Permit Fact Sheet

General Information

Permit Number	WI-0060038-10-0
Permittee Name and Address	SEXTONVILLE SANITARY DISTRICT #1 PO Box 95, Sextonville, WI 53584
Permitted Facility Name and Address	Sextonville Sanitary District #1 WWTF CTH B, NW1/4, NW1/4, SEC 6, T9N, R2E, BUENA VISTA TWP & SW1/4, SW1/4, SEC 31, T10N R2E, ITHACA TWP
Permit Term	April 01, 2026 to March 31, 2031
Discharge Location	East bank of Willow Creek, SW ¼ of SW ¼, Section 31, T10N R2E (Lat: 43.29499º N / Lon: 90.30799º W)
Receiving Water	Willow Creek (Willow Creek Watershed, LW12 – Lower Wisconsin River Basin) in Richland County
Stream Flow ($Q_{7,10}$)	28 cfs
Stream Classification	Warm Water Sport Fish (WWSF), non-public water supply
Discharge Type	Existing, Seasonal (April – June & Oct – Dec)
Annual Average Design Flow (MGD)	0.063 MGD
Industrial or Commercial Contributors	None
Plant Classification	A4 - Ponds, Lagoons and Natural Systems; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

The Sextonville Sanitary District #1 operates a wastewater treatment facility that consists of a wastewater stabilization pond treatment system with seasonal fill and draw discharge from an effluent holding pond to Willow Creek. Discharge is limited to the months of April, May, June, and October, November, December. The facility is designed to treat an average daily flow of 62,700 gallons per day of domestic wastewater from the Town of Sextonville and the Town of Ithaca, which includes the Ithaca, receiving an average of 50,000 gallons per day for treatment.

Substantial Compliance Determination

Enforcement During Last Permit: A Notice of Noncompliance (NON) was issued October 13, 2023 for a sanitary sewer overflow (SSO) in September of 2023. The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on October 24, 2024, this facility has been found to be in substantial compliance with their current permit.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	0.44 MGD (Sept. 2020 – Sept. 2025 Average)	Influent: Representative grab samples shall be collected from the influent manhole where Sextonville and Ithaca flows combine. Influent flow is measured at the Sextonville influent lift station and Ithaca influent manhole. The reported influent flow is a calculated total of these two flows.
002	0.21 MGD (Sept. 2020 – Sept. 2025 Average)	Effluent: Representative grab samples shall be collected from the effluent manhole, prior to discharge to Willow Creek. Discharge period restricted to April, May, June, October, November and December (Fill & Draw). An ultrasonic flow meter is located at the v-notch weir in the effluent manhole.
003	N/A – Sludge has not been removed since 1996	Lagoon sludge, Liquid, Class B. Representative composite grab sample of sludge collected from Lagoon Ponds 1 and 2. If a lagoon is scheduled for desludging, a composite grab sample of that lagoon sludge may be required prior to landspreading.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Calculated	Report the sum of flows measured at Sextonville lift station and Ithaca manhole
BOD5, Total		mg/L	2/Week	Grab	
Suspended Solids, Total		mg/L	2/Week	Grab	

Changes from Previous Permit:

Influent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

Separate flow monitoring Outfalls 702 and 704 have been removed to reflect that the Sextonville Sanitary District includes the Ithaca Sanitary District flows, and that separate flow reporting to the department is not necessary. The single combined flow of both contributing communities is monitored, and total combined flow to the treatment plant is reported.

Flow: Sample frequency changed from “Continuous” to “Daily and sample type changed to “Calculated” for eDMR reporting purposes.

BOD and TSS: Sample frequency changed from “2/Month”” to “2/Week” to align with effluent monitoring.

Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit.

2 Surface Water - Monitoring and Limitations

2.1 Sample Point Number: 002- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate	Daily Max	0.38 MGD	Daily	Continuous	Discharge allowed only April - June and October - December
BOD5, Total	Weekly Avg	45 mg/L	2/Week	Grab	
BOD5, Total	Monthly Avg	30 mg/L	2/Week	Grab	
Suspended Solids, Total	Weekly Avg	45 mg/L	2/Week	Grab	
Suspended Solids, Total	Monthly Avg	30 mg/L	2/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Nitrogen, Ammonia Variable Limit		mg/L	2/Week	See Table	Look up the variable ammonia limit from the 'Variable Ammonia Limitation' table and report the variable limit in the Ammonia Variable Limit column on the eDMR.
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	2/Week	Grab	Report the daily maximum Ammonia result in the Nitrogen, Ammonia (NH3-N) Total column of the eDMR. See Ammonia Limitation Section.
E. coli		#/100 ml	Weekly	Grab	Monitoring only May through September annually per the Effluent Limitations for E. coli

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					Schedule.
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Monitoring and limit effective May through September annually per the Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Monitoring and limit effective May through September annually per the Effluent Limitations for E. coli Schedule. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.
Chloride		mg/L	2/Week	Grab	Monitoring in 2029. Monitoring to obtain a minimum of 11 samples. Monitoring may end once 11 samples are collected.
Phosphorus, Total	Monthly Avg	3.8 mg/L	2/Week	Grab	Limit effective throughout the permit term, as it represents a minimum control level.
Phosphorus, Total		lbs/day	2/Week	Calculated	Report daily mass discharged using Equation 1a. in the Water Quality Trading (WQT) section.
WQT Credits Used (TP)		lbs/month	Monthly	Calculated	Report WQT TP Credits used per month using Equation 2c. in the Water Quality Trading (WQT) section. Available TP Credits are specified in Table 2 and in the approved Water Quality Trading Plan.
WQT Computed Compliance (TP)	Monthly Avg	0.225 mg/L	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3a. in the Water Quality Trading (WQT) section. Value entered on the last day of

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					the month.
WQT Computed Compliance (TP)	6-Month Avg	0.075 mg/L	Monthly	Calculated	Compliance with the six-month average limit is evaluated at the end of the six-month period on June 30 and Dec 31.
WQT Computed Compliance (TP)	6-Month Avg	0.238 lbs/day	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3b. in the Water Quality Trading (WQT) section. Compliance with the six-month average limit is evaluated at the end of the six-month period on June 30 and Dec 31.
WQT Credits Used (TP)	Annual Total	602 lbs/yr	Annual	Calculated	The sum of total monthly credits used may not exceed Table 2 values listed below.
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	Grab	Annual in rotating quarters. See Nitrogen Series Monitoring section.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	Grab	Annual in rotating quarters. See Nitrogen Series Monitoring section.
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	Annual in rotating quarters. See Nitrogen Series Monitoring section. Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.

Changes from Previous Permit

Effluent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

Flow: Sample frequency changed from “Continuous” to “Daily” and sample type changed from “Total Daily” to “Continuous” for eDMR reporting purposes.

pH: Sample frequency changed from “3/Week” to “5/Week”.

Ammonia: Sample frequency has changed from “3/Week” to “2/Week”.

Disinfection & E. coli: At the end of the compliance schedule, Disinfection requirements and E. coli limits of 126 #/100 ml as a monthly geometric mean that may not be exceeded and 410 #/100 ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month will apply. Monitoring is required May – September annually.

Chloride: Monitoring included to ensure 11 samples are available at next permit reissuance to determine reasonable potential.

Phosphorus: Minor changes to reporting requirements for WQT. A phosphorus minimum control level (MCL) of 3.8 mg/L as a monthly average is included, equivalent to the interim TP limit from the previous permit term.

Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo for the Sextonville Sanitary District #1 Wastewater Treatment Facility dated November 19, 2025, prepared by Zainah Masri, and used for this reissuance.

Disinfection & E. coli: Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying E. coli WPDES permit implementation procedures became effective May 1, 2020.

Section NR 102.04(5)(a), Wis. Adm. Code, states that all surface waters shall be suitable for recreational use and meet the E. coli criteria established to protect this use. Section NR 102.04(5)(b), Wis. Adm. Code, states that exceptions to the disinfection requirement can be made if the department determines, in accordance with the procedures specified in s. NR 210.06(3), Wis. Adm. Code, that disinfection is not required to meet water quality criteria. As part of the reissuance process, the requirements for disinfection were reviewed under s. NR 210.06(3), Wis. Adm. Code.

It was determined that the permittee is required to disinfect, during the following months May – September. See WQBEL for further explanation.

Chlorine: If Sextonville Sanitary District #1 decides to upgrade to use chlorination for disinfection, effluent limitations would be recommended to ensure proper operation of the dichlorination system and would become effective May 01, 2030 with the E. coli limitations. Section NR 210.06(2)(b), Wis. Adm. Code, states "When chlorine is used for disinfection, the daily maximum total residual chlorine concentration of the discharge may not exceed 0.10 mg/L". Because the WQBELs are more restrictive, they are recommended instead. Specifically, a daily maximum limit of 38 µg/L would be required if Sextonville Sanitary District #1 Wastewater Treatment Facility decided to use chlorination for disinfection. See WQBEL Memo for more information.

Phosphorus: Phosphorus requirements are based on the Phosphorus Rules that became effective December 1, 2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. Currently in NR 217 Wis. Adm. Code there are two methods used to determine if a phosphorus limit is needed: a technology based effluent limit (TBEL) and a water quality based effluent limit (WQBEL). Based on the size and classification of the stream, the water quality criteria for Willow Creek is 75 ug/L. In this case, *the WQBEL is 0.225 mg/L (monthly average), 0.075 mg/L & 0.238 lbs/day (6-month average).* For the reasons explained in the April 30, 2012 paper entitled 'Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin', WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as a maximum daily, weekly or monthly value. The final effluent limit for phosphorus is expressed as a six-month average. It is also expressed as a monthly average equal to three times the derived WQBEL (which equates to 0.225 mg/L). This final effluent limit was derived from and complies with the applicable water quality criterion. A phosphorus concentration limit is necessary to prevent backsliding during the term of the permit. The MCL of 3.8 mg/L will be retained in the permit.

The wastewater treatment facility is not able to meet the WQBEL. This permit authorizes the use of trading as a tool to demonstrate compliance with the phosphorus WQBELs. This permit includes terms and conditions related to the Water Quality Trading Plan (WQT-2025-0019) or approved amendments thereof. The total 'WQT TP Credits' available are

designated in the approved WQT Plan. The City proposes to utilize streambank stabilization. The WQT Plan proposes the generation of 602 lbs/yr of phosphorus credits for the next five years.

Additional WQT subsections in the permit provide information on compliance determinations, annual reporting and re-opening of the permit.

Total Nitrogen Monitoring: The department has included effluent monitoring for Total Nitrogen through the authority under s. 283.55(1)(e), Wis. Stats., which allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. More information on the justification to include total nitrogen monitoring in wastewater permits can be found in the "Guidance for Total Nitrogen Monitoring in Wastewater Permits" dated October 1, 2019. See permit for total nitrogen monitoring requirements.

PFOS and PFOA: NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites and other potential sources of PFOS or PFOA. Based on information available at the time the proposed permit was drafted, the department has determined the permittee does not need to sample for PFOS or PFOA in the effluent as part of this permit reissuance. The department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

Monitoring Frequencies: The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. The sample frequency for pH was increased from 3/Week to 5/Week to align Sextonville Sanitary District #1 with facilities of similar type and size. The sample frequency for ammonia was decreased from 3/Week to 2/Week to align with other conventional parameters. The department determined based on compliance history, effluent quality, and other factors in guidance, that the minimum sample frequency in guidance is appropriate.

Expression of Limits: In accordance with the federal regulation 40 CFR 122.45(d) and s. NR 205.065, Wis. Adm. Code, limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable. Due to the noncontinuous nature of the discharge, additional limits are not required to meet expression of limits requirements.

3 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
003	B	Liquid	Fecal Coliform	Injection or Incorporation	Land Application	N/A – Lagoon System
Does sludge management demonstrate compliance? **Yes**						
Is additional sludge storage required? **No**						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? **No** If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
Is a priority pollutant scan required? **No, design flow is less than 5 MGD.** Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

3.1 Sample Point Number: 003- LAGOON SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Once	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
Nitrogen, Total Kjeldahl		Percent	Once	Composite	Once when land application occurs.
Nitrogen, Ammonium (NH4-N) Total		Percent	Once	Composite	Once when land application occurs.
Phosphorus, Total		Percent	Once	Composite	Once when land application

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					occurs.
Phosphorus, Water Extractable		% of Tot P	Once	Composite	Once when land application occurs.
Potassium, Total Recoverable		Percent	Once	Composite	Once when land application occurs.
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Once in 2027.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Once in 2027.
PFOA + PFOS		ug/kg	Once	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Once	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

The parameter order has changed, PCB is listed after the List 2 – Nutrients.

List 2 Nutrients: List 2 Nutrients have been added should land application occur and for planning purposes.

PFAS: Monitoring is required once pursuant to s. NR 204.06(2)(b)9, Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5), Wis. Adm. Code. Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7), Wis. Adm. Code for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k), Wis. Adm. Code.

List 2 Nutrients: Monitoring for list 2 (nutrients) is highly recommended at the same time as the monitoring of List 1 (metals) in year 2 of the permit (2027). Results will assist in the determination of the acres needed for land application of sludge should it be necessary. The number of acres needed is also required for the Land Application Management Plan Schedule (see schedules for more information). List 2 nutrient sampling is required when land application occurs.

PFAS: The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The department is evaluating this new information. Until a decision is made, the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS" should be followed

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department's implementation of EPA's

recommendations. To quantitate this risk, PFAS sampling has been included in this WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

Change in form submittal: In prior permit reissuances when it has been noted in the application that sludge would not be removed during the permit term, the department required sampling during the second year of the permit term and the sludge characteristic report (3400-049) would be generated only during that year. Due to moving to electronic submittal of forms via Switchboard, forms 3400-049 ("Characteristics Report"), 3400-052 ("Other Methods of Disposal") and 3400-055 ("Annual Land Application") will now be generated by the department and the permittee will be required to submit all three reports each year of the permit term. This change was adopted to provide the permittee flexibility because many lagoon desludging projects can be unexpected, are delayed or staggered over multiple years. Additionally, it is used to officially report that no land application of sludge has occurred, and annual submittal of the forms is required per the standard requirements section.

4 Schedules

4.1 Disinfection and Effluent Limitations for E. coli

Required Action	Due Date
Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.	05/21/2026
Report on Effluent Discharge: The permittee shall prepare and submit a report on effluent discharge. The report shall include an evaluation of collected effluent data and the facility's ability to comply with final E. coli limitations. The report shall state whether current treatment results in compliance with the final E. coli limitations. The permittee shall also submit a request to the department to evaluate the need for disinfection pursuant s. NR 210.06(3), Wis. Adm. Code. MODIFICATION - If the department determines, based on the information submitted in the Report on Effluent Discharges, that disinfection is not required pursuant s. NR 210.06(3), Wis. Adm. Code, the department will modify or revoke and reissue the permit in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to remove monitoring, the final E. coli limitation, and the remaining actions in this schedule of compliance. FACILITY PLAN - If the Report on Effluent Discharge concludes that current treatment does not results in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance.	11/30/2026
Submit Facility Plan: The permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code for meeting disinfection requirements and complying with E. coli surface water limitations. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor.	04/30/2027
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to meet disinfection requirements per s. NR 210.06(1), Wis. Adm Code, achieve compliance with final E. coli limitations, and a schedule for completing construction of the upgrades by the complete construction date specified below.	03/31/2028

Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	09/30/2028
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2029
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	03/31/2030
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/30/2030

Explanation of Schedule

A compliance schedule is included in the permit to provide time for the permittee to submit plans and specs and install disinfection treatment for meeting effluent E. coli water quality-based effluent limits and disinfection requirements pursuant s. NR 210.06, Wis. Adm. Code. If the facility chooses to utilize chlorine for disinfection, the permit may be modified to include total residual chlorine limits as suggested by the Water Quality-Based Effluent Limits Memo for the Sextonville Sanitary District #1 Wastewater Treatment Facility dated November 19, 2025.

4.2 Water Quality Trading (WQT) Annual Report

Required Action	Due Date
Annual WQT Report: Submit an annual WQT report that shall cover the first year of the permit term. The WQT Report shall include: The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance; The source of each month's pollutant reduction credits by identifying the approved water quality trading plan that details the source; A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.	01/31/2027
Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year.	01/31/2028
Annual WQT Report #3: Submit an annual WQT report that shall cover the previous year.	01/31/2029
Annual WQT Report #4: Submit an annual WQT report that shall cover the previous year.	01/31/2030
Annual WQT Report #5: Submit the 5th annual WQT report. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	01/31/2031
Annual WQT Report Required After Permit Expiration: In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of noncompliance or failure to implement any terms or conditions of the approved water quality trading	

plan for the previous calendar year.	

Explanation of Schedule

Reports are required that include the following information:

- Verification that site inspections occurred;
- Results of site inspection findings;
- Identification of noncompliance or failure to implement any terms or conditions of the permit or trading plan that have not been reported in discharge monitoring reports;
- Any applicable notices of termination or management practice registration; and
- A summary of credits used each month over the calendar year

4.3 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan Submittal: If the permittee proposes to land apply sludge, a management plan shall be submitted and approved by the Department. The management plan shall be consistent with the requirements of this permit, and s. NR 204.07, Wis. Adm. Code. At a minimum, the plan shall describe how the application rate has been calculated as well as how the sludge will be land applied and incorporated. Record keeping and tracking of site loadings shall also be described. Requests for land application site approvals shall also be included. The plan is due sixty (60) days prior to land applying.	

Explanation of Schedule

If the permittee wishes to land apply sludge from the lagoons during the permit term, they must submit a plan detailing how the sludge land application will comply with relevant code and permit requirements. The plan must be submitted at least 60 days prior to the sludge being applied.

4.4 Desludging Management Plan

Required Action	Due Date
Desludging Management Plan Submittal: The permittee shall submit a management plan for approval if removal of sludge will occur during this permit term. At a minimum, the plan shall address how the sludge will be sampled, removed, transported, and disposed of. No desludging may occur unless approval by the Department is obtained. Daily logs shall be kept that record where the sludge has been disposed. The plan is due sixty (60) days prior to desludging.	

Explanation of Schedule

If the lagoons are to be de-sludged during this permit term, a management plan is needed to show compliance with ch. NR 204, Wis. Adm. Code. A management plan needs to be submitted 60 days prior to desludging. At minimum, the plan should address how the sludge will be sampled, removed, transported, and disposed of. There are outlines available to assist in plan development.

Other Comments

Any other comments or delete this section

Attachments

Water Quality Based Effluent Limits dated November 19, 2025

Water Quality Trading Plan Approval Letter dated November 06, 2025

Water Quality Trading Plan dated October 2025

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance.

Prepared By: BetsyJo Howe, Wastewater Specialist **Date:** 01/05/2026

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: November 19, 2025

TO: BetsyJo Howe – SCR/Fitchburg

FROM: Zainah Masri – WY/3

SUBJECT: Water Quality-Based Effluent Limitations for the Sextonville Sanitary District #1 Wastewater Treatment Facility
WPDES Permit No. WI-0060038-08-0

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable) for the discharge from the Sextonville Sanitary District #1 Wastewater Treatment Facility in Richland County. This municipal wastewater treatment facility (WWTF) discharges to the Willow Creek located in the Willow Creek Watershed (LW12) in the Lower Wisconsin River Basin.

The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 002:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate	0.380 MGD					1
BOD_5			45 mg/L	30 mg/L		1
TSS			45 mg/L	30 mg/L		1
pH	9.0 s.u.	6.0 s.u.				1
Ammonia Nitrogen	Variable					2
Bacteria						3
Final Limit *E. coli*				126 #/100 mL geometric mean		
Residual Chlorine	38 µg/L					4
Chloride						5
Phosphorus						6
WQT MCL				3.8 mg/L		
Final WQBELs				0.225 mg/L	0.075 mg/L 0.238 lbs/day	
TKN, Nitrate+Nitrite, and Total Nitrogen						7

Footnotes:

1. No changes from the current permit.
2. The variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values may be included in the permit in place of the single limit. These limits apply year-round.

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
$6.0 \leq pH \leq 6.1$	108	$7.0 < pH \leq 7.1$	66	$8.0 < pH \leq 8.1$	14
$6.1 < pH \leq 6.2$	106	$7.1 < pH \leq 7.2$	59	$8.1 < pH \leq 8.2$	11
$6.2 < pH \leq 6.3$	104	$7.2 < pH \leq 7.3$	52	$8.2 < pH \leq 8.3$	9.4
$6.3 < pH \leq 6.4$	101	$7.3 < pH \leq 7.4$	46	$8.3 < pH \leq 8.4$	7.8
$6.4 < pH \leq 6.5$	98	$7.4 < pH \leq 7.5$	40	$8.4 < pH \leq 8.5$	6.4
$6.5 < pH \leq 6.6$	94	$7.5 < pH \leq 7.6$	34	$8.5 < pH \leq 8.6$	5.3
$6.6 < pH \leq 6.7$	89	$7.6 < pH \leq 7.7$	29	$8.6 < pH \leq 8.7$	4.4
$6.7 < pH \leq 6.8$	84	$7.7 < pH \leq 7.8$	24	$8.7 < pH \leq 8.8$	3.7
$6.8 < pH \leq 6.9$	78	$7.8 < pH \leq 7.9$	20	$8.8 < pH \leq 8.9$	3.1
$6.9 < pH \leq 7.0$	72	$7.9 < pH \leq 8.0$	17	$8.9 < pH \leq 9.0$	2.6

3. Bacteria limits apply during the disinfection season of May through September. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL. A compliance schedule will be included in the permit to meet these limits.
4. If Sextonville Sanitary District #1 Wastewater Treatment Facility decides to upgrade to use chlorination for disinfection, effluent limitations would be recommended to assure proper operation of the de-chlorination system.
5. Monitoring at a frequency to ensure that 11 samples are available at the next permit issuance.
6. Phosphorus WQBELs are met through WQT computed compliance limits which also require a corresponding minimum control level (MCL) to be met at the discharge. A phosphorus MCL of 3.8 mg/L as a monthly average is recommended during the reissued permit term.
7. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).

No WET testing is required because information related to the discharge indicates low to no risk for toxicity.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Zainah Masri at Zainah.Masri@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (4) – Narrative, Ammonia Nitrogen Calculations, Volumetric Capacity Information & Site Map

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Attachment #1

Water Quality-Based Effluent Limitations for
Sextonville Sanitary District #1 Wastewater Treatment Facility

WPDES Permit No. WI-0060038-08-0

Prepared by: Zainah Masri – WY/3

PART 1 – BACKGROUND INFORMATION

Facility Description

Sextonville Sanitary District #1 operates a wastewater treatment facility that consists of a wastewater stabilization pond treatment system with seasonal fill and draw discharge from an effluent holding pond to Willow Creek. Discharge to Willow Creek is limited to the months of April, May, June, October November, and December. The facility is designed to treat an average daily flow of 62,700 gallons per day of domestic wastewater from the Sextonville and Ithaca Sanitary Districts and presently receives an average of 50,000 gallons per day for treatment.

Attachment #4 is a map of the area showing the approximate location of Outfall 002.

Existing Permit Limitations

The current permit which expired on June 30, 2025 includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate	0.380 MGD					1
BOD_5			45 mg/L	30 mg/L		1
TSS			45 mg/L	30 mg/L		1
pH	9.0 s.u.	6.0 s.u.				1
Phosphorus Interim Final				 3.8 mg/L 0.225 mg/L	 0.075 mg/L	2
Ammonia Nitrogen	Variable					3
TKN, Nitrate+Nitrite, and Total Nitrogen						4

Footnotes:

1. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
2. The final WQBELs became effective January 1, 2022.
3. A variable daily maximum ammonia nitrogen limit table corresponding to various effluent pH values is included in the permit in place of a single limit. These limits apply whenever the facility is discharging.

Attachment #1

Effluent pH – s.u.	Ammonia Nitrogen Limit – mg/L	Effluent pH – s.u.	Ammonia Nitrogen Limit – mg/L
7.0 <pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
7.1 <pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
7.2 <pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
7.3 <pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
7.4 <pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

4. As recommended in the Department's October 1, 2019 Guidance for Total Nitrogen Monitoring in Wastewater Permits, annual total nitrogen monitoring is recommended for all minor municipal permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Codes, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).

