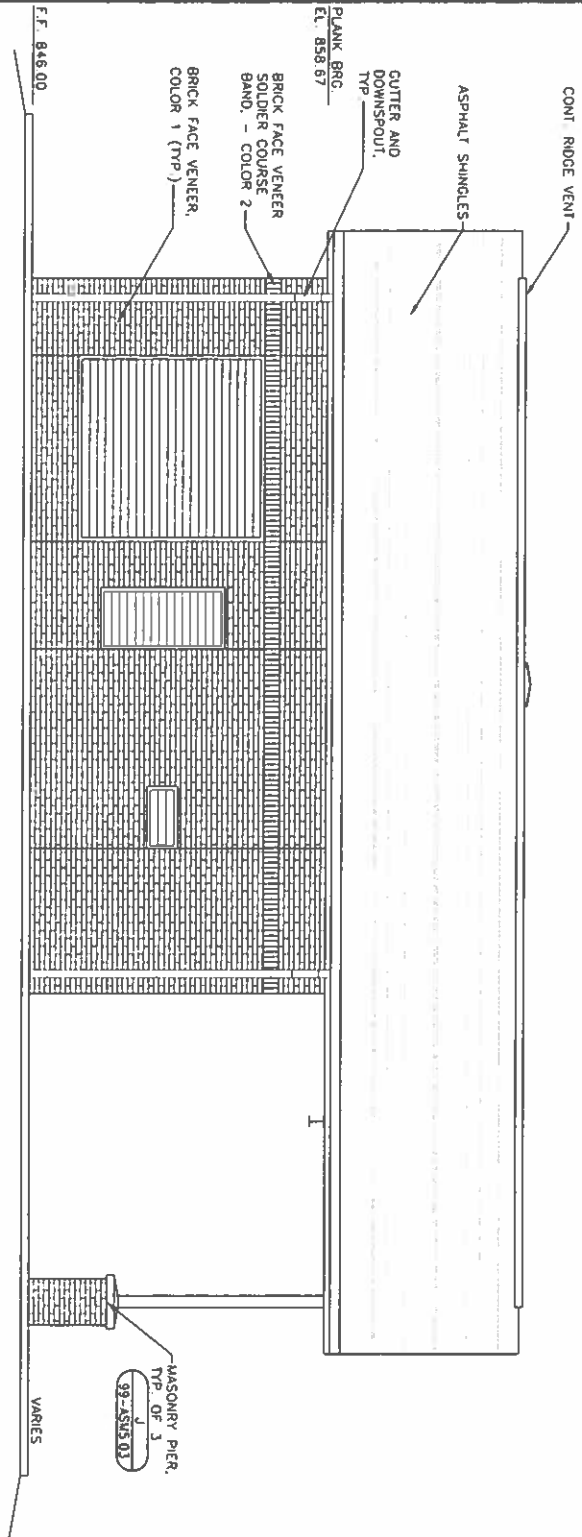
ASSOCIATES*

SHEET

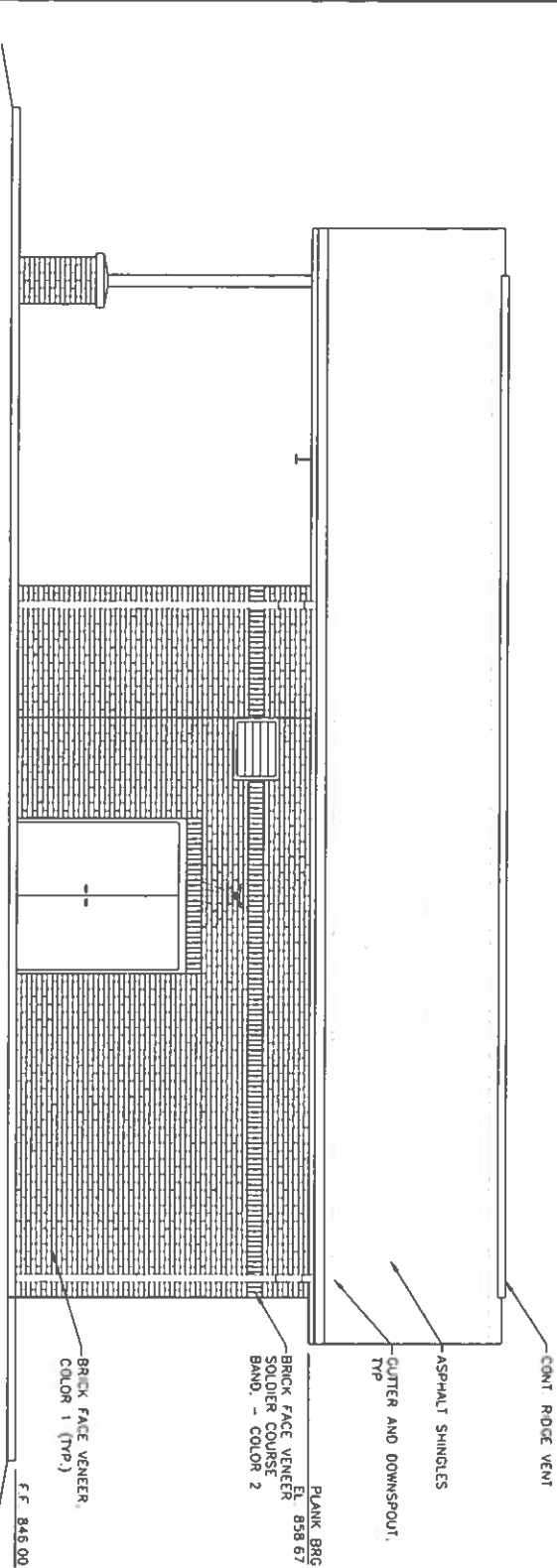
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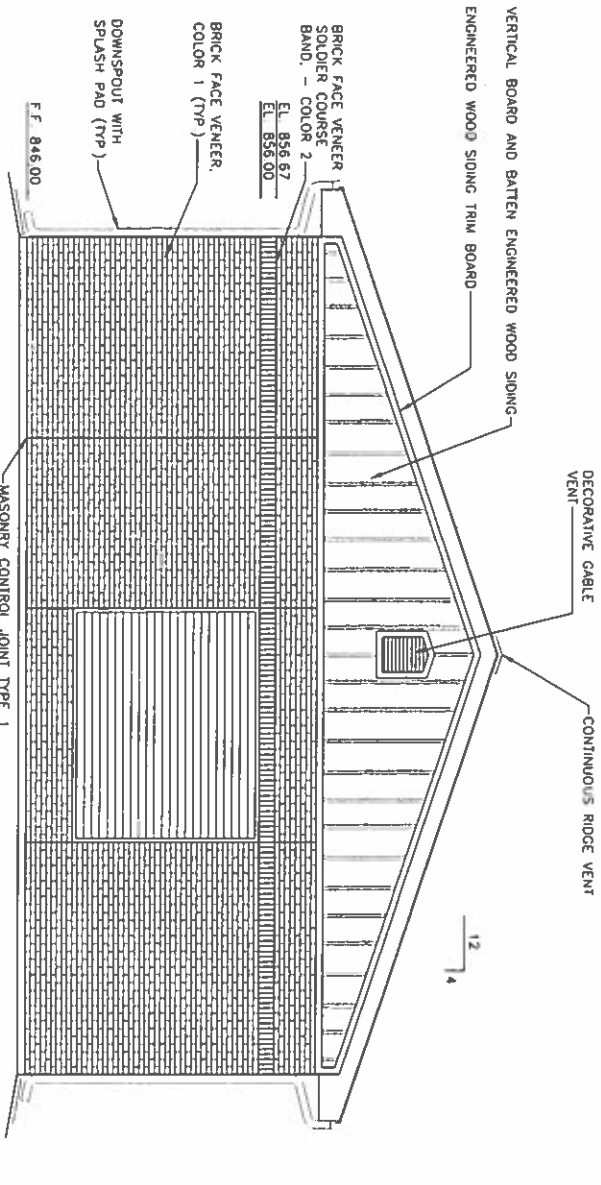




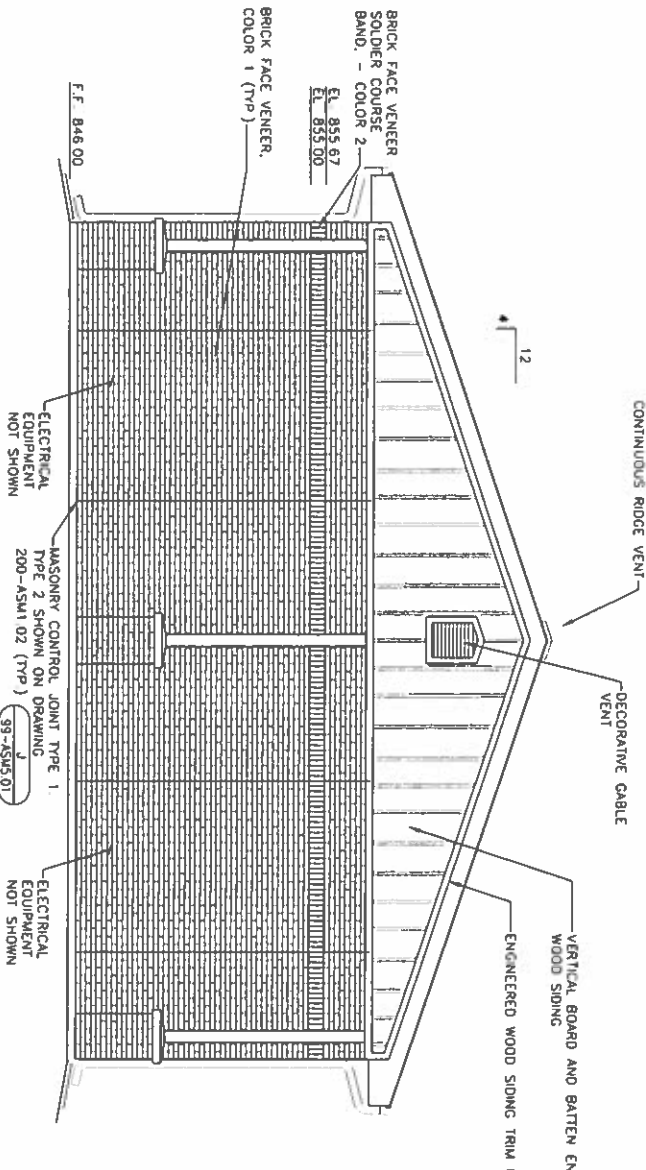
EAST ELEVATION



WEST ELEVATION



SOUTH ELEVATION



NORTH ELEVATION

REVISIONS		DATE:
NO.	NOT REVIEWED	1/7/2023
1		

GUN CLUB PUMPING STATION ELEVATIONS

GUN CLUB PUMPING STATION DESIGN
CITY OF PEWAUKEE
PEWAUKEE, WI

JOB NO.
4421.015
PROJECT MGR.
RANDY LANGER



SHEET
16
200-ASM2.01

GENERAL NOTES:

1. ALL FASTENERS, SUPPORTS, ANCHORS AND HARDWARE IN ALL AREAS SHALL BE 316 SS.
2. PIPING PENETRATIONS THROUGH SLAB WITH UNDER SLAB WATERPROOFING AND WALLS WITH UNDER FLUID-APPLIED WATERPROOFING PER THE MANUFACTURER'S APPROVED DETAILS
3. SEE DRAWING 99-ASM6.01 FOR GENERAL STRUCTURAL NOTES.

KEY NOTES:

- 1 PROVIDE CLASS X CONCRETE BACKFILL OR FLOWABLE FILL.
- 2 PROVIDE SS PIPE SUPPORTS AS SPECIFIED.
- 3 PIPE SUPPORTS NOT SHOWN.
- 4 TERMINATE BYPASS SUCTION PIPING WITHIN 6-INCHES OF FLOOR.
- 5 ROUTE 2" V TO WET WELL. PROVIDE 90 DOWN TOWARDS WET WELL.
- 6 TRANSITION FROM UNDERSLAB WATERPROOFING SYSTEM TO FLUID-APPLIED SYSTEM PER MANUFACTURER'S APPROVED DETAILS.
- 7 INSTALL FILLET PER PUMP MANUFACTURER RECOMMENDATIONS.
- 8 CONTRACTOR SHALL PROVIDE OR FABRICATE STAINLESS STEEL FITTING TO CONNECT PIPE COUPLING AT BYPASS CONNECTION TO OWNER'S VACUUM TRUCK PIPING CONNECTION TYPE (FLAT FLANGE). VERIFY CONNECTION TYPE WITH OWNER.
- 9 PROVIDE STAINLESS STEEL OPERATOR STEW AND SUPPORTS AS SPECIFIED. COORDINATE LOCATION WITH GATES AND OPERATOR (TYP TO ALL 3 GATES).
- 10 CONCRETE SUPPORT WALL WITH #408" CENTERED (PROJECTED INTO VIEW) DOWEL INTO BASE SLAB. ADHESIVE ANCHOR DOWELS, EMBED 4".
- 11 SLUG-200-3 BROUGHT INTO SECTION. PROVIDE 36"x36" OPENING FOR GATE. PROVIDE SS STEW AND SUPPORTS FOR GATE.
- 12 OPTIONAL CONSTRUCTION JOINT IN SLAB.
- 13 4000 PSI CONCRETE FILL.

LEGEND:

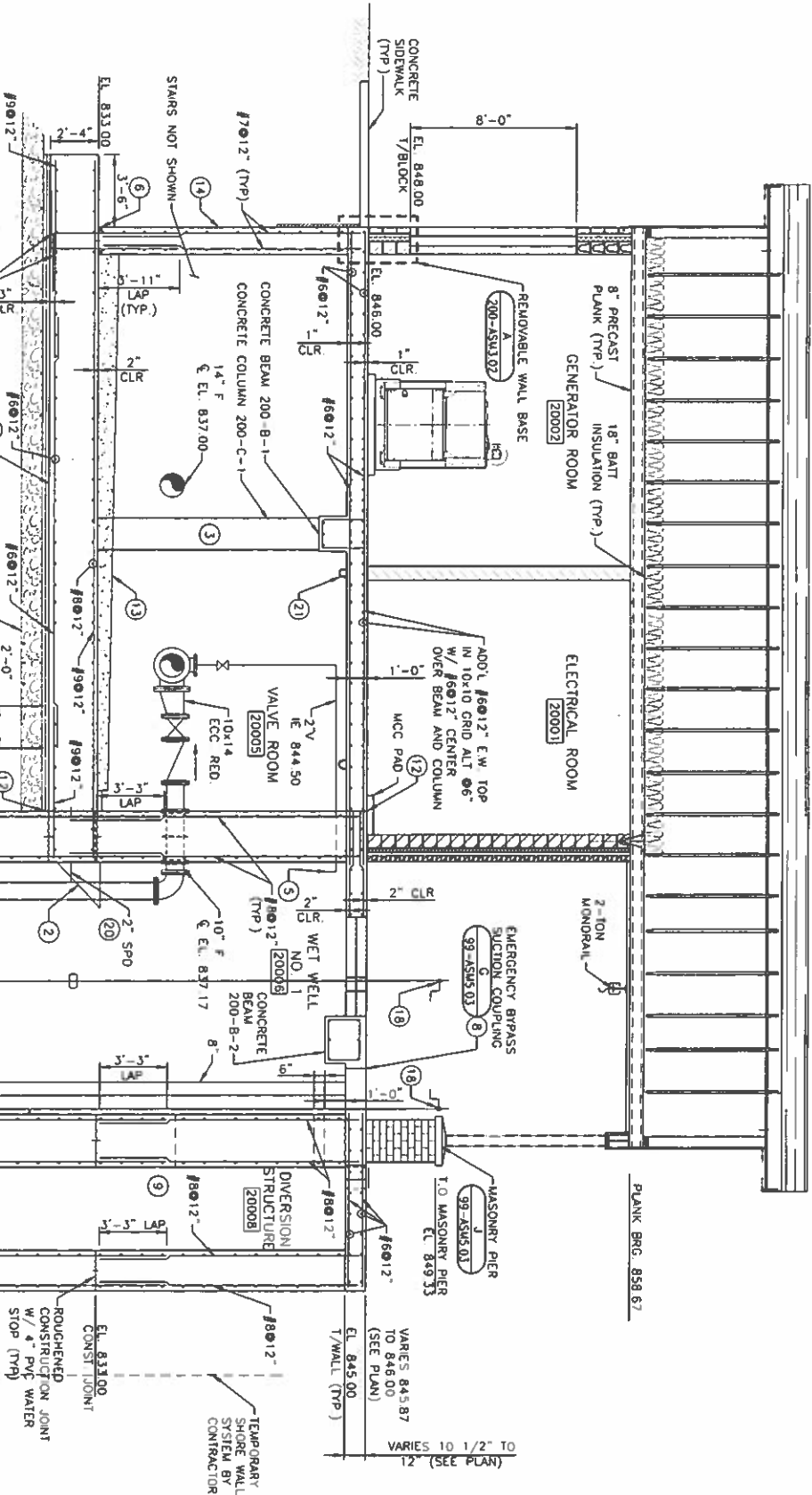
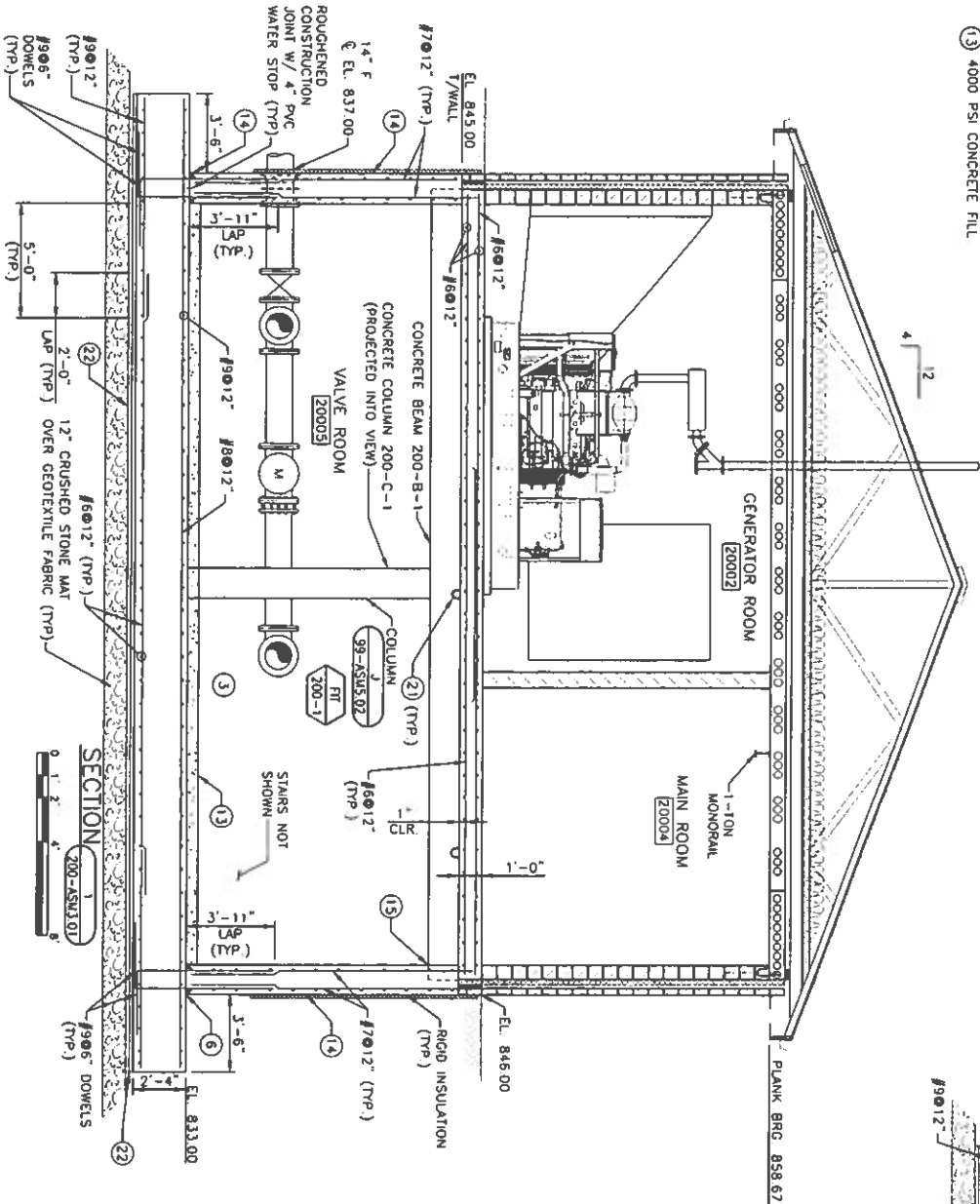
- CONCRETE WITH ANTI-MICROBIAL CRYSTALLINE WATERPROOFING ADHESIVE (CLASS A-CW) AND CONSTRUCTION JOINTS DETAILED PER 99-ASM5.01

KEY NOTES:

- 14 FLUID-APPLIED WATER PROOFING WITH PROTECTION BOARD AND DRAINAGE MAT INSTALL PER MANUFACTURER'S APPROVED DETAILS AT TYPICAL CONDITION, INSIDE, AND OUTSIDE CORNERS.
- 15 1'-6"x8" BEAM POCKET. BOTTOM OF POCKET EL. 843.33
- 16 LIMITS OF CLASS X CONCRETE/FLOWABLE FILL ARE APPROXIMATE. CONTRACTOR SHALL PROVIDE ALL REQUIRED POUR BATTLE WALL AROUND PIPE. PROVIDE EXTRA REBAR PER 99-ASM5.01.
- 18 SLIDE GATE OPERATOR SEE 99-ASM5.02
- 19 #4012" ADHESIVE ANCHOR DOWELS EMBEDDED 4" (TYP.).
- 20 PROVIDE OPEN TOP TEE ON EACH SPD DISCHARGE. ROUTE 2" SPD TO EL. 822.50
- 21 PICK POINT PER 99-ASM5.01
- 22 BLIND SIDE WATER PROOFING SYSTEM SEE SPECIFICATIONS. PROVIDE MUD SLAB AND SAND SLURRY PROTECTION SLAB PER 99-ASM3.02

FLOAT ELEVATIONS:

DESCRIPTION	ELEV.
H/WL ALARM	822.00
LAG LAG START	821.00
LAG LAG END	820.00
LAG START	819.00
LAG END	817.00
LAG OFF	816.00



SECTION 200-ASM3.01



CONCRETE COLUMN SCHEDULE									
COLUMN	B x H	VERT REIN	DOWELS	TIES	DOWEL LAP				
200-C-1	16 x 16	8-#7	8-#7	#3@12"	2'-0"				
200-C-2	14 x 14	4-#7	4-#7	#3@12"	2'-0"				

BEAM SCHEDULE

BEAM	HEIGHT	WIDTH	BOTTOM BARS	TOP BARS	CLOSED STEEL				
DESIGNATION	h	b	A	B	C	X	D	E	Y
200-B-1	2'-4"	1'-8"	3-#8	2-#8	3-#8	7-#8	4-#8@6"		
200-B-2	2'-4"	1'-4"	2-#7	2-#7	2-#7	7-#7	4-#7@10"		
200-B-3	0'-9" (max 2)	2'-8"	5-#5				4-#3@1"		

NOTES:
1. SEE DETAIL APPASMS 01 FOR CONCRETE BEAM DETAILS.
2. 8" MINIMUM SLAB THICKNESS VARIES 9"-12". SEE PLAN.

GUN CLUB PUMPING STATION BUILDING SECTIONS - 1

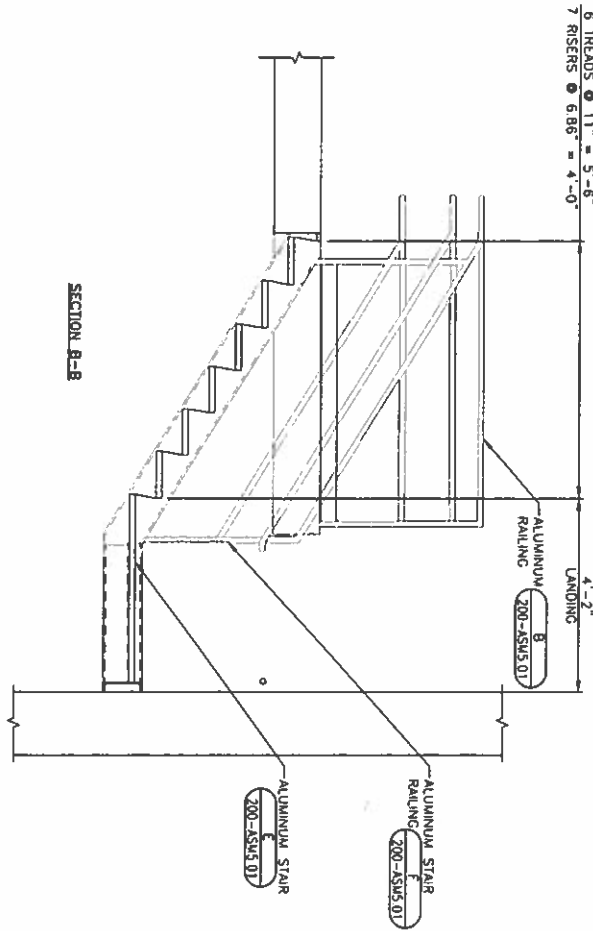
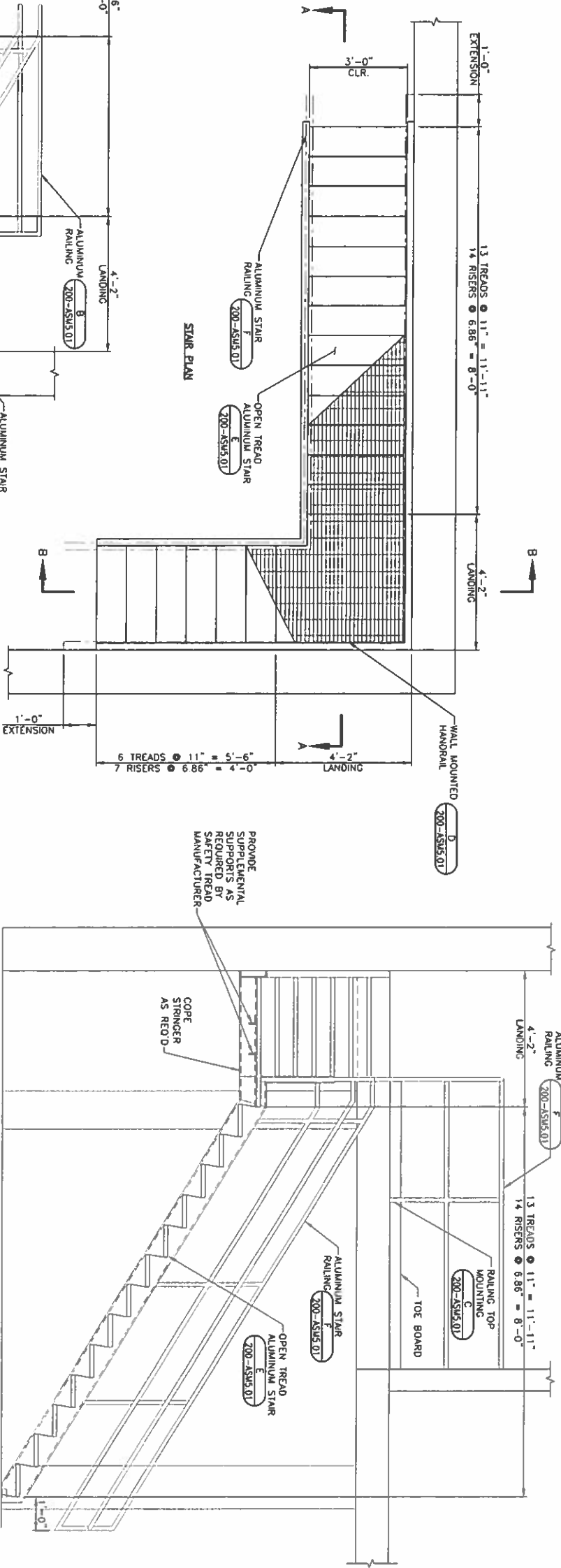
GUN CLUB PUMPING STATION DESIGN
CITY OF PEWAUKEE
PEWAUKEE, WI

JOB NO. 4421.015
PROJECT MGR. RANDY LANGER



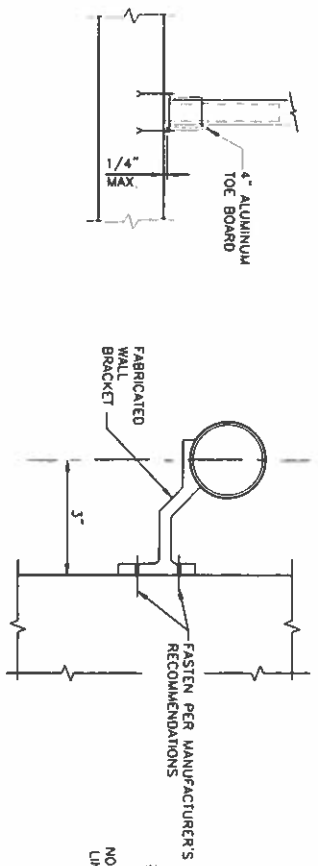
17 SHEET
200-ASM3.01

NO.	REVISIONS	DATE:
1	NOT REVIEW	7/7/2023



ENLARGED STAIR DETAIL

RAILING STRINGER MOUNTING



RAILING TOP MOUNTING

HANDRAIL WALL MOUNTING

ALUMINUM STAIR

ALUMINUM RAILING

- NOTES:
- 1-TREAD, R-RISE SEE PLAN OR SECTION VIEWS(S) FOR DIMENSIONS AND NUMBER OF TREADS AND RISERS
 - 2- PROVIDE CLIP ANGLES AND EXPANSION BOLTS AT BOTTOM OF STAIR SIMILAR TO TOP OF STAIR
 - 3- STAIR WIDTH=3'-8" OUT-TO-OUT OF STRINGERS, UNLESS NOTED OTHERWISE

- NOTES:
- 1- ALL PAILS & POSTS SHALL BE ALUMINUM. ALL ACCESSORIES SHALL BE ALUMINUM OR STAINLESS STEEL
 - 2- ALL RAIL SYSTEMS SHALL MEET OSHA, PERFORMANCE STANDARDS FOR PUBLIC AND INDUSTRIAL APPLICATIONS AND WISCONSIN BUILDING CODE
 - 3- EXTEND HANDRAILS HORIZONTALLY A MIN 1'-0" BEYOND TOP RISER
 - 4- MOUNT RAILING TO WALLS OR GUARDRAIL POST PER

GUN CLUB PUMPING STATION
DETAILS

GUN CLUB PUMPING STATION DESIGN
CITY OF PEWAUKEE
PEWAUKEE, WI

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JOB NO.
4421.015
PROJECT MGR.
RANDY LANGER

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STRAND ASSOCIATES*

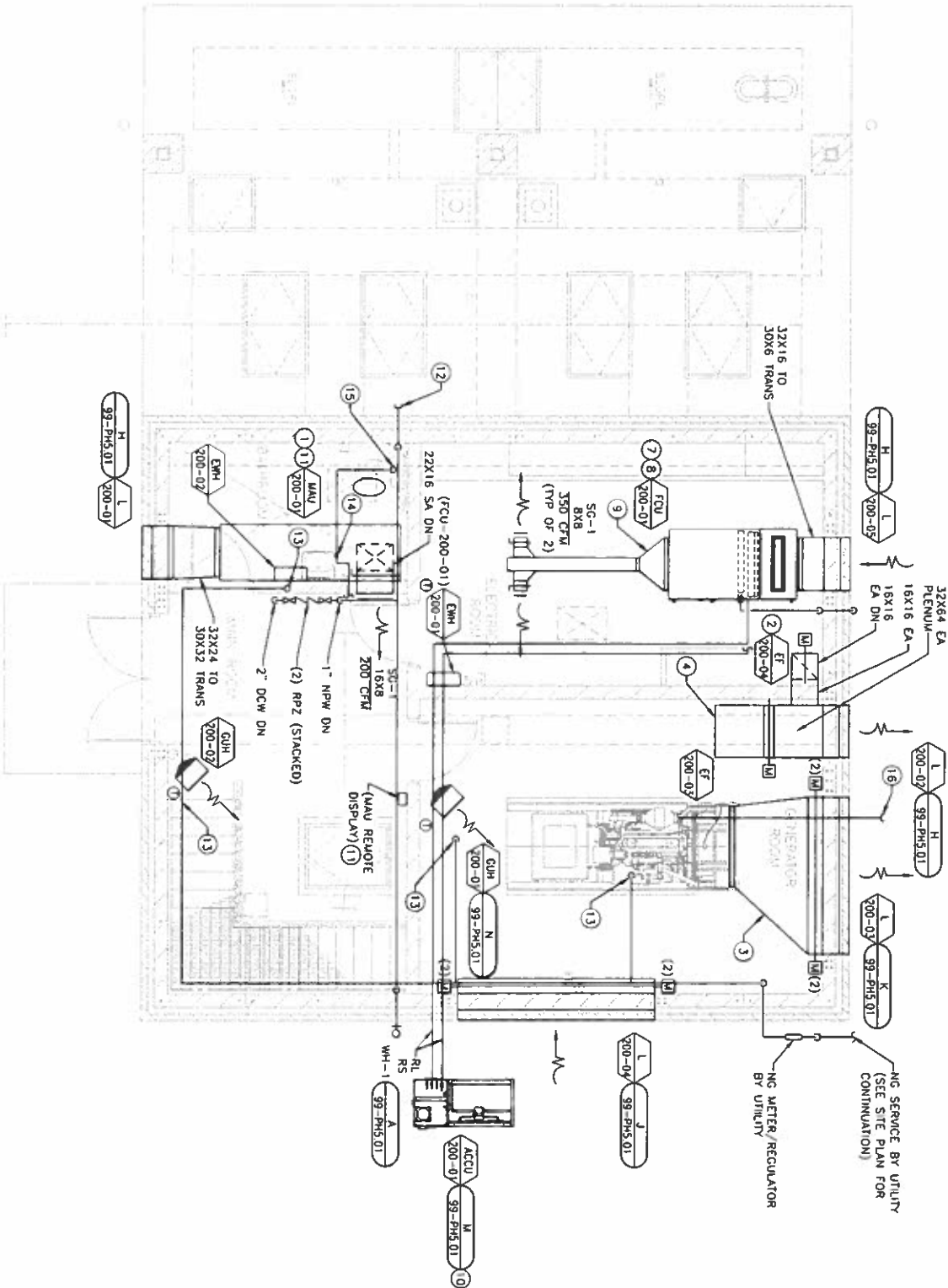
SHEET

20

200-ASMS.01

GENERAL NOTES.
1. SEE GENERAL NOTES ON SHEET 200-PH1.01.

- KEY NOTES:
- 1 MOUNT MAU ON PRECAST PLANK ABOVE RESTROOM
 - 2 MOUNT EF ON VIBRATION ISOLATORS AT BOTTOM OF FAN = 3'-4" AFF.
 - 3 TRANSITION FROM RADIATOR CONNECTION ON GENERATOR TO LOUVER
 - 4 PROVIDE SCREENED INLET
 - 5 MOUNT BOTTOM OF FAN ON VIBRATION ISOLATORS AT 10'-0" AFF
 - 6 SHUTOFF VALVE IN VERTICAL DROP TO GENERATOR
 - 7 MOUNT BOTTOM OF FCU AT 8'-0" AFF ON VIBRATION ISOLATORS
 - 8 ROUTE COOLING COIL CONDENSATE FROM UNIT TO GRADE. ROUTE THROUGH WALL AT 8" AFF. TERMINATE WITH DOWNWARD ELBOW. SEE DETAIL F/99-PH5.01 FOR ADDITIONAL DETAILS.
 - 9 PROVIDE TRANSITION FROM FCU OUTLET TO 8X8
 - 10 MOUNT ACCU ON EXTERIOR EQUIPMENT PAD.
 - 11 ROUTE MAU MANUFACTURER FURNISHED CABLE FROM MAU TO REMOTE DISPLAY.
 - 12 PROVIDE BALL VALVE AND 2" NPT CONNECTION ON EXTERIOR WALL.
 - 13 ROUTE NG DN TO EQUIPMENT CONNECTION. COORDINATE FINAL CONNECTION SIZE AND LOCATION WITH EQUIPMENT MANUFACTURER.
 - 14 ROUTE DCW DN TO LAVATORY (L-1) AND MH-200-01 BELOW SINK.
 - 15 ROUTE DCW DN TO WC-1.
 - 16 ROUTE GENERATOR EXHAUST OUT SIDEWALL OF BUILDING. TERMINATE EXHAUST WITH METAL SCREEN 6" BEYOND ROOF EYE.



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7/7/2023	
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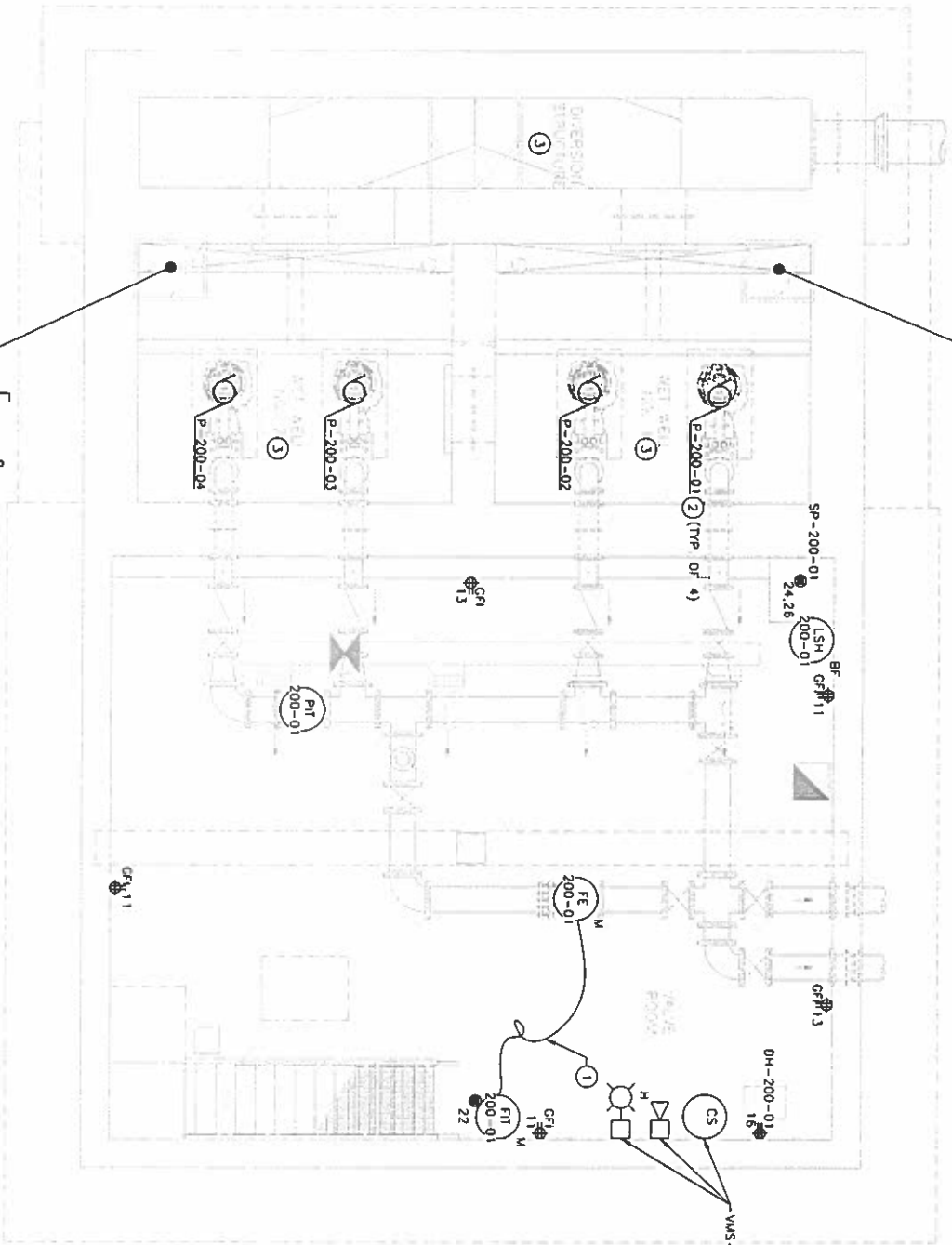
GUN CLUB PUMPING STATION
FIRST FLOOR PLAN

GUN CLUB PUMPING STATION DESIGN
CITY OF PEWAUKEE
PEWAUKEE, WI

JOB NO.
4421.015
PROJECT MGR.
RANDY LANGER



SHEET
22
200-PH1.02



- LT 200-01 (2) (TYP. OF 2)
- LS 200-01 (2) (TYP. OF 12)
- LS 200-02 (2) (TYP. OF 12)
- LS 200-03 (2) (TYP. OF 12)
- LS 200-04 (2) (TYP. OF 12)

- LT 200-02 (2) (TYP. OF 2)
- LS 200-07 (2) (TYP. OF 12)
- LS 200-08 (2) (TYP. OF 12)
- LS 200-09 (2) (TYP. OF 12)
- LS 200-10 (2) (TYP. OF 12)
- LS 200-11 (2) (TYP. OF 12)
- LS 200-12 (2) (TYP. OF 12)

VALVE ROOM AND WET WELL POWER AND SYSTEMS PLAN

GENERAL NOTES:
1. REFER TO SPECIFICATION SECTION 26.09.90 FOR WIRING ASSOCIATED WITH THE SCADA SYSTEM.

- KEY NOTES:
- 1. PROVIDE EACH MANUFACTURER-FURNISHED CABLE IN 1" CONDUIT FROM FLOW METER TO TRANSMITTER
 - 2. PROVIDE MOUNTING PER DETAIL (D) (98-55.01)
 - 3. ALL ELECTRICAL WORK AND EQUIPMENT IN THIS AREA SHALL BE RATED FOR A CLASS I, DIVISION 1, GROUP C AND D LOCATION
 - 4. PROVIDE 2-#14 AND #14 GROUND IN 3/4" CONDUIT FROM ALARM HORN TO SCC-200-01
 - 5. PROVIDE 4-#14 AND #14 GROUND IN 3/4" CONDUIT FROM SILENCE/TEST CONTROL STATION TO SCC-200-01
 - 6. PROVIDE 4-#14 AND #14 GROUND IN 3/4" CONDUIT FROM MULTI-COLOR WARNING LIGHT TO SCC-200-01
 - 7. TRANSMITTERS SHALL BE MOUNTED WITH STAINLESS STEEL HARDWARE PER MANUFACTURER REQUIREMENTS AND SHALL BE ACCESSIBLE FROM HATCH OPENING.

NO.		REVISIONS		DATE:	
1		1	VOID REVIEW	7/7/2023	

GUN CLUB PUMPING STATION
VALVE ROOM AND WET WELL POWER AND SYSTEMS PLAN

GUN CLUB PUMPING STATION DESIGN
CITY OF PEWAUKEE
PEWAUKEE, WI

JOB NO.
4421.015
PROJECT MGR.
RANDY LANGER



**CITY OF PEWAUKEE
PUBLIC WORKS COMMITTEE AGENDA ITEM 5.3.**

DATE: July 27, 2023

DEPARTMENT: PW - Water/Sewer

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion on the submitted 2022 Annual Compliance Maintenance Annual Report.

BACKGROUND:

The 2022 Annual Compliance Maintenance Annual Report and Resolution have been submitted to the Wisconsin Department of Natural Resources. We are providing this report and resolution for your information.

The Utility received an overall grade of an A for its operations and maintenance of the system.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

No motion required.

ATTACHMENTS:

Description
2022 CMAR
CMAR Resolution

Compliance Maintenance Annual Report

Pewaukee City Sewage Collection System

Last Updated: Reporting For:
6/21/2023 2022

DNR Response to Resolution or Owner's Statement

Name of Governing
Body or Owner:

City of Pewaukee

Date of Resolution or
Action Taken:

2023-06-19

Resolution Number:

23-06-08

Date of Submittal:

6/21/2023

ACTIONS SET FORTH BY THE GOVERNING BODY OR OWNER RELATING TO SPECIFIC CMAR SECTIONS (Optional for grade A or B. Required for grade C, D, or F):

Financial Management: Grade = A

Permittee Response:

DNR Response:

Thank you for the detail.

Collection Systems: Grade = A

(Regardless of grade, response required for Collection Systems if SSOs were reported)

Permittee Response:

DNR Response:

Thank you for the detail.

ACTIONS SET FORTH BY THE GOVERNING BODY OR OWNER RELATING TO THE OVERALL GRADE POINT AVERAGE AND ANY GENERAL COMMENTS

(Optional for G.P.A. greater than or equal to 3.00, required for G.P.A. less than 3.00)

G.P.A. = 4

Permittee Response:

DNR G.P.A. Response:

DNR CMAR Overall Response:

Thank you for completing the 2022 CMAR process for Pewaukee City Sewage Collection System.

Based on the grading for 2022 and the requirements in ch. NR 208, Wis. Adm. Code, no further action is required.

DNR Reviewer: Lent, Nicholas

Address: 1027 W Saint Paul Ave, Milwaukee, WI 53212

Phone: (414) 897-5723

Date: 6/23/2023

RESOLUTION #23-06-08

**Wisconsin Department of Natural Resources
NR 208 – Compliance Maintenance Resolution
2022**

WHEREAS, it is a requirement under a Wisconsin Pollutant Discharge Elimination System (WPDES) permit issued by the Wisconsin Department of Natural Resources to file a Compliance Maintenance Annual Report (CMAR) for the City of Pewaukee Wastewater collection system under Wisconsin Administrative Code NR 208; and,

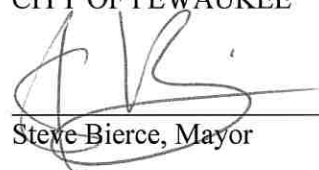
WHEREAS, it is necessary to acknowledge that the governing body has reviewed the Compliance Maintenance Annual Report (CMAR) for 2022; and,

WHEREAS, all sections within the Compliance Maintenance Annual Report (CMAR) received a grade of B or better which results in a Grade Point Average (GPA) of 3.0 or greater.