Receiving Water Information

- Name: Willow Creek
- Waterbody Identification Code (WBIC): 1220900
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm water sport fish community (downstream on the Ithaca Mill dam), non-public water supply.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q_{10} and 7-Q_2 values are from USGS based on flow information obtained at Station # LW1A which is located at SE ¼ of SW ¼ of Sec. 6, T9N- R2E, 100 feet above highway 14 bridge, 2.0 miles SE of highway 58, 6.0 miles southeast of Richland Center, where Outfall 002 is located.
  7-Q_{10} = 28 cubic feet per second (cfs)
  7-Q_2 = 34 cfs
  90-Q_{10} = 29 cfs
  Harmonic Mean = 48.1 cfs
- Hardness = 234 mg/L as CaCO3. This value represents the geometric mean of hardness data from SWIMS station 533029 (Pine River at STH 14 in Richland Center) from October 1995 to April 1997 which is in the same watershed (LW12). Though, this data is dated, the hardness, is typical of what is considered normal to similar water bodies in the area.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%.
- The geometric mean of metals and chloride data from the Pine River at STH 14 is used for this evaluation because there is no data available for Willow Creek. Pine River is within the same ecological landscape so ambient water quality characteristics are expected to be similar. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen are described later.
- Multiple dischargers: None.

- Impaired water status: Willow Creek is not listed as impaired; however, the Wisconsin River, located approximately 8 miles downstream, is impaired for total phosphorus.

Effluent Information

- Design flow rate:

  Annual average = 0.063 million gallons per day (MGD)
  Daily flow limit = 0.380 MGD
  Note: The facility is designed to treat an average daily flow of 0.0627 MGD, and previous limits were calculated using the design flow rate of 0.0627 MGD. However, since the facility is permitted to discharge up to 0.380 MGD per day, it was determined that using the flow limit of 0.380 MGD in calculations should be used to be protective of the receiving water.

  For reference, the actual average flow from September 2020 to September 2025 was 0.21 MGD, excluding days discharge did not occur.

- Hardness = 187 mg/L as $CaCO_3$. This value represents the geometric mean of four samples collected in August 2024 which were reported on the permit application.
- Acute dilution factor used in accordance with s. NR 106.06(3)(c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Water supply: Municipality waterworks and private wells.
- Additives: None.
- Effluent characterization: This facility is categorized as a minor municipality, so the permit application required effluent sample analyses for a limited number of common pollutants, as specified in s. NR 200.065, Table 1, Wis. Adm. Code, primarily metal substances plus ammonia, chloride, hardness and phosphorus.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2, in the column titled "MEAN EFFL. CONC.". Otherwise, substances with multiple effluent data are shown in the tables below or in their respective parts in this evaluation.

Copper Effluent Data

Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)
10/05/2024	<3.2	10/17/2024	3.5	10/29/2024	<3.2
10/08/2024	3.2	10/20/2024	3.5	11/01/2024	<3.2
10/11/2024	3.6	10/23/2024	<3.2	11/04/2024	<3.2
10/14/2024	4.0	10/26/2024	4.2		
Mean = 2.0 µg/L					

"<" means that the pollutant was not detected at the indicated limit of detection. The mean concentration was calculated using zero in place of the non-detected results.

Chloride Effluent Data

Sample Date	Chloride mg/L
10/05/2024	143
10/06/2024	140
10/07/2024	148
10/08/2024	145
Mean	144 mg/L

The following table presents the average concentrations and loadings at Outfall 002 from September 2020 to September 2025 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameters with Effluent Limits

	Average Measurement	Average Mass Discharged
BOD_5	12 mg/L	-
TSS	18 mg/L	-
pH field	7.3 s.u.	-
Ammonia Nitrogen	2.4 mg/L	-
Phosphorus	3.3 mg/L	5.7 lbs/day

PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99th percentile (or P_{99}) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. If fewer than 11 detected results are available, the mean effluent concentration exceeds 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

Acute Limits based on 1-Q_{10}

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q_{10} receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{Qe}$$

Where:

WQC =Acute toxicity criterion or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Qs = average minimum 1-day flow which occurs once in 10 years (1-day Q_{10}) if the 1-day Q_{10} flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q_{10}).

Qe = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

Cs = Background concentration of the substance (in units of mass per unit volume) as specified in

s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q_{10} method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is not the case for Sextonville Sanitary District #1 WWTF and the limits are set based on two times the acute toxicity criteria.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling for all the detected substances. All concentrations are expressed in terms of micrograms per Liter (µg/L), except for hardness and chloride (mg/L).

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 22 cfs, (1-Q_{10} (estimated as 80% of 7-Q_{10})), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. mg/L	ATC	MAX. EFFL. LIMIT*	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Chlorine		19	38	7.6			
Arsenic		340	680	136	3.9		
Cadmium	187	21	42	8.5	<0.17		
Chromium	187	3,011	6,021	1,204	<3.3		
Copper	187	28	56	11	2.0		4.2
Lead	187	196	392	78	<5.4		
Nickel	187	797	1,594	319	<4.7		
Zinc	187	208	416	83	<2.0		
Chloride (mg/L)		757	1,514	303	144		148

* The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q_{10} flow rates per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 7 cfs (¼ of the 7-Q_{10}), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD.* mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Chlorine		7.3		94	19		
Arsenic		152		11,082	2216	3.9	
Cadmium	175	3.82	0.08	272	55	<0.17	
Chromium	234	265	3.00	19,083	3817	<3.3	
Copper	234	21	3.50	1,308	262	2.0	
Lead	234	64		4,637	927	<5.4	
Nickel	234	107		7,802	1,560	<4.7	
Zinc	234	253		18,434	3,687	<2.0	
Chloride (mg/L)		395	4.90	28,409	5,682	144	

* The indicated hardness may differ from the receiving water hardness because the receiving water hardness exceeded the maximum range in ch. NR 105, Wis. Adm. Code, over which the chronic criteria are applicable. In that case, the maximum of the range is used to calculate the criterion.

Monthly Average Limits based on Wildlife Criteria (WC)

The effluent characterization did not include any effluent sampling results for substances for which Wildlife Criteria exist.

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 12.1 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370	0.08	46,288	9,258	<0.17
Chromium (+3)	3,818,000	3.00	477,748,392	95,549,678	<3.3
Lead	140	-	17,518	3,504	<5.4
Nickel	43,000	-	5,380,617	1,076,123	<4.7

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 12.1 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3	-	1,664	333	3.9

Conclusions and Recommendations

Based on a comparison of the effluent data and calculated effluent limitations, **effluent limitations are not required, but chloride monitoring is recommended.** Limits and/or monitoring recommendations are made in the paragraphs below:

Copper – Considering available effluent data from the current permit term October 2024 to November 2024, the mean concentration is 2.0 µg/L, with a maximum concentration of 4.2 µg/L. The maximum effluent concentration and the mean of the effluent data do not exceed the calculated daily maximum limit, **therefore concentration and mass limits, as well as monthly monitoring, are not required.**

Chloride – Considering available effluent data from the current permit term October 2024 the mean chloride concentration is 144 mg/L.

These effluent concentrations are below the calculated WQBELs for chloride, **therefore no effluent limits are needed. Chloride monitoring is recommended to ensure that 11 sample results are available at the next permit issuance to meet the data requirements of s. NR 106.85, Wis. Adm. Code**.

Mercury – The permit application did not require monitoring for mercury because the Sextonville Sanitary District #1 WWTF is categorized as a minor facility as defined in s. NR 200.02(8), Wis. Adm. Code. In accordance with s. NR 106.145(3)(a)3, Wis. Adm. Code, a minor municipal discharger shall monitor, and report results of influent and effluent mercury monitoring once every three months if, "there are two or more exceedances in the last five years of the high-quality sludge mercury concentration of 17 mg/kg specified in s. NR 204.07(5), Wis. Adm. Code." A review of the past five years of sludge characteristics data reveals that the sample result is within expected analytical range and well below the

17 mg/kg level. The concentration in the sludge from June 29, 2021 was 0.13 mg/kg. **Therefore, no mercury monitoring is recommended at Outfall 002.**

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code.

Based on the type of discharge, effluent flow rate, and nondetectable levels of PFOS/PFOA in the source water **PFOS and PFOA monitoring is not recommended.**

The Department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. The current permit has daily maximum limits. These limits are re-evaluated at this time due to the following changes:

- Subchapter IV of ch. NR 106, Wis. Adm. Code allows limits based on available dilution instead of limits set to twice the acute criteria.
- Section NR 106.07(3), Wis. Adm. Code requires weekly and monthly average limits for municipal treatment plants.
- The maximum expected effluent pH has changed

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)
Daily maximum limitations are based on acute toxicity criteria in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The acute toxicity criterion (ATC) for ammonia is calculated using the following equation:

$$ATC \text{ in mg/L} = [A \div (1 + 10^{(7.204 - pH)})] + [B \div (1 + 10^{(pH - 7.204)})]$$

Where:

A = 0.411 and B = 58.4 for a Warm Water Sport fishery, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 135 sample results were reported from October 2020 to April 2025. The maximum reported value was 8.4 s.u. (Standard pH Units). The effluent pH was 8.4 s.u. or less 99% of the time. The 1-day P_{99}, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 8.2 s.u. The mean plus the standard deviation multiplied by a factor of 2.33, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 8.2 s.u. Therefore, a value of 8.4 s.u. is believed to represent the maximum reasonably expected pH, and therefore most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 8.4 s.u. into the equation above yields an ATC = 3.9 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method
In accordance with s. NR 106.32(2), Wis. Adm. Code daily maximum ammonia limitations are calculated using the 1-Q_{10} receiving water low flow if it is determined that the previous method of acute ammonia

limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q_{10} (estimated as 80 % of 7-Q_{10}) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit mg/L
2×ATC	7.8
1-Q_{10}	882

The 2×ATC method yields the most stringent limits for Sextonville Sanitary District #1 WWTF.

The current permit has variable daily maximum effluent limits based on effluent pH. Presented below is a table of daily maximum limitations corresponding to various effluent pH values.

Daily Maximum Ammonia Nitrogen Limits – WWSF

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
6.0 ≤ pH ≤ 6.1	108	7.0 < pH ≤ 7.1	66	8.0 < pH ≤ 8.1	14
6.1 < pH ≤ 6.2	106	7.1 < pH ≤ 7.2	59	8.1 < pH ≤ 8.2	11
6.2 < pH ≤ 6.3	104	7.2 < pH ≤ 7.3	52	8.2 < pH ≤ 8.3	9.4
6.3 < pH ≤ 6.4	101	7.3 < pH ≤ 7.4	46	8.3 < pH ≤ 8.4	7.8
6.4 < pH ≤ 6.5	98	7.4 < pH ≤ 7.5	40	8.4 < pH ≤ 8.5	6.4
6.5 < pH ≤ 6.6	94	7.5 < pH ≤ 7.6	34	8.5 < pH ≤ 8.6	5.3
6.6 < pH ≤ 6.7	89	7.6 < pH ≤ 7.7	29	8.6 < pH ≤ 8.7	4.4
6.7 < pH ≤ 6.8	84	7.7 < pH ≤ 7.8	24	8.7 < pH ≤ 8.8	3.7
6.8 < pH ≤ 6.9	78	7.8 < pH ≤ 7.9	20	8.8 < pH ≤ 8.9	3.1
6.9 < pH ≤ 7.0	72	7.9 < pH ≤ 8.0	17	8.9 < pH ≤ 9.0	2.6

Section NR 106.33(2), Wis. Adm. Code, was updated effective September 1, 2016. As a result, seasonal 20 and 40 mg/L thresholds for including ammonia limits in municipal discharge permits are no longer applicable under current rules. **As such, the table has been expanded from the table in the current permit to included ammonia nitrogen limits throughout the pH range.**

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)
Weekly and monthly average limits for the months of are not included in the current permit but are being evaluated here due to changes to ch. NR 106, Wis. Adm. Code. **The weekly and monthly average ammonia nitrogen limits calculation from the previous memo for the months of April – May and October – November do not change** because there have been no changes in the effluent and receiving water flow rates, but an evaluation of May and December is needed as the Sextonville Wastewater Treatment Facility discharges during these months. The calculations from the previous WQBEL memo are shown in attachment #2.

The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as a Warm Water Sport Fish Community is calculated by the following equation, according to subchapter IV of NR 106, Wis. Adm. Code.

$$CTC = E \times \{[0.0676 \div (1 + 10^{(7.688 - pH)})] + [2.912 \div (1 + 10^{(pH - 7.688)})]\} \times C$$

Where:

pH = the pH (s.u.) of the receiving water,
E = 0.854,
C = the minimum of 2.85 or $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Present), or
C = $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Absent), and
T = the temperature (ºC) of the receiving water – (Early Life Stages Present), or
T = the maximum of the actual temperature (ºC) and 7 - (Early Life Stages Absent)

The 4-day criterion is equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q_{10} (4-Q_3, if available) to derive weekly average limitations. And the 30-day criteria are used with the 30-Q_5 (estimated as 85% of the 7-Q_2 if the 30-Q_5 is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature; 100% of the flow is used if the Temperature ≥ 16 ºC, 25% of the flow is used if the Temperature < 11 ºC, and 50% of the flow is used if the Temperature ≥ 11 ºC but < 16 ºC.

Section NR 106.32 (3), Wis. Adm. Code, provides a mechanism for less stringent weekly average and monthly average effluent limitations when early life stages (ELS) of critical organisms are absent from the receiving water. This applies only when the water temperature is less than 14.5 ºC, during the winter and spring months. Burbot, an early spawning species, are believed to be present in the Willow Creek, based on raw fish data in the Fisheries Management Information System. So "ELS Absent" criteria apply from October through March, and "ELS Present" criteria will apply from April through September for a WWSF classification.

The "default" basin assumed values are used for Temperature, pH and background ammonia concentrations, because minimum ambient data is available. These values are shown in the table below, with the resulting criteria and effluent limitations.

Weekly and Monthly Ammonia Nitrogen Limits – WWSF

		Summer	Winter
		June	December
Effluent Flow	Qe (MGD)	0.38	0.38
Background Information	7-Q_{10} (cfs)	22	22
	7-Q_2 (cfs)	28	28
	Ammonia (mg/L)	0.06	0.085
	Temperature (°C)	19	2
	Maximum Temperature (°C)	19	2
	pH (s.u.)	8.09	8.06
	% of Flow used	100	25
	Reference Weekly Flow (cfs)	28	7

Attachment #1

		Summer	Winter
		June	December
	Reference Monthly Flow (cfs)	29	7
Criteria mg/L	4-day Chronic		
	Early Life Stages Present	4.0	-
	Early Life Stages Absent	-	9.0
	30-day Chronic		
	Early Life Stages Present	1.6	-
	Early Life Stages Absent	-	3.6
Effluent Limitations mg/L	Weekly Average		
	Early Life Stages Present	191	-
	Early Life Stages Absent	-	115
	Monthly Average		
	Early Life Stages Present	77	-
	Early Life Stages Absent	-	47

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)
Weekly and monthly average limits are not included in the current permit but are being evaluated here due to changes to ch. NR 106, Wis. Adm. Code. **The weekly and monthly average ammonia nitrogen limits calculation from the previous memo do not change** because there have been no changes in the effluent and receiving water flow rates. The months of June rand December were not previously evaluated. The evaluations for June and December are above, and there is no reasonable potential for either month. The calculations from the previous WQBEL memo are shown in attachment #2.

Effluent Data
The following table evaluates the statistics based upon ammonia data reported from October 2020 to April 2025. The facility is a seasonal discharger

Ammonia Nitrogen Effluent Data

Ammonia Nitrogen mg/L	
1-day P_{99}	12
4-day P_{99}	6.4
30-day P_{99}	3.3
Mean*	2.0
Std	2.5
Sample size	21
Range	0.12 - 8.2

*Values lower than the limit of detection were substituted with a zero

Reasonable Potential
The permit currently has daily maximum limits year-round. The evaluations for June and December are above, and there is no reasonable potential for either month. There is no reasonable potential for the limits carried over from the previous permit term. Where there are existing ammonia nitrogen limits in the permit, **the limits must be retained regardless of reasonable potential, consistent with s. NR 106.33(1)(b), Wis. Adm. Code:**

(b) If a permittee is subject to an ammonia limitation in an existing permit, the limitation shall be included in any reissued permit. Ammonia limitations shall be included in the permit if the permitted facility will be providing treatment for ammonia discharges.

Conclusions and Recommendations

In summary, after rounding to two significant figures, the following ammonia nitrogen limitations are recommended. Sections NR 106.07(3) and NR 205.067(7), Wis. Adm. Code require WPDES permits contain weekly average and monthly average limitations for municipal dischargers whenever practicable and necessary to protect water quality. **Therefore, as this is a noncognitions discharge, additional limits not required** to meet expression of limits requirements. No mass limitations are recommended in accordance with s. NR 106.32(5), Wis. Adm Code.

Final Ammonia Nitrogen Limits

	Daily Maximum mg/L	Weekly Average mg/L	Monthly Average mg/L
Year round	Variable	-	-

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

Section NR 102.04(5), Wis. Adm. Code, states that all surface waters shall be suitable for supporting recreational use and shall meet *E. coli* criteria during the recreation season. Section NR 102.04(5)(b), Wis. Adm. Code, allows the Department to make exceptions when it determines, in accordance with s. NR 210.06(3), Wis. Adm. Code, that wastewater disinfection is not required to meet E. coli limits and protect the recreational use. Section NR 210.06(3), Wis. Adm. Code, tasks the Department with determining the need for disinfection using a site-specific analysis based on potential risk to human or animal health. It sets out the factors that must be considered in determining the necessity to disinfect municipal wastewater or to change the length of the disinfection season.

Except in extenuating circumstances, the discharge of wastewater to surface water from a treatment system with a detention time of 180 days or longer does not pose a risk to human and animal health as described in s. NR 210.06(3)(h), Wis. Adm. Code. The maximum 180-day rolling average flowrate for the facility is 0.07 MGD (September 2020– September 2025) including days discharge did not occur. The volumetric capacity of the lagoons is approx. 11.8 MG, based on dimensions provided by Sextonville Sanitary District #1 WWTF in the permit application included in attachment #3. Therefore, the estimated shortest detention time for the facility **is approximately 11.8 MG / 0.07 MGD = 163 days and is less than the 180-day minimum, therefore, disinfection is required May through September.**

Section NR 210.06(2)(a)1, Wis. Adm. Code, includes two limits which must be included in permits for facilities:
1. The geometric mean of E. coli bacteria in effluent samples collected in any calendar month may not exceed 126 counts/100 mL.
2. No more than 10 percent of E. coli bacteria samples collected in any calendar month may exceed 410 counts/100 mL.

These limits are required during May through September. **Monitoring should be conducted at a minimum of weekly for the disinfection season during the permit term. Since this is a new limit, a compliance schedule may be included in the permit.**

Total Residual Chlorine – **If Sextonville Sanitary District #1 Wastewater Treatment Facility decides to upgrade to use chlorination for disinfection, effluent limitations would be recommended to assure proper operation of the de-chlorination system.** Section NR 210.06(2)(b), Wis. Adm. Code, states, "When chlorine is used for disinfection, the daily maximum total residual chlorine concentration of the discharge may not exceed 0.10 mg/L." Because the WQBELs are more restrictive, they are recommended instead. Specifically, **a daily maximum limit of 38 µg/L would be required if Sextonville Sanitary District #1 Wastewater Treatment Facility decides to use chlorination for disinfection.** Due to revisions to s. NR 106.07(2), Wis. Adm. Code, mass limitations are no longer required.

Sections NR 106.07(3) and NR 205.067(7), Wis. Adm. Code require WPDES permits contain weekly average and monthly average limitations for municipal dischargers whenever practicable and necessary to protect water quality. **Therefore, as this is a noncognitions discharge, additional limits not required** to meet expression of limits requirements.

PART 5 – PHOSPHORUS

Technology-Based Effluent Limit
Subchapter II of Chapter NR 217, Wis. Adm. Code, requires municipal wastewater treatment facilities that discharge greater than 150 pounds of total phosphorus per month to comply with a monthly average limit of 1.0 mg/L, or an approved alternative concentration limit.

Since Sextonville Sanitary District #1 WWTF has phosphorus limits in effect that are more stringent than 1.0 mg/L, the need for a TBEL will not be considered further.

In addition, the need for a WQBEL for phosphorus must be considered.

Water Quality-Based Effluent Limits (WQBEL)
Revisions to administrative rules regulating phosphorus took effect on December 1, 2010. These rule revisions include additions to s. NR 102.06, Wis. Adm. Code, which establish phosphorus standards for surface waters. Subchapter III of NR 217, Wis. Adm. Code, establishes procedures for determining WQBELs for phosphorus, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.075 mg/L applies for Willow Creek.

The conservation of mass equation is described in s. NR 217.13(2)(a), Wis. Adm. Code, for phosphorus WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream phosphorus concentrations (Cs) provided below.

$$\text{Limitation} = [(WQC)(Qs+(1-f)\ Qe) - (Qs-f\ Qe)\ (Cs)]/Qe$$

Where:

WQC = 0.075 mg/L for Willow Creek
Qs = 100% of the 7-Q_2 of 34 cfs
Cs = background concentration of phosphorus in the receiving water pursuant to s. NR 217.13(2)(d), Wis. Adm. Code
Qe = effluent flow rate = 0.380 MGD = 0.588 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

Section NR 217.13(2)(d), Wis. Adm. Code, specifies that the background phosphorus concentration used in the limit calculation formula shall be calculated as a median using the procedures specified in s. NR 102.07(1)(b) to (c), Wis. Code. All representative data from the most recent 5 years shall be used, but data from the most recent 10 years may be used if representative of current conditions.

A previous evaluation resulted in a WQBEL of 0.075 mg/L using a background concentration of 0.119 mg/L, by calculating the mean of two background concentration medians, 0.110 mg/L and 0.139 mg/L. Section NR 217.13(2)(d), Wis. Adm. Code, states that the determination of upstream concentrations shall be evaluated at each permit reissuance. Additional data were considered in estimating the background phosphorus concentration.

A review of all available in stream total phosphorus data from April 2006 to October 2020 stored in the Surface Water Integrated Monitoring System database indicates the median background total phosphorus concentration in Little Willow Creek at Little Willow at Spiral Rd. (SWIMS station ID 10012231) and Pine River at Pine River at STH 60 (SWIMS station ID 10031637) is 0.117 mg/L. The phosphorus concentration of 0.117 mg/L was found by taking the mean of both station median values.

In stream total phosphorus data upstream of the discharge is not available however the following data were considered in estimating the background phosphorus concentration:

SWIMS ID	10012231	10031637
Station Name	Monitoring station at Little Willow at Spiral Rd.	Monitoring station at Pine River at STH 60
Waterbody	Little Willow Creek	Pine River
Sample Count	8	16
First Sample	04/04/2006	10/20/2010
Last Sample	08/28/2017	10/19/2020
Mean	0.233 mg/L	0.136 mg/L
Median	0.100 mg/L	0.134 mg/L

Substituting a background concentration above criteria into the limit calculation equation above would result in a calculated limit that is less than the applicable criterion of 0.075 mg/L. However, s. NR 217.13(7), Wis. Adm. Code, specifies that "if the WQBEL calculated pursuant to the procedures in this section is less than the phosphorus criterion specified in s. NR 102.06, Wis. Adm. Code, for the water body, the effluent limit shall be set equal to the criterion."

The facility may opt to sample the receiving water upstream of the outfall. The WQBEL may be amended if background phosphorus stream data, collected during the period of May – October and with regards to other stipulations laid out in s. NR 217.13(2)(d), Wis. Adm. Code, is submitted to the department that shows the upstream concentration of Total Phosphorus is in fact less than the applicable criterion. For informational purposes only, the following table shows a range of limits based on possible background concentrations. This calculation is based on effluent flow 0.380 MGD and stream flow (7-Q_2) of 34 cfs at the criterion of 0.075 mg/L in accordance with s. NR 217.13(2), Wis. Adm. Code.

Total Phosphorus Background Concentrations & Limits

Upstream 'Concentrations' mg/L	Corresponding P Limit mg/L
0.04	2.1
0.05	1.5
0.06	0.94
0.07	0.36
> = 0.075	0.075

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from September 2020 to September 2025.