NOW, THEREFORE, BE IT RESOLVED that the Common Council of the City of Pewaukee does hereby agree to commit reasonable and fiscally prudent funding to operate the City's sewer utility effectively and maintain an acceptable point average.

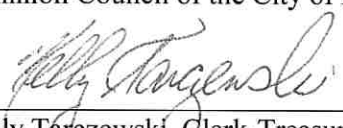
Dated this 19th day of June, 2023.

CITY OF PEWAUKEE



Steve Bierce, Mayor

This is to certify that this is a true and accurate copy of Resolution 23-06-08 which was adopted by the Common Council of the City of Pewaukee.



Kelly Tarczewski, Clerk-Treasurer

CITY OF PEWAUKEE
PUBLIC WORKS COMMITTEE AGENDA ITEM 6.1.

DATE: July 27, 2023

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner/Michaelis Gabbey

SUBJECT:

Discussion and possible action regarding the Quiet Zone studies at the intersections of Green Road, Duplainville Road, and Watertown Road.

BACKGROUND:

The City authorized additional Quiet Zone Crossing studies for the intersections of Duplainville Road, Watertown Road, and Green Road. NOTE: The Weyer Road crossing was previously studied. The Springdale Road crossing is being completed by the City of Brookfield with shared cost by the City of Pewaukee.

Staff held a diagnostic team meeting with the Railroad, Federal Railroad Administration, and Wisconsin Department of Transportation Railroad Division. A review of the study was completed and discussion occurred on the crossings. It was agreed to move to the next step in the process to establish a quiet zone crossing.

The next step will be to file a Notice of Intent (NOI) with the Railroads for review and comment of the study. This review can take a year (1) to a year and a half (1-1/2) depending on the measures proposed at each crossing. Once we receive written notice of the approval, the City will be able to construct the improvements at each crossing.

Duplainville Road is proposed to not have any improvements due to the Quad gates already installed by the Railroad.

Watertown Road is proposed to have a curb installed along the center of the road for a set distance in both directions starting at the crossing gates.

Green Road will be proposed to have a curb installed along the center of the road for a set distance in both directions starting at the crossing gates.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

Recommend to the Common Council to proceed with the submittal of the NOI and include the proposed improvements in the 2024 budget.

ATTACHMENTS:

Description

Quiet Zone Study

MEMORANDUM

DATE: June 22, 2023

TO: Maggie Wagner, City of Pewaukee
Michaelis Gabbey, City of Pewaukee

FR: John Bruggeman, P.E., PTOE

CC: Tim Barbeau, P.E.

RE: Pewaukee Quiet Zone Analysis
Canadian Pacific Crossing at Duplainville Road
Canadian National Crossings at Green Road & Watertown Road

INTRODUCTION

The City of Pewaukee is interested in adding three additional at-grade public crossings into existing or proposed Quiet Zones within their municipal boundary. The crossings being considered include the following locations as shown in Exhibit 1:

- Canadian Pacific (CP) Crossing at Duplainville Road
- Canadian National (CN) Crossings at Green Road & Watertown Road

The CP and CN crossings are owned and operated by separate railroad companies and are located on different sets of tracks. Therefore, they will be analyzed as two separate quiet zones despite their relative proximity to each other.

The City previously studied the CN Crossing at Weyer Road and plans to install raised curb medians on both sides of the crossing as an Alternative Safety Measure (ASM) to qualify the crossing as a Quiet Zone. This evaluation includes the option of adding the improved Weyer Road crossing into the CN Quiet Zone at Green Road and Watertown Road.

EXISTING CONDITIONS

The existing conditions at each of the study crossings are shown in Exhibits 2-4. Table 1 provides a summary of the primary crossing characteristics from the USDOT Grade Crossing Inventory at each study location.

Table 1
Existing USDOT Grade Crossing Inventory

Crossing Location	USDOT Crossing #	Ownership	WisDOT AADT, vpd (Year)	Roadway Width (ft)	Tracks	Track Width (ft)	Existing Safety Measures	# of Daily Trains	Maximum Speed (mph)	Type of Train Detection
Duplainville Road	390524K	CP	3,900 (2003)	22	2	35	Flashing Lights and 4-Quadrant Gates	21	60	Constant Warning Time (CWT)
Watertown Road	692232Y	CN	13,500 (2003)	22	1	30	Flashing Lights and Gates	34	50	Constant Warning Time (CWT)
Green Road	692237H	CN	1,200 (1988)	22	1	30	Flashing Lights and Gates	21	79	Constant Warning Time (CWT)

CP = Canadian Pacific Railroad
CN = Canadian National Railroad

The total track length on the CN line from Watertown Road to Green Road is approximately 1.3 miles. A private industrial crossing exists at the Zignego Company, south of Green Road. If the Quiet Zone included the Weyer Road crossing, the total track length would increase to 3.5 miles and include a private residential crossing approximately $\frac{3}{4}$ mile south of Weyer Road.

The Quiet Zone on the CP line would include a $\frac{1}{4}$ mile segment of track on either side of Duplainville Road ($\frac{1}{2}$ mile total track length). There is a public crossing at Springdale Road that lies on the municipal boundary between the City of Pewaukee and City of Brookfield, approximately 0.6 miles east of Duplainville Road. The City of Brookfield intends to include the Springdale Road crossing within their Quiet Zone with the endorsement of the City of Pewaukee. For purposes of this evaluation, the Springdale Road crossing was not included.

raSmith collected 48-hour weekday vehicle classification counts on the study roadways included in this evaluation in May 2023. The location of the counts was in close proximity to the WisDOT AADT counts noted in Table 1. The ADT volumes are as follows:

- Duplainville Road: 3,200 vehicles per day (vpd)
- Green Road: 2,100 vpd
- Watertown Road: 10,800 vpd
- Weyer Road: 1,300 vpd

Traffic count data is provided in Appendix A.

REQUIREMENTS FOR ESTABLISHING A NEW QUIET ZONE

The Federal Railroad Administration (FRA) has established several requirements that must be in place for a crossing to be considered for a new quiet zone. Minimum requirements for new quiet zones include the following:

- Minimum track length of $\frac{1}{2}$ mile
- Flashing lights and gates operating at each crossing

- Constant warning time devices (where practical) and a power out indicator
- Jurisdictional cooperation among all responsible entities within the quiet zone

The CP and CN crossings evaluated for this study meet these minimum criteria.

Public crossings included in the quiet zone must be evaluated using criteria set forth by the FRA to determine their Quiet Zone Risk Index (QZRI) using the FRA Quiet Zone Calculator. This calculator evaluates the existing safety conditions at a crossing and determines the need for additional safety measures to create a quiet zone. To qualify as a Quiet Zone, one of the following conditions must be met:

- All crossings in the proposed Quiet Zone must have a QZRI less than the National Significant Risk Threshold (NSRT)
- All crossings in the proposed Quiet Zone must have a QZRI less than the Risk Index with Horns (RIWH)
- All crossings in the proposed Quiet Zone must have Supplemental Safety Measures (SSM) installed.

Crossings that have a QZRI greater than the NSRT and RIWH must be upgraded using SSMs or Alternative Safety Measures (ASMs) to reduce the QZRI below the NSRT or RIWH.

Tables 2 & 3 summarize the existing Quiet Zone Calculator results at the study crossing locations.

Table 2
FRA Existing Quiet Zone Calculator Summary
CN Line

USDOT Crossing #	Crossing Location	Warning Device	Quiet Zone Risk Index (QZRI) ^{1,2}	Risk Index with Horns (RIWH)	Nationwide Significant Risk Threshold (NSRT)	Qualifies as a Quiet Zone?
692232Y	Watertown Road	Gates	73,647	44,153	15,488	No
692237H	Green Road	Gates				

¹ QZRI calculated using 2023 traffic count data collected by raSmith

² QZRI is an average between the risk indices for each crossing

The CN line currently operates with a QZRI greater than the NSRT and RIWH and will require improvements to qualify as a Quiet Zone. The Watertown Road crossing experienced one crash in the most recent five-year crash period, which significantly increases the risk index.

Table 3
FRA Existing Quiet Zone Calculator Summary
CP Line

USDOT Crossing #	Crossing Location	Warning Device	Quiet Zone Risk Index (QZRI) ¹	Risk Index with Horns (RIWH)	Nationwide Significant Risk Threshold (NSRT)	Qualifies as a Quiet Zone?
390524K	Duplainville Road	Four Quadrant Gates	6,235	20,768	15,488	Yes

¹ QZRI calculated using 2023 traffic count data collected by raSmith

The CP line currently operates with a QZRI less than the NSRT and RIWH. The four-quadrant gates installed at Duplainville Road is an SSM and automatically qualifies this crossing for a Quiet Zone.

QUIET ZONE IMPROVEMENTS

CN LINE

The CN Line at Green Road and Watertown Road will qualify as a Quiet Zone by installing one of the following SSM alternatives:

- 1) Raised or mountable medians added on both sides of the tracks at Watertown Road (100' minimum length)
- 2) Four-quadrant crossing gates at Watertown Road

If the Weyer Road crossing is included in the Quiet Zone (with the planned raised median ASM improvements), the overall risk index is lower but the required Quiet Zone improvements (SSM alternatives 1 or 2) remain the same.

No improvements are required at the Green Road crossing if one of the above-listed improvements is implemented at Watertown Road. Implementing SSMs such as raised or mountable medians or four-quadrant gates at the Green Road crossing in lieu of improvements at Watertown Road does not reduce the QZRI for the proposed quiet zone (with or without Weyer Road improvements) to an acceptable level.

Given the significantly lower cost of the median improvements (\$50,000) compared to the four-quadrant gate system (\$500,000), raSmith recommends the installation of raised medians on both sides of the tracks at Watertown Road. Mountable medians could be implemented at a slightly lower costs, but ongoing maintenance of these median types is a concern based on past experience. The Quiet Zone Calculator summary with raised median improvements at Watertown Road is shown in Table 4.

Table 4
FRA Quiet Zone Calculator Summary
CN Zone with Improvements

USDOT Crossing #	Crossing Location	Warning Device	Quiet Zone Risk Index (QZRI) ^{1, 2}	Risk Index with Horns (RIWH)	Nationwide Significant Risk Threshold (NSRT)	Qualifies as a Quiet Zone?
692232Y	Watertown Rd	Raised Medians	27,856	44,153	15,488	Yes
692237H	Green Rd	Gates				

¹ QZRI calculated using 2023 traffic count data collected by raSmith

² QZRI is an average between the risk indices for each crossing

The private industrial crossing at the Zignego Company will require both stop signs and railroad crossing crossbuck signs in both directions. Field observations indicate a stop sign is present, but no crossbuck signs. All recommended CN Line Quiet Zone improvements are shown in Exhibit 5.

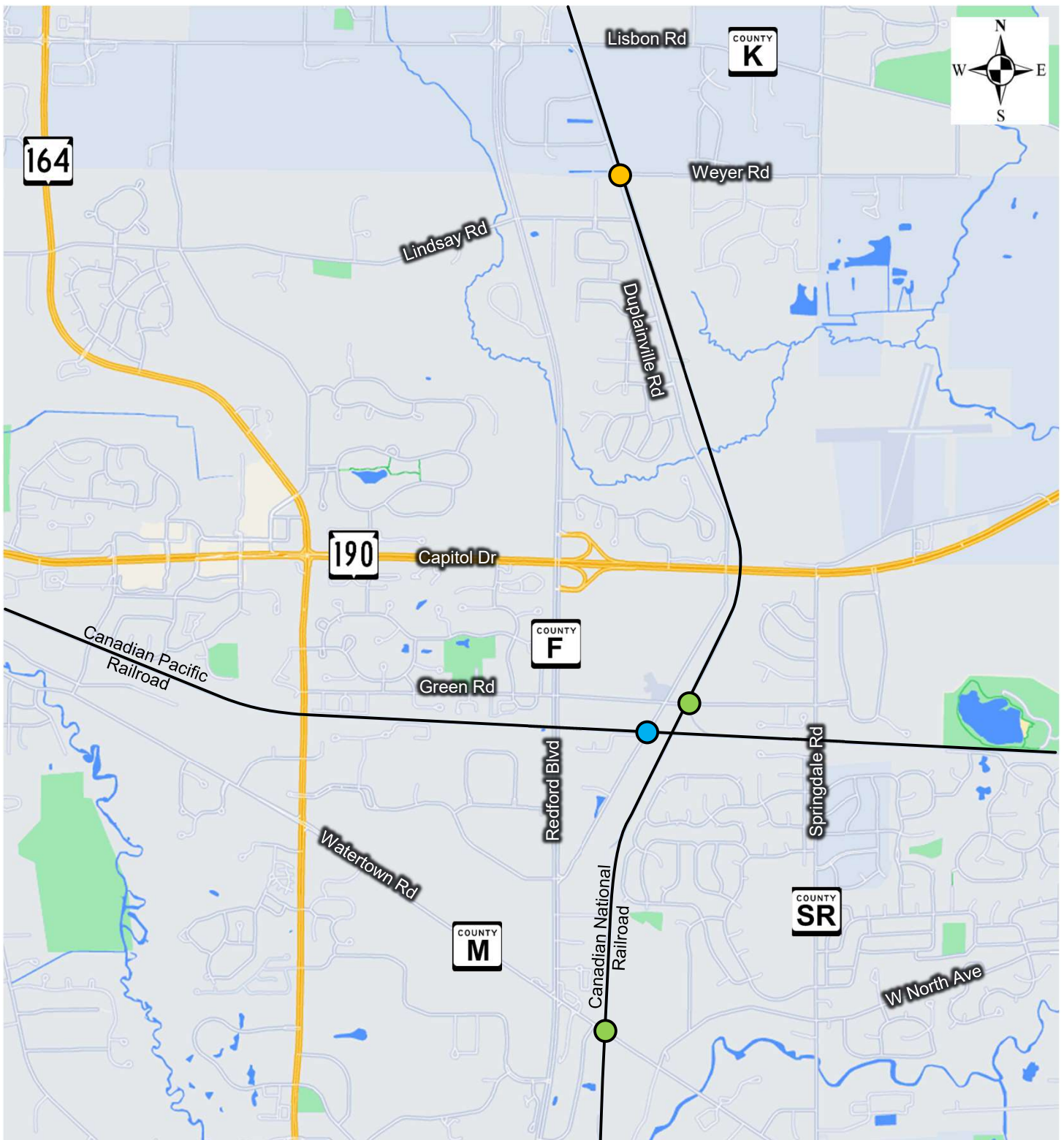
CP LINE

The CP Line at Duplainville Road automatically qualifies as a Quiet Zone since there is only one crossing included in the Quiet Zone and an SSM (four-quadrant gate system) is already installed. The City of Brookfield could include the Duplainville Road crossing in its Quiet Zone to reduce the overall risk index, but no additional improvements are anticipated at the Duplainville Road crossing.

All FRA Quiet Zone Calculator results for the existing and improved conditions are provided in Appendix B.

RECOMMENDATIONS

The City of Pewaukee is proposing new Quiet Zones along the CN and CP railroad lines. Crossing improvements are required at Watertown Road and at the Zignego Company private crossing for the CN line to qualify for a Quiet Zone. No additional improvements are required for the CP line since an SSM is already installed at Duplainville Road. The next step in the process is to schedule a Diagnostic Team Review Meeting with the FRA, WisDOT, and railroad companies to discuss the improvements and additional procedures needed to attain Quiet Zone status along each railroad line.



Legend

- = Canadian National Railroad Crossings
- = Canadian Pacific Railroad Crossing
- = Additional Canadian National Railroad Crossing (Previously Studied)

Project Location Map

Exhibit
1



Legend

-  = Stop Sign
-  = Deployed Gate Location
-  = Flashing Lights and Crossbucks
-  = Stop Bar Location
-  = Approximate Edge of Pavement Line (Extended)

**Existing Conditions
(Watertown Road)**

Exhibit
2



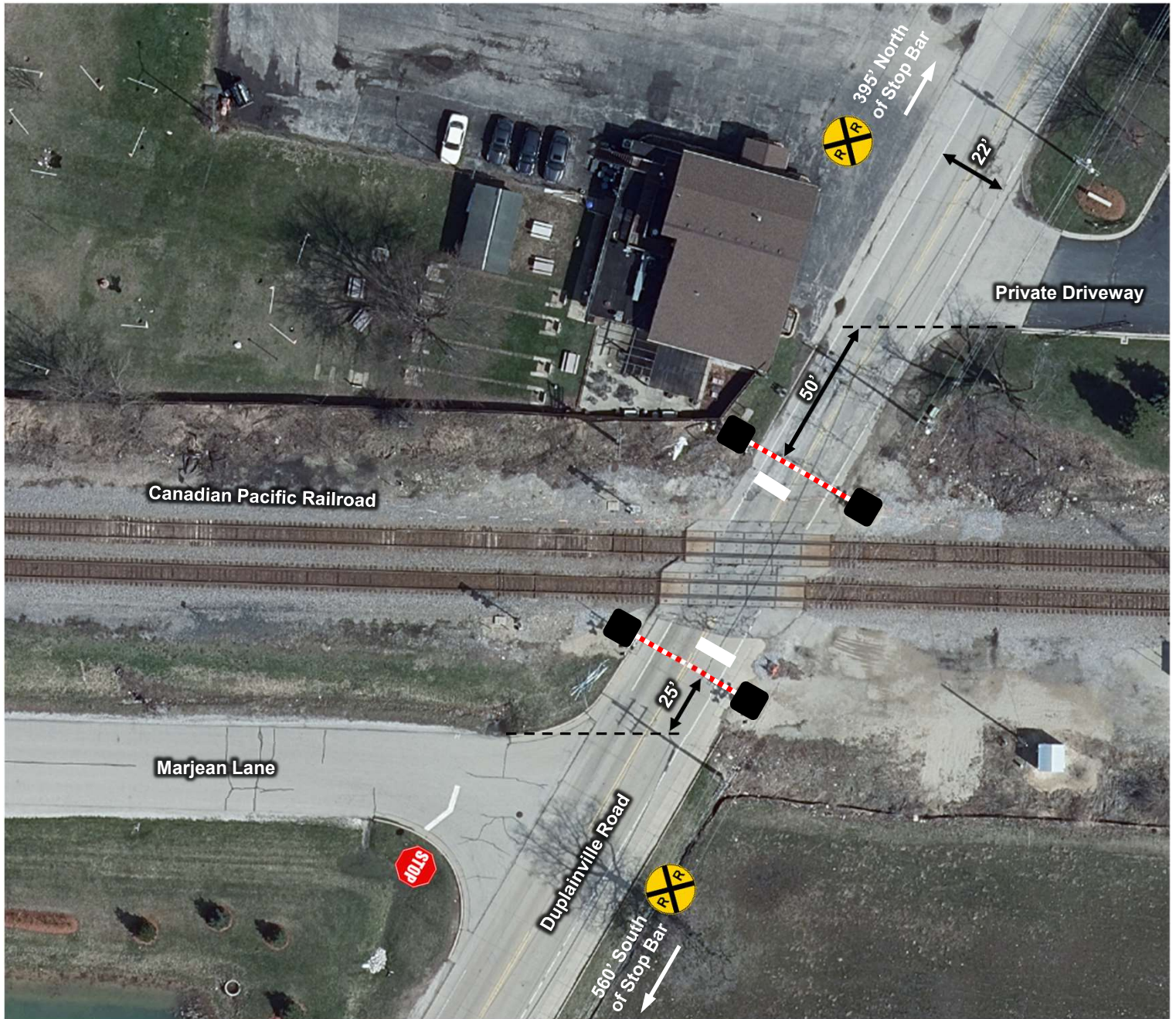
Note: No eastbound advance railroad crossing sign along Green Road.