Attachment #1

Total Phosphorus Effluent Data

	Phosphorus mg/L
1-day P_{99}	7.5
4-day P_{99}	5.1
30-day P_{99}	3.9
Mean	3.3
Std	1.3
Sample size	103
Range	0.46 - 6.2

Reasonable Potential Determination
The discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion. The facility is currently operating the treatment facility to remove phosphorus and meet the WQBELs. Therefore, **the WQBELs are required to continue in the reissued permit per ss. NR 217.15 and 205.067(5), Wis. Adm. Codes.**

Limit Expression
According to s. NR 217.14(2), Wis. Adm. Code, because the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of 0.075 mg/L may be expressed as a six-month average. If a concentration limitation expressed as a six-month average is included in the permit, a monthly average concentration limitation of 0.225 mg/L equal to three times the WQBEL calculated under s. NR 217.13, Wis. Adm. Code shall also be included in the permit.

Mass Limits
A mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code, because the discharge is to a surface water that is to or upstream of a phosphorus impaired water, the Wisconsin River. **This final mass limit shall be 0.075 mg/L × 8.34 × 0.380 MGD = 0.238 lbs/day expressed as a six-month average.**

Water Quality Trading Minimum Control Level
A WQT plan has been submitted as an alternative compliance option to offset any total phosphorus discharged from Outfall 002 that exceed the phosphorus WQBELs. The phosphorus WQBELs may be expressed as computed compliance limits, but a MCL must be set as a limit not to be exceeded at the outfall location. **The current limit of 3.8 mg/L as a monthly average is recommended to continue throughout the next permit term.**

PART 6 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

Due to the amount of upstream flow available for dilution in the limit calculation (Qs:Qe >20:1), the lowest calculated limitation is 120° F (s. NR 106.55(6)(a), Wis. Adm. Code). The Qs:Qe ratio is 72:1, and therefore unlikely to cause any exceedance in the water quality criteria, therefore, **temperature limits and monitoring are not required.**

PART 7 – WHOLE EFFLUENT TOXICITY (WET)

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the *Whole Effluent Toxicity (WET) Program Guidance Document* (2022).

Guidance in Chapter 1.11 of the WET Guidance Document (WET Testing of Minor Municipal Discharges) was consulted. This is a minor municipal discharge (< 1.0 MGD) comprised solely of domestic wastewater, with no history of WET failures and no toxic compounds detected at levels of concern. **No WET testing is recommended** at this time because of the low risk in effluent toxicity.

Ammonia Nitrogen calculations from the October 30, 2014 WQBEL memo

The rules provide a mechanism for less stringent weekly average and monthly average effluent limitations when early life stages (ELS) of critical organisms are absent from the receiving water. This applies only when the water temperature is less than 14.5 ºC, during the winter and spring months. Burbot, an early spawning species, are not believed to be present in Willow Creek, based on conversations with local fisheries biologists. So "ELS Absent" criteria apply from October through March, and "ELS Present" criteria will apply from April through September.

Since minimal ambient data is available, the "default" basin assumed values are used for Temperature, pH and background ammonia concentrations, shown in the table below, with the resulting criteria and effluent limitations.

		April	May	Oct –Nov.
The following calculations are based on effluent pH of 9.0 s.u. and Qe =				
Background Information:	7-Q_{10} (cfs)	28	28	28
	7-Q_2 (cfs)	34	34	34
	Ammonia (mg/L)	0.06	0.06	0.05
	Temperature (°C)	9	17	9
	pH (s.u.)	7.97	8.21	7.97
	% of Flow used	100	25	25
	Reference Weekly Flow (cfs)	7	28	7
	Reference Monthly Flow (cfs)	7.225	28.9	7.225
Criteria mg/L:	4-Day Chronic			
	Early Life Stages Present	6.35	3.76	6.35
	Early Life Stages Absent	9.06	3.76	9.06
	30-Day Chronic			
	Early Life Stages Present	2.54	1.50	2.54
	Early Life Stages Absent	3.63	1.50	3.63
Effluent Limitations mg/L:	Weekly Average			
	Early Life Stages Present	156.61	357.23	156.84
	Early Life Stages Absent	224.14		224.38
	Monthly Average			
	Early Life Stages Present	63.69	143.89	63.93
	Early Life Stages Absent	91.53		91.78

Volumetric Capacity Information:

002-10.2 The detention time of the wastewater treatment system.

Except in extenuating circumstances, the discharge of wastewater to surface water from a treatment system with a detention time of 180 days or longer does not pose a risk to human and animal health. Department staff will evaluate the last permit term's worth of flow data to determine whether or not detention times are met.

002-10.2.1 Does the current treatment process consist of treatment lagoons?

- ● Yes (proceed with answering 10.2.2 and 10.2.3)
- ○ No

002-10.2.2 What is the total operating pond volume of the facility?

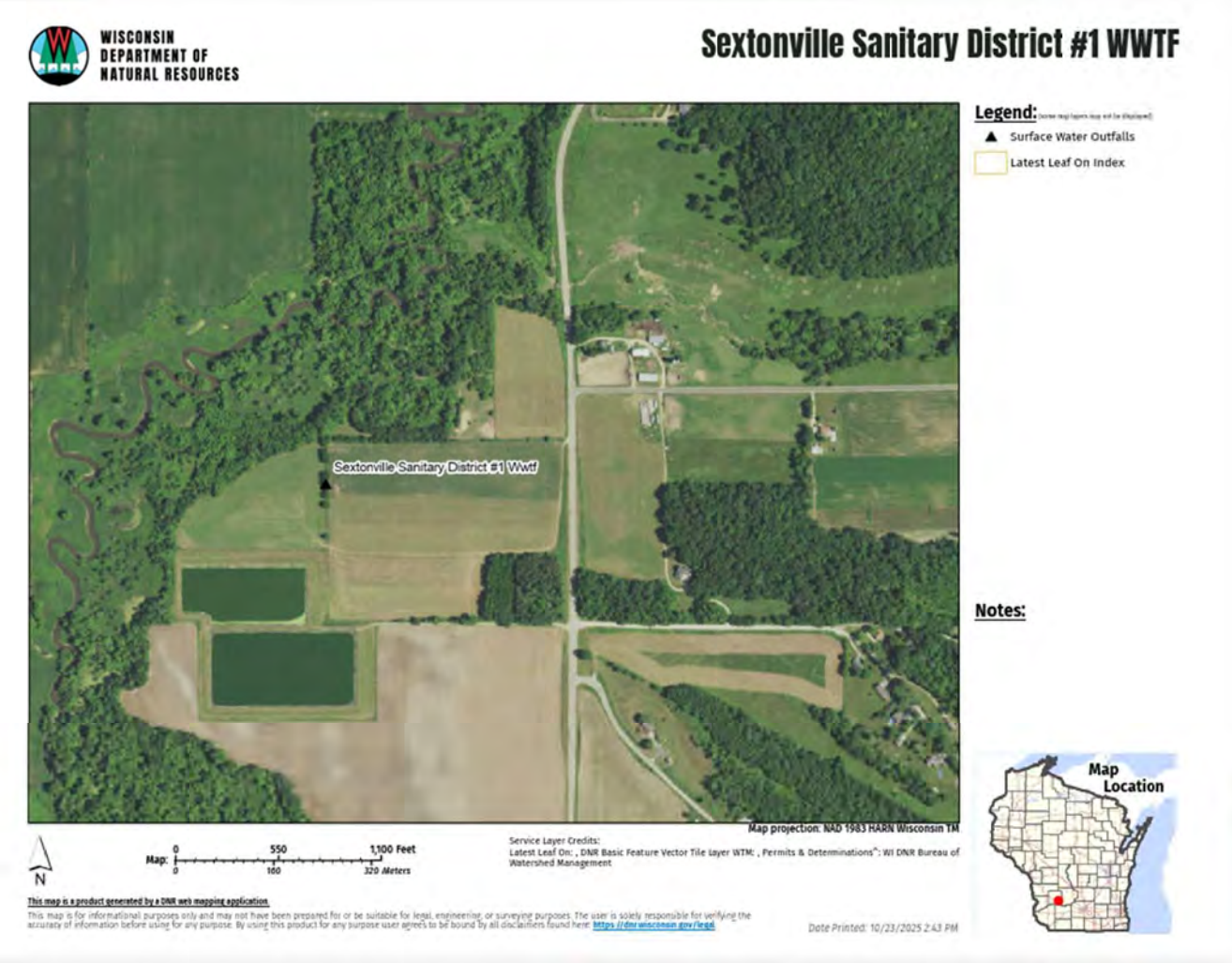
Primary Pond = 4,474,103 gallons
Secondary Pond = 7,298,161 gallons
Total = 11,772,264 gallons

002-10.2.3 Are there any other influent flows not accounted for in the daily flow results on the discharge monitoring reports (i.e. hauled in waste.)?

- ○ Yes (provide explanation and supporting documentation with the permit application)
- ● No

002-10.2.4 Is sufficient monitoring data available for E. coli in effluent? Monitoring data is needed for a

Site Map:


WISCONSIN
DEPARTMENT OF
NATURAL RESOURCES
Sextonville Sanitary District #1 WWTF
Legend:
Surface Water Outfalls
Latest Leaf On Index
Sextonville Sanitary District #1 Wwtf
Notes:
Map Location
Map projection: NAD 1983 HARN Wisconsin TM
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Map:
0
550
1,100 Feet
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320 Meters
Service Layer Credits:
Latest Leaf On: , DNR Basic Feature Vector Tile Layer WTM: , Permits & Determinations": WI DNR Bureau of Watershed Management
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Attachment #4

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg, WI 53711

Tony Evers, Governor
Karen Hyun, Ph.D., Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

November 06, 2025

Kirk Ghastin, SD President
Sextonville Sanitary District
P.O. Box 95
Sextonville, WI 53584

Subject: Sextonville Sanitary District #1 WWTF - WPDES Permit WI-0060038
Water Quality Trading Plan – CONDITIONAL APPROVAL

Dear Kirk Ghastin:

The Department recently received a water quality trading plan (WQT Plan) for compliance with phosphorus effluent limits at the Sextonville Sanitary District #1 WWTF. The initial plan was received in March of 2025 and updated versions were received in June and October of 2025. Based on WDNR review, the final WQT Plan (dated October 2025) is in general conformance with the WDNR Water Quality Trading Guidance and Section 283.84 of the Wisconsin Statutes. The WQT plan proposes to utilize streambank stabilization. Credit generation began in 2021, with the first permit term WQT approval (WQT-2020-0003). Credits generated from approved practices result in available credit quantities shown in Table 1. These credits will be incorporated into the reissued WPDES permit and will be used to demonstrate compliance with final phosphorus effluent limits.

Please note that this WQT plan approval is not to be construed as approval to commence work regulated under other state or local authorities, such as Chapter 30 waterways and wetlands permitting, floodplain, or construction activities.

Table 1: Total Phosphorus Credits Available per WQT-2025-0019

Year	Available Credits (lbs/yr) – Total
2026	602
2027	602
2028	602
2029	602
2030	602
2031	602

The Department conditionally approves the WQT Plan as a basis for water quality trading during the next WPDES permit term. The Department has assigned the WQT plan a tracking number of WQT-2025-0019 and will be referenced as such in the draft WPDES permit. The final WQT plan will be included as part of the public

notice package for permit reissuance. The draft WPDES permit will include a requirement for an annual trading report and effluent monitoring for total phosphorus.

If you have any questions or comments, please contact me at 608-419-4155 or at betsyjo.howe@wisconsin.gov.

Thank You,

BetsyJo Howe

BetsyJo Howe
SC Region WQT Coordinator
Wisconsin Department of Natural Resources

e-CC:

Dale Servais, Sextonville SD
Logan Hoppman, Delta 3 Engineering
Jordan Main, WDNR

WATER QUALITY TRADING PLAN

October 10, 2025

Sextonville Sanitary District #1
Wastewater Treatment Facility

WPDES Permit No. WI-0060038-09-0
County Trunk Highway 'B'
NWQ, NWQ, SEC 6, T9N, R2E, Buena Vista Township &
SWQ, SWQ SEC 31 Ithaca Township
Sextonville, Wisconsin

Prepared by:

Delta 3 Engineering, Inc.

875 S Chestnut St. | Platteville, WI 53818
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DELTA 3
EVERY ANGLE COVERED

Project Number: D17-181

TABLE OF CONTENTS

Attachments

I. Executive Summary -

This Water Quality Trading Plan summarizes the Sextonville Sanitary District #1's (District) plan to continue utilizing Water Quality Trading (WQT) for compliance with the final total phosphorus limit as provided in the Wisconsin Pollutant Discharge Elimination System (WPDES) Permit #WI 0060038-09-0. The Wastewater Treatment Facility (WWTF) treated 0.040 MGD in 2024. The WWTF had an average effluent Total Phosphorus (TP) concentration of 3.14 mg/L. The WWTF is required to offset utilize WQT Credits to satisfy the final annual six-month average TP limit of 0.075 mg/L and a monthly average TP limit of 0.225 mg/L, which became effective December 31, 2021

NRCS Streambank Erosion modeling methods were used to calculate the total phosphorus credits that would be generated based on the installation of best management practices (BMPs). These credits will be used to demonstrate compliance with the final total phosphorus limit as proposed in the WPDES Permit.

As demonstrated in modeling results from Table 1.1, the WWTF has the ability to register approximately 602 credits. The implementation of this WQT Plan will result in compliance with the final TP limits. The WWTF intends to monitor TP credit usage and intends to perform construction of additional BMPs as needed for future effluent TP to comply with WPDES Permits Limits. A new Water Quality Trading Plan will be submitted at that time for new BMP practices and credit production.

Table 1.1 – Modeling Results

Property Owner	Site	Current Phosphorus Loading (lbs/yr)	Proposed Phosphorus Loading (lbs/yr)	Proposed Phosphorus Reductions (lbs/yr)	Trade Ratio[1]	Proposed Phosphorus Credits
Rippchen	1	44	0	44	2.13:1	21
Servais[2]	1A	8	0	8	2.13:1	4
	2A	8	0	8	2.13:1	4
	3A	20	0	20	2.13:1	9
	4A	5	0	5	2.13:1	2
	5A	6	0	6	2.13:1	3
	1B	36	0	36	2.13:1	17
	2B	39	0	39	2.13:1	18
	3B	32	0	32	2.13:1	15
	4B	17	0	17	2.13:1	8
	5B	34	0	34	2.07:1	16
Ithaca Lions Club	1	51	0	51	2:1	26
McCormick	1	56	0	56	2.2:1	26
	2	72	0	72	2.2:1	33
	3	56	0	56	2.2:1	26
	4	77	0	77	2.2:1	35
	5	90	0	90	2.2:1	41
	6	302	0	302	2.2:1	137
Sextonville Sanitary District #1	1	103	0	103	2.2:1	47
	2	252	0	252	2.2:1	114
					Total	**602**

NOTE: Justification for Trade Ratio is provided below.

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habitat Adjustment):1

Delivery Factor = (1 / *Delivery Fraction*) – 1

Delivery Fraction = 1 – ((user del_frac – generator del_frac) / user del_frac)

Downstream = 0 (For trades upstream of Outfall 002)

Downstream = 0.2 (For trades downstream of Outfall 002)

Equivalency = 0 (Not necessary of Total Phosphorus)

Uncertainty:

1. *Streambank Stabilization with Habitat Restoration* = 2
2. *Description for Servais Sites:*
   A = North of Anderson Lane
   B = Old Grotophurst Property

II. Background -

The purpose of this Water Quality Trading Plan (Plan) is to describe the District's use of Water Quality Trading to comply with the total phosphorus limits as provided in District's WPDES Permit #WI-0060038-08-0. The Plan was developed following the Notice of Intent to Conduct Water Quality Trading, provided in Attachment #1, dated January 16, 2019. The Water Quality Trading Checklist Form 3400-208 is provided in Attachment #2.

The Sextonville Sanitary District #1 is located in Richland County adjacent to United States Highway (U.S.H.) '14' in southwestern Wisconsin. The District operates and maintains a public wastewater system that services Sextonville and Ithaca. The Sextonville Waterworks Sanitary District #1 operates and maintains the water distribution system in Sextonville, while Ithaca is serviced by private wells. The Sanitary District is located in Sections 5,6,7, and 8; Town 9 North, Range 2 East of the Fourth Principal Meridian. The District serves 160 residential users in Sextonville and 45 residential users in Ithaca.

The District is comprised mostly of commercial and residential development and is situated along Willow Creek. The District accepts wastewater from Ithaca. The District is between two ridges with the grade sloping throughout the area generally between 1% and 5%. Elevations in the area range from approximately 718'± at the Wastewater Treatment Facility (WWTF) to 745'± at the Ithaca School. The topography of the area is shown in Attachment #3.

The existing sanitary sewer collection system consists of post-1975 construction. The system consists of 37 sanitary sewer manholes; one (1) sanitary lift station; 11,930 feet of eight-inch (8") sanitary sewer; and 6,500 feet of four-inch (4") sanitary force main. The gravity sewer is composed primarily of concrete pipe. The manholes are composed of precast concrete structures. The District currently uses its CMOM Program for documenting operation and maintenance activities within the collection system.

The Sextonville Sanitary District #1 WWTF utilizes a fill & draw lagoon treatment system. The facility consists of a primary pond and secondary pond. Sludge accumulates at the bottom of the lagoons and is dredged intermittently. No chemicals are currently used at the WWTF for the removal of Phosphorus. The current WWTF treats 0.040 MGD on an annual average with a design flow of 0.063 MGD. Please see Attachment #4 for the WWTF flow schematic. The Sextonville Sanitary District #1's WWTF has one (1) receiving water and effluent discharge location, Outfall 002: Willow Creek (Willow Creek Watershed, LW12 – Lower Wisconsin River Basin).

The monthly average influent and effluent flows and loadings at the WWTF for 2024 are provided in Table 2.1. In addition, the average effluent flows and loadings at the WWTF from 2022 through 2024 are provided in Table 2.2.

Table 2.1 – 2024 Monthly Averages

Month	Outfall	Flow MGD Influent	Flow MGD Effluent	Phosphorus mg/L Effluent	Phosphorus lbs./day Effluent
Jan. (’24)	002	0.035	-	-	-
Feb. (’24)	002	0.035	-	-	-
Mar. (’24)	002	0.041	-	-	-
Apr. (’24)	002	0.038			
May (’24)	002	0.036	0.096	4.41	8.35
June (’24)	002	0.045	-	-	-
July (’24)	002	0.052	-	-	-
Aug. (’24)	002	0.038	-	-	-
Sept. (’24)	002	0.034	-	-	-
Oct. (’24)	002	0.035	0.177	4.30	6.72
Nov. (’24)	002	0.042	0.013	2.62	1.57
Dec. (’24)	002	0.051	-	-	-

Table 2.2 – 2022-2025 Annual Averages

Year	Outfall	Flow MGD Effluent	Discharge Days Effluent	Phosphorus mg/L Effluent	Phosphorus lbs./day Effluent	Phosphorus WQT Credits Used
2022	002	0.233	62	4.25	8.40	408.36
2023	002	0.188	46	2.91	5.13	219.87
2024	002	0.180	50	4.12	6.52	324.13

To reduce effluent TP, the District has made efforts to optimize TP reduction at the WWTF. The District has also implemented source reduction measures such as investigating potential TP contributors. In 2024, the month of May and October exceeded the interim limit of 3.8 mg/L. The District will continue to investigate options for TP removal at the WWTF.

Additionally, the District has investigated watershed compliance alternatives such as Water Quality Trading (WQT) and Adaptive Management (AM). Utilizing the results from PRESTO, the watershed of the WWTF has a nonpoint source ratio of 1:99 and is considered to be nonpoint-source dominated. The WDNR has performed stream monitoring on the Little Willow Creek at Spiral Road Station #10012231 which is upstream of the WWTF outfall. The results are demonstrated a median TP concentration of 0.16 mg/L. Following discussion with the County and initial investigation, the District elected to move forward with WQT. The District intends to perform WQT projects within the District’s HUC-10 #0707000510 as provided in Attachment #5. The Richland County Land Conservation Department (County) has been contacted and is actively implementing Projects and has provided funding for Projects.

The current required reduction of Total Phosphorus was approximately 324 lbs/yr which is only 54% of the available 602 WQT Credits. The District currently has adequate WQT Credits to offset discharges, but will want to investigate further effluent Total Phosphorus reduction and/or additional WQT Credits.

III. Location and Description of Credit Generation Sites –

The District discharges to the Willow Creek (Willow Creek Watershed, LW12-Lower Wisconsin River Basin) at Outfall 002. As mentioned previously, the District completed WQT projects within the District's HUC-10 #0707000510. The District implemented BMPs to generate TP credits. Specifically, Streambank stabilization occured along the banks of the Little Willow Creek and Willow Creek. See Figure 3-1 for additional project location information.

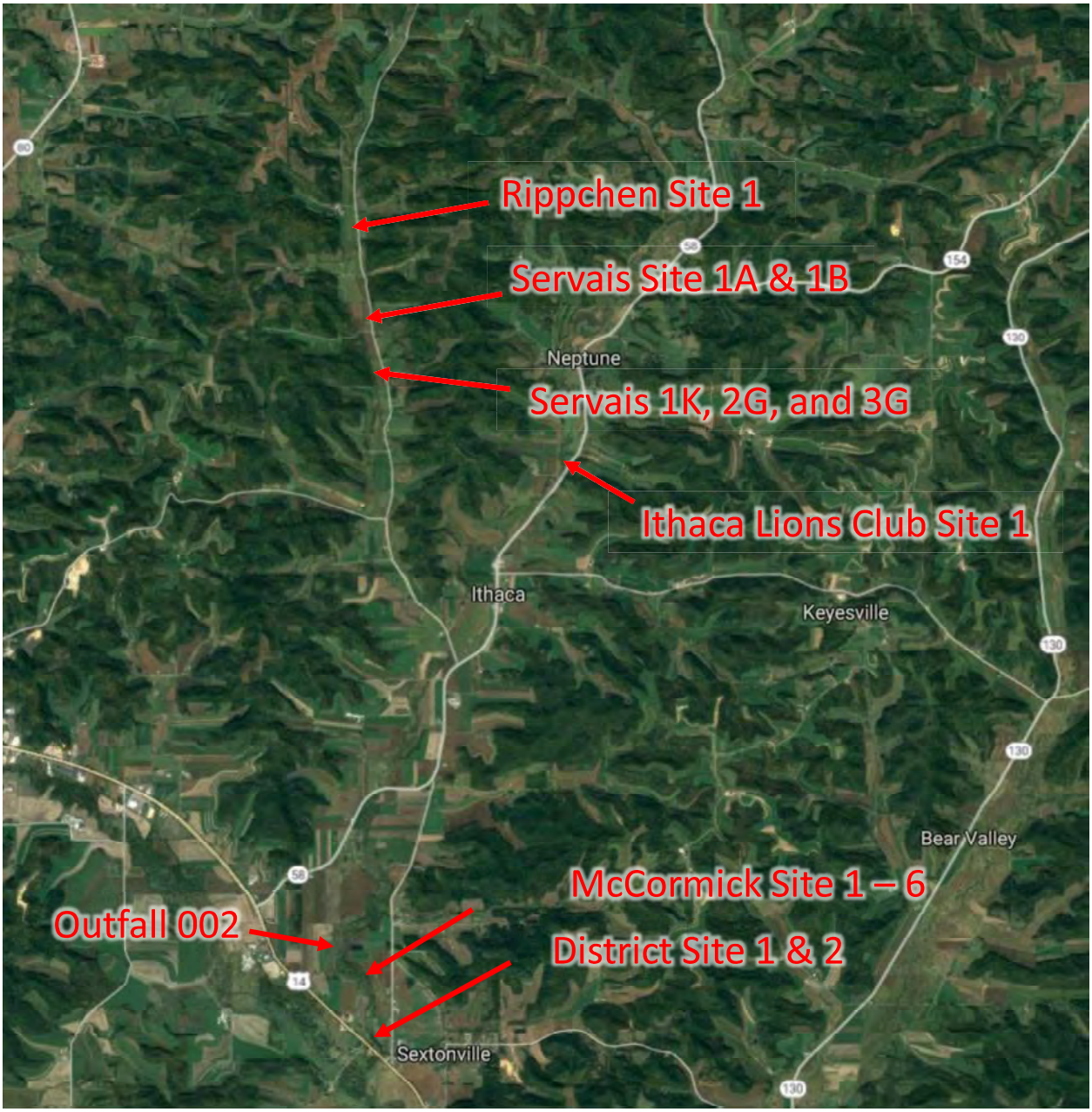


Figure 3-1 – Streambank stabilization locations in relation to Outfall 002.

IV. Methods for Nonpoint Source Load Reduction –

The Plan identifies trading practices that modeled reduction of TP runoff by more than 1,300 lbs and utilize a trade ratio ranging from 2:1 to 2.2:1 trade ratio for upstream and downstream trades. Downstream trade ratios were determined by Table 4.1 as provided by the Wisconsin DNR.

Table 4.1 – Downstream Trading Factor

Percent Difference Between Credit User's Load and Total Load at the Point of the Credit User's Point of Standards Application	Downstream Trading Factor
<25%	0.1
<50%	0.2
<75%	0.4
≥75%	0.8

Percent Difference = (1- (Qe x Ce) / (Qe x Ce + Qs x Cs)) x 100 = 46%
46% < 50%
Downstream Trading Factor = 0.2

Qs = Receiving water flow (7Q2) = 34 cfs
Qe = Effluent flow = 0.1774 MGD = 2 cfs
Cs = Background concentration of TP = 0.16 mg/L
Ce = Effluent concentration of TP = 3.14 mg/L

The WQT practices identified for this Water Quality Trading Plan has the ability to generate approximately 602 TP credits/year indefinitely as long as trading practices are maintained.

A. Methods Used to Generate Load Reductions

For streambank stabilization, District has the ability generate TP load reductions through streambank grading and riprapping of approximately 6,263' of streambank.

Ripchen Property =	190 feet
Servais Property =	1,470 feet
Ithaca Lions Club Property =	175 feet
McCormick Property =	3,028 feet
District Property =	1,400 feet
Total =	**6,263 feet**

Streambank Stabilization was performed as per NR 328 *Shore Erosion Control Structures in Navigable Waterways,* NRCS 580 *Streambank and Shoreline Protection*, and NRCS 395 *Stream Habitat Improvement and Management*. Streambank shaping and riprapping shall eliminate the discharge of sediment to the stream. The streambank stabilization project occurred within HUC-10 #707000510 in order to generate TP credits. Standard Plans and Specifications for the Project Sites have been provided by

the County. The County acquired all required permits and authorizations for the Projects.

To register credits, the District has entered into trade agreements with Property Owners pursuant to *s. 283.84(1)(b), Wis. Stats*. Additionally, the District has prepared a Water Quality Trade Agreement pursuant to *s. 283.84(1)(e), Wis. Stats.* between the Wisconsin DNR and Sextonville Sanitary District #1. The Water Quality Trade Agreement is provided in Attachment #5A. The agreement shall be executed upon approval of this Water Quality Trading Plan.

B. History of Project Site

The Project Sites are within the Willow Creek Watershed. The land is primarily agricultural grain fields with minimal native trees and vegetative cover. The streambanks have experienced significant erosion as the Willow Creek and Little Willow Creek have been developed and cleared for agricultural and residential use. The banks are predominately bare with some rills and vegetative overhang. Tree roots, fallen trees, and slumps are readily visible throughout the sites. The erosion indicators demonstrate the lateral recession rate is Severe. In consensus with the Richland County Conservationist, an average recession rate of 0.5 feet/year was utilized for modeling purposes.

C. Model Used to Derive Load Reductions

NRCS Streambank Erosion modeling methods were used to calculate the total phosphorus credits that would be generated based on the installation of BMPs. These credits will be used to demonstrate compliance with the final total phosphorus limit as proposed in the WPDES Permit. Modeling results are provided in Table 4.2. If the Plan or model inputs change during construction, the District will submit to the DNR the revised models and calculations to more accurately reflect and number of credits generated.

Table 4.2 – Modeling Results

Property Owner	Site	Current Phosphorus Loading (lbs/yr)	Proposed Phosphorus Loading (lbs/yr)	Proposed Phosphorus Reductions (lbs/yr)	Trade Ratio[1]	Proposed Phosphorus Credits
Rippchen	1	44	0	44	2.13:1	21
Servais[2]	1A	8	0	8	2.13:1	4
	2A	8	0	8	2.13:1	4
	3A	20	0	20	2.13:1	9
	4A	5	0	5	2.13:1	2
	5A	6	0	6	2.13:1	3
	1B	36	0	36	2.13:1	17
	2B	39	0	39	2.13:1	18
	3B	32	0	32	2.13:1	15
	4B	17	0	17	2.13:1	8
	5B	34	0	34	2.07:1	16
Ithaca Lions Club	1	51	0	51	2:1	26
McCormick	1	56	0	56	2.2:1	26
	2	72	0	72	2.2:1	33
	3	56	0	56	2.2:1	26
	4	77	0	77	2.2:1	35
	5	90	0	90	2.2:1	41
	6	302	0	302	2.2:1	137
Sextonville Sanitary District #1	1	103	0	103	2.2:1	47
	2	252	0	252	2.2:1	114
					Total	**602**

NOTE: Justification for Trade Ratio is provided below.

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habitat Adjustment):1

Delivery Factor = (1 / *Delivery Fraction*) – 1

Delivery Fraction = 1 – ((user del_frac – generator del_frac) / user del_frac)

Downstream = 0 (For trades upstream of Outfall 002)

Downstream = 0.2 (For trades downstream of Outfall 002)

Equivalency = 0 (Not necessary of Total Phosphorus)

Uncertainty:

3. *Streambank Stabilization with Habitat Restoration* = 2
4. *Description for Servais Sites:*
   A = North of Anderson Lane
   B = Old Grotophurst Property

Soil testing was completed to determine TP concentrations within the soil. Soil sampling was performed every 100 feet and included the use of a soil sampler which pulled ¾" cores at 8" depth. Approximately six (6) cores were taken at each sampling location to provide a representative sample. Soils maps and soil testing data is provided in Attachment #6. An onsite evaluation has been conducted to estimate stream bank recession rate. The streambank has also been evaluated in the

field by the Richland County Land Conservation Department. The data, narrative, and photos documenting the current state of eroding stream banks are provided in Attachment #7.

With the collected data, the NRCS Streambank Erosion Estimator was used to calculate TP loss from each reach of the eroding streambank. The modeling data for the NRCS Streambank Erosion Estimator is available in Attachment #8. The streambank grading and riprap design will eliminate streambank recession thus eliminating TP inputs due to streambank recession in riprap areas. For the Habitat Restoration portions of the WQT Plan, the District has worked with the County to incorporate habitat improvements into the Project Plans. Proposed habitat improvements were developed based on the information provided in the Wisconsin DNR *Total Maximum Daily Load: Little Willow Creek Richland County, WI.* This report stated the following:

"Sedimentation from stream bank erosion is the suspected cause of habitat degradation in Little Willow Creek. Fine sediments covering the stream substrate reduce suitable habitat for fish and other biological communities by filling in pools and reducing available cover for juvenile and adult fish. Sedimentation of riffle areas compromises reproductive success of fish communities by covering the gravel substrate necessary for spawning conditions. Field observations during 2006 and 2007 confirming heavy sedimentation occurring at Spiral Rd. and extending upstream approximately 1000 ft. can be linked to "poor" cold water IBI scores from 2005. The filling in of riffle areas also affects the fish communities' food source, macroinvertebrates, which have difficulty thriving in areas with predominately silt substrate as opposed to a substrate composed of gravel, cobble/rubble, and sand mixture. In addition, sedimentation can increase turbidity in the water column, causing reduced light penetration necessary for photosynthesis in aquatic plants, reduced feeding efficiency of visual predators and filter feeders, and a lower respiratory capacity of aquatic macroinvertebrates due to clogged gill surfaces. Sedimentation of the substrate can also cause an increase in other contaminant levels, such as nutrients, which are attached to sediment particles and transported into the stream during runoff events."

Similar to Little Willow Creek, Willow Creek has experienced agricultural development within the watershed and has issues caused by sedimentation which was included in Wisconsin DNR *Willow Creek Watershed (LW12)*. Both watersheds have also experienced reduction of large woody debris along the streambanks due to agricultural development which reduces available habitat and bank roughness. Streambank improvements reduce sediment which was identified as the #1 reason for habitat degradation in the Little Willow. The Project also implemented in-stream habitat structures such as lunkers, rock spurs, cross channel logs, and vortex weirs. These structures increase available cover for juvenile and adult fish. These structures also influence stream hydrology by creating pools and riffles which are stream formations essential to macroinvertebrates, fish, and other aquatic life. The quantity and location of habitat structures is provided in Table 4.3 below.

Table 4.3 – Habitat Structures

Property Owner	Lunkers	Rock Spurs	Cross Channel Logs	Vortex Weirs
Rippchen	3			
Servais A	4		1	2
Servais B	4		3	2
Ithaca Lions Club	3			
McCormick		3		
District		1		
Total	**14**	**4**	**4**	**4**

D. Operation and Maintenance

An Operation and Maintenance (O&M) Plan is provided in Attachment #9. The O&M plan describes how the Stream Stabilization Practices will be operated and maintained. The O&M Plan also addresses response procedures for Practice Registration, Noncompliance Notification, and Notification of Trade Agreement Termination.

As previously mentioned, District is planning to perform streambank stabilization by implementing BMPs along the Little Willow Creek and Willow Creek streambanks. The stabilization practices will be installed and maintained per the Richland County Land Conservation Department Plans and Specifications as provided in Attachment #10. BMPs are to follow NR 328 Shore Erosion Control Structures in Navigable Waterways, NRCS 580 Streambank and Shoreline Protection, and NRCS 395 Stream Habitat Improvement and Management. Restoration landscaping and seeding will be installed following construction and will be closely monitored for a minimum of two (2) growing seasons to ensure the new seeding grows and erosion is not prevalent. Weeds and invasive vegetation growth will be addressed if present. The riprap will be inspected following heavy rain events at a minimum. Inspection will be used to determine appropriate actions in order to maintain the riprap and vegetation for continuous and ongoing streambank stabilization and TP credit generation.

The BMPs will be inspected annually by a licensed Professional Engineer to ensure that the BMPs are functioning as intended in order to meet the requirements of this WQT Plan.

V. Trade Timeline –

Schedule for Installation of the above mentioned trading practices for Total Phosphorus Credit Generation for TP compliance is provided in Table 5.1 below.

Table 5.1 – Trade Timeline

Item	Completion Timeline
Site Investigation	Fall 2018 – Fall 2019
Conceptual Design	Spring 2019
Final Design	Summer - Fall 2019
Construction Permits	Summer - Fall 2019
DNR Review of Final Design	Fall 2019
Construction of BMPs	Fall 2019 – Summer 2020
Phosphorus Credit Registration	Summer 2020
Use of Phosphorus Credits by Sextonville Sanitary District #1 (Ongoing for Permit Compliance)	December 31, 2021

Credits have been used by the District beginning January 1, 2022. Credits will continue as long as the trading practices are maintained as outlined in this WQT Plan.

VI. Inspection Reporting –

A. Tracking Procedures

The District will track credits used monthly. The District will report credit usage to the DNR on a monthly basis in the Discharge Monitoring Reports (DMRs). The annual report will summarize the 12 months of credit usage and credit generation. The District will report to DNR any concern that they have that may result in a need to modify the trade agreement and/or this trade plan. For example, a need to generate additional credits based on discharge.

B. Inspection

Inspection of the BMPs shall occur during construction phase to ensure they are installed per the design and meet all applicable codes and permits. Once completed, inspections of the established BMPs shall occur each at a minimum biannually in the Spring and Fall. Operator shall check BMPs following heavy rain events. A licensed professional engineer will perform an annual certification to ensure the practice is performing as designed and the District remains in compliance.

The inspection reports will include:

i. Name and contact information of the inspector
ii. Inspection Date
iii. Relevant standards set forth in the Design Plan or Operation and Maintenance Plan
iv. Issues identified
v. When and how any issues identified were addressed
vi. When and how any issues identified will be addressed in the future
vii. Inspection photos of the BMP's (Spring and Fall)
viii. Vegetative and structural condition

Inspection reports generated during each inspection will be included with the Annual Water Quality Trading Report submitted by the District to DNR. Annual inspections by a professional engineer will typically occur in April or May. This time of year is ideal for evaluating the condition of BMPs as it follows the freeze/thaw which poses the greatest potential for changes to the BMPs. Minimal vegetation cover will allow for adequate visual inspection.

C. Management Practice Registration Form

The District will file a completed registration form 3400-207 for Water Quality Trading Management Practice Registration separately from this Plan.

D. Annual Water Quality Trading Report Submittal

The following shall be submitted to the DNR by January 31 of each year:

i. The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance;
ii. A summary of the annual inspection of the practice that generated any of the pollutant reduction credits used during the previous year, this

inspection shall be completed by a licensed Professional Engineer;

iii. All inspection reports;
iv. Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports;
v. A list of all noncompliance and the correction measures and timing to address the issues throughout the year; and
vi. An updated WQT plan if management practices have or will change.

E. Certification of Management Practices

Each month that WQT Credits are used, the District will certify that the BMPs are maintained and operating in a manner consistent with this Water Quality Trading Plan or provide a statement noting noncompliance with this Plan. The monthly Discharge Monitoring Report (DMR) will include the following statement as a certification of compliance when the Credit Generating Practice is operating in a manner consistent with the Plan:

> "I certify that to the best of my knowledge that the management practices identified in the approved water quality trading plan as the source of phosphorus credits is installed, established and properly maintained."

F. Notification of Failure to Generate Credits

The District will notify DNR by telephone call to DNR's regional wastewater compliance engineer within 24 hours or next business day of becoming aware that phosphorus credits used or intended for use by District are not being generated as outlined in this Water Quality Trading Plan.

The District will submit a written notification within five days after the District recognizes that the phosphorus credits are not being generated as outlined in the Trading Plan. DNR may waive the requirement for submittal for a written notice within five days and instruct the District to submit the written notice with the next regularly scheduled monitoring report required by District's WPDES Permit.

The written notice will contain a description of how and why the TP credits are not being generated as outlined in the Water Quality Trading Plan, the steps taken or planned to prevent reoccurrence of the identified problems and the length of time anticipated it will take to address the issue.

The District will work to rectify the problem as laid out in the Operation and Maintenance Plans.

G. Conditions under which Management Practices May Be Inspected

Any DNR authorized officer, employee, or representative has the right to access and inspect the credit generating practice so long as the District's trade agreement with the property owner(s) and this Water Quality Trading Plan remain in effect.

VII. Certification –

The undersigned hereby certifies that this Water Quality Trading Plan is accurate and correct to the best of his knowledge.

Sextonville Sanitary District #1 Wastewater Treatment Facility

By: Dale A. Servais

Dale Servais
WWTF Operator
Sextonville Sanitary District #1
28960 Pine Street
Sextonville, WI 53584
Telephone: (608) 604-8799
Email: servaisvalleyranch@hotmail.com

Attachment #1

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notice of Intent to Conduct Water Quality Trading

Form 3400-206 (1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
Sextonville Sanitary District #1	WI- 0060038-08-0	

Facility Address	City	State	ZIP Code
CTH B, NWQ, NWQ, SEC 6, T9N, R2E, Buena Vista TWP	Sextonville	WI	53584

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Bart Nies (Delta 3 Eng.)	875 South Chestnut Street	Platteville	WI	53818

Project Name

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Willow Creek	Total Phosphorus	070700051003

Is the permittee in a point or nonpoint source dominated watershed?
(See PRESTO results - http://dnr.wi.gov/topic/surfacewater/presto.html)

- ○ Point source dominated
- ◉ Nonpoint source dominated

Credit Generator Information

Credit generator type (select all that apply):

- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify:

Are any of the credit generators in a different HUC 12 than the applicant?

- ○ Yes; HUC 12:
- ◉ No
- ○ Unsure

Are any of the credit generators downstream of the applicant?

- ○ Yes
- ◉ No
- ○ Unsure

Will a broker/exchange be used to facilitate trade?

- ○ Yes; Name:
- ◉ No
- ○ Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

Discharge Type	Permit Number	Name	Contact Address	Is the point source credit generator currently in compliance with their permit requirements?
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure

Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Tillage Practices, Riparian Filter Strips, Grassed Waterways, Cover Crops, Stream bank stabilization, Bioretention, infiltration basin/tranch, Storm Water Sedimentation, Vegetated Infiltration Swales, Wet Detention Ponds, etc.

The District plans to implement site specific Best Management Practices (BMPs) in conjunction with SNAP-Plus, BARNY, and NRCS Erosion models to generate Phosphorus Trading Credits. The Sextonville Sanitary District has been in contact with four (4) local property owners within the District's HUC-12 Watershed that have verbally agreed to participate in WQT with the District. The trade agreement will therefore be from a non-point source to point source.

The following is a list of non-point source property owners that have verbally agreed to participate in WQT with the District:

1.) Francic Huebsch Jr.

2.) Ithaca Lions Club

3.) Alan Rippchen

4.) Dale Servais

Method for quantifying credits generated:
- ☐ Monitoring
- ☒ Modeling, Names: SNAP-Plus, BARNY, NRCS Erosion
- ☐ Other: _____

Projected date credits will be available: 12/31/2021

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer	Date Signed
Jordan Fuhrer	1/16/19

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Dale A. Servais	1-16-19

Attachment #2

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Checklist

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that intends to pursue pollutant trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
Sextonville Sanitary District #1	WI- 0060038	

Facility Address	City	State	ZIP Code
CTH B NWQ, NWQ, SEC 6, T9N, R2E, Buena Vista Township	Sextonville	WI	53584

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Dale Servais	28960 Pine St.	Sextonville	WI	53584

Project Name
Sextonville Sanitary District #1 - Water Quality Trading for Total Phosphorus

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Willow Creek	Total Phosphorus	0707000510

Credit Generator Information

Credit generator type (select all that apply):
- ☐ Permitted Discharge (non-MS4CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12: _____
- ◉ No

Are any of the credit generators downstream of the applicant?
- ○ Yes
- ◉ No

Will a broker/exchange be used to facilitate trade?
- ○ Yes *(include description and contact information in WQT plan)*
- ◉ No

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO)

Are each of the point source credit generators identified in this section in compliance with their WDPES permit requirements?
- ○ Yes
- ○ No

Discharge Type	Permit Number	Name	Contact Information	Trade Agreement Number
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO) *cont.*

Does plan have a narrative that describes:			Plan Section
a. Summary of discharge and existing treatment including optimization	○ Yes	○ No	
b. Amount of credit being generated	○ Yes	○ No	
c. Timeline for credits and agreements	○ Yes	○ No	
d. Method for quantifying credits	○ Yes	○ No	
e. Tracking and verification procedures	○ Yes	○ No	
f. Location of credit generator in proximity to receiving water and credit user	○ Yes	○ No	
g. Other: ______________________	○ Yes	○ No	

Point to Nonpoint Trades (Non-Permitted Urban, Agricultural, Other)

Discharge Type	Practices Used to Generate Credits	Method of Quantification	Trade Agreement Number	Have the practice(s) been formally registered?
○ Urban NPS ◉ Agricultural NPS ○ Other	Streambank Stabilization	NRCS Streambank Erosion Estimator	1 - 5	○ Yes ◉ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ◉ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part
○ Urban NPS ○ Agricultural NPS ○ Other				○ Yes ○ No ○ Only in part

Does plan have a narrative that describes:			Plan Section
a. Description of existing land uses	◉ Yes	○ No	Section IV
b. Management practices used to generate credits	◉ Yes	○ No	Section IV
c. Amount of credit being generated	◉ Yes	○ No	Section IV
d. Description of applicable trade ratio per agreement/management practice	◉ Yes	○ No	Section IV
e. Location where credits will be generated	◉ Yes	○ No	Section III
f. Timeline for credits and agreements	◉ Yes	○ No	Section V
g. Method for quantifying credits	◉ Yes	○ No	Section IV

Does plan have a narrative that describes:			Plan Section
h. Tracking procedures	◉ Yes	○ No	Section IV
i. Conditions under which the management practices may be inspected	◉ Yes	○ No	Section VI
j. Reporting requirements should the management practice fail	◉ Yes	○ No	Section VI
k. Operation and maintenance plan for each management practice	◉ Yes	○ No	Section IV
l. Location of credit generator in proximity to receiving water and credit user	◉ Yes	○ No	Section III
m. Practice registration documents, if available	○ Yes	◉ No	
n. History of project site(s)	◉ Yes	○ No	Section IV
o. Other: _____	○ Yes	○ No	

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed
Jordan Fine	9-2-19

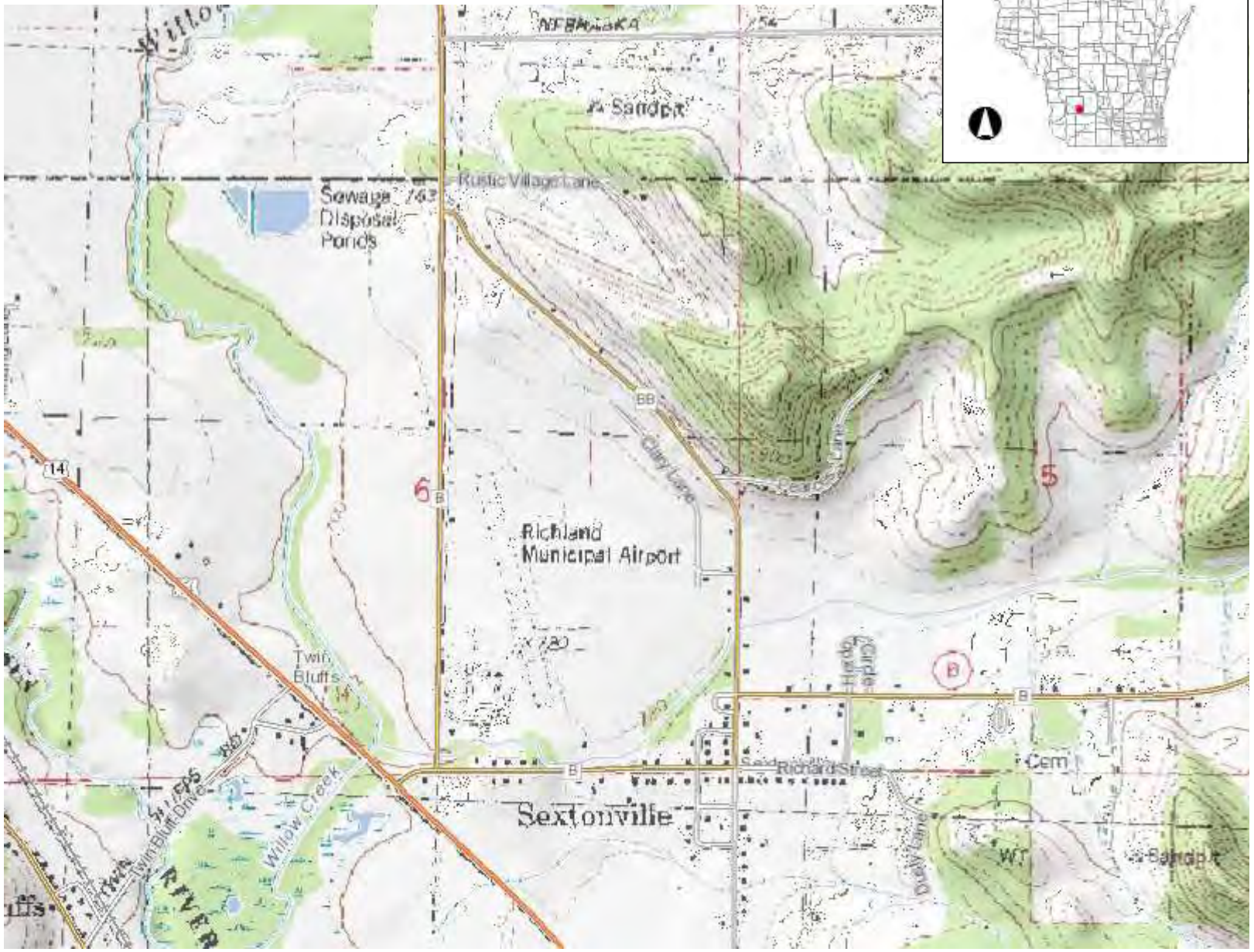
Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Dale A. Serwais	1-16-19