Legend

-  = Stop Sign
-  = Deployed Gate Location
-  = Flashing Lights and Crossbucks
-  = Stop Bar Location
-  = Approximate Edge of Pavement Line (Extended)

**Existing Conditions
(Green Road)**

Exhibit
3

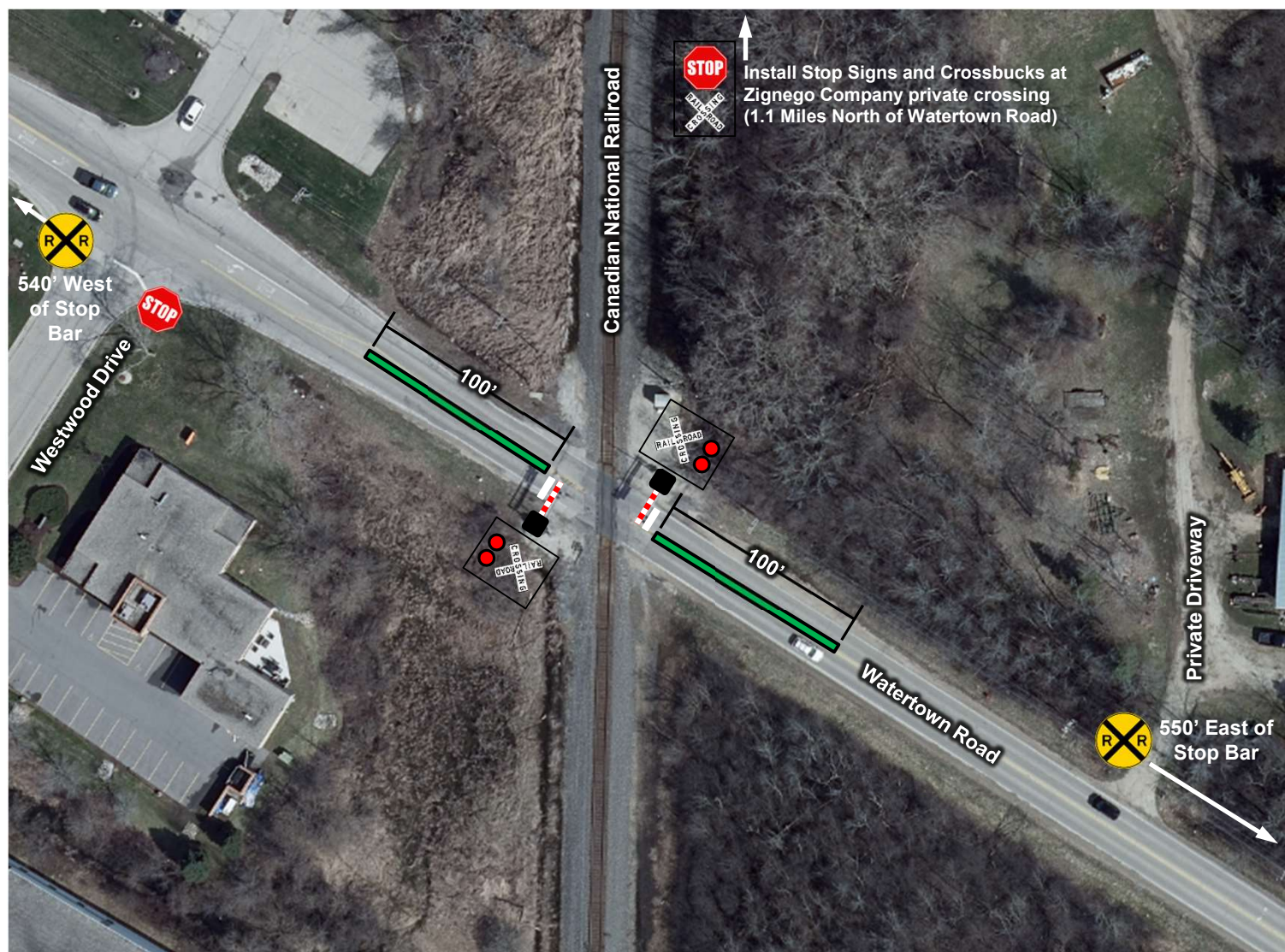


Legend

-  = Stop Sign
-  = Deployed Gate Location
-  = Flashing Lights and Crossbucks
-  = Stop Bar Location
-  = Approximate Edge of Pavement Line (Extended)

**Existing Conditions
(Duplainville Road)**

Exhibit
4



Legend



= Stop Sign and Cross Buck Assembly



= Flashing Lights and Cross Buck Assembly



= Stop Sign

= Deployed Gate Location



= Stop Bar Location



= Raised Median

**Recommended
Quiet Zone Improvements
(CN Line)**

Exhibit

5

APPENDIX A

Traffic Counts

48-Hour Volume and Classification Counts

48-hour Volume and Classification Counts

CLASSIFICATION STATISTICS
5/2/2023 at 00:00 TO 5/3/2023 at 24:00

Page: 3

Station #: 1
Site ID: 000000021769
Location: 1

File: D0502003.prn
City: Pewaukee
County: Waukesha

Site Total Statistics

Total	0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	Total
TOTALS	26	4405	1468	2	112	100	19	99	168	26	3	5	0	0	0	6433
PERCENT	0.4	68.5	22.8	0.0	1.7	1.6	0.3	1.5	2.6	0.4	0.0	0.1	0.0	0.0	0.0	100.0

24 Hour Total =
6,433/2 = 3,217

Peak Hour Statistics

Total	0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	Total
AM Times	07:15	08:15	07:30	08:30	11:15	07:15	08:30	08:30	10:15	10:15	07:15	08:45				07:30
AM Peaks	3	213	74	2	11	11	2	5	16	5	1	2				296
PM Times	16:45	17:45	17:45		11:30	17:00	12:30	16:15	11:45	12:45	18:15	15:30				17:45
PM Peaks	4	244	79		10	11	3	8	13	4	1	1				343

Station #: 2 File: D0510001.prn
Site ID: Watertown Rd City: Brookfield
Location: 100 ft West of Westwood Dr County: Waukesha

Site Total Statistics

Total	0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	Total
TOTALS	371	15938	3605	90	400	388	212	215	287	38	48	31	41	0	0	21664
PERCENT	1.7	73.6	16.6	0.4	1.8	1.8	1.0	1.0	1.3	0.2	0.2	0.1	0.2	0.0	0.0	100.0

24 Hour Total =
 $21,664/2 = 10,832$

Peak Hour Statistics

Total	0001	0002	0003	0004	0005	0006	0007	0008	0009	0010	0011	0012	0013	0014	0015	Total
AM Times	07:30	07:30	07:45	07:45	07:45	07:45	11:15	08:15	11:00	07:45	07:45	08:00	08:15			07:30
AM Peaks	24	711	162	9	31	28	16	18	17	6	5	4	6			978
PM Times	17:00	16:45	16:45	17:00	17:00	17:00	17:00	15:15	14:45	15:30	12:45	12:00	13:00			16:45
PM Peaks	25	1000	179	13	25	33	19	12	24	4	6	4	3			1303

VOLUME SUMMARY REPORT

Station ID: Pewaukee Quiet Zones (2)

Info Line 1: Green Rd Start Time: 11:45 AM
 Info Line 2: Green Rd Start Date: 4/24/2023
 Counter Type: RoadRunner3 End Time: 1:14 PM
 Counter Version: 1.2 End Date: 4/26/2023
 Serial #: 160753
 Latitude: Interval: 15 (min)
 Longitude:
 Lanes: 2
 Speed Limit:

LANE CONFIGURATION:

Lane #	Dir	Information	Vol Mode	Vol Sensor	Divide / 2	Comment																							
1		East	Directional Axle	Yes																									
2		West	Directional Axle	Yes																									
Total Count	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Total				
Lane #1	6	2	1	3	12	42	81	133	155	91	102	128	123	110	110	166	209	215	110	81	69	38	6	5	1998				
Lane #2	10	2	2	3	8	32	113	203	175	128	135	139	161	138	131	200	221	177	138	89	59	20	10	3	2297				
TOTAL	16	4	3	6	20	74	194	336	330	219	237	267	284	248	241	366	430	392	248	170	128	58	16	8	4295				
Percents	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM					
Lane #1	0.3	0.1	0.1	0.2	0.6	2.1	4.1	6.7	7.8	4.6	5.1	6.4	6.2	5.5	5.5	8.3	10.5	10.8	5.5	4.1	3.5	1.9	0.3	0.3					
Lane #2	0.4	0.1	0.1	0.1	0.3	1.4	4.9	8.8	7.6	5.6	5.9	6.1	7	6	5.7	8.7	9.6	7.7	6	3.9	2.6	0.9	0.4	0.1					
TOTAL	0.4	0.1	0.1	0.1	0.5	1.7	4.5	7.8	7.7	5.1	5.5	6.2	6.6	5.8	5.6	8.5	10	9.1	5.8	4	3	1.4	0.4	0.2					
ADT	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Total				
Lane #1	3	1	1	2	6	21	41	67	78	46	51	57	41	49	55	83	105	108	55	41	35	19	3	3	971				
Lane #2	5	1	1	2	4	16	57	102	88	64	68	62	54	61	66	100	111	89	69	45	30	10	5	2	1112				
TOTAL	8	2	2	4	10	37	98	169	166	110	119	119	95	110	121	183	216	197	124	86	65	29	8	5	2083				

ALL LANES SUMMARY:

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals	0	1300	2116	879	0	0	0	4295	100
# Days	0	0.5104	1	0.5521	0	0	0	2082	
ADT	#DIV/0!	2547	2116	1592	#DIV/0!	#DIV/0!	#DIV/0!	0	0
# Days	0	30.3	49.3	20.5	0	0	0	#DIV/0!	
Weekday (Mon-Fri):								4295	100
ADT:								2082	
Weekend (Sat-Sun):								0	0
ADT:								#DIV/0!	

VOLUME SUMMARY REPORT

Station ID: Pewaukee Quiet Zone (1)

Info Line 1: Weyer Rd Start Time: 11:30 AM
Info Line 2: Weyer Rd Start Date: 4/24/2023
Counter Type: RoadRunner3 End Time: 12:44 PM
Counter Version: 1.2 End Date: 4/26/2023
Serial #: 160754
Latitude: Interval: 15 (min)
Longitude:
Lanes: 2
Speed Limit:

LANE CONFIGURATION:

	Lane #	Dir	Information	Vol Mode	Vol Sensors	Divide / 2	Comment																		
	1		East	Directional	Axle	Yes																			
	2		West	Directional	Axle	Yes																			
Total Count	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Total
Lane #1	1	1	0	8	7	20	58	146	98	80	65	72	77	80	77	135	177	142	96	63	58	28	2	7	1498
Lane #2	2	0	1	2	5	40	71	101	125	77	71	62	84	68	75	104	108	109	63	38	20	13	3	1	1243
TOTAL	3	1	1	10	12	60	129	247	223	157	136	134	161	148	152	239	285	251	159	101	78	41	5	8	2741
Percents	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	
Lane #1	0.1	0.1	0	0.5	0.5	1.3	3.9	9.7	6.5	5.3	4.3	4.8	5.1	5.3	5.1	9	11.8	9.5	6.4	4.2	3.9	1.9	0.1	0.5	
Lane #2	0.2	0	0.1	0.2	0.4	3.2	5.7	8.1	10.1	6.2	5.7	5	6.8	5.5	6	8.4	8.7	8.8	5.1	3.1	1.6	1	0.2	0.1	
TOTAL	0.1	0	0	0.4	0.4	2.2	4.7	9	8.1	5.7	5	4.9	5.9	5.4	5.5	8.7	10.4	9.2	5.8	3.7	2.8	1.5	0.2	0.3	
ADT	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	Total
Lane #1	1	1	0	4	4	10	29	73	49	40	33	29	28	40	39	68	89	71	48	32	29	14	1	4	736
Lane #2	1	0	1	1	3	20	36	51	63	39	36	25	31	34	38	52	54	55	32	19	10	7	2	1	611
TOTAL	2	1	1	5	7	30	65	124	112	79	69	54	59	74	77	120	143	126	80	51	39	21	3	5	1347

ALL LANES SUMMARY:

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total	Percent
DW Totals	0	786	1374		581	0	0	0	Weekday (Mon-Fri): 2741 100
# Days	0	0.5208	1	0.5313	0	0	0	0	ADT: 1336
ADT	#DIV/0!	1509	1374	1094	#DIV/0!	#DIV/0!	#DIV/0!	0	Weekend (Sat-Sun): 0 0
# Days	0	28.7	50.1	21.2	0	0	0	0	ADT: #DIV/0!

APPENDIX B

FRA Quiet Zone Calculator Results

CN ZONE

Without Weyer Road

Existing conditions

FRA Quiet Zone Risk Indices

ZoneID	SenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate	Eff. Of Pre-SSM	Eff-of new SSM	RIWH	RIWH w/Pre-SSMs	Pre-ASM eff	RIWH w/Pre-ASMs	Eff. Of New ASM	Final Risk Index
	68333	692232Y	WATERTOWN PLANK	Gates	0	0	114,478.35		-	-	68632.1	68632.1	0	68632.1	0	114478.4
	68333	692237H	GREEN RD	Gates	0	0	32,816.44		-	-	19674.12	19674.12	0	19674.12	0	32816.44

QZRI	73647.40
RIWH	44153.11
NSRT	15488
Qualifies?	NO

SSM = Supplemental Safety Measure
 ASM = Alternative Safety Measure
 QZRI = Quiet Zone Risk Index
 RIWH = Risk Index with Horns
 NSRT = Nationwide Significant Risk Threshold

*** The requirement is to have QZRI < RIWH ***

SSM Effectiveness Percentages:

Four Quadrant Gate Upgrade from Two Quadrant Gate, with Medians and no Vehicle Presence Detection = 0.92

Four Quadrant Gate Upgrade from Two Quadrant Gate, No Vehicle Presence Detection = 0.82

Non-Traversable Curb Medians with or without Channelization Device = 0.80

Mountable Medians with Reflective Traffic Channelization Devices = 0.75

44153.11 44153.11 44153.11 73647.4

QZRI	73647.4
RIWH	44153.11
NSRT	15488
Qualifies?	NO

Improved conditions w/ Raised Medians at Watertown Rd

FRA Quiet Zone Risk Indices

ZoneID	SenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate	Eff. Of Pre-SSM	Eff-of new SSM	RIWH	RIWH w/Pre-SSMs	Pre-ASM eff	RIWH w/Pre-ASMs	Eff. Of New ASM	Final Risk Index
	68333	692232Y	WATERTOWN PLANK	Gates	0	0	114,478.35		-	-	68632.1	68632.1	0	68632.1	0.8	22895.67
	68333	692237H	GREEN RD	Gates	0	0	32,816.44		-	-	19674.12	19674.12	0	19674.12	0	32816.44

QZRI	73647.40
RIWH	44153.11
NSRT	15488
Qualifies?	NO

SSM = Supplemental Safety Measure
 ASM = Alternative Safety Measure
 QZRI = Quiet Zone Risk Index
 RIWH = Risk Index with Horns
 NSRT = Nationwide Significant Risk Threshold

*** The requirement is to have QZRI < RIWH ***

SSM Effectiveness Percentages:

Four Quadrant Gate Upgrade from Two Quadrant Gate, with Medians and no Vehicle Presence Detection = 0.92

Four Quadrant Gate Upgrade from Two Quadrant Gate, No Vehicle Presence Detection = 0.82

Non-Traversable Curb Medians with or without Channelization Device = 0.80

Mountable Medians with Reflective Traffic Channelization Devices = 0.75

44153.11 44153.11 44153.11 27856.06

QZRI	27856.06
RIWH	44153.11
NSRT	15488
Qualifies?	YES

Improved conditions w/ Mountable Medians at Watertown Rd

FRA Quiet Zone Risk Indices

ZoneID	ScenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate	Eff. Of Pre-SSM	Eff- of new SSM	RIWH	RIWH w/Pre-SSMs	Pre-ASM eff	RIWH w/Pre-ASMs	Eff. Of New ASM	Final Risk Index
	68333	692232Y	WATERTOWN PLANK	Gates	0	0	114,478.35		-	-	68632.1	68632.1	0	68632.1	0.75	28619.59
	68333	692237H	GREEN RD	Gates	0	0	32,816.44		-	-	19674.12	19674.12	0	19674.12	0	32816.44

QZRI	73647.40
RIWH	44153.11
NSRT	15488
Qualifies?	NO

44153.11 44153.11 44153.11 30718.01

SSM = Supplemental Safety Measure
 ASM = Alternative Safety Measure
 QZRI = Quiet Zone Risk Index
 RIWH = Risk Index with Horns
 NSRT = Nationwide Significant Risk Threshold

*** The requirement is to have QZRI < RIWH ***

SSM Effectiveness Percentages:

Four Quadrant Gate Upgrade from Two Quadrant Gate, with Medians and no Vehicle Presence Detection = 0.92

Four Quadrant Gate Upgrade from Two Quadrant Gate, No Vehicle Presence Detection = 0.82

Non-Traversable Curb Medians with or without Channelization Device = 0.80

Mountable Medians with Reflective Traffic Channelization Devices = 0.75

QZRI	30718.01
RIWH	44153.11
NSRT	15488
Qualifies?	YES

Improved conditions w/ 4-Quad Gates at Watertown Rd

FRA Quiet Zone Risk Indices

ZoneID	ScenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate	Eff. Of Pre-SSM	Eff- of new SSM	RIWH	RIWH w/Pre-SSMs	Pre-ASM eff	RIWH w/Pre-ASMs	Eff. Of New ASM	Final Risk Index
	68333	692232Y	WATERTOWN PLANK	Gates	0	0	114,478.35		-	-	68632.1	68632.1	0	68632.1	0.82	20606.1
	68333	692237H	GREEN RD	Gates	0	0	32,816.44		-	-	19674.12	19674.12	0	19674.12	0	32816.44

QZRI	73647.40
RIWH	44153.11
NSRT	15488
Qualifies?	NO

44153.11 44153.11 44153.11 26711.27

SSM = Supplemental Safety Measure
 ASM = Alternative Safety Measure
 QZRI = Quiet Zone Risk Index
 RIWH = Risk Index with Horns
 NSRT = Nationwide Significant Risk Threshold

*** The requirement is to have QZRI < RIWH ***

SSM Effectiveness Percentages:

Four Quadrant Gate Upgrade from Two Quadrant Gate, with Medians and no Vehicle Presence Detection = 0.92

Four Quadrant Gate Upgrade from Two Quadrant Gate, No Vehicle Presence Detection = 0.82

Non-Traversable Curb Medians with or without Channelization Device = 0.80

Mountable Medians with Reflective Traffic Channelization Devices = 0.75

QZRI	26711.27
RIWH	44153.11
NSRT	15488
Qualifies?	YES

CN ZONE

With Weyer Road (Improved)

Existing conditions

FRA Quiet Zone Risk Indices

ZoneID	SenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate	Eff. Of Pre-SSM	Eff- of new SSM	RIWH	RIWH w/Pre-SSMs	Pre-ASM eff	RIWH w/Pre-SSMs	Eff. Of New ASM	Final Risk Index
	68333	692232Y	WATERTOWN PLANK	Gates	0	0	114,478.35		-	-	68632.1	68632.1	0	68632.1	0	114478.4
	68333	692237H	GREEN RD	Gates	0	0	32,816.44		-	-	19674.12	19674.12	0	19674.12	0	32816.44
	68333	692244T	WEYER RD	Gates	0	0	35,208.03		-	-	21107.93	21107.93	0	21107.93	0.487	18061.72

13-ft "effective" median length (w/ driveway)

$$\frac{0.4}{60 \text{ ft}} = \frac{x}{13 \text{ ft}}$$

$$x = \text{effectiveness of ASM}$$

$$5.2 = 60x$$

$$x = 0.087$$

QZRI	60834.27
RIWH	36471.39
NSRT	15488
Qualifies?	NO

SSM = Supplemental Safety Measure
 ASM = Alternative Safety Measure
 QZRI = Quiet Zone Risk Index
 RIWH = Risk Index with Horns
 NSRT = Nationwide Significant Risk Threshold

*** The requirement is to have QZRI < RIWH ***

QZRI	55118.84
RIWH	36471.39
NSRT	15488
Qualifies?	NO

SSM Effectiveness Percentages:

Four Quadrant Gate Upgrade from Two Quadrant Gate, with Medians and no Vehicle Presence Detection = 0.92

Four Quadrant Gate Upgrade from Two Quadrant Gate, No Vehicle Presence Detection = 0.82

Non-Traversable Curb Medians with or without Channelization Device = 0.80

Mountable Medians with Reflective Traffic Channelization Devices = 0.75

Improved conditions w/ Raised Medians at Watertown Rd

FRA Quiet Zone Risk Indices

ZoneID	SenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate	Eff. Of Pre-SSM	Eff- of new SSM	RIWH	RIWH w/Pre-SSMs	Pre-ASM eff	RIWH w/Pre-SSMs	Eff. Of New ASM	Final Risk Index
	68333	692232Y	WATERTOWN PLANK	Gates	0	0	114,478.35		-	-	68632.1	68632.1	0	68632.1	0.8	22895.67
	68333	692237H	GREEN RD	Gates	0	0	32,816.44		-	-	19674.12	19674.12	0	19674.12	0	32816.44
	68333	692244T	WEYER RD	Gates	0	0	35,208.03		-	-	21107.93	21107.93	0	21107.93	0.487	18061.72

QZRI	60834.27
RIWH	36471.39
NSRT	15488
Qualifies?	NO

SSM = Supplemental Safety Measure
 ASM = Alternative Safety Measure
 QZRI = Quiet Zone Risk Index
 RIWH = Risk Index with Horns
 NSRT = Nationwide Significant Risk Threshold

*** The requirement is to have QZRI < RIWH ***

36471.39 36471.39 36471.39 24591.28

QZRI	24591.28
RIWH	36471.39
NSRT	15488
Qualifies?	YES

SSM Effectiveness Percentages:

Four Quadrant Gate Upgrade from Two Quadrant Gate, with Medians and no Vehicle Presence Detection = 0.92

Four Quadrant Gate Upgrade from Two Quadrant Gate, No Vehicle Presence Detection = 0.82

Non-Traversable Curb Medians with or without Channelization Device = 0.80

Mountable Medians with Reflective Traffic Channelization Devices = 0.75

Improved conditions w/ Mountable Medians at Watertown Rd

FRA Quiet Zone Risk Indices

ZoneID	SenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate	Eff. Of Pre-SSM	Eff- of new SSM	RIWH	RIWH w/Pre-SSMs	Pre-ASM eff	RIWH w/Pre-ASMs	Eff. Of New ASM	Final Risk Index
	68333	692232Y	WATERTOWN PLANK	Gates	0	0	114,478.35		-	-	68632.1	68632.1	0	68632.1	0.75	28619.59
	68333	692237H	GREEN RD	Gates	0	0	32,816.44		-	-	19674.12	19674.12	0	19674.12	0	32816.44
	68333	692244T	WEYER RD	Gates	0	0	35,208.03		-	-	21107.93	21107.93	0	21107.93	0.487	18061.72

SSM = Supplemental Safety Measure
 ASM = Alternative Safety Measure
 QZRI = Quiet Zone Risk Index
 RIWH = Risk Index with Horns
 NSRT = Nationwide Significant Risk Threshold

*** The requirement is to have QZRI < RIWH ***

SSM Effectiveness Percentages:

Four Quadrant Gate Upgrade from Two Quadrant Gate, with Medians and no Vehicle Presence Detection = 0.92

Four Quadrant Gate Upgrade from Two Quadrant Gate, No Vehicle Presence Detection = 0.82

Non-Traversable Curb Medians with or without Channelization Device = 0.80

Mountable Medians with Reflective Traffic Channelization Devices = 0.75

QZRI	60834.27
RIWH	36471.39
NSRT	15488
Qualifies?	NO

36471.39 36471.39 36471.39 26499.25

QZRI	26499.25
RIWH	36471.39
NSRT	15488
Qualifies?	YES

Improved conditions w/ 4-Quad Gates at Watertown Rd

FRA Quiet Zone Risk Indices

ZoneID	SenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate	Eff. Of Pre-SSM	Eff- of new SSM	RIWH	RIWH w/Pre-SSMs	Pre-ASM eff	RIWH w/Pre-ASMs	Eff. Of New ASM	Final Risk Index
	68333	692232Y	WATERTOWN PLANK	Gates	0	0	114,478.35		-	-	68632.1	68632.1	0	68632.1	0.82	20606.1
	68333	692237H	GREEN RD	Gates	0	0	32,816.44		-	-	19674.12	19674.12	0	19674.12	0	32816.44
	68333	692244T	WEYER RD	Gates	0	0	35,208.03		-	-	21107.93	21107.93	0	21107.93	0.487	18061.72

SSM = Supplemental Safety Measure
 ASM = Alternative Safety Measure
 QZRI = Quiet Zone Risk Index
 RIWH = Risk Index with Horns
 NSRT = Nationwide Significant Risk Threshold

*** The requirement is to have QZRI < RIWH ***

SSM Effectiveness Percentages:

Four Quadrant Gate Upgrade from Two Quadrant Gate, with Medians and no Vehicle Presence Detection = 0.92

Four Quadrant Gate Upgrade from Two Quadrant Gate, No Vehicle Presence Detection = 0.82

Non-Traversable Curb Medians with or without Channelization Device = 0.80

Mountable Medians with Reflective Traffic Channelization Devices = 0.75

QZRI	60834.27
RIWH	36471.39
NSRT	15488
Qualifies?	NO

36471.39 36471.39 36471.39 23828.09

QZRI	23828.09
RIWH	36471.39
NSRT	15488
Qualifies?	YES

CN ZONE

Existing conditions

FRA Quiet Zone Risk Indices

ZoneID	SenarioID	Crossing	Street	WarningDevice	SSM	PreSSM	RiskIndex	ASM Effectiveness Rate
60347	68354	390524K	DUPLAINVILLE RD	Gates	4	0	6517.642833	

QZRI	6517.64
RIWH	21708.11
NSRT	15488
Qualifies?	YES

**CITY OF PEWAUKEE
PUBLIC WORKS COMMITTEE AGENDA ITEM 6.2.**

DATE: July 27, 2023

DEPARTMENT: Public Works

PROVIDED BY: Magdelene Wagner/Michaelis Gabbey

SUBJECT:

Discussion and possible action regarding the GIS Implementation and Asset Management Software selection.

BACKGROUND:

The Staff has been working with a consultant to implement our new GIS application. This will enable Staff to make real time changes in our data and better access to the information. We currently have access to a demo site which we are reviewing.

Staff recently selected our Asset Management Software, Cartegraph (<https://www.cartegraph.com/oms/asset-management-software-for-government>). This software will wrap around our GIS. Forms, work orders, and citizen information will be centered on this software. This will help automate our processes and assist us in going paperless. This will also assist us in the asset tracking that is required to be more robust with our reclassification to an Class AB utility.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

CITY OF PEWAUKEE
PUBLIC WORKS COMMITTEE AGENDA ITEM 6.3.

DATE: July 27, 2023

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner

SUBJECT:

Discussion and possible action regarding utility extension to Shady Lane and Shady Nook.

BACKGROUND:

The last two years we have bid out water main extension, sanitary sewer extension, and road reconstruction to the Shady Lane/Shady Nook area. The first year we rejected all bids due to the prices, believing the high costs to be related to COVID residuals and the late bidding. We bid the project in 2022 which yielded almost identical costs. After discussion with the Common Council, it was determined to move forward to the public hearing for the assessments. The assessments were approximately \$41,000 for sewer and lateral, \$26,000 for water and service, and \$3,206 for road which was capped. After the public hearing, the Council did not award the project.

The roads in Shady Lane/Shady Nook are failing and need a complete reconstruction. Prior to doing this, it is recommended that utilities be extended to achieve the longest life out of the pavement. About 10 years ago, the City placed a temporary cap on the roadway to allow time to bid the sewer and water as part of the project. This cap is now starting to fail as well.

In addition, there is known groundwater contamination in the area. The ongoing testing in the area still reflect the contaminate is above the allowable limit.

Finally, this is an old subdivision on septic. Since the municipal sewer is available, it should be extended for septic relief.

After the last bid was rejected, we reviewed the design. The sewer was fairly deep in a few locations to serve basements of existing properties that are much lower than the roadway. This is an area that can be redesigned to require homes to pump up to the sewer which would shallow up the sewer by 10+ feet. The location of the sewer can also be shifted to be along one side of the roadway to assist with access during construction. The final item to address the concerns we heard back from the contractors is a concern with soil contamination. While we have been assured by the Wisconsin Department of Natural Resources that the groundwater contamination does not translate to soil contamination, it was a concern for some contractors. We could complete some soil testing and include those results in the bid to alleviate this concern. Estimated cost for this testing is \$35,000.

If the road is reconstructed without these utilities, we will not revisit this area for 20+ years (the expected life of the asphalt road).

Staff is looking for direction from the Committee to potentially recommend to the Council. Options include:

1. Do nothing. The roadway will continue to fail, but we wait until it reaches critical failure and then rebid the whole package again (sewer, water, and road).

2. Bid the road reconstruction only. This does not provide sewer for septic relief or water to mitigation the groundwater contamination. When utilities are extended in the future, we would be removing any provisions used to rebuild the roadway for extended lift (such as geogrid).
3. Rebid the sewer, water, and road project with the redesigned sewer location and depth as early as possible to ensure a healthy bidding climate.
4. Rebid the water and road project. This eliminates the sewer and the potential for septic relief for this area. It will also make any future sewer extension more difficult due to the depth of the sewer, as we will need to worry about the operation of the water main.
5. Bid the project with road as the main project and the utility extensions as mandatory alternates that may or may not be awarded.

FINANCIAL IMPACT:

RECOMMENDED MOTION:

ATTACHMENTS:

Description

CC meeting agenda 3.20.2023

**CITY OF PEWAUKEE
COMMON COUNCIL AGENDA ITEM 5.**

DATE: March 20, 2023

DEPARTMENT: PW - Engineering

PROVIDED BY: Magdelene Wagner

SUBJECT:

Public Hearing, Discussion and Possible Action regarding Shady Lane and Shady Nook Road Reconstruction, Water Main Extension, and Sanitary Sewer Extension Project [Wagner]

BACKGROUND:

The City authorized the road reconstruction, water main extension, and sanitary sewer extension project for Shady Lane and Shady Nook as part of the 2023 budget.

These roads are in poor condition and require rehabilitation. Several years ago, we placed an asphalt overlay on the road to give the City time to plan and design the utility extensions. It is best before reconstructing the roadway to install utilities where available for the longevity of the pavement.

The Shady Lane/Shady Nook is an area that has known groundwater contamination from the Quad Graphics property which was originally found in the mid 1990's. This is an area where water main should be extended to protect the health of the residents. The City does not have records on the status of the contamination as this is managed by the Wisconsin Department of Natural Resources (WDNR). The WDNR also oversees private wells. Since water main is adjacent to the roadway and the roadway is being reconstructed, installing the water main would ensure safe drinking water to this neighborhood.

This neighborhood was built in the late 1950's and early 1960's. These homes are on private septic systems. Since the County maintains these records, we are unsure of the condition of these septic systems. Homes surrounding these currently have municipal sewer. The general area is also known to have a seasonal high ground water table which also impacts the life of the septic fields. This is an area where we believe we should provide septic relief in the way of a municipal sewer. With the Storm Water Utility acquiring land at the west end of Shady Lane and to the west of Hill n Dale Circle, Shady Lane can be served by a gravity system. When sanitary sewer was proposed back in the early-1990's for this subdivision, there was a lift station which we eliminated in this design.

This project was bid in 2022, but the City rejected the bids for this project in 2022 due to the potential assessment costs and supply chain concerns increasing the cost of the project. The City rebid this project in 2023 taking into consideration the feedback from the 2022 bidding and bidding it earlier when contractors are still filling their construction season. In 2023, we received 1 bid (even though we had plenty of contractors pull plans and ask several questions during bidding). The bid amount is roughly the same as last year's bids.

The project was bid to remove the existing asphalt pavement and base stone, complete any subbase repairs, install sanitary sewer and laterals, install water main and services, place new asphaltic concrete pavement, install new culverts, and ditching. The road assessment is \$17,534.68/unit which exceeds the paving cap of \$3,206.00. The sanitary sewer assessment is \$29,204.36/unit and sanitary lateral assessment is \$11,153.89/unit. The water main assessment is \$18,052.41/unit, HDPE

water service assessment is \$7,894.81/unit, and copper water service assessment is \$11,173.95/unit.

At the Common Council meeting on March 6th, the Council had preliminary discussions on the project and possible options to assist with the assessments. The decision was made to move the project forward to the public hearing and continue the discussion on the assessments and possible assistance.

Current policy for the sanitary sewer is to require connection in 15 years and payment of the assessment over 10 years with simple interest. The interest rate for this project would be 5% to 6% (1% over the interest rate the City borrowed at for this and other projects per ordinance).

Current policy for the water main is to require connection at the time of sale and payment of the assessment over 10 years with simple interest. The interest rate for this project would be 5% to 6% (1% over the interest rate the City borrowed at for this and other projects per ordinance).

Current policy for the road assessment is payment of the assessment over 10 years with simple interest. The interest rate for this project would be 5% to 6% (1% over the interest rate the City borrowed at for this and other projects per ordinance).

As we discussed at the March 6th Common Council meeting, some possibilities to assist in these assessments would be 1) give longer than the standard 10-year payment schedule, 2) offset funds using general tax levy or ARPA funds.

To assist in the discussion on the payment schedule, we have included several payment schedules. We estimated the interest rate at 5.5% which is 1% over the average rate the City borrowed for these projects. We have included our standard 10 year pay back period, a 15 year pay back period (with and without a 5 year deferment for the water & sewer assessments), and a 20 year pay back period.

FINANCIAL IMPACT:

The 2023 budget included:

Road \$500,000.00

Storm \$250,000.00

Sewer Utility \$1,100,000.00

Water Utility \$830,000.00

The actual costs are:

Road \$648,783.25

Storm \$219,984.02

Sewer Utility \$1,256,384.29

Water Utility \$682,432.44

For the road construction, the budget is \$148,832.25 short. I recommend reallocating from the Busse Road Bridge due to its delay in applying for State funds for this bridge project.

For the sewer construction, the budget is \$156,384.29 short. I recommend reallocating from the borrowing for the Swan View Farms Sewer Oversizing project which was completed prior to the borrowing and funds need to be reallocated.

RECOMMENDED MOTION:

Common Council accept the preliminary engineering report and special assessments and award the contract to the lowest qualified bidder, CW Purpuro, in the amount of \$2,159,680.00 and reallocate funds as recommended.

ATTACHMENTS:

Description

Preliminary Engineers Report

Payment Schedules

Preliminary Report of the Engineer
On the Proposed Shady Lane and Shady Nook
Pavement Rehabilitation, Sanitary Sewer, and Water Main Assessments
In the City of Pewaukee

In accordance with the resolution passed by the Common Council of the City of Pewaukee, we herewith submit our report on assessments for the rehabilitation of Shady Lane and Shady Nook, sanitary sewer extensions, water main extension, and drainage improvements to be made in the City of Pewaukee. All data shown here is based on bid prices.

This report consists of the following Schedules:

- | | |
|---------------|--|
| Schedule “A”: | Summary of options for assessments and related costs. |
| Schedule “B”: | Legal descriptions and maps, dated May 2022 and March 2023, of all parcels within the assessment district. |
| Schedule “C”: | Estimated assessment for each parcel affected. |

The properties against which the assessments are proposed are benefited and the improvements constitute an exercise of Police Powers.

Magdelene J. Wagner, P.E.
Director of Public Works/City Engineer
City of Pewaukee
W240N3065 Pewaukee Road
Pewaukee, WI 53072
March 20, 2023

Prepared by:
Brian G. Leightner, P.E.
Civil Engineer
March 7, 2023

Schedule “A” – Shady Lane and Shady Nook

The City of Pewaukee is considering the pavement rehabilitation of Shady Lane and Shady Nook. The improvements consist of road rehabilitation, drainage repair, sewer extension, water extension, and related facilities.

The cost of the road improvements will be apportioned to all property owners abutting the street with direct or indirect access. The City of Pewaukee shall cap the road assessments to the single family, duplex residential, and residential condominium properties. All other properties shall pay the full road assessment.

Drainage improvements will be paid by the Storm Water Management Utility.

Sanitary Sewer extensions will be apportioned to all property owners with access to the sewer extensions.

Water Main extensions will be apportioned to all property owners with access to the water main extension.

It is recommended that the costs for the improvements in Shady Lane and Shady Nook be determined on a unit basis.

UNIT RATE COMPUTATIONS

Road Rehabilitation Unit Rate – Shady Lane and Shady Nook

Estimated Road Reconstruction Costs (see attached breakdown)	\$ 499,064.00
Engineering, Administration, & Contingencies	\$ 149,719.20
Total Estimated Road Reconstruction Costs	\$ 648,783.20

$$\frac{\$ 648,783.20}{37 \text{ units}} = \$ 17,534.68/\text{unit}$$

Use \$ 17,534.68/unit as the Road Rehabilitation Unit Rate¹.

Sanitary Sewer Extension Unit Rate – Shady Lane and Shady Nook

Estimated Sanitary Sewer Costs (see attached breakdown)	\$ 786,271.27
Engineering, Administration, & Contingencies	\$ 235,881.38
Total Estimated Sanitary Sewer Costs	\$1,022,152.65

$$\frac{\$ 1,022,152.65}{35 \text{ units}} = \$ 29,204.36/\text{unit}$$

Use \$ 29,204.36/unit as the Hill N Dale Circle Sanitary Sewer Extension Unit Rate.

Sanitary Lateral Unit Rate – Shady Lane and Shady Nook

Estimated Sanitary Lateral Costs (see attached breakdown)	\$ 180,178.20
Engineering, Administration, & Contingencies	\$ 54,053.46
Total Estimated Sanitary Lateral Costs	\$ 234,231.66

$$\frac{\$ 234,231.66}{21 \text{ units}} = \$ 11,153.89/\text{unit}$$

Use \$ 11,153.89/unit as the Sanitary Lateral Unit Rate.

¹ A maximum assessment of \$ 3,206.00 (2023 Pavement Cap) will be assessed to single family, duplex, and condominium residential properties.

Water Main Extension Unit Rate – Shady Lane and Shady Nook

Estimated Assessable Water Main Costs (see attached breakdown)	\$ 388,821.23
Engineering, Administration, & Contingencies	\$ 116,646.37
Total Estimated Assessable Water Main Costs	\$ 505,467.60

$$\frac{\$ 505,467.60}{28 \text{ units}} = \$ 18,052.41/\text{unit}$$

Use \$ 18,052.41/unit as the Water Main Extension Unit Rate.

HDPE Water Service Unit Rate – Shady Lane and Shady Nook

Estimated Assessable 1 1/4" HDPE Water Service Costs (see attached breakdown)	\$ 127,531.48
Engineering, Administration, & Contingencies	\$ 38,259.44
Total Estimated Assessable 1 1/4" HDPE Water Service Costs	\$ 165,790.92

$$\frac{\$ 165,790.92}{21 \text{ units}} = \$ 7,894.81/\text{unit}$$

Use \$ 7,894.81/unit as the HDPE Water Service Unit Rate.

Copper Water Service Unit Rate – Shady Lane and Shady Nook

Estimated Assessable 1 1/2" Copper Water Service Costs (see attached breakdown)	\$ 8,595.35
Engineering, Administration, & Contingencies	\$ 2,578.60
Total Estimated Assessable 1 1/2" Copper Water Service Costs	\$ 11,173.95

$$\frac{\$ 11,173.95}{1 \text{ unit}} = \$ 11,173.95/\text{unit}$$

Use \$ 11,173.95/unit as the Copper Water Service Unit Rate.

Storm Water Management – Shady Lane and Shady Nook

Estimated Storm Water Utility Costs (see attached breakdown)	\$ 169,218.48
Engineering, Administration, & Contingencies	\$ 50,765.54
Total Estimated Storm Water Utility Costs	\$ 219,984.02

COST SUMMARY

Cost Summary

Total Project Costs	\$2,807,584.00
Total Road Assessable Costs (Deduct)	\$(105,601.36)
Total Sanitary Sewer Assessable Costs (Deduct)	\$(642,495.92)
Total Sanitary Lateral Assessable Costs (Deduct)	\$(234,231.69)
Total Water Main Assessable Costs (Deduct)	\$(379,100.61)
Total Water Service Assessable Costs (Deduct)	\$(176,964.96)
Total Storm Water Utility Costs (Deduct)	\$(219,984.02)
Total Deferred Road Assessable Costs (Deduct)	\$(227,950.84)
Total Deferred Sanitary Sewer Assessable Costs (Deduct)	\$(379,656.68)
Total Deferred Water Main Assessable Costs (Deduct)	\$(126,366.87)
Net Non-assessable & City Costs	\$ 315,231.05

Computation of Costs
Total Rehabilitation Project Costs

<u>Item</u> <u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated</u> <u>Quantity</u>	<u>Bid Unit</u> <u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	1	\$72,000.00	\$ 72,000.00
2	Traffic control	L.S.	1	\$ 3,000.00	\$ 3,000.00
3	Tree removal	I.D.	255	\$ 36.20	\$ 9,231.00
4	Shrub removal	I.D.	480	\$ 3.00	\$ 1,440.00
5	Clearing and grubbing	S.Y.	4,360	\$ 2.70	\$ 11,772.00
6	Rock and boulder excavation	C.Y.	40	\$ 100.00	\$ 4,000.00
7	Manufactured ditch check	EA.	30	\$ 125.00	\$ 3,750.00
8	Silt fence	L.F.	1,400	\$ 2.00	\$ 2,800.00
9	Tracking pad	S.F.	1,310	\$ 2.20	\$ 2,882.00
10	Full depth saw cutting	L.F.	435	\$ 3.00	\$ 1,305.00
		1,000			
11	Dust control using water	GAL	30	\$ 60.00	\$ 1,800.00
	8-inch sanitary sewer in granular				
12	backfill, PVC SDR 35	L.F.	1,385	\$ 250.00	\$ 346,250.00
	8-inch sanitary sewer in granular				
13	backfill, PVC SDR 18	L.F.	325	\$ 400.00	\$ 130,000.00
	8-inch Sanitary sewer in spoil				
14	backfill	L.F.	795	\$ 106.00	\$ 84,270.00
15	48-inch Sanitary sewer manhole	V.F.	178	\$ 500.00	\$ 89,000.00
16	Connection to existing manhole	EA.	1	\$ 5,000.00	\$ 5,000.00
17	Manhole vacuum test	EA.	13	\$ 250.00	\$ 3,250.00
18	Bentonite clay dam	EA.	4	\$ 3,500.00	\$ 14,000.00
	6-inch Sanitary sewer lateral in				
19	granular backfill	L.F.	435	\$ 250.00	\$ 108,750.00
	6-inch Sanitary sewer lateral in				
20	spoil backfill	L.F.	300	\$ 215.00	\$ 64,500.00
21	6-inch Sanitary sewer riser	V.F.	42	\$ 200.00	\$ 8,400.00
	Televised Sanitary sewer				
22	inspection	L.F.	2,500	\$ 2.00	\$ 5,000.00
	Internal/external manhole chimney				
23	seal	EA.	13	\$ 750.00	\$ 9,750.00
	8-inch Water main in granular				
24	backfill	L.F.	1,680	\$ 155.00	\$ 260,400.00
	6-inch Water main in granular				
25	backfill	L.F.	15	\$ 150.00	\$ 2,250.00
	6-inch Hydrant Lead in granular				
26	backfill	L.F.	56	\$ 150.00	\$ 8,400.00
	Hydrant assembly with anchor tee				
27	and 6-inch valve	EA.	5	\$ 8,750.00	\$ 43,750.00
28	8-inch Water main valve	EA.	5	\$ 3,000.00	\$ 15,000.00

Total Rehabilitation Project Costs – Continued

<u>Item</u> <u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated</u> <u>Quantity</u>	<u>Bid Unit</u> <u>Price</u>	<u>Bid Price</u>
29	1 1/4-inch HDPE Water service in granular backfill	L.F.	475	\$ 115.00	\$ 54,625.00
30	1 1/4-inch HDPE Water service in spoil backfill	L.F.	315	\$ 95.00	\$ 29,925.00
31	1 1/4-inch Tap and corporation stop for HDPE	EA.	22	\$ 750.00	\$ 16,500.00
32	1 1/4-inch Curb valve and curb box for HDPE	EA.	22	\$ 600.00	\$ 13,200.00
33	1 1/2-inch Copper Water service in spoil backfill	L.F.	60	\$ 110.00	\$ 6,600.00
34	1 1/2-inch Tap and corporation stop for copper	EA.	1	\$ 850.00	\$ 850.00
35	1 1/2-inch Curb valve and curb box for copper	EA.	1	\$ 700.00	\$ 700.00
36	Pipe insulation	S.F.	660	\$ 12.50	\$ 8,250.00
37	12-inch × 18-inch CMCA	L.F.	616	\$ 75.00	\$ 46,200.00
38	12-inch × 18-inch CMCA end section	EA.	56	\$ 210.00	\$ 11,760.00
39	14-inch × 23-inch HERCP CL IV	L.F.	44	\$ 144.00	\$ 6,336.00
40	14-inch × 23-inch HERCP CL IV end section	EA.	2	\$ 1,075.00	\$ 2,150.00
41	Pavement pulverizing, shaping, and grading	S.Y.	5,125	\$ 6.80	\$ 34,850.00
42	Full depth asphaltic concrete patch	S.Y.	225	\$ 33.00	\$ 7,425.00
43	Construct road to subgrade	L.S.	1	\$64,000.00	\$ 64,000.00
44	Excavation below subgrade	C.Y.	1,200	\$ 25.00	\$ 30,000.00
45	Excavation below subgrade (EBS) backfill	TON	2,400	\$ 23.25	\$ 55,800.00
46	Geogrid in EBS area	S.Y.	3,545	\$ 5.80	\$ 20,561.00
47	1 1/4-inch Crushed TB aggregate base course	TON	1,645	\$ 14.50	\$ 23,852.50
48	3/4-inch Crushed TB aggregate base course	TON	1,645	\$ 17.50	\$ 28,787.50
49	3 1/4-inch Asphaltic concrete binder course	TON	1,105	\$ 69.40	\$ 76,687.00
50	Tack Coat	GAL	415	\$ 3.00	\$ 1,245.00
51	1 3/4-inch Asphaltic concrete surface course	TON	595	\$ 81.20	\$ 48,314.00

Total Rehabilitation Project Costs – Continued

<u>Item</u> <u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated</u> <u>Quantity</u>	<u>Bid Unit</u> <u>Price</u>	<u>Bid Price</u>
52	4-inch Asphaltic concrete driveway replacement at W223N3251 Shady Lane	S.F.	2,055	\$ 5.00	\$ 10,275.00
53	4-inch Asphaltic concrete driveway replacement	S.F.	6,305	\$ 3.00	\$ 18,915.00
54	6-inch H.E.S. Concrete driveway replacement	S.F.	1,800	\$ 17.00	\$ 30,600.00
55	Gravel driveway replacement (10-inch depth)	TON	35	\$ 50.00	\$ 1,750.00
56	Ditching	L.F.	3,430	\$ 18.00	\$ 61,740.00
57	Removal of decorative culvert walls	EA.	14	\$ 238.00	\$ 3,332.00
58	Topsoil, seed, fertilizer, mulch, and erosion mat (non-channel)	S.Y.	2,600	\$ 8.50	\$ 22,100.00
59	Topsoil, seed, fertilizer, mulch, and erosion mat (channel)	S.Y.	2,600	\$ 8.50	\$ 22,100.00
60	Temporary access road grading	S.Y.	2,420	\$ 10.00	\$ 24,200.00
61	Temporary access road geogrid	S.Y.	1,800	\$ 7.00	\$ 12,600.00
62	Temporary access road 1 1/4-inch crushed TB aggregate base course	TON	1,910	\$ 15.50	\$ 29,605.00
63	Temporary access road topsoil, seed, fertilizer, mulch, and erosion mat (non-channel)	S.Y.	2,420	\$ 3.50	\$ 8,470.00
64	Removal of temporary access road, STA 30+50 to STA 32+50	L.S.	1	\$ 4,300.00	\$ 4,300.00
65	Temporary mailbox relocation and reinstallation	EA.	23	\$ 125.00	\$ 2,875.00
66	Repair sprinkler system if ordered by Engineer	EA.	5	\$ 750.00	\$ 3,750.00
67	Repair dog fence if ordered by Engineer	EA.	5	\$ 500.00	\$ 2,500.00
Subtotal of Contract					\$2,159,680.00
Engineering, Administration, & Contingencies					\$ 647,904.00
Total Project Costs					\$2,807,584.00

Total Estimated Project Costs = \$ 2,807,584.00

Total Road Rehabilitation & Assessment Costs

<u>Item</u>			<u>Estimated</u>	<u>Bid Unit</u>	
<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	0.23	\$72,000.00	\$ 16,560.00
2	Traffic control	L.S.	0.23	\$ 3,000.00	\$ 690.00
7	Manufactured ditch check	EA.	10.00	\$ 125.00	\$ 1,250.00
10	Full depth saw cutting	L.F.	435.00	\$ 3.00	\$ 1,305.00
		1,000			
11	Dust control using water	GAL	10.20	\$ 60.00	\$ 612.00
	Pavement pulverizing, shaping, and				
41	grading	S.Y.	5,125.00	\$ 6.80	\$ 34,850.00
43	Construct road to subgrade	L.S.	1.00	\$64,000.00	\$ 64,000.00
44	Excavation below subgrade	C.Y.	1,200.00	\$ 25.00	\$ 30,000.00
	Excavation below subgrade (EBS)				
45	backfill	TON	2,400.00	\$ 23.25	\$ 55,800.00
46	Geogrid in EBS area	S.Y.	3,545.00	\$ 5.80	\$ 20,561.00
	1 1/4-inch Crushed TB aggregate base				
47	course	TON	1,645.00	\$ 14.50	\$ 23,852.50
	3/4-inch Crushed TB aggregate base				
48	course	TON	1,645.00	\$ 17.50	\$ 28,787.50
	3 1/4-inch Asphaltic concrete binder				
49	course	TON	1,105.00	\$ 69.40	\$ 76,687.00
50	Tack Coat	GAL	415.00	\$ 3.00	\$ 1,245.00
	1 3/4-inch Asphaltic concrete surface				
51	course	TON	595.00	\$ 81.20	\$ 48,314.00
	4-inch Asphaltic concrete driveway				
	replacement at W223N3251 Shady				
52	Lane	S.F.	2,055.00	\$ 5.00	\$ 10,275.00
	4-inch Asphaltic concrete driveway				
53	replacement	S.F.	6,305.00	\$ 3.00	\$ 18,915.00
	6-inch H.E.S. Concrete driveway				
54	replacement	S.F.	1,800.00	\$ 17.00	\$ 30,600.00
	Gravel driveway replacement (10-inch				
55	depth)	TON	35.00	\$ 50.00	\$ 1,750.00
57	Removal of decorative culvert walls	EA.	14.00	\$ 238.00	\$ 3,332.00
	Topsoil, seed, fertilizer, mulch, and				
58	erosion mat (non-channel)	S.Y.	1,170.00	\$ 8.50	\$ 9,945.00
	Topsoil, seed, fertilizer, mulch, and				
59	erosion mat (channel)	S.Y.	1,248.00	\$ 8.50	\$ 10,608.00
	Temporary mailbox relocation and				
65	reinstallation	EA.	23.00	\$ 125.00	\$ 2,875.00
	Repair sprinkler system if ordered by				
66	Engineer	EA.	5.00	\$ 750.00	\$ 3,750.00

Total Road Rehabilitation & Assessment Costs – Continued

<u>Item</u> <u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated</u> <u>Quantity</u>	<u>Bid Unit</u> <u>Price</u>	<u>Bid Price</u>
67	Repair dog fence if ordered by Engineer	EA.	5.00	\$ 500.00	\$ 2,500.00
Subtotal of Contract					\$499,064.00
Engineering, Administration, & Contingencies					\$149,719.20
Total Project Costs					\$648,783.20

Total Estimated Road Rehabilitation Costs = \$ 648,783.20

Total Potential Units abutting the Road = 37 units¹

Computation of Unit Cost: $\frac{\$ 648,783.20}{37 \text{ units}} = \$ 17,534.68/\text{unit}$

Use \$ 17,534.68/unit as the Road Rehabilitation Unit Rate².