Attachment #3

Location Map



Legend

- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
- Index to EN_Image_Basemap_Leaf_Off

Notes

Exhibit #1 - Location Map

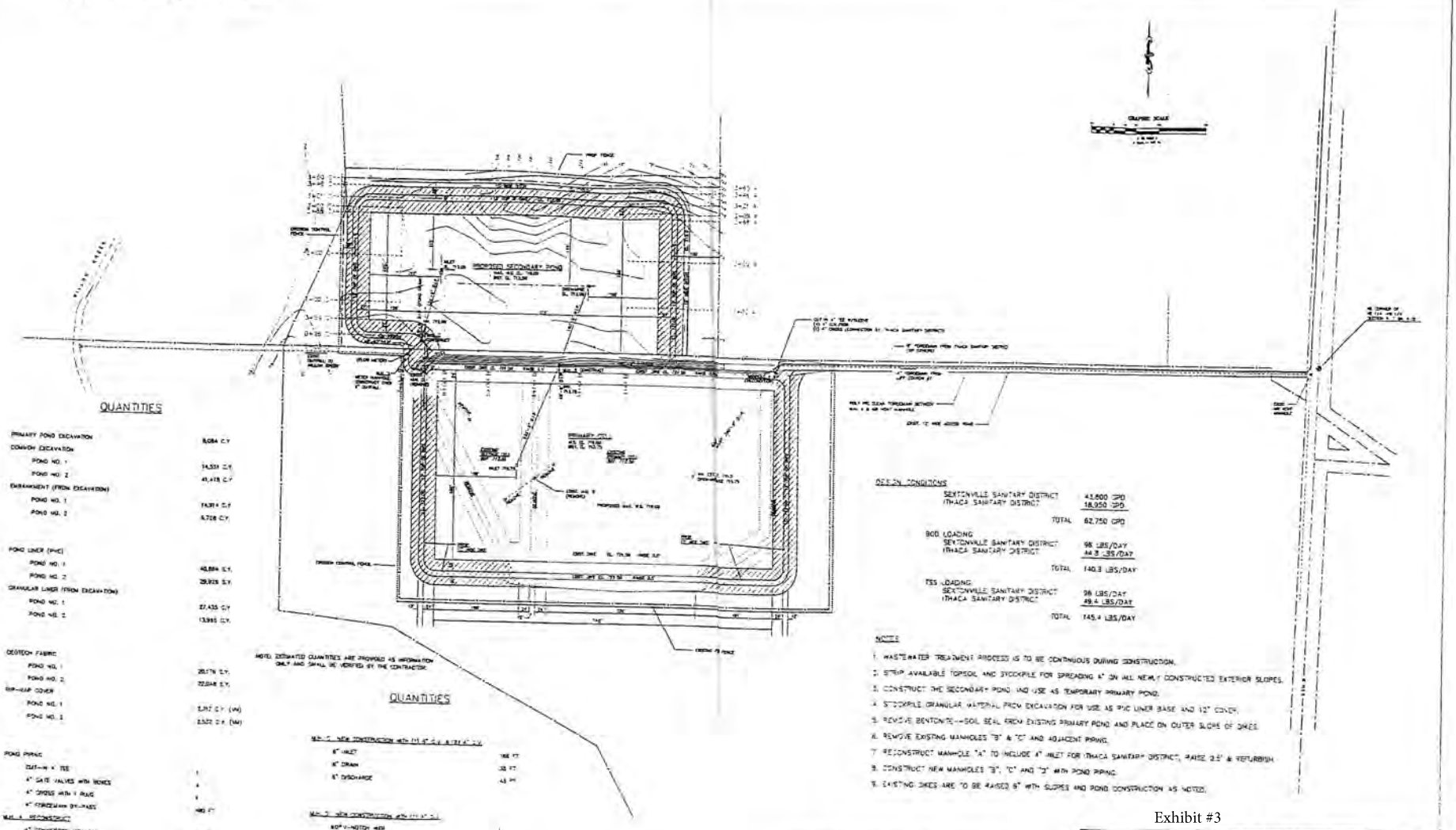
0.5 0 0.25 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

1: 15,840

Attachment #4

ATT. JORDAN FURE



QUANTITIES

PRIMARY POND EXCAVATION	8,084 C.Y.
COMMON EXCAVATION	
POND NO. 1	14,551 C.Y.
POND NO. 2	41,478 C.Y.
EMBANKMENT (FROM EXCAVATION)	
POND NO. 1	7,631 C.Y.
POND NO. 2	6,728 C.Y.
POND LINER (PVC)	
POND NO. 1	40,884 S.Y.
POND NO. 2	28,928 S.Y.
GRANULAR LINER (FROM EXCAVATION)	
POND NO. 1	27,435 C.Y.
POND NO. 2	13,995 C.Y.
GEOTECH FABRIC	
POND NO. 1	28,578 S.Y.
POND NO. 2	17,084 S.Y.
RIP-RAP COVER	
POND NO. 1	3,317 C.Y. (IN)
POND NO. 2	2,522 C.Y. (IN)
POND PIPING	
CUT-IN 'X' TEE	1
4" GATE VALVES WITH BOXES	4
4" CROSS WITH 'X' PLUG	1
4" HORIZONTAL BY-PASS	1
	440 FT.
MH. 4 RECONSTRUCT	
4" CONNECTION (ITHACA)	15 FT.
MH. 5 NEW CONSTRUCTION WITH (2) 6" GATE VALVES	
6" INLET	242 FT.
6" DRAIN	45 FT.
6" DISCHARGE	197 FT.

NOTE: ESTIMATED QUANTITIES ARE PROVIDED AS INFORMATION ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR.

QUANTITIES

MH. 1 NEW CONSTRUCTION WITH (1) 6" G.V. & (3) 4" G.V.	
6" INLET	188 FT.
6" DRAIN	32 FT.
6" DISCHARGE	43 FT.
MH. 2 NEW CONSTRUCTION WITH (1) 4" G.V.	
90° V-NOTCH WEIR	1
CUT-IN 6" TEE	2 FT.
LANDSCAPING SEED, FERTILIZER & MULCH	4.8 ACRES
EROSION CONTROLS	EST. 2,460 FT.
NEW FENCE	EST. 1,720 FT.
CRUSHED ROCK SURFACING	EST. 1,200 C.Y. (IN)
CLEAN 4" INLET SIPHON (APP. INVT MH. 1 TO MH. 4 = 1153 FT.)	LUMP SUM
PORTABLE FLOW METER & DRAWDOWN	LUMP SUM

SHADED AREAS REPRESENT RETURNED DIKES.

DESIGN CONDITIONS

	SEXTONVILLE SANITARY DISTRICT	43,800 GPD
	ITHACA SANITARY DISTRICT	18,950 GPD
	TOTAL	62,750 GPD
BOD LOADING		
	SEXTONVILLE SANITARY DISTRICT	98 LBS/DAY
	ITHACA SANITARY DISTRICT	44.8 LBS/DAY
	TOTAL	140.8 LBS/DAY
TSS LOADING		
	SEXTONVILLE SANITARY DISTRICT	98 LBS/DAY
	ITHACA SANITARY DISTRICT	49.4 LBS/DAY
	TOTAL	145.4 LBS/DAY

NOTES

1. WASTEWATER TREATMENT PROCESS IS TO BE CONTINUOUS DURING CONSTRUCTION.
2. STRIP AVAILABLE TOPSOIL AND STOCKPILE FOR SPREADING 4" ON ALL NEWLY CONSTRUCTED EXTERIOR SLOPES.
3. CONSTRUCT THE SECONDARY POND AND USE AS TEMPORARY PRIMARY POND.
4. STOCKPILE GRANULAR MATERIAL FROM EXCAVATION FOR USE AS PVC LINER BASE AND 12" COVER.
5. REMOVE BENTONITE-SOIL SEAL FROM EXISTING PRIMARY POND AND PLACE ON OUTER SLOPE OF DIKES.
6. REMOVE EXISTING MANHOLES "B" & "C" AND ADJACENT PIPING.
7. RECONSTRUCT MANHOLE "A" TO INCLUDE 4" INLET FOR ITHACA SANITARY DISTRICT, RAISE 2.5' & REFURBISH.
8. CONSTRUCT NEW MANHOLES "B", "C" AND "2" WITH POND PIPING.
9. EXISTING DIKES ARE TO BE RAISED 6" WITH SLOPES AND POND CONSTRUCTION AS NOTED.

Exhibit #3

DAVY ENGINEERING CO.
LA CROSSE - WISCONSIN

SITE PLAN
WASTEWATER TREATMENT FACILITY
SEXTONVILLE, WISCONSIN

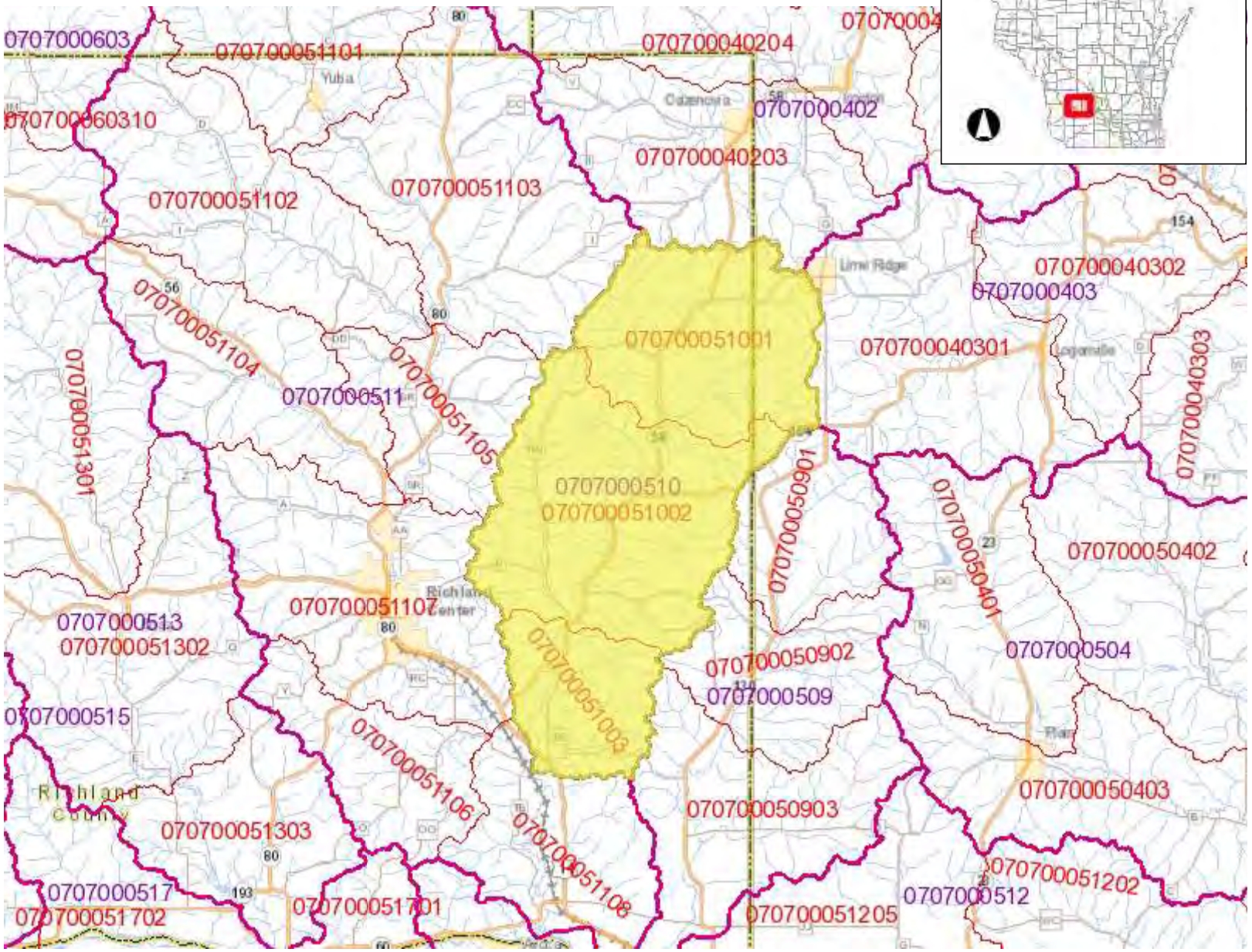
REVISIONS	DATE
	12/20/1996
	01/21/1997
	02/21/1997

MASTERDISK NO.	DATE	DRAWN	CHECKED	SCALE	SHEET
	11/12/1996	VS	RLH	1"=100'	2 OF 5

SITE PLAN WASTEWATER TREATMENT FACILITY SEXTONVILLE, WISCONSIN

Attachment #5

Watershed Map



Legend

- 12-digit HUCs (Subwatersheds)
- 10-digit HUCs (Watersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

Notes

8.0 0 4.00 8.0 Miles

NAD_1983_HARN_Wisconsin_TM

1: 253,440

Attachment #5A

Water Quality Trade Agreement between
Sextonville Sanitary District #1 and Wisconsin Department of Natural Resources

This Water Quality Trade Agreement (this "Agreement") is made by and between Sextonville Sanitary District #1 ("District") and the Wisconsin Department of Natural Resources ("the Department") and together "the Parties".

1. Recitals

a. Water quality trading is an alternative compliance option for Wisconsin Permit Discharge Elimination System ("WPDES") Permit holders and is authorized by Wis. Stat. § 283.84.

b. Wis. Stat. § 283.84(l)(e) provides that, "the [the Department] may authorize a person required to obtain a permit to increase the discharge of pollutants above levels that would otherwise be authorized in the permit if the person . . . reaches a binding, written agreement with [the Department] under which the person constructs a project or implements a plan that results in reducing the amount of water pollution from sources other than the source covered by the permit."

c. The Department has issued guidance regarding water quality trading, including:

1) Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges, No. 3400-2020-12, (Edition 3, June 1, 2020);

2) Guidance for Implementing Water Quality Trading in WPDES Permits, No. 3200-3400-3800-2020-03 (June 1, 2020).

d. The District submitted a Permit application for issuance of a WPDES Permit on December 31, 2024. The Permit is for a wastewater discharge from its facility located in Sextonville, Wisconsin.

e. The WPDES Permit will contain phosphorus water quality based effluent limits ("WQBELs") for Outfall Number 002, which is located in HUC-12 subwatershed 070700051003.

f. The District owns and will implement streambank stabilization and habitat features within the same hydrologic region as Outfall Number 002.

g. The descriptions of the lands that include streambank stabilization and habitat features are on private-owned Property at the following locations:

- Willow Creek
  - Parcel #006.0631.2000
  - Parcel #006.0634.1000
  - Parcel #006.0634.6000

The District submitted to the Department a Water Quality Trading Plan (WQT Plan) under which the District will install streambank stabilization and habitat features to reduce pollution to surface waters of the State.

h. The management practices will be installed and maintained relative to the NRCS Conservation Practice Standard listed below in Table One:

Table One – Conservation Practice Standards

NRCS Conservation Practice Standard	Number
NRCS Streambank and Shoreline Protection Standard	580

i. The WQT Plan includes an Establishment Plan and an Operation and Maintenance Plan for the streambank stabilization and habitat features.

2. Agreement Terms

a. The District shall establish streambank stabilization and habitat features consistent with the requirements in the approved WQT Plan (including the Establishment Plan, and the Operation and Maintenance Plan).

b. The Department will propose to reissue the WPDES Permit to allow the District to use water quality trading as a compliance option, in accordance with the WQT Plan as approved by the Department.

c. Subject to the terms of this Agreement and the terms of the WPDES Permit issued to the District, the Department shall allow the District to utilize Total Phosphorus credits in the amount set forth in the approved WQT Plan to demonstrate compliance with phosphorus WQBELs in the WPDES Permit, provided the District implements the approved WQT Plan and complies with the related trading terms of the Permit.

d. Any duly authorized officer, employee or representative of the Department shall have the right to access and inspect the streambank stabilization and habitat features' locations pursuant to Wis. Stat. § 283.55(2) so long as this Agreement remains in effect.

e. The Agreement shall become effective on the later date of the completion of the following conditions: i.) the Department approves a WQT plan that is consistent with this Agreement; and ii.) The WPDES Permit includes trading terms that are consistent with both the approved WQT Plan and the terms of this Agreement.

f. The Agreement applies and is effective for the term of the issued Permit unless, subject to this section the Permit is modified, terminated or revoked and reissued by the Department to eliminate the trade or to revise the trading terms in a manner that is inconsistent with this Agreement. If the trade is removed or revised through a Permit action, this Agreement is terminated. In accordance with Wis. Stat. § 227.51(2), if the trade has not been eliminated or modified through a Permit action, and if the District files a timely application for the reissuance of the Permit, the terms of the Agreement will continue until the later of the following: 1.) the application has been finally acted upon by the Department, 2.) the last day for seeking review of the agency's decision or 3.) a later date fixed by a reviewing court. The Agreement may extend into a subsequent reissued Permit upon approval of the Department.

g. The Parties may terminate this Agreement by written mutual agreement at any time.

h. The District may terminate this Agreement by providing at least sixty (60) days written notice to the Department of the District's intent to terminate the Agreement.

i. In accordance with paragraph (2j) and the procedures and requirements of Wis. Stat. § 283.53(2) and Wis. Admin. Code §§ NR 203.135 and 203.136, the Department may terminate this Agreement and modify or remove the terms of the Permit related to the trade if any one of the following occur:

1) The District fails to implement the WQT Plan as approved by the Department;

2) The District fails to comply with WPDES Permit terms and conditions related to water quality trading;

3) New information becomes available that causes the Department to determine that water quality trading is no longer an acceptable option, including an objection or disapproval of the trade by USEPA.

j. Any action by the Department to terminate this Agreement or otherwise to reduce or eliminate the number of phosphorus credits in the reissued WPDES Permit and approved WQT Plan shall be implemented through a modification, revocation and reissuance or reissuance of the W PDES Permit. Prior to termination of this agreement, the Department shall notify the District of its intent to terminate the trading agreement and shall provide an opportunity for the District to discuss the proposed termination with the Department. If appropriate

and feasible, the Department shall provide the District with a reasonable time period to correct the grounds for the proposed termination.

k. This Agreement may be amended only by a further written document signed by each of the Parties. The WQT Plan, Agreement and Permit terms may be revised as part of a future Permit reissuance or modification.

l. This Agreement shall be interpreted pursuant to the laws of the State of Wisconsin.

m. This Agreement may be executed in one or more counterparts, and all such executed counterparts shall constitute the same agreement. A signed copy of this Agreement transmitted by facsimile or email shall be treated as an original and shall be binding against the party whose signature appears on such copy.

n. If any provision of this Agreement is held invalid or unenforceable, the invalidity or unenforceability shall be limited to the particular provision involved and shall not affect the validity or enforceability of the remaining provisions. The Parties shall work together in good faith to modify this Agreement if necessary to preserve its original intent.

o. In no event shall the Department be liable to any party under this Agreement or to any third party in contract, tort or otherwise for incidental or consequential damages of any kind, including, without limitation, punitive or economic damages or lost profits, except as provided under federal or state laws.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year entered below.

SEXTONVILLE SANITARY DISTRICT #1

By: _____

Title: Sanitary District President

Date: 10-4-25

Pres Kirk Ghastin

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

By: Adrian Stocks

Title: Water Quality Bureau Director

Date: 11/5/2024

Attachment #6

ROCK RIVER LABORATORY, INC.
AGRICULTURAL ANALYSIS

710 Commerce Drive
P.O. Box 169
Watertown, WI
Phone: 920-261-0446

Analysis report for
Sextonville Waterworks
PO Box 95
Sextonville, WI 53584

Reporting date: 08.06.2019

Total phosphorus analysis

Field ID	Sample ID	P (ppm)
~~Denman~~ Sextonville Sanitary District #1	1	550.5
~~Denman~~ Sextonville Sanitary District #1	2	493.7
~~Denman~~ Sextonville Sanitary District #1	3	362.3
~~Denman~~ Sextonville Sanitary District #1	4	301.7
~~Denman~~ Sextonville Sanitary District #1	5	427.2
~~Denman~~ Sextonville Sanitary District #1	6	187.4
~~Denman~~ Sextonville Sanitary District #1	7	450.9
~~Coleman~~ McCormick	1	210.8
~~Coleman~~ McCormick	2	222.9
~~Coleman~~ McCormick	3	307.8
~~Coleman~~ McCormick	4	451.6
~~Coleman~~ McCormick	5	312.8
~~Coleman~~ McCormick	6	238.8
~~Coleman~~ McCormick	7	458.1
~~Coleman~~ McCormick	8	356.5
~~Coleman~~ McCormick	9	321.8
~~Coleman~~ McCormick	10	328.0
~~Coleman~~ McCormick	11	539.0
Ripchen	1	558.0
Ripchen	2	506.1
Ripchen	3	479.8
Servais Valley Ranch	1A	394.0
Servais Valley Ranch	2A	294.7
Servais Valley Ranch	2G	415.1
Servais Valley Ranch	1K	644.1
Servais	3G	325.3

ROCK RIVER LABORATORY, INC.
AGRICULTURAL ANALYSIS

710 Commerce Drive
PO Box 169
Watertown, WI 53094

920-261-0446 phone
920-261-1365 fax
www.rockriverlab.com

8/22/2019

Acct: 3398
Sample 225054

Nitrogen and Ammonium Analysis

Field ID	Sample ID	P (ppm)
For P	1	486.9

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

Location Map

CLIENT: Paul Denman

COUNTY: RICHLAND

Designed STC	Date 6/2018	Drawing Name WI-002
Drawn		Date 10/2006
Checked bb	2/2019	
Approved		Sheet 4 of 7

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

Location Map

CLIENT: Jill Coleman

COUNTY: RICHLAND

Designed STC	Date 2/2018	Drawing Name WI-002
Drawn		Date 10/2006
Checked DDJ	2/2018	
Approved		Sheet 4 of 7

ROCK RIVER LABORATORY, INC.
AGRICULTURAL ANALYSIS

710 Commerce Drive
P.O. Box 169
Watertown, WI
Phone: 920-261-0446

Analysis report for
Sextonville Waterworks
PO Box 95
Sextonville, WI 53584

Reporting date: 08.06.2019

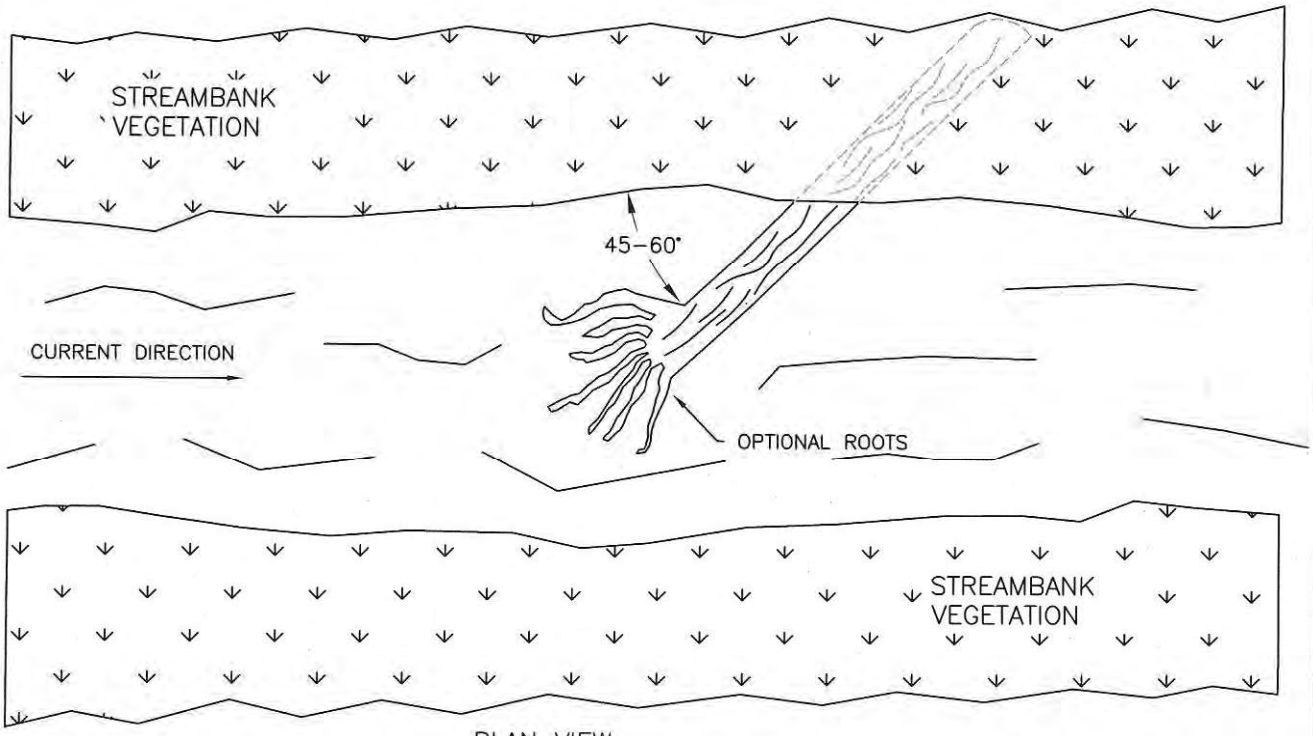
Total phosphorus analysis

Field ID	Sample ID	P (ppm)
Denman	1	550.5
Denman	2	493.7
Denman	3	362.3
Denman	4	301.7
Denman	5	427.2
Denman	6	187.4
Denman	7	450.9
Coleman	1	210.8
Coleman	2	222.9
Coleman	3	307.8
Coleman	4	451.6
Coleman	5	312.8
Coleman	6	238.8
Coleman	7	458.1
Coleman	8	356.5
Coleman	9	321.8
Coleman	10	328.0
Coleman	11	539.0
Ripchen	1	558.0
Ripchen	2	506.1
Ripchen	3	479.8
Servais Valley Ranch	1A	394.0
Servais Valley Ranch	2A	294.7
Servais Valley Ranch	2G	415.1
Servais Valley Ranch	1K	644.1
Servais	3G	325.3