¹ Includes potential units in deferred assessments.

² A maximum assessment of \$ 3,206.00 (2023 Pavement Cap) will be assessed to single family, duplex, and condominium residential properties.

Total Estimated Sanitary Assessable Costs

<u>Item</u>			<u>Estimated</u>	<u>Bid Unit</u>	
<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	0.45	\$72,000.00	\$ 32,400.00
2	Traffic control	L.S.	0.45	\$ 3,000.00	\$ 1,350.00
3	Tree removal	I.D.	89.25	\$ 36.20	\$ 3,230.85
4	Shrub removal	I.D.	158.4	\$ 3.00	\$ 475.20
5	Clearing and grubbing	S.Y.	1569.6	\$ 2.70	\$ 4,237.92
6	Rock and boulder excavation	C.Y.	40	\$ 100.00	\$ 4,000.00
7	Manufactured ditch check	EA.	10	\$ 125.00	\$ 1,250.00
8	Silt fence	L.F.	1400	\$ 2.00	\$ 2,800.00
9	Tracking pad	S.F.	1310	\$ 2.20	\$ 2,882.00
			1,000		
11	Dust control using water	GAL	9.9	\$ 60.00	\$ 594.00
	8-inch sanitary sewer in granular				
12	backfill, PVC SDR 35	L.F.	1385	\$ 250.00	\$ 346,250.00
	8-inch sanitary sewer in granular				
13	backfill, PVC SDR 18	L.F.	325	\$ 400.00	\$ 130,000.00
	8-inch Sanitary sewer in spoil				
14	backfill	L.F.	795	\$ 106.00	\$ 84,270.00
15	48-inch Sanitary sewer manhole	V.F.	178	\$ 500.00	\$ 89,000.00
16	Connection to existing manhole	EA.	1	\$ 5,000.00	\$ 5,000.00
17	Manhole vacuum test	EA.	13	\$ 250.00	\$ 3,250.00
18	Bentonite clay dam	EA.	3	\$ 3,500.00	\$ 10,500.00
	6-inch Sanitary sewer lateral in				
19	granular backfill	L.F.	435	\$ 250.00	\$ 108,750.00
	6-inch Sanitary sewer lateral in				
20	spoil backfill	L.F.	300	\$ 215.00	\$ 64,500.00
21	6-inch Sanitary sewer riser	V.F.	42	\$ 200.00	\$ 8,400.00
22	Televised Sanitary sewer inspection	L.F.	2500	\$ 2.00	\$ 5,000.00
	Internal/external manhole chimney				
23	seal	EA.	13	\$ 750.00	\$ 9,750.00
42	Full depth asphaltic concrete patch	S.Y.	225	\$ 33.00	\$ 7,425.00
	Topsoil, seed, fertilizer, mulch, and				
58	erosion mat (non-channel)	S.Y.	130	\$ 8.50	\$ 1,105.00
	Topsoil, seed, fertilizer, mulch, and				
59	erosion mat (channel)	S.Y.	52	\$ 8.50	\$ 442.00
60	Temporary access road grading	S.Y.	1210	\$ 10.00	\$ 12,100.00
61	Temporary access road geogrid	S.Y.	900	\$ 7.00	\$ 6,300.00
	Temporary access road 1 1/4-inch				
62	crushed TB aggregate base course	TON	955	\$ 15.50	\$ 14,802.50
	Temporary access road topsoil,				
	seed, fertilizer, mulch, and erosion				
63	mat (non-channel)	S.Y.	1210	\$ 3.50	\$ 4,235.00

Total Estimated Sanitary Assessable Costs – Continued

<u>Item</u> <u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated</u> <u>Quantity</u>	<u>Bid Unit</u> <u>Price</u>	<u>Bid Price</u>
64	Removal of temporary access road, STA 30+50 to STA 32+50	L.S.	0.5	\$ 4,300.00	\$ 2,150.00
Subtotal of Contract					\$ 966,449.47
Engineering, Administration, & Contingencies					\$ 289,934.84
Total Project Costs					\$1,256,384.31

Total Estimated Sanitary Assessable Costs = \$ 1,256,384.31

Total Estimated Sanitary Sewer Extension & Assessable Costs

<u>Item</u>			<u>Estimated</u>	<u>Bid Unit</u>	
<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	0.37	\$72,000.00	\$ 26,640.00
2	Traffic control	L.S.	0.37	\$ 3,000.00	\$ 1,110.00
3	Tree removal	I.D.	89.25	\$ 36.20	\$ 3,230.85
4	Shrub removal	I.D.	158.4	\$ 3.00	\$ 475.20
5	Clearing and grubbing	S.Y.	1569.6	\$ 2.70	\$ 4,237.92
6	Rock and boulder excavation	C.Y.	40	\$ 100.00	\$ 4,000.00
7	Manufactured ditch check	EA.	10	\$ 125.00	\$ 1,250.00
8	Silt fence	L.F.	1400	\$ 2.00	\$ 2,800.00
9	Tracking pad	S.F.	1310	\$ 2.20	\$ 2,882.00
		1,000			
11	Dust control using water	GAL	9.9	\$ 60.00	\$ 594.00
	8-inch sanitary sewer in granular				
12	backfill, PVC SDR 35	L.F.	1385	\$ 250.00	\$ 346,250.00
	8-inch sanitary sewer in granular				
13	backfill, PVC SDR 18	L.F.	325	\$ 400.00	\$ 130,000.00
	8-inch Sanitary sewer in spoil				
14	backfill	L.F.	795	\$ 106.00	\$ 84,270.00
15	48-inch Sanitary sewer manhole	V.F.	178	\$ 500.00	\$ 89,000.00
16	Connection to existing manhole	EA.	1	\$ 5,000.00	\$ 5,000.00
17	Manhole vacuum test	EA.	13	\$ 250.00	\$ 3,250.00
18	Bentonite clay dam	EA.	3	\$ 3,500.00	\$ 10,500.00
21	6-inch Sanitary sewer riser	V.F.	42	\$ 200.00	\$ 8,400.00
	Televised Sanitary sewer				
22	inspection	L.F.	2500	\$ 2.00	\$ 5,000.00
	Internal/external manhole chimney				
23	seal	EA.	13	\$ 750.00	\$ 9,750.00
42	Full depth asphaltic concrete patch	S.Y.	225	\$ 33.00	\$ 7,425.00
	Topsoil, seed, fertilizer, mulch,				
58	and erosion mat (non-channel)	S.Y.	41.6	\$ 8.50	\$ 353.60
	Topsoil, seed, fertilizer, mulch,				
59	and erosion mat (channel)	S.Y.	31.2	\$ 8.50	\$ 265.20
60	Temporary access road grading	S.Y.	1210	\$ 10.00	\$ 12,100.00
61	Temporary access road geogrid	S.Y.	900	\$ 7.00	\$ 6,300.00
	Temporary access road 1 1/4-inch				
62	crushed TB aggregate base course	TON	955	\$ 15.50	\$ 14,802.50
	Temporary access road topsoil,				
	seed, fertilizer, mulch, and erosion				
63	mat (non-channel)	S.Y.	1210	\$ 3.50	\$ 4,235.00

Total Estimated Sanitary Sewer Extension & Assessable Costs – Continued

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
64	Removal of temporary access road, STA 30+50 to STA 32+50	L.S.	0.5	\$ 4,300.00	\$ 2,150.00
Subtotal of Contract					\$ 786,271.27
Engineering, Administration, & Contingencies					\$ 235,881.38
Total Project Costs					\$1,022,152.65

Total Estimated Sanitary Sewer Extension & Assessable Costs = \$ 1,022,152.65

Total Potential Units benefiting from Sanitary Sewer Extensions = 35 units¹

Computation of Unit Cost: $\frac{\$ 1,022,152.65}{35 \text{ units}} = \$ 29,204.36/\text{unit}$

Use \$ 29,204.36/unit as the Sanitary Sewer Unit Rate.

¹ Includes potential units in deferred assessments.

Total Estimated Sanitary Lateral Installation & Assessable Costs

<u>Item</u>			<u>Estimated</u>	<u>Bid Unit</u>	
<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	0.08	\$72,000.00	\$ 5,760.00
2	Traffic control	L.S.	0.08	\$ 3,000.00	\$ 240.00
19	6-inch Sanitary sewer lateral in granular backfill	L.F.	435	\$ 250.00	\$108,750.00
20	6-inch Sanitary sewer lateral in spoil backfill	L.F.	300	\$ 215.00	\$ 64,500.00
58	Topsoil, seed, fertilizer, mulch, and erosion mat (non-channel)	S.Y.	88.4	\$ 8.50	\$ 751.40
59	Topsoil, seed, fertilizer, mulch, and erosion mat (channel)	S.Y.	20.8	\$ 8.50	\$ 176.80
Subtotal of Contract					\$180,178.20
Engineering, Administration, & Contingencies					\$ 54,053.46
Total Project Costs					\$234,231.66

Total Estimated Sanitary Lateral Installation & Assessable Costs = \$ 234,231.66

Total Potential Units receiving Sanitary Lateral Installations = 21 units

Computation of Unit Rate: $\frac{\$ 234,231.66}{21 \text{ units}} = \$ 11,153.89/\text{unit}$

Use \$ 11,153.89/unit as the Sanitary Lateral Installation Unit Rate.

Total Estimated Water Assessable Costs

<u>Item</u>			<u>Estimated</u>	<u>Bid Unit</u>	
<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	0.24	\$72,000.00	\$ 17,280.00
2	Traffic control	L.S.	0.24	\$ 3,000.00	\$ 720.00
3	Tree removal	I.D.	12.75	\$ 36.20	\$ 461.55
7	Manufactured ditch check	EA.	10	\$ 125.00	\$ 1,250.00
		1,000			
11	Dust control using water	GAL	9.9	\$ 60.00	\$ 594.00
18	Bentonite clay dam	EA.	1	\$ 3,500.00	\$ 3,500.00
	8-inch Water main in granular				
24	backfill	L.F.	1680	\$ 155.00	\$260,400.00
	6-inch Water main in granular				
25	backfill	L.F.	15	\$ 150.00	\$ 2,250.00
	6-inch Hydrant Lead in granular				
26	backfill	L.F.	56	\$ 150.00	\$ 8,400.00
	Hydrant assembly with anchor tee				
27	and 6-inch valve	EA.	5	\$ 8,750.00	\$ 43,750.00
28	8-inch Water main valve	EA.	5	\$ 3,000.00	\$ 15,000.00
	1 1/4-inch HDPE Water service in				
29	granular backfill	L.F.	475	\$ 115.00	\$ 54,625.00
	1 1/4-inch HDPE Water service in				
30	spoil backfill	L.F.	315	\$ 95.00	\$ 29,925.00
	1 1/4-inch Tap and corporation				
31	stop for HDPE	EA.	22	\$ 750.00	\$ 16,500.00
	1 1/4-inch Curb valve and curb				
32	box for HDPE	EA.	22	\$ 600.00	\$ 13,200.00
	1 1/2-inch Copper Water service in				
33	spoil backfill	L.F.	60	\$ 110.00	\$ 6,600.00
	1 1/2-inch Tap and corporation				
34	stop for copper	EA.	1	\$ 850.00	\$ 850.00
	1 1/2-inch Curb valve and curb				
35	box for copper	EA.	1	\$ 700.00	\$ 700.00
36	Pipe insulation	S.F.	660	\$ 12.50	\$ 8,250.00
	Topsoil, seed, fertilizer, mulch,				
58	and erosion mat (non-channel)	S.Y.	104	\$ 8.50	\$ 884.00
	Topsoil, seed, fertilizer, mulch,				
59	and erosion mat (channel)	S.Y.	26	\$ 8.50	\$ 221.00
60	Temporary access road grading	S.Y.	1210	\$ 10.00	\$ 12,100.00
61	Temporary access road geogrid	S.Y.	900	\$ 7.00	\$ 6,300.00
	Temporary access road 1 1/4-inch				
62	crushed TB aggregate base course	TON	955	\$ 15.50	\$ 14,802.50

Total Estimated Water Assessable Costs – Continued

<u>Item</u> <u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated</u> <u>Quantity</u>	<u>Bid Unit</u> <u>Price</u>	<u>Bid Price</u>
63	Temporary access road topsoil, seed, fertilizer, mulch, and erosion mat (non-channel)	S.Y.	1210	\$ 3.50	\$ 4,235.00
64	Removal of temporary access road, STA 30+50 to STA 32+50	L.S.	0.5	\$ 4,300.00	\$ 2,150.00
Subtotal of Contract					\$524,948.05
Engineering, Administration, & Contingencies					\$157,484.42
Total Project Costs					\$682,432.47

Total Estimated Water Assessable Costs = \$ 682,432.47

Total Estimated Water Main Extension & Assessable Costs

<u>Item</u>			<u>Estimated</u>	<u>Bid Unit</u>	
<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	0.18	\$72,000.00	\$ 12,960.00
2	Traffic control	L.S.	0.18	\$ 3,000.00	\$ 540.00
3	Tree removal	I.D.	12.75	\$ 36.20	\$ 461.55
7	Manufactured ditch check	EA.	10	\$ 125.00	\$ 1,250.00
		1,000			
11	Dust control using water	GAL	9.9	\$ 60.00	\$ 594.00
18	Bentonite clay dam	EA.	1	\$ 3,500.00	\$ 3,500.00
	8-inch Water main in granular				
24	backfill	L.F.	1680	\$ 155.00	\$260,400.00
	6-inch Water main in granular				
25	backfill	L.F.	15	\$ 150.00	\$ 2,250.00
	6-inch Hydrant Lead in granular				
26	backfill	L.F.	56	\$ 150.00	\$ 8,400.00
	Hydrant assembly with anchor tee				
27	and 6-inch valve	EA.	5	\$ 8,750.00	\$ 43,750.00
28	8-inch Water main valve	EA.	5	\$ 3,000.00	\$ 15,000.00
	Topsoil, seed, fertilizer, mulch, and				
58	erosion mat (non-channel)	S.Y.	13.52	\$ 8.50	\$ 114.92
	Topsoil, seed, fertilizer, mulch, and				
59	erosion mat (channel)	S.Y.	1.56	\$ 8.50	\$ 13.26
60	Temporary access road grading	S.Y.	1210	\$ 10.00	\$ 12,100.00
61	Temporary access road geogrid	S.Y.	900	\$ 7.00	\$ 6,300.00
	Temporary access road 1 1/4-inch				
62	crushed TB aggregate base course	TON	955	\$ 15.50	\$ 14,802.50
	Temporary access road topsoil, seed,				
	fertilizer, mulch, and erosion mat				
63	(non-channel)	S.Y.	1210	\$ 3.50	\$ 4,235.00
	Removal of temporary access road,				
64	STA 30+50 to STA 32+50	L.S.	0.5	\$ 4,300.00	\$ 2,150.00
Subtotal of Contract					\$388,821.23
Engineering, Administration, & Contingencies					\$116,646.37
Total Project Costs					\$505,467.60

Total Estimated Water Main Extension & Assessable Costs – Continued

Total Estimated Water Main Extension & Assessable Costs = \$ 505,467.60

Total Potential Units benefiting from Water Main Extension = 28 units¹

Computation of Unit Cost: $\frac{\$ 505,467.60}{28 \text{ units}} = \$ 18,052.41/\text{unit}$

Use \$ 18,052.41/unit as the Water Main Unit Rate.

¹ Includes potential units in deferred assessments.

Total Estimated HDPE Water Service Installation & Assessable Costs

<u>Item</u>			<u>Estimated</u>	<u>Bid Unit</u>	
<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	0.06	\$72,000.00	\$ 4,320.00
2	Traffic Control	L.S.	0.06	\$ 3,000.00	\$ 180.00
29	1 1/4-inch HDPE Water service in granular backfill	L.F.	475	\$ 115.00	\$ 54,625.00
30	1 1/4-inch HDPE Water service in spoil backfill	L.F.	315	\$ 95.00	\$ 29,925.00
31	1 1/4-inch Tap and corporation stop for HDPE	EA.	22	\$ 750.00	\$ 16,500.00
32	1 1/4-inch Curb valve and curb box for HDPE	EA.	22	\$ 600.00	\$ 13,200.00
36	Pipe insulation	S.F.	633.6	\$ 12.50	\$ 7,920.00
58	Topsoil, seed, fertilizer, mulch, and erosion mat (non-channel)	S.Y.	76.91	\$ 8.50	\$ 653.74
59	Topsoil, seed, fertilizer, mulch, and erosion mat (channel)	S.Y.	24.44	\$ 8.50	\$ 207.74
Subtotal of Contract					\$127,531.48
Engineering, Administration, & Contingencies					\$ 38,259.44
Total Project Costs					\$165,790.92

Total Estimated HDPE Water Service Installation & Assessable Costs = \$ 165,790.92

Total Potential Units receiving HDPE Water Service Installations = 21 units

Computation of Unit Cost: $\frac{\$ 165,790.92}{21 \text{ units}} = \$ 7,894.81/\text{unit}$

Use \$ 7,894.81/unit as the HDPE Water Service Unit Rate.

Total Estimated Copper Water Service Installation & Assessable Costs

<u>Item</u> <u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Estimated</u> <u>Quantity</u>	<u>Bid Unit</u> <u>Price</u>	<u>Bid Price</u>
33	1 1/2-inch Copper Water service in spoil backfill	L.F.	60	\$ 110.00	\$ 6,600.00
34	1 1/2-inch Tap and corporation stop for copper	EA.	1	\$ 850.00	\$ 850.00
35	1 1/2-inch Curb valve and curb box for copper	EA.	1	\$ 700.00	\$ 700.00
36	Pipe insulation	S.F.	26.4	\$ 12.50	\$ 330.00
58	Topsoil, seed, fertilizer, mulch, and erosion mat (non-channel)	S.Y.	13.57	\$ 8.50	\$ 115.35
Subtotal of Contract					\$ 8,595.35
Engineering, Administration, & Contingencies					\$ 2,578.60
Total Project Costs					\$11,173.95

Total Estimated Copper Water Service Installation & Assessable Costs = \$ 11,173.95

Total Potential Units receiving Copper Water Service Installations = 1 unit

Computation of Unit Cost: $\frac{\$ 11,173.95}{1 \text{ unit}} = \$ 11,173.95/\text{unit}$

Use \$ 11,173.95/unit as the Copper Water Service Unit Rate.

Total Estimated Storm Water Utility Costs

<u>Item</u>			<u>Estimated</u>	<u>Bid Unit</u>	
<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Price</u>	<u>Bid Price</u>
1	Mobilization	L.S.	0.08	\$72,000.00	\$ 5,760.00
2	Traffic Control	L.S.	0.08	\$ 3,000.00	\$ 240.00
3	Tree removal	I.D.	153	\$ 36.20	\$ 5,538.60
4	Shrub removal	I.D.	321.6	\$ 3.00	\$ 964.80
5	Clearing and grubbing	S.Y.	2790.4	\$ 2.70	\$ 7,534.08
37	12-inch × 18-inch CMCA	L.F.	616	\$ 75.00	\$ 46,200.00
38	12-inch × 18-inch CMCA end section	EA.	56	\$ 210.00	\$ 11,760.00
39	14-inch × 23-inch HERCP CL IV	L.F.	44	\$ 144.00	\$ 6,336.00
40	14-inch × 23-inch HERCP CL IV end section	EA.	2	\$ 1,075.00	\$ 2,150.00
56	Ditching	L.F.	3430	\$ 18.00	\$ 61,740.00
58	Topsoil, seed, fertilizer, mulch, and erosion mat (non-channel)	S.Y.	1196	\$ 8.50	\$ 10,166.00
59	Topsoil, seed, fertilizer, mulch, and erosion mat (channel)	S.Y.	1274	\$ 8.50	\$ 10,829.00
Subtotal of Contract					\$169,218.48
Engineering, Administration, & Contingencies					\$ 50,765.54
Total Project Costs					\$219,984.02

Total Estimated Storm Water Utility Project Costs = \$ 219,984.02

May 25th, 2022

An Area of Assessment in the Southeast ¼ of Section 12, T7N, R19E, In the City of Pewaukee, Waukesha County, Wisconsin. Bound and Described as Follows:

Commencing at the SE Corner of the SE ¼ of Section 12, T7N, R19E, Thence N0°57'41"W Along the East Line of said SE 1/4 , 215.00 Feet; Thence S89°18'19"W, Along the Extension of the South Line of Hill n Dale Subdivision, 33.00 Feet, to the SE Corner of Lot 1 Block 1 of Said Subdivision, Also being the Point of Beginning of Area to Be Described; Thence N0°57'41"W Along the East Line of Said Lot 1, 294.33 Feet, to the NE Corner of Said Lot 1, Also Being a Point on the South R/W Line of Shady Lane; Thence N69°16'13"W, 162.10 Feet, to the SE Corner of Lot 34 Block 2 of Said Subdivision; Thence N0°59'32"W, 167.61 Feet, to the NE Corner of Said Lot 34; Thence S89°02'19"W, 135.00 Feet, to a Point on the East Line of CSM #8233; Thence N0°47'41"W, 167.76 Feet to the NE Corner of CSM #8233, Also Being a Point on the South R/W of Hill N Dale Circle; Thence Along said South R/W, 138.03 Feet Along the Arc of a Curve whose Center is to the North, Chord Bears N83°17'18W, 137.85 Feet, Whose Radius is 770.73 Feet; Thence S1°09'29"E Along the West Line of Said CSM, 186.16 Feet to the NE Corner of Lot 36 Block 2 of Said Subdivision; Thence N75°38'41"W, 206.44 Feet to the NE Corner of Lot 2 CSM #8880; Thence N59°01'41"W, 658.64 Feet, to the SW Corner of Lot 24 Block 2 of Said Subdivision; Thence S89°27'19"W, 108.50 Feet, to a point on the West Line of Said Subdivision; Thence N0°32'41"W Along Said West Line, 1440.39 Feet, to the NW Corner of Hill N Dale Subdivision, Also being a Point on the South R/W of Capitol Drive; Thence N88°51'08"W, Along Said South R/W, 206.20 Feet to a point on the East R/W Line of Canadian National Railroad; Thence Along Said East R/W, Along the Arc of a curve, 1078.28 Feet, Whose Center is to the West, Chord Bears S14°37'20"W, 1072.17 Feet, whose Radius is 2921.43 Feet; Thence S25°01'32"W Continuing Along Said East R/W, 932.81 Feet to the SW Corner of CSM #12247; Thence S74°33'16E Along the South Line of Said CSM, 925.03 Feet, to a point on the West Line of Said Subdivision; Thence S0°32'41"E Along Said West Line, 234.94 Feet, To the SW Corner of Said Subdivision; Thence N89°18'19, Along the South Line of Said Subdivision, 1294.47 Feet, To the Point of Beginning.

Dave Geis
Senior Engineering Technician
City of Pewaukee

March 9th, 2023

An Area of Assessment in the Southeast $\frac{1}{4}$ of Section 12, T7N, R19E, In the City of Pewaukee, Waukesha County, Wisconsin. Bound and Described as Follows:

Commencing at the SE Corner of the SE $\frac{1}{4}$ of Section 12, T7N, R19E, Thence N0°57'41"W Along the East Line of said SE $\frac{1}{4}$, 215.00 Feet; Thence S89°18'19"W, Along the Extension of the South Line of Hill n Dale Subdivision, 33.00 Feet, to the SE Corner of Lot 1 Block 1 of Said Subdivision, Also being the Point of Beginning of Area to Be Described; Thence N0°57'41"W Along the East Line of Said Lot 1, 294.33 Feet, to the NE Corner of Said Lot 1, Also Being a Point on the South R/W Line of Shady Lane; Thence N69°16'13"W, 162.10 Feet, to the SE Corner of Lot 34 Block 2 of Said Subdivision; Thence N0°59'32"W, 167.61 Feet, to the NE Corner of Said Lot 34; Thence S89°02'19"W, 135.00 Feet, to the NW Corner of Said Lot 34; Thence S0°59'32"E, 167.69 Feet to the SW Corner of Said Lot 43, Also being a point on the North R/W Line of Shady Lane; Thence S89°00'19"W, Along Said North R/W Line, 135.00 Feet, to the SE Corner of Lot 36 Block 2 of Said Subdivision; Thence N1°09'29"W, 167.77' Feet to the NE Corner of said Lot 36; Thence N75°38'41"W Along the North Line of said Lot 36 and extended, 206.44 Feet, to the NW Corner of Lot 37 Block 2 of Said Subdivision; Thence N59°01'41"W, 658.64 Feet, to the SW Corner of Lot 24 Block 2 of Said Subdivision; Thence S89°27'19"W, 108.50 Feet, to a point on the West Line of Said Subdivision; Thence N0°32'41"W Along Said West Line, 1440.39 Feet, to the NW Corner of Hill N Dale Subdivision, Also being a Point on the South R/W of Capitol Drive; Thence N88°51'08"W, Along Said South R/W, 206.20 Feet to a point on the East R/W Line of Canadian National Railroad; Thence Along Said East R/W, Along the Arc of a curve, 1078.28 Feet, Whose Center is to the West, Chord Bears S14°37'20"W, 1072.17 Feet, whose Radius is 2921.43 Feet; Thence S25°01'32"W Continuing Along Said East R/W, 932.81 Feet to the SW Corner of CSM #12247; Thence S74°33'16"E Along the South Line of Said CSM, 925.03 Feet, to a point on the West Line of Said Subdivision; Thence S0°32'41"E Along Said West Line, 234.94 Feet, To the SW Corner of Said Subdivision; Thence N89°18'19"E, Along the South Line of Said Subdivision, 1294.47 Feet, To the Point of Beginning.

Dave Geis
Senior Engineering Technician
City of Pewaukee

May 25th, 2022

An Area of Assessment in the Southeast $\frac{1}{4}$ of Section 12, T7N, R19E, In the City of Pewaukee, Waukesha County, Wisconsin. Bound and Described as Follows:

Commencing at the SE Corner of the SE $\frac{1}{4}$ of Section 12, T7N, R19E, Thence N0°57'41"W Along the East Line of said SE $\frac{1}{4}$, 215.00 Feet; Thence S89°18'19"W, Along the Extension of the South Line of Hill n Dale Subdivision, 193.24 Feet, to the SE Corner of Lot 2 Block 1 of Said Subdivision, Also being the Point of Beginning of Area to Be Described; Thence N1°02'09"W along the East Line of Said Lot 2, 293.49 Feet to a point on the South R/W Line of Shady Lane; Thence N65°20'51"W, 138.62 Feet to a the SE Corner of Lot 1 CSM #8233; Thence N0°53'36"W, 335.45 Feet to the NE Corner of CSM #8233, Also Being a Point on the South R/W of Hill N Dale Circle; Thence Along said South R/W, 138.03 Feet Along the Arc of a Curve whose Center is to the North, Chord Bears N83°17'18W, 137.85 Feet, Whose Radius is 770.73 Feet; Thence S1°09'29"E Along the West Line of Said CSM, 186.16 Feet to the NE Corner of Lot 36 Block 2 of Said Subdivision; Thence N75°38'41"W, 206.44 Feet to the NE Corner of Lot 2 CSM #8880; Thence N59°01'41"W, 658.64 Feet, to the SW Corner of Lot 24 Block 2 of Said Subdivision; Thence S89°27'19"W, 108.50 Feet, to a point on the West Line of Said Subdivision; Thence S0°32'41"E Along Said West Line 305.00 Feet; Thence S89°31'55"W Along a line of CSM #12247, 66.00 Feet; Thence N0°32'41"W, 305.75 Feet to the NE Corner of CSM #12247; Thence N89°42'21"W Along the North Line of Said CSM, 612.96 Feet to a point on the East R/W Line of Canadian National Railroad; Thence S25°01'32"W Along Said East R/W, 487.33 Feet to the SW Corner of Said CSM; Thence S74°33'16E Along the South Line of Said CSM, 925.03 Feet, to a point on the West Line of Said Subdivision; Thence S0°32'41"E Along Said West Line, 234.94 Feet, To the SW Corner of Said Subdivision; Thence N89°18'19, Along the South Line of Said Subdivision, 1134.23 Feet, To the Point of Beginning.

Dave Geis
Senior Engineering Technician
City of Pewaukee

May 23rd, 2022

An Area of Assessment in the Southeast ¼ of Section 12, T7N, R19E, In the City of Pewaukee, Waukesha County, Wisconsin. Bound and Described as Follows:

Commencing at the SE Corner of the SE ¼ of Section 12, T7N, R19E, Thence N0°57'41"W Along the East Line of said SE 1/4 , 215.00 Feet; Thence S89°18'19"W, Along the Extension of the South Line of Hill n Dale Subdivision, 193.24 Feet, to the SE Corner of Lot 2 Block 1 of Said Subdivision, Also being the Point of Beginning of Area to Be Described; Thence N1°02'09"W along the East Line of Said Lot 2, 293.49 Feet to a point on the South R/W Line of Shady Lane; Thence N8°30'00"E, 60.83 Feet to a the SE Corner of Lot 34 Block 2 of Said Subdivision; Thence N0°59'32"W, 167.61 Feet to the NE Corner of Said Lot 34; Thence S89°02'19"W, 135.00 Feet to the NW Corner of said lot 34; Thence S0°59'32"E, 167.69 Feet, to a Point on the North R/W Line of Shady Lane; Thence S89°00'19"W, Along Said R/W Line, 135.00 Feet, to the SE Corner of Lot 36 Block 2 of Said Subdivision; Thence N1°09'29"W, Along the West Line of Said Lot 36, 167.77 Feet, to the NE Corner of Said Lot 36; Thence N75°38'41"W, 206.44 Feet to the NE Corner of Lot 2 CSM #8880; Thence N59°01'41"W, 658.64 Feet, to the SW Corner of Lot 24 Block 2 of Said Subdivision; Thence S89°27'19"W, 108.50 Feet, to a point on the West Line of Said Subdivision; Thence S0°32'41"E Along Said West Line 305.00 Feet; Thence S89°31'55"W Along a line of CSM #12247, 66.00 Feet; Thence N0°32'41"W, 305.75 Feet to the NE Corner of CSM #12247; Thence N89°42'21"W Along the North Line of Said CSM, 612.96 Feet to a point on the East R/W Line of Canadian National Railroad; Thence S25°01'32"W Along Said East R/W, 487.33 Feet to the SW Corner of Said CSM; Thence S74°33'16"E Along the South Line of Said CSM, 925.03 Feet, to a point on the West Line of Said Subdivision; Thence S0°32'41"E Along Said West Line, 234.94 Feet, To the SW Corner of Said Subdivision; Thence N89°18'19", Along the South Line of Said Subdivision, 1134.23 Feet, To the Point of Beginning.

Dave Geis
Senior Engineering Technician
City of Pewaukee

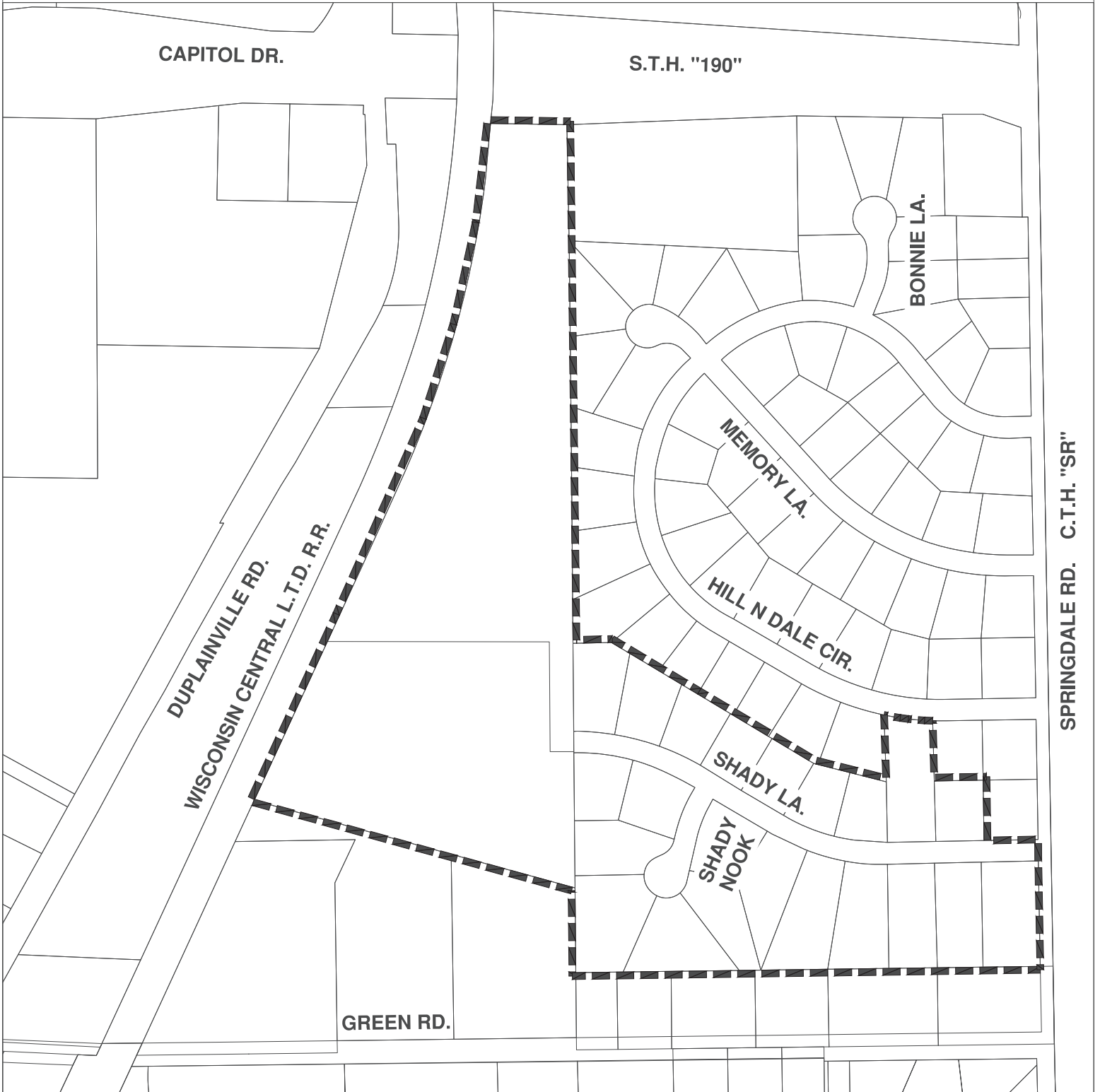
May 23rd, 2022

An Area of Assessment in the Southeast $\frac{1}{4}$ of Section 12, T7N, R19E, In the City of Pewaukee, Waukesha County, Wisconsin. Bound and Described as Follows:

Commencing at the SE Corner of the SE $\frac{1}{4}$ of Section 12, T7N, R19E, Thence N0°57'41"W Along the East Line of said SE $\frac{1}{4}$, 215.00 Feet; Thence S89°18'19"W, Along the Extension of the South Line of Hill n Dale Subdivision, 193.24 Feet, to the SE Corner of Lot 2 Block 1 of Said Subdivision, Also being the Point of Beginning of Area to Be Described; Thence N1°02'09"W along the East Line of Said Lot 2, 293.49 Feet to a point on the South R/W Line of Shady Lane; Thence N8°30'00"E, 60.83 Feet to a the SE Corner of Lot 34 Block 2 of Said Subdivision; Thence N0°59'32"W, 167.61 Feet to the NE Corner of Said Lot 34; Thence S89°02'19"W, 135.00 Feet to the NW Corner of said lot 34; Thence N0°47'41"W, along the East line of CSM # 8233, 167.76 Feet to a Point on the South R/W Line of Hill N Dale Circle; Thence Along said South R/W, 138.03 Feet Along the Arc of a Curve whose Center is to the North, Chord Bears N83°17'18W, 137.85 Feet, Whose Radius is 770.73 Feet; Thence S1°09'29"E Along the West Line of Said CSM, 186.16 Feet to the NE Corner of Lot 36 Block 2 of Said Subdivision; Thence N75°38'41"W, 206.44 Feet to the NE Corner of Lot 2 CSM #8880; Thence N59°01'41"W, 658.64 Feet, to the SW Corner of Lot 24 Block 2 of Said Subdivision; Thence S89°27'19"W, 108.50 Feet, to a point on the West Line of Said Subdivision; Thence S0°32'41"E Along Said West Line 305.00 Feet; Thence S89°31'55"W Along a line of CSM #12247, 66.00 Feet; Thence N0°32'41"W, 305.75 Feet to the NE Corner of CSM #12247; Thence N89°42'21"W Along the North Line of Said CSM, 612.96 Feet to a point on the East R/W Line of Canadian National Railroad; Thence S25°01'32"W Along Said East R/W, 487.33 Feet to the SW Corner of Said CSM; Thence S74°33'16E Along the South Line of Said CSM, 925.03 Feet, to a point on the West Line of Said Subdivision; Thence S0°32'41"E Along Said West Line, 234.94 Feet, To the SW Corner of Said Subdivision; Thence N89°18'19, Along the South Line of Said Subdivision, 1134.23 Feet, To the Point of Beginning.

Dave Geis
Senior Engineering Technician
City of Pewaukee

SHADY LANE AND SHADY NOOK 2022 PAVING PROGRAM
 ROAD RESURFACING
 RD-22-57407
 ROAD ASSESSMENT
 CITY OF PEWAUKEE
 WAUKESHA COUNTY, WISCONSIN



LEGEND

ROAD ASSESSMENT
 AREA BOUNDARY

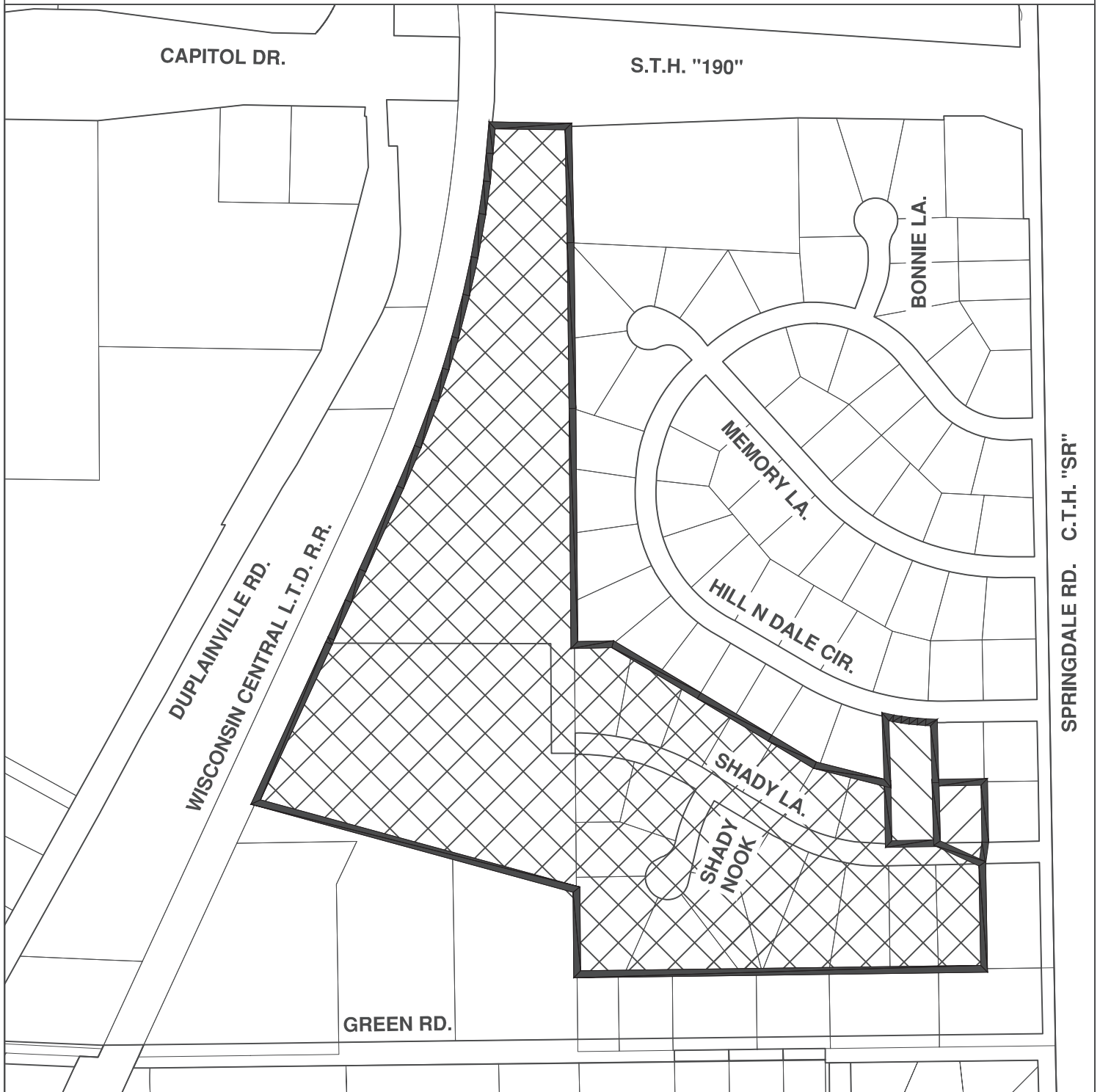


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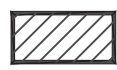
SCALE IN FEET

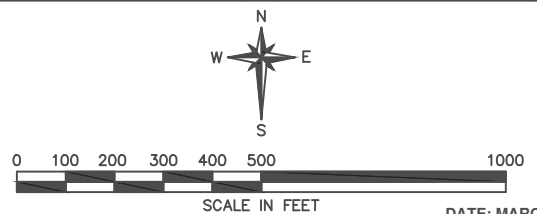
SHADY LANE AND SHADY NOOK 2022
SANITARY SEWER MAIN AND SANITARY SEWER LATERAL
SW-22-12804