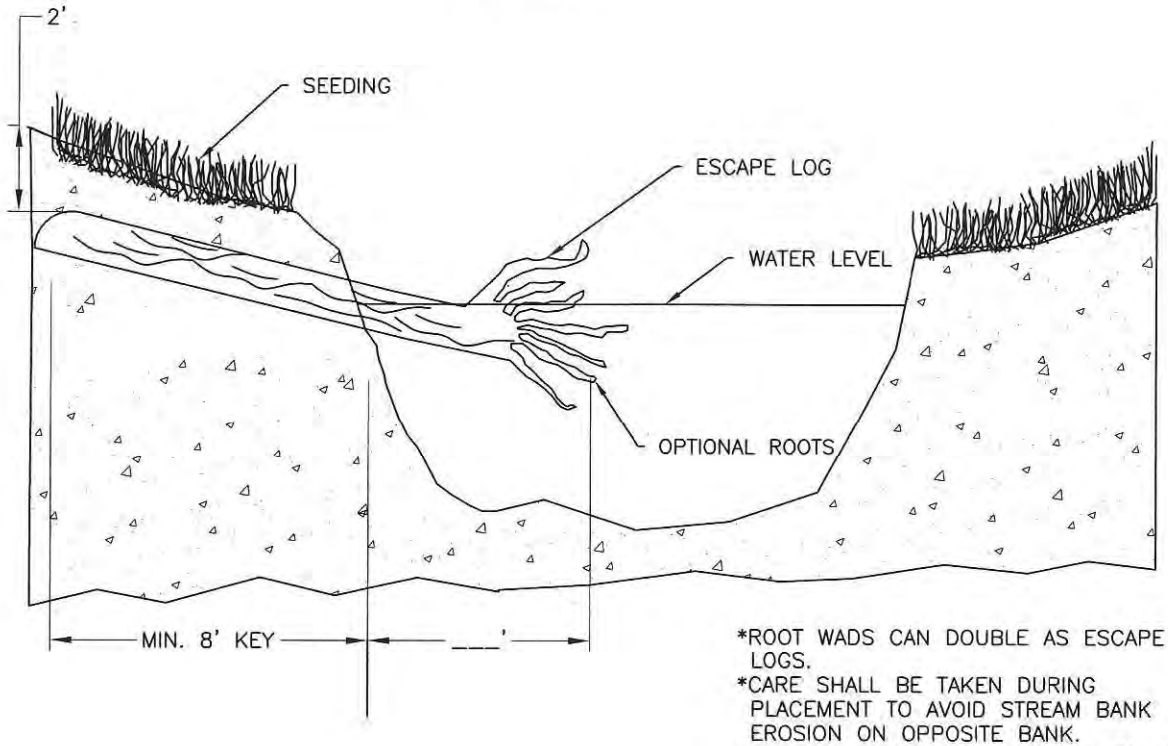

Rippchen farms
Write a description for your map.
Legend
SITE 1
Google Earth
© 2018 Google
300 ft
N


Servaisvalley Ranch
Write a description for your map.
Legend
SITE 1B
SITE #1A
Co Hwy Nn
Anderson Rd
N
300 ft
Google Earth
© 2018 Google


Servais Valley Ranch
Write a description for your map.
Legend
Co Hwy Nn
Tn Rd 44
SITE 1 K
SITE 2 G
SITE 3 G
Google Earth
© 2018 Google
N
400 ft



PLAN VIEW



CROSS SECTION

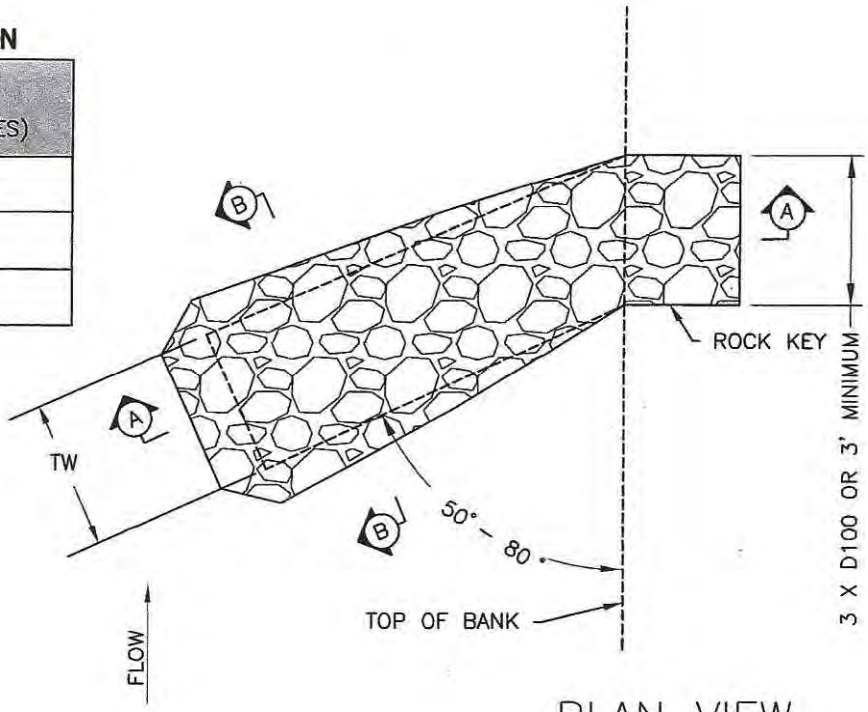
*ROOT WADS CAN DOUBLE AS ESCAPE LOGS.
*CARE SHALL BE TAKEN DURING PLACEMENT TO AVOID STREAM BANK EROSION ON OPPOSITE BANK.
*THE LOG SHOULD EMERGE MIN. 3'–4' FROM EDGE OF STREAM BANK.
*ROOTS/LIMBS SHALL BE TRIMMED SO AS TO BE BELOW THE ORDINARY HIGH WATER MARK.

USDA United States Department of Agriculture Natural Resources Conservation Service	ESCAPE LOG CLIENT: _____ COUNTY: _____	Date Designed _____ Drawn _____ Checked _____ Approved _____	File Name WI–942 Date 08/14 Sheet of

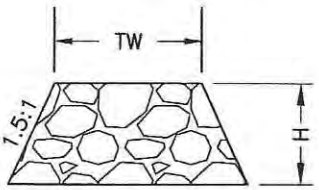
DRAWING NOT TO SCALE

ROCK SIZE AND GRADATION

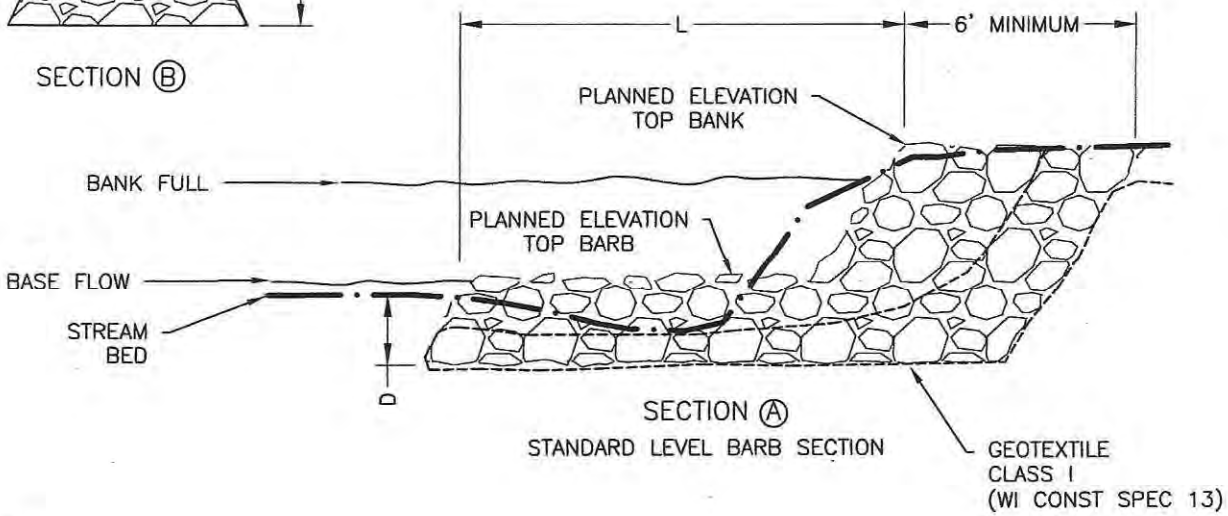
PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	4 X D_5
25 – 50	2 X D_5
0 – 5	D_5



PLAN VIEW



SECTION Ⓑ



SECTION Ⓐ

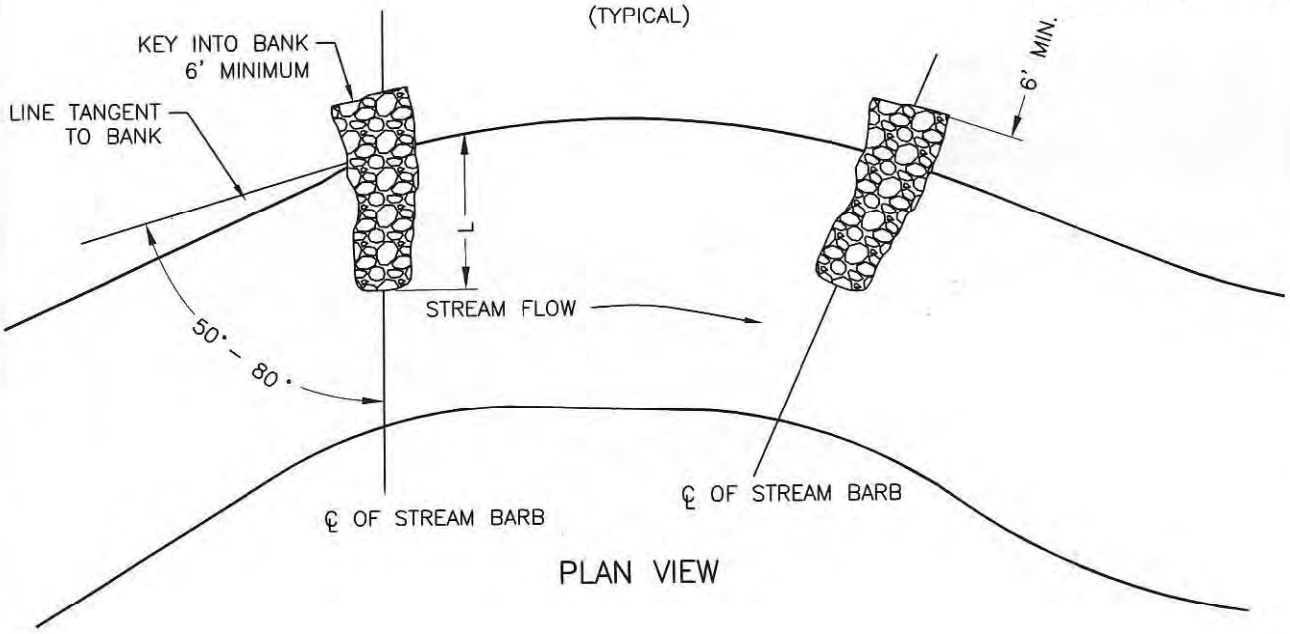
STANDARD LEVEL BARB SECTION

NOTES

1. THIS STANDARD DRAWING REQUIRES SUPPORTING TECHNICAL DOCUMENTATION PRIOR TO USE AND MUST BE ADAPTED TO THE SPECIFIC SITE.
2. SEE CHART ON SHEET 2 FOR DIMENSIONS AND ELEVATIONS.

USDA United States Department of Agriculture Natural Resources Conservation Service	STREAM BARBS – FLAT CLIENT: _____ COUNTY: _____	Date Designed _____ Drawn _____ Checked _____ Approved _____	File Name WI–938 Date 08/14 Sheet of

DRAWING NOT TO SCALE



PLAN VIEW

DESIGN AND INSTALLATION

1. KEY BARB INTO STREAM BED A DEPTH, D, APPROXIMATELY D100 OR AT LEAST ONE FOOT BELOW THE BED.

2. THE MINIMUM ELEVATION OF THE BARB TOP PROJECTING INTO THE STREAM SHOULD BE EQUAL TO THE BASE FLOW ELEVATION.

3. THE MINIMUM ELEVATION OF THE ROCK ON TOP OF THE BANK SHOULD BE THE LESSER OF THE ORIGINAL BANK ELEVATION OR ONE FOOT ABOVE BANK FULL ELEVATION.

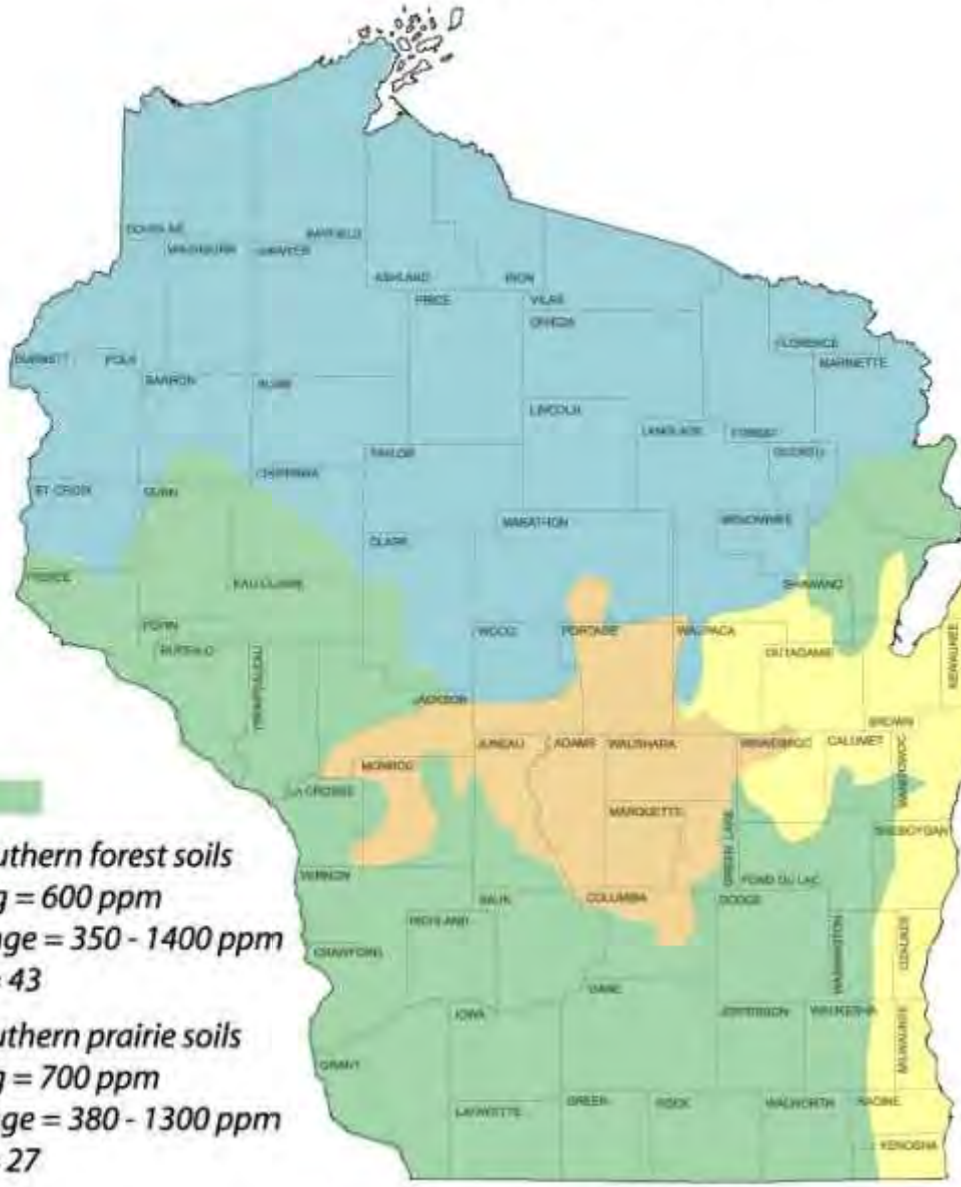
4. BARB TOP WIDTH, TW, SHOULD BE AT LEAST EQUAL TO 3 TIMES THE D100, BUT NOT LESS THAN 3'. IF EQUIPMENT MUST TRAVEL ON TOP OF THE BARB FOR CONSTRUCTION, USE 8 TO 10 FEET.

5. THE LENGTH OF THE BARB, L, MUST BE LONG ENOUGH TO CROSS THE STREAM THALWEG. (THE THALWEG BEING DEFINED AS THE DEEPEST PORTION OF THE CHANNEL.) 1.5 TO 2 TIMES THE DISTANCE FROM THE BANK TO THE THALWEG HAS PROVED SATISFACTORY ON SOME PROJECTS.

6. THE SPACING OF BARBS IS DEPENDENT ON THE STREAMFLOW LEAVING THE BARB AND ITS' INTERSECTION WITH THE BANK DOWNSTREAM. THE SPACING IS TYPICALLY 4 TO 5 TIMES THE BARB LENGTH. BEGIN INSTALLATION WITH THE UPSTREAM BARB, AND LOCATE SUBSEQUENT BARBS DOWNSTREAM BY OBSERVING WHERE THE FLOW MEETS THE BANK.

BARB NUMBER	L	D	H	TW	ROCK ELEVATION TOP BANK	ROCK ELEVATION TOP BARB

Soil Total P



Northern loamy soils
avg = 540 ppm
range = 480-580 ppm
n = 4

Southern forest soils
avg = 600 ppm
range = 350 - 1400 ppm
n = 43

Southern prairie soils
avg = 700 ppm
range = 380 - 1300 ppm
n = 27

Eastern red soils
avg = 950 ppm
range = 430 - 2820 ppm
n = 12

Sandy soils
range = 250 - 400 ppm
n = 2

Organic soils: range = 1330 - 1350 ppm, n = 2

Attachment #7

ATTACHEMENT #7
TABLE OF CONTENTS

I. Introduction

The lateral recession rate of the eroding bank is a critical component for the NRCS Streambank Erosion Estimator. All Project Sites within this WQT Plan were surveyed by a Richland County Conservation Specialist. Lateral recession rate was measured by Richland County Conservation Department utilizing a combination of GPS survey data and aerial images to calculate the lateral recession rate of each site in addition to an on site evaluation. The following documentation provides the justification for the lateral recession rates used in the NRCS Streambank Erosin Estimator. The following includes representative photos of Project Sites, containing eroding streambanks, to be stabilized through installation of Best Management Practices (BMPs).

II. Rippchen Site

Image 1 – Site 1 Undercut with slump.

Image 2 – Site 1 Undercut with slump.

Image 3 – Site 1 Undercut with slump.

Image 4 – Site 1 Fence Undercut.

Image 5 – Site 1 Undercut with slump.

III. Servais Site (north of Anderson Lane)

Image 6 – Site 1A - 5A Undercut with slump.

Image 7 – Site 1A - 5A Undercut with slump.

Image 8 – Site 1A - 5A Undercut with slump.

Image 9 – Site 1A - 5A Undercut with slump.

Image 10 – Site 1A - 5A Undercut with slump.

Image 11 – Site 1A - 5A Undercut with slump.

IV. Servais Site (Grotophurst)

Image 12 – Site 1B - 5B Undercut with slump and fallen trees.

Image 13 – Site 1B - 5B Undercut with slump and fallen trees.

Image 14 – Site 1B - 5B Undercut with slump and fallen trees.

Image 15 – Site 1B - 5B Undercut with slump.

Image 16 – Site 1B - 5B Undercut with slump, exposed tree roots, and fallen trees.

Image 17 – Site 1B - 5B Undercut with slump, exposed tree roots, and fallen trees.

Image 18 – Site 1B - 5B Undercut with slump, exposed tree roots, and fallen trees.

Image 19 – Site 1B - 5B Undercut with slump, exposed tree roots, and fallen trees.

Image 20 – Site 1B - 5B Undercut with slump, exposed tree roots, and fallen trees.

Image 21 – Site 1B - 5B Undercut with slump, exposed tree roots, and fallen trees.

V. Ithaca Lion's Club Site

Image 22 – Site 1 Undercut with slump, exposed tree roots, and fallen trees.

Image 23 – Site 1 Undercut with slump, exposed tree roots, and fallen trees.

VI. McCormick Site

Image 24 – Site 1 - 6 Undercut with slump, exposed tree roots, and fallen trees.

Image 25 – Site 1 - 6 Undercut with slump.

Image 26 – Site 1 - 6 Undercut with slump, exposed tree roots, and fallen trees.

Image 27 – Site 1 - 6 Undercut with slump.

VII. Sanitary District Site

Image 28 – Site 1 & 2 Undercut with slump, exposed tree roots, and fallen trees.

Image 29 – Site 1 & 2 Undercut with slump.

Image 30 – Site 1 & 2 Undercut with slump, exposed tree roots, and fallen trees.

Image 31 – Site 1 & 2 Undercut with slump, exposed tree roots, and fallen trees.

Image 32 – Site 1 & 2 Undercut with slump, exposed tree roots, and fallen trees.

Attachment #8

NRCS Excel Workbook Estimating 'Other' Erosion Types June 2006

Annual soil loss predictions for conservation planning purposes are made with current soil loss prediction technology (RUSLE2). RUSLE2 estimates sheet, rill and interrill erosion. Erosion that is seasonal in nature and caused by concentrated flow, however, is not predicted by RUSLE2.

This workbook provides conservation planners with simple tools and processes to help estimate the amount of erosion occurring in ephemeral gullies, classic gullies and on streambank erosion sites.

Definitions:

Rill Erosion: consists of the removal of soil by concentrated water running through little streamlets, or headcuts. Detachment in a rill occurs if the sediment in the flow is below the amount the load can transport and if the flow exceeds the soil's resistance to detachment. As detachment continues or flow increases, rills will become wider and deeper. Rills may be of any size but are usually less than four inches deep. Rills are:

<> generally parallel on the slope, but may converge,
<> generally of uniform spacing and dimension,
<> generally appear at different locations on the landscape from year to year,
<> generally shorter than ephemeral cropland gullies,
<> usually end at a concentrated flow channel, or an area where the slope flattens and deposition occurs,
<> are on the same portion of the slope that is used to determine the length of slope (L) for RUSLE2,
<> many small, but conspicuous channels running in the direction of slope gradient

Rill erosion is considered in the RUSLE2 calculations.

Ephemeral Gully Erosion: Small erosion channels formed on crop fields as a result of concentrated flow of runoff water. These channels are routinely eliminated by tillage of the field but return following subsequent runoff events. Ephemeral Gullies are small enough to be eliminated (temporarily) with the use of typical farm tillage equipment and they:

<> recur in the same area of concentrated flow each time they form,
<> frequently form in well-defined depressions in natural drainage ways,
<> are generally wider, deeper, and longer than the rills in the field,

Ephemeral Gullies are **not** calculated by the RUSLE2 program.

Gully Erosion: Permanent gullies are formed when channel development has progressed to the point where the gully is too wide and too deep to be tilled across. These channels carry large amounts of water after rains and deposit eroded material at the foot of the gully. They disfigure landscape and make the land unfit for growing crops. Gullies:

<> may grow or enlarge from year to year by head cutting and lateral enlarging,
<> often occur in depressions or natural drainage ways,
<> may begin as ephemeral gullies that were left in the field untreated,
<> may, over time, become partially stabilized by grass, weeds or woody vegetation,

Gully erosion is not calculated by the RUSLE2 program.

Streambank Erosion: The wearing away of streambanks by flowing water. The removal of soil from streambanks is typically caused by the direct action of stream flow and/or wind/wave action, typically occurring during periods of high flow. Streambank erosion:

<> is a natural process that generally increases when unprotected streambanks (e.g. no woody vegetation) are subject to the actions of flowing water and ice damage.

<> is a common occurrence on many Vermont river channels that are experiencing geomorphic adjustments

---

The soil loss from ephemeral gullies, gullies and streambank erosion areas can be estimated by calculating the volume of soil removed by erosion processes. The volume of soil loss can be multiplied by the typical unit weight of the soil (based on soil texture) which is eroded. Approximate soil unit weights are expressed below[1]:

Soil Texture	Estimated Dry Density lb/ft^3
Gravel	110
Sand	105
Loamy Sand	100
Sandy Loam	100
Fine Sandy Loam	100
Sandy Clay Loam	90
Silt Loam	85
Silty Clay Loam	85
Silty Clay	85
Clay Loam	85
Organic	22

Procedure for estimating Ephemeral Soil Erosion:

The following formula will be used to calculate annual estimated ephemeral gully erosion:

$$\frac{\text{Ephemeral Gully } \mathbf{Length} \times \text{Gully Average } \mathbf{Width} \times \text{Gully Average } \mathbf{Depth}}{2000} \times \text{Soil Weight (lbs/ft}^3\text{)} \times \text{Occurrences per Year} = \mathbf{Estimated} \text{ Soil Loss (Tons per Year)}$$

* Ephemeral gully erosion may reform multiple times per year, and under certain conditions it may not form in a given year. The voided volume which would be calculated after a runoff event is not necessarily representative of an annual rate, but is representative of only the specific event. This erosion can be calculated for individual storms and can be summed for a yearly estimate.

1 Data from published soil surveys, laboratory data, and soil interpretation record are to be used where available. Parent materials, soil consistency, soil structure, pore space, soil texture, and coarse fragments all influence unit weight.

Procedure for estimating Gully Soil Erosion:

The following formula will be used to calculate annual estimated classic gully erosion:

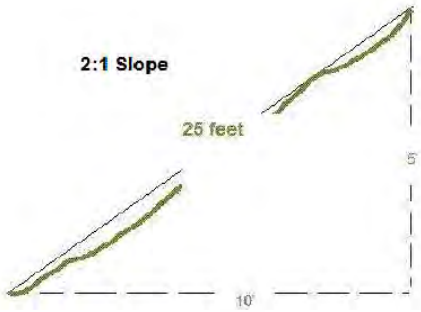
$$\frac{\text{Gully } \textbf{Length} \times (\text{Average } \textbf{Width} \times \text{Average } \textbf{Depth} \times 0.5) \times \textbf{Soil Weight (lbs/ft3)}}{2000} \Big/ \text{Formation Years} = \textbf{Estimated Soil Loss Per Year (Tons)}$$

Procedure for estimating Streambank Soil Erosion (Direct Volume Method):

The following formula will be used to calculate annual estimated streambank erosion unless a field measurement procedure[2] is used:

$$\frac{\text{ing Bank } \textbf{Length} \times \text{Eroding Bank Height} \times \text{Lateral Recession Rate (FT/YR)} \times \text{Soil Weight (lb}}{2000} = \textbf{Estimated Soil Loss Per Year (Tons)}$$

** Eroding bank height is measured along the bank, not the vertical height of bank. Example: if vertical height of an eroding streambank is 5 feet, and the bank is on a 2:1 slope, the total eroding bank distance is 25 feet -- 1/2 (Base X Height).



***The average annual recession rate is the thickness of soil eroded from a bank surface (perpendicular to the face) in an average year.

Stream bank erosion sometimes presents itself as a major occurance in a given year, whereas the same bank may not erode significantly for a period of years if no major runoff events occur. Recession rates need to be calculated as an average of years when erosion does and does not occur. Recession rate is not calculated as the erosion occurring after a single event.

Use available resources to assist in the estimation of recession rate: use past and present aerial photography, old survey records, and any other information that helps to determine the bank condition at known times in the past. When such information is lacking or insufficient, field observations and professional judgement are needed to estimate recession rates.
It is often not possible to directly measure recession rates in the field. Therefore, the following table has been included which relates recession rates to narrative descriptions of banks eroding at different rates (Table from NRCS Wisconsin guidance).

Lateral Recession Rate (ft/yr)	Category	Description
0.01-0.05	Slight	Some bare bank but active erosion not readily apparent. Some rills but no vegetative overhang. No exposed tree roots.
0.06-0.2	Moderate	Bank is predominantly bare with some rills and vegetative overhang. Some exposed tree roots but no slumps or slips.
0.3-0.5	Severe	Bank is bare with rills and severe vegetative overhang. Many exposed tree roots and some fallen trees and slumps or slips. Some changes in cultural features such as fence corners missing and realignment of roads or trails. Channel cross section becomes U-shaped as opposed to V-shaped.
0.5+	Very Severe	Bank is bare with gullies and severe vegetative overhang. Many fallen trees, drains and culverts eroding out and changes in cultural features as above. Massive slips or washouts common. Channel cross section is U-shaped and stream course may be meandering.

2 The best way to quantify streambank erosion is to measure it directly in the field. The basic procedure in measuring streambank erosion is to survey, flag, or in some way fix a "before" image of the channel you are evaluating in order to establish the baseline condition. Changes due to erosion can then be monitored over time by going back to the study area and re-measuring from the fixed reference points.
Channel cross-sections can be surveyed and plotted on a periodic basis to monitor change. Stakes or pins can be driven into channel banks flush with the surface. The amount of stake or pin exposed due to erosion is the amount of change at the streambank erosion site between your times of observation.
The time required to monitor a site often precludes this method of data collection. The Direct Volume Method can be used to estimate streambank erosion at your site.

Acknowledgements: This Excel workbook was created as a planning tool for use by conservation planners. The basic format and content of the tool is a compilation of various similar tools, processes and procedures employed by NRCS in several states including: Indiana, Iowa, Kansas, Maryland, Michigan, Missouri, Nebraska, Oklahoma, South Dakota and Wisconsin. Some of the terminology in the 'Definitions' section of this Readme document closely mirrors these sources.

NRCS Streambank and Irrigation Ditch Erosion Estimator (Direct Volume Method)

Farmer / Cooperator Name: Sextonville Sanitary District #1
Tract Number: Varies
Evaluated By: L. Hoppman
Evaluation Date: September 12, 2025

Field Number	Eroding Strmbnk Reach #; or Ditch Side/Bottom	Eroding Bank or Ditch Length (Feet)	Eroding Bank Height; or Ditch Bottom Width* (Feet)	Area of Eroding Strmbank or Ditch (FT^2)	Lateral or Ditch Bottom Recession Rate (Estimated) (FT / Year)	Estimated Volume (FT^3) Eroded Annually	Soil Texture	Approximate Pounds of Soil per FT^3	Estimated Soil Loss (Tons/Year)	Average Soil Total Phosphorus (ppm)	Estimated Phosphorus Loss (Pounds/Year)	Trade Ratio	WQT Credits
Rippchen	1	190	9	1,710	0.50	855	Fine Sandy Loam	100	42.8	515	44	2.13:1	21
Servais	1A	80	5	400	0.50	200	Fine Sandy Loam	100	10.0	394	8	2.13:1	4
	2A	80	5	400	0.50	200	Fine Sandy Loam	100	10.0	394	8	2.13:1	4
	3A	200	5	1,000	0.50	500	Fine Sandy Loam	100	25.0	394	20	2.13:1	9
	4A	80	4	320	0.50	160	Fine Sandy Loam	100	8.0	295	5	2.13:1	2
	5A	70	6	420	0.50	210	Fine Sandy Loam	100	10.5	295	6	2.13:1	3
	1B	160	7	1,120	0.50	560	Fine Sandy Loam	100	28.0	644	36	2.13:1	17
	2B	175	7	1,225	0.50	613	Fine Sandy Loam	100	30.6	644	39	2.13:1	18
	3B	165	6	990	0.50	495	Fine Sandy Loam	100	24.8	644	32	2.13:1	15
	4B	160	5	800	0.50	400	Fine Sandy Loam	100	20.0	415	17	2.13:1	8
	5B	300	7	2,100	0.50	1,050	Fine Sandy Loam	100	52.5	325	34	2.07:1	16
Ithaca Lions Club	1	175	12	2,100	0.50	1,050	Fine Sandy Loam	100	52.5	487	51	2.1:1	26
McCormick	1	400	13	5,200	0.50	2,600	Fine Sandy Loam	100	130.0	217	56	2.2:1	26
	2	290	13	3,770	0.50	1,885	Fine Sandy Loam	100	94.3	380	72	2.2:1	33
	3	300	12	3,600	0.50	1,800	Fine Sandy Loam	100	90.0	313	56	2.2:1	26
	4	535	12	6,420	0.50	3,210	Fine Sandy Loam	100	160.5	239	77	2.2:1	35
	5	303	13	3,939	0.50	1,970	Fine Sandy Loam	100	98.5	458	90	2.2:1	41
	6	1,200	13	15,600	0.50	7,800	Fine Sandy Loam	100	390.0	387	302	2.2:1	137
District	1	280	14	3,920	0.50	1,960	Fine Sandy Loam	100	98.0	523	103	2.2:1	47
	2	1,120	13	14,560	0.50	7,280	Fine Sandy Loam	100	364.0	346	252	2.2:1	114
TOTAL		**6,263**				**34,798**			**1,740.0**		**1,308**		**602**

Streambank or Ditch Erosion Calculation Formula:

$$\frac{\text{Eroding Bank/Ditch Length} \times \text{Eroding Bank Ht or Ditch Bottom Width} \times \text{Lateral or Ditch Bottom Recession Rate (FT/YR)} \times \text{Soil Weight (lbs/ft}^3\text{)}}{2000} = \text{Estimated Soil Loss Per Year (Tons)}$$

$$\text{Soil Total Phosphorus (ppm)} \times 10^{-6} \times \text{Estimated Soil Loss (Tons/Year)} \times 2000 \text{ Pounds/Ton} = \text{Estimated Phosphorus Loss Per Year (Pounds)}$$

Attachment #9

Water Quality Trading
Operation and Maintenance Plan

Introduction:
The Water Quality Trading (WQT) Operation and Maintenance (O&M) Plan is meant to be a working document and should be updated as new trading practices are implemented. Currently, the Operation and Maintenance Plan revolves around the Best Management Practice (BMP) construction along the Willow Creek and Little Willow Creek. The attached *BMP Inspection Form* should be completed during annual inspections of BMPs and following major storm events. Inspection forms shall be retained for at least five (5) years to ensure compliance with the WQT Plan.

Publicly Owned BMP:
District representative to complete inspection form annually and following major storm events. The form will then be provided to the Director of Public Works following inspection. The District will address maintenance issues identified during inspection within 30 days. Substantial maintenance issues may require an extended timeframe for generation of plans, specifications, and a public bid process to perform the work. Inspections and O&M activities shall be reported in the annual WQT Report sent to the DNR.

Privately Owned BMP:
District representative to complete inspection form annually and following major storm events. The form will then be provided to the Director of Public Works following inspection. The District will address maintenance issues identified during inspection within 30 days. Substantial maintenance issues may require an extended timeframe for generation of plans, specifications, and a public bid process to perform the work. Maintenance expenses will be incurred by either by the District or Private Property Owner depending on agreement with the District. The Private Property Owner will be allowed to perform maintenance activities at the expense of the Private Property Owner. Inspections and O&M activities shall be reported in the annual WQT Report sent to the DNR.

Quality Assurance:
Riprap gradation and composition shall be provided for each source of material. Streambank shaping and riprap shall be installed per the Richland County Land Conservation Department and NRCS Standards. Contractors to supply rock that is approved by the NRCS and meets criteria in Wisconsin Construction Spec.9.

Installation:
- Staking provided by the Land Conservation Department.
- Do not place riprap over frozen or spongy subgrade surfaces.
- Place riprap as indicated on Construction Plans. Do not dump rip-rap over the bank.
- Blend riprap with existing bank.
- Spread spoil out in a layer of less than 6” and seed down. Do not spread soil in wetlands.
- All disturbed areas and spoil must be seeded and mulched.
- Lunker, Root Wad, and Rock Spur Installation per County Land Conservation Department Project Plans.

Practice Registration:
The purpose of the "Water Quality Trading Management Practice Registration" form is to report to WDNR that a management practice identified in the trading plan has been properly installed and is established and effective. This information will be used to track implementation progress, verify compliance and perform audits, as necessary. A registration form should be submitted for every management practice that has been identified in the trading plan. If practices are established prior to trading plan submittal, registration forms may be submitted with the trading plan. Otherwise, registration forms should be submitted during the permit term as practices become effective or with the annual report. A blank *Water Quality Trading Management Practice Registration Form 3400-207* is attached and should be submitted following implementation of the trading practice.

Tracking Procedures:
The District will track credits used monthly. The District will report credit usage to the DNR on a monthly basis in the Discharge Monitoring Reports (DMRs). The annual report will summarize the 12 months of credit usage and credit generation. The District will report to DNR any concern that they have that may result in a need to modify the trade agreement and/or this trade plan. For example, a need to generate additional credits based on discharge.

Inspections/Maintenance Considerations:

- A *BMP Inspection Form* is attached.
    - Site: As noted on Construction Plans
    - Vegetative Condition: Excellent; Good; Fair; or Poor
    - Structural Condition of BMP: Excellent; Good; Fair; or Poor
    - Maintenance Estimate: Provide an estimate for how long the maintenance will take to complete or a dollar value for completion. This will help determine if the District will perform the work or if the District will hire another entity to perform the work.
    - Date Completed: Following completion of the required maintenance, input the date of completion.
    - Comments: Provide the required maintenance activity along with any other useful information. If the cell provided is not large enough for Comments, write "See Back of Sheet" and provide comments on the reverse side of the Form.
- Following installation, inspect the disturbed areas closely over the next few months to ensure that seeding grows.
- BMPs may settle or shift especially after flooding events or freeze/thaw.
- May need to control weed and brush growth.
- Inspect stabilized areas as needed.
- At a minimum, inspect BMPs Biannually.
- Check BMPs following major storm events.
- For BMPs adjacent to livestock pastures, monitor fence barrier (if applicable) and any direct impact livestock may have on the streambanks.
    - Streambank damage caused by livestock shall be remedied per NRCS 578 – Stream Crossing.
- If a BMP has been damaged, repair it promptly to prevent a progressive failure.
- If repairs are needed repeatedly at a location, evaluate the site to determine if the original design conditions have changed.

Routine Maintenance Items that can be performed by District:

- Evaluate BMP condition
    - Reconstruct/replace BMPs that have settled, shifted, or washed out.
- Manage Vegetation
    - Remove invasive/noxious plants.
    - Reseed bare spots and other areas devoid of vegetation throughout as necessary.
- Manage Garbage
    - Remove garbage and other debris that could otherwise impair the streambank stability.

Certification:

For each month that WQT Credits are used, the District will certify that the BMPs are maintained and operating in a manner consistent with this Water Quality Trading Plan or provide a statement noting noncompliance with this Plan. The monthly Discharge Monitoring Report (DMR) will include the following statement as a certification of compliance when the Credit Generating Practice is operating in a manner consistent with the Plan:

> "I certify that to the best of my knowledge that the management practices identified in the approved water quality trading plan as the source of phosphorus credits is installed, established and properly maintained."

Annual Inspection:

An annual inspection of the BMPs will be performed by a licensed Professional Engineer to ensure that the BMPs are functioning as intended in order to meet the requirements of the WQT Plan.

Noncompliance:

The District will notify DNR by telephone call to DNR's regional wastewater compliance engineer within 24 hours or next business day of becoming aware that phosphorus credits used or intended for use by District are not being generated as outlined in this Water Quality Trading Plan.

The District will submit a written notification within five days after the District recognizes that the phosphorus credits are not being generated as outlined in the Trading Plan. DNR may waive the requirement for submittal for a written notice within five days and instruct the District to submit the written notice with the next regularly scheduled monitoring report required by District's WPDES Permit.

The written notification should include:

- Description of noncompliance and cause.
- Period of noncompliance including dates and times.
- Schedule for attaining compliance including time and steps toward compliance.
- Plan to prevent reoccurrence of the noncompliance.

Notification of Trade Agreement Termination:

If a trade agreement or the trading plan needs to be terminated during the permit term, the permittee should submit a Notice of Termination to the wastewater engineer/specialist to inform WDNR of the termination. WDNR staff should use this information to determine if a permit modification is required due to the termination, the termination will result in non-compliance, or other permit actions are required due to the termination. When credits are reduced or eliminated for any reason, the permittee is still required to meet their WQBELs without any grace period. To prevent noncompliance with WQBELs, changes to trading plans must be addressed before credits are lost. Modifying the permit/trading plan will require at least 180 days. A blank *Notification of Water Trade Agreement Termination Form 3400-209* is attached and should be submitted to WDNR prior to practice termination, no later than the submittal date of the annual report.

DELTA 3
Platteville, Wisconsin
Dubuque, Iowa
P 608.348.5355
P 563.542.9005
E mail@delta3eng.biz
W www.delta3eng.biz

Streambank BMP Inspection Form

Date & Time:	
Inspector/Title:	
Weather:	
Reason for Inspection:	Biannual ☐ Precipitation Event ☐ Annual P.E. ☐ Other ☐:
Last Inspection Photos Date*:	

* inspection photos should be taken at each biannual inspection at minimum

ID	Vegetative Condition	Structural Condition	Habitat Feature Condition	Required Maintenance	Maintenance Estimate (Time and/or Cost)	Date Maintenance Completed	Comments

Photos Taken? ☐ Yes ☐ No

Section 606 Riprap

606.1 Description

(1) This section describes furnishing and placing riprap.

606.2 Materials

606.2.1 Riprap Stone

(1) Furnish durable field or quarry stone that is sound, hard, dense, resistant to the action of air and water, and free of seams, cracks, or other structural defects. Use stone pieces with a length and width no more than twice the thickness. Do not place material without the engineer's approval of the stone quality, size, and shape.

(2) The department will determine the average dimension of stone pieces by averaging measurements of thickness, width, and length. Furnish stones conforming to the size requirements for the riprap grade the plans show. Size requirements are expressed as the percent of the gross in-place riprap volume occupied by stones within average dimension size ranges for each riprap grade as follows:

AVERAGE DIMENSION RANGES FOR EACH RIPRAP GRADE				FRACTION OF GROSS
LIGHT RIPRAP	MEDIUM RIPRAP	HEAVY RIPRAP	EXTRA-HEAVY RIPRAP	IN-PLACE RIPRAP VOLUME OCCUPIED
inches	inches	inches	inches	BY STONES
>16	>20	>25	>30	0%
11 - 13	14 - 16	18 - 20	22 - 25	10% - 14%
9 - 11	11 - 14	14 - 18	18 - 22	15% - 21%
4 - 9	5 - 11	6.5 - 14	8 - 18	20% - 28%
<4	<5	<6.5	<8	5% - 7%
<1	<1	<1	<1	2% or less

(3) The contractor may substitute waste concrete slabs for stone. Furnish sound concrete, free of protruding reinforcement, and conforming to the size requirements specified for stone.

606.2.2 Riprap Grout

(1) Furnish an air-entrained mortar or concrete to fill the voids between riprap stones in grouted riprap. Conform to the physical requirements for component materials as specified in 501.2 except furnish fine aggregate or a combination of fine and coarse aggregate with a gradation that results in a grout with a consistency that allows complete filling of the riprap voids.

(2) Certify that the grout conforms to the following mixture requirements:

- Contains 470 pounds or more of portland cement per cubic yard of grout. The contractor may substitute class C fly ash for up to 30 percent of the required portland cement.
- Contains only enough water to achieve a 3-inch slump. Any additional workability required to completely fill the riprap voids must be achieved with admixture without increasing the w/cm ratio.
- Contains 9 percent or more air for mixes with a nominal top size aggregate less than 3/8 inch or 7 percent or more air for a mix with 3/8 inch or larger aggregate.

606.3 Construction

606.3.1 General

(1) Prepare the bed for the riprap by excavating, shaping the slopes, and constructing the toe for riprap installation. After placing the riprap, restore the surface of adjacent work and dispose of surplus material.

606.3.2 Placing Light Riprap

(1) If laying stone above the waterline, place it by hand. Lay it with close, broken joints and firmly bed it in the slope and against the adjoining stones. Lay the stones perpendicular to the slope with ends in contact. Compact the riprap thoroughly as construction progresses. Make the finished surface even and tight. Place larger stone in lower courses. Chink spaces between stones by firmly ramming spalls into place. If placing riprap over geotextile, use type R and conform to 645.3.1.6.

(2) Unless specified otherwise, make riprap at least one foot thick, measured perpendicular to the slope.

(3) Do not place riprap against, or in contact with, concrete surface before the end of the concrete's curing and protection period.

606.3.3 Placing Medium, Heavy, and Extra-Heavy Riprap

(1) The contractor may place medium, heavy, and extra-heavy riprap by any mechanical means that produce a completed job within reasonable tolerances of the typical section the plans show. Limit

handwork to the quantity necessary to fill large voids or to correct segregated areas. If placing riprap over geotextile, use type HR and conform to 645.3.1.7.

(2) Unless specified otherwise, make medium riprap at least 18 inches thick, heavy riprap at least 24 inches thick, and extra-heavy riprap at least 30 inches thick.

606.3.4 Placing Grouted Riprap

(1) If the plans specify using grouted riprap, lay the stone as specified above under 606.3.2 or 606.3.3. Fill the spaces between the stones with cement mortar. Use sufficient mortar or concrete to completely fill voids, except leave the face surface of the stone exposed.

(2) Place grout from the bottom to the top and then sweep the surface with a stiff broom. After completing the grouting, cure the surface as specified in 415.3.12 except substitute type 1-D curing compound as specified for structures in 502.2.6. During cold weather, protect the concrete as specified in 415.3.13 for concrete pavement.

606.4 Measurement

(1) The department will measure the bid items under this section by the cubic yard acceptably completed, measured as the volume within the limiting dimensions the contract designates or the engineer establishes in the field.

606.5 Payment

(1) The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
606.0100	Riprap Light	CY
606.0200	Riprap Medium	CY
606.0300	Riprap Heavy	CY
606.0400	Riprap Extra-Heavy	CY
606.0500	Grouted Riprap Light	CY
606.0600	Grouted Riprap Medium	CY
606.0700	Grouted Riprap Heavy	CY
606.0800	Grouted Riprap Extra-Heavy	CY

(2) Payment for the bid items under this section is full compensation for preparing the bed, providing and placing riprap, restoring adjacent work, and disposing of surplus material. The department will pay for excavation in excess of the approximate volume of earth occupied by the riprap under the Excavation Common bid item as specified under 205.5.

(3) Payment for the Grouted Riprap bid items also includes placing and curing mortar.