SANITARY SEWER MAIN & SANITARY SEWER LATERAL ASSESSMENT
CITY OF PEWAUKEE
WAUKESHA COUNTY, WISCONSIN



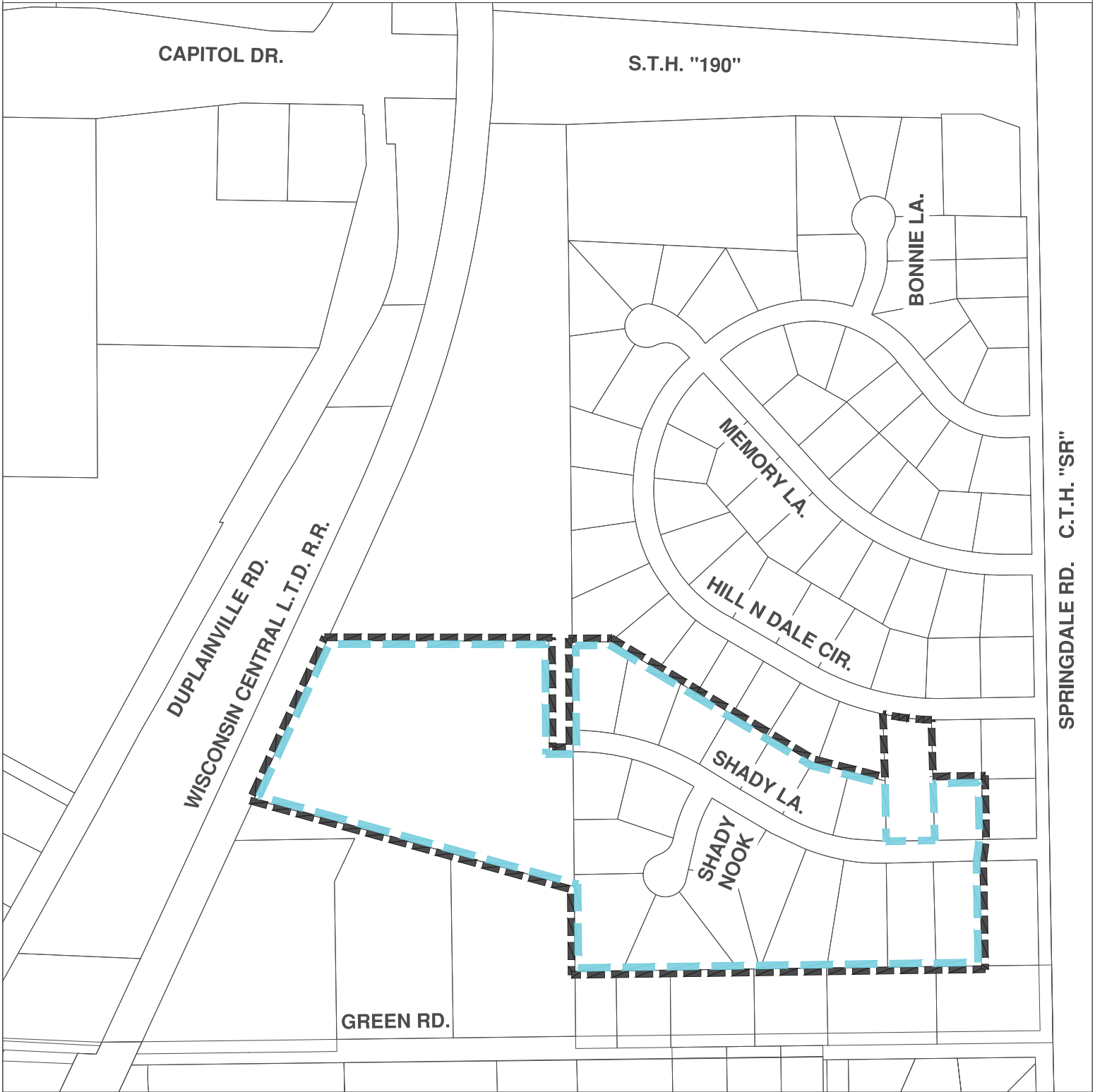
LEGEND

-  SANITARY SEWER ASSESSMENT AREA
-  SANITARY SEWER LATERAL ASSESSMENT AREA



DATE: MARCH, 2023

SHADY LANE AND SHADY NOOK 2022
 WATER MAIN AND WATER SERVICE
 SW-22-12804
 WATER MAIN & WATER SERVICE ASSESSMENT
 CITY OF PEWAUKEE
 WAUKESHA COUNTY, WISCONSIN



LEGEND

- WATER MAIN ASSESSMENT AREA BOUNDARY
- WATER SERVICE ASSESSMENT AREA BOUNDARY



0 100 200 300 400 500 1000

SCALE IN FEET

DATE: MAY, 2022

SCHEDULE C
PRELIMINARY ASSESSMENT ROLL
SHADY LANE SHADY NOOK 2023 RECONSTRUCTION
RD-22-57047, ST-22-57333, SW-22-12804

NO.	OWNER'S NAME AND ADDRESS	TAX KEY NO.	DESCRIPTION	UNIT	COST/UNIT	ASSESSMENT	ASSESSMENT CAP	TOTAL ASSESSMENT
1	ANDERSON FAMILY REVOCABLE LIVING TRUST DATED 7/29/14 N31W22025 SHADY LANE PEWAUKEE WI 53072-4121	PWC 0912001	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$3,206.00	\$ 3,206.00
2	MICHAEL SHARP JOLENE SHARP N31W22039 SHADY LANE PEWAUKEE WI 53072	PWC 0912002	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
3	JOHN KOPECKY CINDY KOPECKY N31W22087 SHADY LANE PEWAUKEE WI 53072-3401	PWC 0912003	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
4	RHONDA L ZIEGLER MICHAEL T WADDELL N31W22095 SHADY LANE PEWAUKEE WI 53072-4121	PWC 0912004	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
5	NOEL H CALDERON LAURA B CALDERON N31W22117 SHADY LANE PEWAUKEE WI 53072	PWC 0912005	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
6	PETER T LABISSONIERE N31W22141 SHADY LANE PEWAUKEE WI 53072	PWC 0912006	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
7	GARY SIMZAK GEORGIANN SIMZAK N32W22161 SHADY LANE PEWAUKEE WI 53072	PWC 0912007	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47

SCHEDULE C
PRELIMINARY ASSESSMENT ROLL
SHADY LANE SHADY NOOK 2023 RECONSTRUCTION
RD-22-57047, ST-22-57333, SW-22-12804

NO.	OWNER'S NAME AND ADDRESS	TAX KEY NO.	DESCRIPTION	UNIT	COST/UNIT	ASSESSMENT	ASSESSMENT CAP	TOTAL ASSESSMENT
8	MATTHEW PICKETT JESSICA PICKETT W221N3148 SHADY NOOK PEWAUKEE WI 53072	PWC 0912008	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
9	CLARENCE OTT AUDREY OTT N31W22207 SHADY NOOK PEWAUKEE WI 53072	PWC 0912009	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
10	JOHN P JONES KELLY J JONES W222N3167 SHADY NOOK PEWAUKEE WI 53072	PWC 0912010	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
11	ANDREW BEHLING IVONNE RUBIO W222N3187 SHADY NOOK PEWAUKEE WI 53072-4153	PWC 0912011	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
12	MAIKE U O'ROURKE UWE M KONOPKA C/O GEORG KONOPKA N32W22211 SHADY LANE PEWAUKEE WI 53072	PWC 0912012	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
13	BRYAN MCDERMOTT N32W22207 SHADY LANE PEWAUKEE WI 53072	PWC 0912013	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47
14	MARK A WILLIAMSON N32W22154 SHADY LANE PEWAUKEE WI 53072	PWC 0912041004	Road Reconstruction Sanitary Sewer Sanitary Lateral Water Main Water Service	1 1 1 1 1	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 17,534.68 \$ 29,204.36 \$ 11,153.89 \$ 18,052.41 \$ 7,894.81	\$ 3,206.00	\$ 69,511.47

SCHEDULE C
PRELIMINARY ASSESSMENT ROLL
SHADY LANE SHADY NOOK 2023 RECONSTRUCTION
RD-22-57047, ST-22-57333, SW-22-12804

NO.	OWNER'S NAME AND ADDRESS	TAX KEY NO.	DESCRIPTION	UNIT	COST/UNIT	ASSESSMENT	ASSESSMENT CAP	TOTAL ASSESSMENT
15	KEVIN BROUWER N31W22050 SHADY LANE PEWAUKEE WI 53072	PWC 0912047	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$ 3,206.00	\$ 58,357.58
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Water Main	1	\$ 18,052.41	\$ 18,052.41		
			Water Service	1	\$ 7,894.81	\$ 7,894.81		
16	JASON P KLEINHANS N31W22080 SHADY LANE PEWAUKEE WI 53072-4120	PWC 0912048001	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$ 3,206.00	\$ 22,254.70
			Sanitary Lateral	1	\$ 11,153.89	\$ 11,153.89		
			Water Service	1	\$ 7,894.81	\$ 7,894.81		
17	JEFFREY LOOYSEN JENNIFER LOOYSEN N31W22104 SHADY LANE PEWAUKEE WI 53072	PWC 0912049	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$ 3,206.00	\$ 69,511.47
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Sanitary Lateral	1	\$ 11,153.89	\$ 11,153.89		
			Water Main	1	\$ 18,052.41	\$ 18,052.41		
			Water Service	1	\$ 7,894.81	\$ 7,894.81		
18	ERIC NORPPA BETH NORPPA N31W22130 SHADY LANE PEWAUKEE WI 53072	PWC 0912050	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$ 3,206.00	\$ 69,511.47
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Sanitary Lateral	1	\$ 11,153.89	\$ 11,153.89		
			Water Main	1	\$ 18,052.41	\$ 18,052.41		
			Water Service	1	\$ 7,894.81	\$ 7,894.81		
19	CHAD BOYLES LORI BOYLES N32W22180 SHADY LANE PEWAUKEE WI 53072	PWC 0912052	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$ 3,206.00	\$ 69,511.47
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Sanitary Lateral	1	\$ 11,153.89	\$ 11,153.89		
			Water Main	1	\$ 18,052.41	\$ 18,052.41		
			Water Service	1	\$ 7,894.81	\$ 7,894.81		
20	MONICA ZABEL ERIK ZABEL N32W22198 SHADY LANE PEWAUKEE WI 53072	PWC 0912053	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$ 3,206.00	\$ 69,511.47
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Sanitary Lateral	1	\$ 11,153.89	\$ 11,153.89		
			Water Main	1	\$ 18,052.41	\$ 18,052.41		
			Water Service	1	\$ 7,894.81	\$ 7,894.81		
21	KARSTEN BLACK LAUREN JOHNSON N32W22216 SHDAY LANE PEWAUKEE WI 53072-4124	PWC 0912054	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$ 3,206.00	\$ 69,511.47
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Sanitary Lateral	1	\$ 11,153.89	\$ 11,153.89		
			Water Main	1	\$ 18,052.41	\$ 18,052.41		
			Water Service	1	\$ 7,894.81	\$ 7,894.81		
22	KENNETH JOHNSON DAWN JOHNSON N32W22240 SHADY LANE PEWAUKEE WI 53072	PWC 0912055	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68	\$ 3,206.00	\$ 69,511.47
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Sanitary Lateral	1	\$ 11,153.89	\$ 11,153.89		
			Water Main	1	\$ 18,052.41	\$ 18,052.41		
			Water Service	1	\$ 7,894.81	\$ 7,894.81		

SCHEDULE C
PRELIMINARY ASSESSMENT ROLL
SHADY LANE SHADY NOOK 2023 RECONSTRUCTION
RD-22-57047, ST-22-57333, SW-22-12804

NO.	OWNER'S NAME AND ADDRESS	TAX KEY NO.	DESCRIPTION	UNIT	COST/UNIT	ASSESSMENT	ASSESSMENT CAP	TOTAL ASSESSMENT
23	CITY OF PEWAUKEE W240N3065 PEWAUKEE RD PEWAUKEE WI 53072-4044	PWC 0912982002	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68		\$ 46,739.04
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Road Reconstruction - Deferred	6	\$ 17,534.68	\$ 105,208.08		\$ 280,434.24
			Sanitary Sewer - Deferred	6	\$ 29,204.36	\$ 175,226.16		D
24	RELEVANT RADIO, INC. 1496 BELLEVUE ST STE 202 GREEN BAY WI 54311-4205	PWC 0912982001	Road Reconstruction	1	\$ 17,534.68	\$ 17,534.68		\$ 87,119.29
			Sanitary Sewer	1	\$ 29,204.36	\$ 29,204.36		
			Sanitary Lateral	1	\$ 11,153.89	\$ 11,153.89		
			Water Main	1	\$ 18,052.41	\$ 18,052.41		
			Water Service	1	\$ 11,173.95	\$ 11,173.95		
			Road Reconstruction - Deferred	7	\$ 17,534.68	\$ 122,742.76		\$ 453,540.15
			Sanitary Sewer - Deferred	7	\$ 29,204.36	\$ 204,430.52		D
			Water Main - Deferred	7	\$ 18,052.41	\$ 126,366.87		
			TOTAL CONTRIBUTION IN AID OF ROAD RECONSTRUCTION					
TOTAL CONTRIBUTION IN AID OF SANITARY SEWER CONSTRUCTION								\$ 642,495.92
TOTAL CONTRIBUTION IN AID OF SANITARY LATERAL CONSTRUCTION								\$ 234,231.69
TOTAL CONTRIBUTION IN AID OF WATER MAIN CONSTRUCTION								\$ 379,100.61
TOTAL CONTRIBUTION IN AID OF WATER SERVICE CONSTRUCTION								\$ 176,964.96
TOTAL CONTRIBUTION IN AID OF ROAD RECONSTRUCTION - Deferred								\$ 227,950.84
TOTAL CONTRIBUTION IN AID OF SANITARY SEWER CONSTRUCTION - Deferred								\$ 379,656.68
TOTAL CONTRIBUTION IN AID OF WATER MAIN CONSTRUCTION - Deferred								\$ 126,366.87

The properties against which contributions in aid of construction of proposed benefits and improvements constitute an exercise of Police Powers.

CITY OF PEWAUKEE
SPECIAL ASSESSMENT PAYMENT SCHEDULE
W240 N3065 Pewaukee Road
Pewaukee, WI 53072
All assessment payments start in year 1

PROJECT NAME: SHADY LANE AND SHADY NOOK

DATE ASSESSMENT FINALIZED: 8/1/2024
ANNUAL SIMPLE INTEREST RATE: 5.50%

FULL ASSESSMENT AMOUNT: \$ 69,511.47

ASSESSMENT CAN BE PAID IN FULL PRIOR TO 11/1/2024 WITH NO INTEREST
ADDED.

THE REMAINING BALANCE IS ADDED TO THE REAL ESTATE PROPERTY TAX BILL IN
10 ANNUAL INSTALLMENTS AS FOLLOWS:

TAX ROLL				TOTAL ADDED TO	BALANCE AFTER
YEAR	PRINICPAL	INTEREST	TAX BILL	PAYMENT	
1	\$ 6,951.15	\$ -	\$ 6,951.15	\$ 62,560.32	
2	\$ 6,951.15	\$ 3,440.82	\$ 10,391.97	\$ 55,609.17	
3	\$ 6,951.15	\$ 3,058.50	\$ 10,009.65	\$ 48,658.02	
4	\$ 6,951.15	\$ 2,676.19	\$ 9,627.34	\$ 41,706.87	
5	\$ 6,951.15	\$ 2,293.88	\$ 9,245.03	\$ 34,755.72	
6	\$ 6,951.15	\$ 1,911.56	\$ 8,862.71	\$ 27,804.57	
7	\$ 6,951.15	\$ 1,529.25	\$ 8,480.40	\$ 20,853.42	
8	\$ 6,951.15	\$ 1,146.94	\$ 8,098.09	\$ 13,902.27	
9	\$ 6,951.15	\$ 764.62	\$ 7,715.77	\$ 6,951.12	
10	\$ 6,951.12	\$ 382.31	\$ 7,333.43	\$ -	
TOTAL:	<u>\$ 69,511.47</u>	<u>\$ 17,204.08</u>	<u>\$ 86,715.55</u>		

CITY OF PEWAUKEE
SPECIAL ASSESSMENT PAYMENT SCHEDULE
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

10-year plan, road assessment payments start in year 1, all others start in year 5
assuming no property sales or connections during payments

PROJECT NAME: SHADY LANE AND SHADY NOOK

DATE ASSESSMENT FINALIZED: 8/1/2024
ANNUAL SIMPLE INTEREST RATE: 5.50%

FULL ASSESSMENT AMOUNT: \$ 69,511.47

ASSESSMENT CAN BE PAID IN FULL PRIOR TO 11/1/2024 WITH NO INTEREST
ADDED.

THE REMAINING BALANCE IS ADDED TO THE REAL ESTATE PROPERTY TAX BILL IN
10 ANNUAL INSTALLMENTS AS FOLLOWS:

TAX ROLL				TOTAL ADDED TO	BALANCE AFTER
YEAR	PRINICPAL	INTEREST		TAX BILL	PAYMENT
1	\$ 320.60	\$ -	\$	320.60	\$ 69,190.87
2	\$ 320.60	\$ 3,805.50	\$	4,126.10	\$ 68,870.27
3	\$ 320.60	\$ 3,787.86	\$	4,108.46	\$ 68,549.67
4	\$ 320.60	\$ 3,770.23	\$	4,090.83	\$ 68,229.07
5	\$ 6,951.15	\$ 3,752.60	\$	10,703.75	\$ 61,277.92
6	\$ 6,951.15	\$ 3,370.29	\$	10,321.44	\$ 54,326.77
7	\$ 6,951.15	\$ 2,987.97	\$	9,939.12	\$ 47,375.62
8	\$ 6,951.15	\$ 2,605.66	\$	9,556.81	\$ 40,424.47
9	\$ 6,951.15	\$ 2,223.35	\$	9,174.50	\$ 33,473.32
10	\$ 6,951.15	\$ 1,841.03	\$	8,792.18	\$ 26,522.17
11	\$ 6,630.55	\$ 1,458.72	\$	8,089.27	\$ 19,891.62
12	\$ 6,630.55	\$ 1,094.04	\$	7,724.59	\$ 13,261.08
13	\$ 6,630.55	\$ 729.36	\$	7,359.91	\$ 6,630.53
14	\$ 6,630.53	\$ 364.68	\$	6,995.21	\$ (0.00)
TOTAL:	<u>\$ 69,511.47</u>	<u>\$ 31,791.29</u>	\$	<u>101,302.76</u>	

CITY OF PEWAUKEE
SPECIAL ASSESSMENT PAYMENT SCHEDULE
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

Special Consideration

15-year plan, all assessment payments start in year 1

PROJECT NAME: SHADY LANE AND SHADY NOOK

DATE ASSESSMENT EXPECTED TO BE FINALIZED: 8/1/2024
ANNUAL ESTIMATED SIMPLE INTEREST RATE: 5.50%

FULL ASSESSMENT AMOUNT: \$ 69,511.47

ASSESSMENT CAN BE PAID IN FULL PRIOR TO 11/1/2024 WITH NO INTEREST ADDED.

THE REMAINING BALANCE IS ADDED TO THE REAL ESTATE PROPERTY TAX BILL IN 10
ANNUAL INSTALLMENTS AS FOLLOWS:

TAX ROLL YEAR	PRINICPAL	INTEREST	TOTAL ADDED TO TAX BILL	BALANCE AFTER PAYMENT
1	\$ 4,634.10	\$ -	\$ 4,634.10	\$ 64,877.37
2	\$ 4,634.10	\$ 3,568.26	\$ 8,202.36	\$ 60,243.27
3	\$ 4,634.10	\$ 3,313.38	\$ 7,947.48	\$ 55,609.17
4	\$ 4,634.10	\$ 3,058.50	\$ 7,692.60	\$ 50,975.07
5	\$ 4,634.10	\$ 2,803.63	\$ 7,437.73	\$ 46,340.97
6	\$ 4,634.10	\$ 2,548.75	\$ 7,182.85	\$ 41,706.87
7	\$ 4,634.10	\$ 2,293.88	\$ 6,927.98	\$ 37,072.77
8	\$ 4,634.10	\$ 2,039.00	\$ 6,673.10	\$ 32,438.67
9	\$ 4,634.10	\$ 1,784.13	\$ 6,418.23	\$ 27,804.57
10	\$ 4,634.10	\$ 1,529.25	\$ 6,163.35	\$ 23,170.47
11	\$ 4,634.10	\$ 1,274.38	\$ 5,908.48	\$ 18,536.37
12	\$ 4,634.10	\$ 1,019.50	\$ 5,653.60	\$ 13,902.27
13	\$ 4,634.10	\$ 764.62	\$ 5,398.72	\$ 9,268.17
14	\$ 4,634.10	\$ 509.75	\$ 5,143.85	\$ 4,634.07
15	\$ 4,634.07	\$ 254.87	\$ 4,888.94	\$ -
TOTAL:	\$ 69,511.47	\$ 26,761.90	\$ 96,273.37	

CITY OF PEWAUKEE
SPECIAL ASSESSMENT PAYMENT SCHEDULE
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

Special Consideration

20-year plan, all assessment payments start in year 1

PROJECT NAME: SHADY LANE AND SHADY NOOK

DATE ASSESSMENT EXPECTED TO BE FINALIZED: 8/1/2024
ANNUAL ESTIMATED SIMPLE INTEREST RATE: 5.50%

FULL ASSESSMENT AMOUNT: \$ 69,511.47

ASSESSMENT CAN BE PAID IN FULL PRIOR TO 11/1/2024 WITH NO INTEREST ADDED.

THE REMAINING BALANCE IS ADDED TO THE REAL ESTATE PROPERTY TAX BILL IN 10 ANNUAL INSTALLMENTS AS FOLLOWS:

TAX ROLL YEAR	PRINICIPAL	INTEREST	TOTAL ADDED TO TAX BILL	BALANCE AFTER PAYMENT
1	\$ 3,475.57	\$ -	\$ 3,475.57	\$ 66,035.90
2	\$ 3,475.57	\$ 3,631.97	\$ 7,107.54	\$ 62,560.33
3	\$ 3,475.57	\$ 3,440.82	\$ 6,916.39	\$ 59,084.76
4	\$ 3,475.57	\$ 3,249.66	\$ 6,725.23	\$ 55,609.19
5	\$ 3,475.57	\$ 3,058.51	\$ 6,534.08	\$ 52,133.62
6	\$ 3,475.57	\$ 2,867.35	\$ 6,342.92	\$ 48,658.05
7	\$ 3,475.57	\$ 2,676.19	\$ 6,151.76	\$ 45,182.48
8	\$ 3,475.57	\$ 2,485.04	\$ 5,960.61	\$ 41,706.91
9	\$ 3,475.57	\$ 2,293.88	\$ 5,769.45	\$ 38,231.34
10	\$ 3,475.57	\$ 2,102.72	\$ 5,578.29	\$ 34,755.77
11	\$ 3,475.57	\$ 1,911.57	\$ 5,387.14	\$ 31,280.20
12	\$ 3,475.57	\$ 1,720.41	\$ 5,195.98	\$ 27,804.63
13	\$ 3,475.57	\$ 1,529.25	\$ 5,004.82	\$ 24,329.06
14	\$ 3,475.57	\$ 1,338.10	\$ 4,813.67	\$ 20,853.49
15	\$ 3,475.57	\$ 1,146.94	\$ 4,622.51	\$ 17,377.92
16	\$ 3,475.57	\$ 955.79	\$ 4,431.36	\$ 13,902.35
17	\$ 3,475.57	\$ 764.63	\$ 4,240.20	\$ 10,426.78
18	\$ 3,475.57	\$ 573.47	\$ 4,049.04	\$ 6,951.21
19	\$ 3,475.57	\$ 382.32	\$ 3,857.89	\$ 3,475.64
20	\$ 3,475.64	\$ 191.16	\$ 3,666.80	\$ -
TOTAL:	\$ 69,511.47	\$ 36,319.78	\$ 105,831.25	