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Management Practice Registration

Form 3400-207 (R 1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number WI-	Facility Site Number

Facility Address	City	State	ZIP Code

Project Contact Name (if applicable)	Address	City	State	ZIP Code

Project Name

Broker/Exchange Information (if applicable)

Was a broker/exchange be used to facilitate trade? ◯ Yes ◯ No

Broker/Exchange Organization Name	Contact Name

Address	Phone Number	Email

Trade Registration Information (Use a separate form for each trade agreement)

Type	Trade Agreement Number	Practices Used to Generate Credits	Anticipated Load Reduction	Trade Ratio	Method of Quantification
◯ Urban NPS ◯ Agricultural NPS ◯ Other					

County	Closest Receiving Water Name	Land Parcel ID(s)	Parameter(s) being traded

The preparer certifies all of the following:

- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed

Leave Blank – For Department Use Only

Date Received		Trade Docket Number
Entered in Tracking System ☐ Yes	Date Entered	Name of Department Reviewer

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notification of Water Trade Agreement Termination

Form 3400-209 (1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number WI-	Facility Site Number

Facility Address	City	State	ZIP Code

Project Contact Name (if applicable)	Address	City	State	ZIP Code

Project Name

Credit Generator Information

Credit generator type (select all that apply):

- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☐ Agricultural nonpoint source discharge
- ☐ Other - Specify:

Trade Agreement number(s) to be terminated including affected land parcel ID(s):

Amount of trading credit being terminated	Effective date of termination

Reason for termination

Is this agreement being updated or replaced?

- ◯ Yes
- ◯ No
- ◯ Unsure

Will this termination result in non-compliance with the effective limit or other permit requirements?

- ◯ Yes; Name: _____
- ◯ No
- ◯ Unsure

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer	Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed

Attachment #10

Cost Estimate $5250

USDA United States Department of Agriculture
Natural Resources Conservation Service

WISCONSIN STANDARD
DRAWING NO. WI-001C 03/16

CONSTRUCTION PLAN

PRACTICE(S) 580 - Streambank Protection

LANDOWNER Ithaca Lions

ADDRESS 23490 State Hwy 58, Richland Center, WI 53581

LANDOWNER PHONE NO. 608-585-4808 COUNTY Richland

TOWNSHIP Ithaca T 10 N, R 2 E/W, Sec. 9

FIELD OFFICE Richland County LCD TELEPHONE NO. 608-647-2100

DIGGERS HOTLINE

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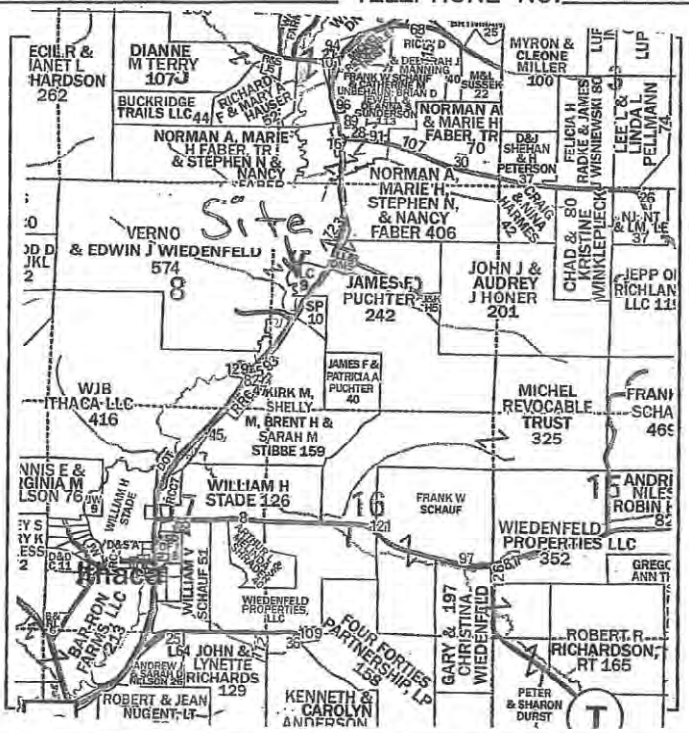
Nationwide 811

Toll Free 1-800-242-8511

TDD 1-800-542-2289

Website www.diggershotline.com



N

Not to Scale

LOCATION MAP

COPY

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the Richland County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities. Call Diggers Hotline! Ticket Number _____

CONSTRUCTION DRAWINGS AND SPECIFICATIONS ACCEPTANCE

I have reviewed and understand the construction plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any continued NRCS technical assistance or program cost sharing applied for. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws. Modification of these construction plans or specifications must be approved by the NRCS before installation. I assume all responsibility for negotiations and contract agreements with the construction contractors.

Landowner Signature: _____ Date: _____

Designed by: Ken Anderson Date: 1/14/2019

Checked by: Ken Anderson Date: 2-13-19

Approved by: Ken Anderson Date: 2-13-19

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: _____ Date: _____

Job Approval Class _____ Sheet 1 of 9

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	SHEET NUMBER	WI. CONSTRUCTION SPEC. OR JOB SHEET NUMBER
6" D50 Rock	CuYds	107	4-6	WCS #9
Sloping & Shaping	LinFt	175	4-6	WCS #2
Lunkers	No	3	7	----------
Seeding & Mulching	Ac.	1	9	----------

Quantities are estimated to the neat lines and grades of in-place materials shown on the construction plan unless otherwise stated. Truck yardage, loose fill, shrinkage, etc., must be calculated and compensated for by the contractor preparing a bid or constructing the project.

USDA United States Department of Agriculture
Natural Resources Conservation Service

ESTIMATED QUANTITIES

CLIENT: Ithaca Lions Park
COUNTY: Richland

Date
Designed KAnderson 2/13/19
Drawn KAnderson 2/13/19
Checked K. Anderson 2/13/19
Approved K. Anderson 2/13/19

Drawing Name WI-005
Date 06/14
Sheet 7 of 9

Construction Notes

1. Construction is not to be started until all needed permits and approval have been received. Contact Jeff Schure, DNR Water Specialist, at (608) 275-3228 for a permit.
2. It is the Landowners responsibility to secure a Diggers Hotline (1-800-242-8511) ticket number. Diggers will notify the owners of any utility, such as buried cable or pipelines that may be present in the construction area, before the start of construction, so that they may locate and stake such utilities.
3. This project must be staked by a LCD technician prior to the start of any construction. Technician will be present to assist with the installation of trout structures.
4. Use only rock that is approved by NRCS and meets criteria in Wisconsin Construction Spec.9.
5. Place rock and distribute sizes to assure a tight fit. Do not dump rock over the bank.
6. Spread spoil out in a layer of less than 6" and seed down. Do not spread spoil in wetlands.
7. All disturbed areas and spoil must be seeded and mulched.

Ithaca Lions Club

2/13/2019 11:07:10 AM

Roads

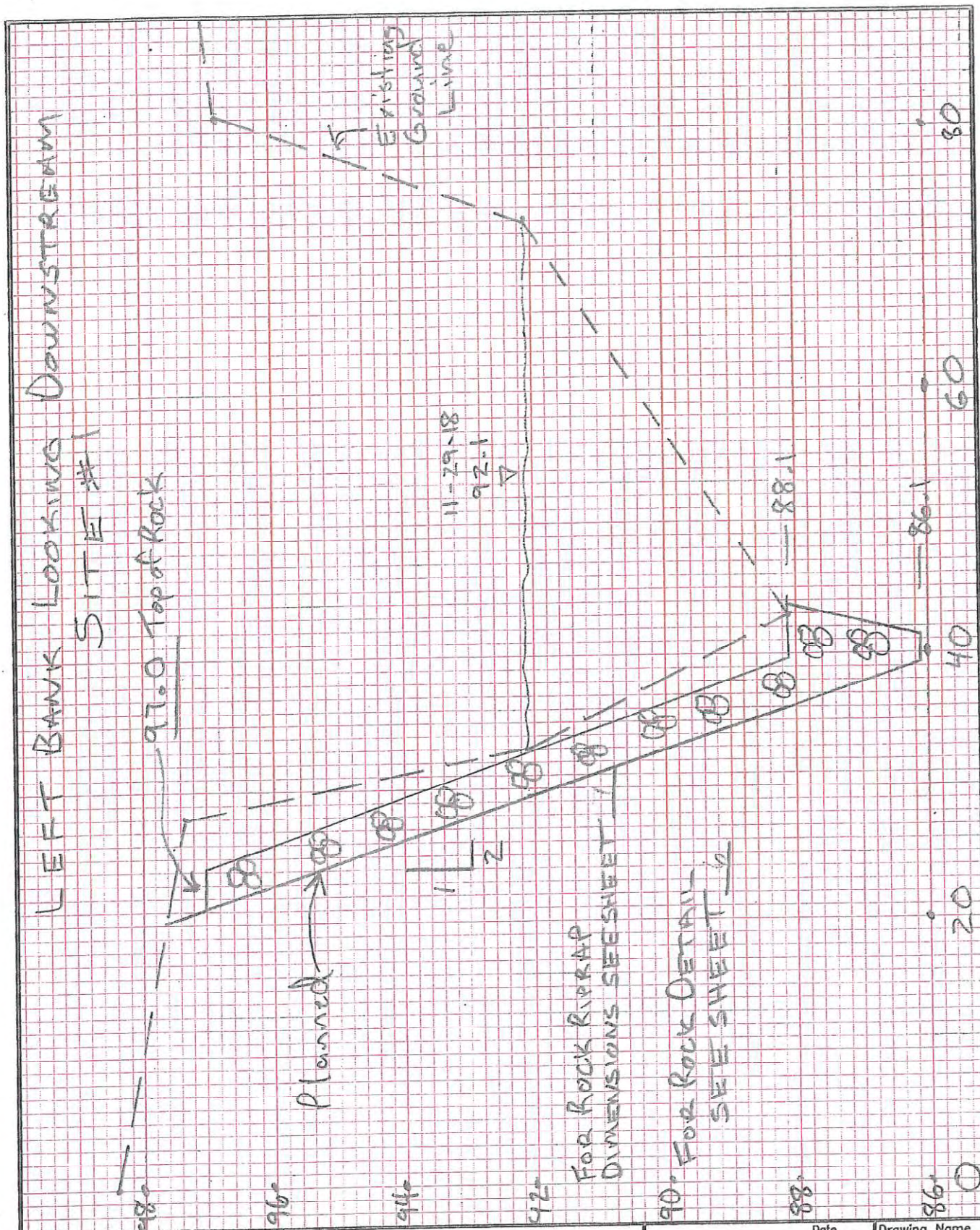
- City Streets
- Town Roads
- US Hwy
- County Highway
- State Highway

1:4,514

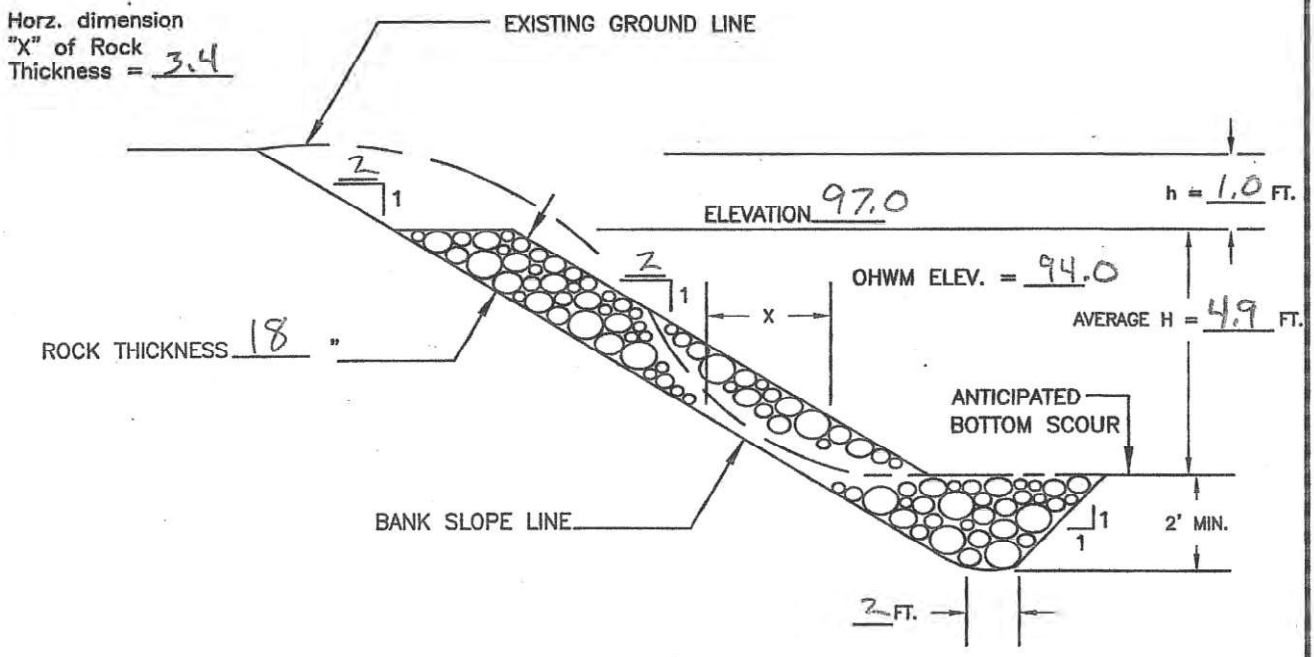
0 0.03 0.06 0.11 mi

0 0.04 0.09 0.17 km

Web AppBuilder for ArcGIS



USDA United States Department of Agriculture Natural Resources Conservation Service	CROSS SECTION CLIENT: Ithaca Lions COUNTY: Richland	Designed K. Anderson 1/14/19 Drawn K. Anderson 1/14/19 Checked Approved	Drawing Name WI-008color Date 6/2014 Sheet 5 of 9



TYPICAL CROSS SECTION

GRADATION OF ROCK

PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	12
60–85	9
25–50	6
5–20	3
0–5	1

QUANTITY ESTIMATE*

BANK SLOPING FOR RIPRAP	175	LIN. FT.
BANK SLOPING (SEEDING ONLY)	175	LIN. FT.
ROCK FOR RIPRAP (WI CONST. SPEC. 9)	107	CU. YD.
SEEDING	1.0	ACRES

*ESTIMATED TO THE NEAT LINES AND GRADE

NOTES:

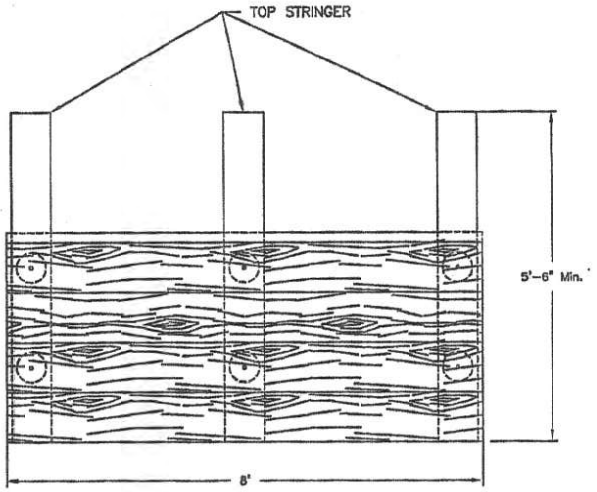
1. DOUBLE THE ROCK THICKNESS FOR A DISTANCE OF 5 FEET AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE RIPRAP. BLEND THE ROCK SURFACE TO MATCH THE EXISTING STABLE BANK SURFACE.

THIS STANDARDIZED DESIGN MUST BE ADAPTED TO THE SPECIFIC SITE.

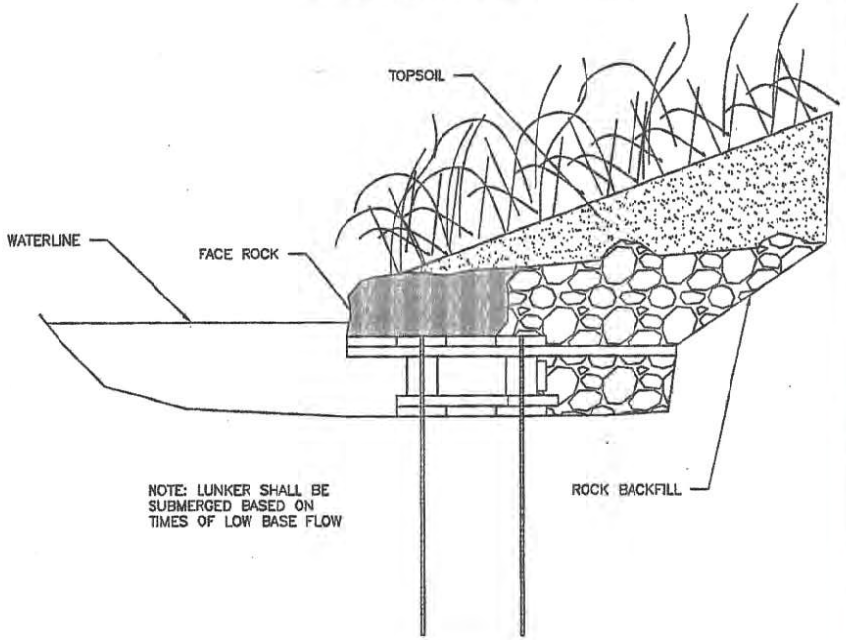
EXCAVATED KEYWAY

SITE 1

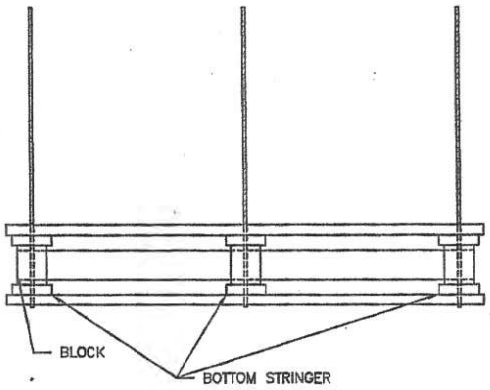
USDA United States Department of Agriculture Natural Resources Conservation Service	STREAMBANK PROTECTION NO FILTER OR GEOTEXTILE (PARTIAL BANK HEIGHT) CLIENT: Ithaca Lions COUNTY: Richland	Date Designed K. Anderson 1/15/19 Drawn K. Anderson 1/15/19 Checked K. Anderson 2/13/19 Approved K. Anderson 2/13/19	File Name WI-404E Date 07/14 Sheet 6 of 9



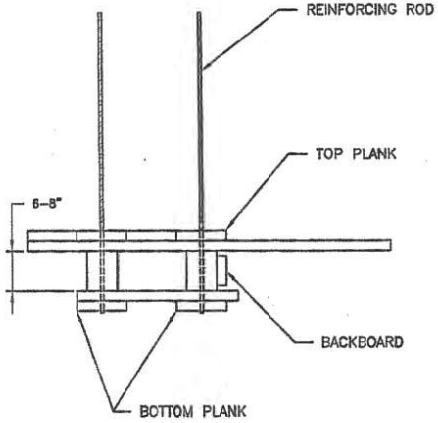
TOP VIEW



CONSTRUCTED SIDE VIEW



FRONT VIEW



SIDE VIEW

BILL OF MATERIALS LUNKER STRUCTURE		
ITEM	SIZE	QUANTITY
TOP PLANK	2" X 8" X 8' OAK BOARD	4
TOP STRINGER	2" X 8" X 5'-6" Min OAK BOARD	3
BLOCK	6" DIA. X 8" OAK BLOCK	6
BOTTOM STRINGER	2" X 8" X 30" BOARD	3
BOTTOM PLANK	2" X 8" X 8' OAK BOARD	2
BACKBOARD	2" X 8" X 8' OAK BOARD	1
#5 REINFORCING ROD	5/8" X 5' DEFORMED STEEL	6
RINGSHANK NAILS	20D GALVANIZED	60

10 Total Boards 2" X 8" X 8 Feet Long

Designed K. Anderson 1/21/19
Drawn K. Anderson 1/21/19
Checked K. Anderson 2/15/19
Approved K. Anderson 2/15/19

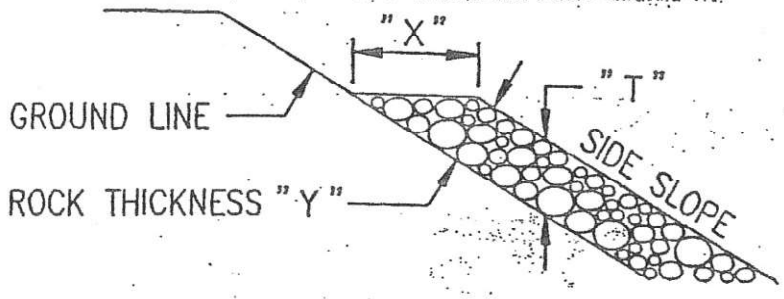
LUNKER STRUCTURE DETAIL

CLIENT: Ithaca Lions Park
COUNTY: Richland

United States Department of Agriculture
Natural Resources Conservation Service

File Name WI-930
Date 08/14
Sheet 7 of 9

ROCK RIPRAP SECTION DIMENSIONS



VALUE OF ROCK TOP WIDTH "X" IN FEET

Rock Thickness "Y" inches	Side Slope 1–1/2:1	2:1	3:1
12	1.8	2.2	3.2
15	2.3	2.8	4.0
(18)	2.7	(3.4)	4.7
21	3.2	3.9	5.5
24	3.6	4.5	6.3
27	4.1	5.0	7.1
30	4.5	5.6	7.9
33	5.0	6.2	8.7
36	5.4	6.7	9.5
39	5.9	7.3	10.3
42	6.3	7.8	11.1
45	6.8	8.4	11.9
48	7.2	9.0	12.7

VERTICAL "T" VS NORMAL TO SLOPE "Y" THICKNESS DIMENSIONS

Rock Thickness "Y" inches	Side Slope 1–1/2:1	2:1	3:1
12	1.2	1.1	1.0
15	1.5	1.4	1.3
(18)	1.8	(1.7)	1.6
21	2.1	2.0	1.8
24	2.4	2.2	2.1
27	2.7	2.5	2.4
30	3.0	2.8	2.6
33	3.3	3.1	2.9
36	3.6	3.4	3.2
39	3.9	3.6	3.4
42	4.2	3.9	3.7
45	4.5	4.2	4.0
48	4.8	4.5	4.2

SEEDING DATES

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	July 31	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	October 15	Temporary *
Late Fall	November 1	through	Snow Cover	Dormant
Winter	No snow cover	through	April 14	Frost Seed

MATERIALS

Apply Ag Lime (80–85) at the rate of 2 tons per acre.
Apply 150 pounds per acre of 20 – 10 – 10 fertilizer.
Mulch with 1–1/2 tons per acre of straw or hay reasonably free from grain and weed seed. If other mulch materials are used, the rate of application shall meet the manufacturer's recommendations.
* Seed a temporary cover crop of Annual Ryegrass at a rate of 25 pounds/acre.
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)[1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX Custom	LOCATION Disturbed Areas ACRES 1.0		SEEDING MIX	LOCATION ACRES	
SPECIES	RATE	POUNDS	SPECIES	RATE	POUNDS
Aslike Clover	1.2	1.2			
Timothy	4.8	4.8			

1. PLS = (% Germination X % Purity)

SEEDBED PREPARATION

During the recommended seeding periods, seedbed preparation shall immediately follow construction activities. Prepare a fine, firm seedbed to a minimum depth of 3 inches.

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer. Seed grasses and legumes no more than 1/4 inch deep. Seed may be broadcast or drilled as appropriate to the site. Seeding shall be done prior to mulching, except for dormant seedings.

MULCHING

Mulching shall be done prior to seeding and immediately after seedbed preparation when seeding is accomplished as a dormant seeding. Spread mulch uniformly. Straw mulch materials shall be stabilized by the use of a disk, by a suitable non–asphaltic tackifier, or by netting. A disk harrow shall have the disks set straight and the harrow shall be used to anchor the straw mulch into the soil. The tackifier shall be applied uniformly over the mulch material at the specified rate, or by injecting it into the mulch material as it is being applied. The netting shall be stapled per the manufacturer's recommendations.

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

INTRODUCED SPECIES SEEDING ESTABLISHMENT

CLIENT: Ithaca Lions
COUNTY: RICHLAND

	Date	File Name	Date
Designed K. Anderson	1/14/19	WI-710	6/07
Drawn K. Anderson	1/14/19		
Checked K. Anderson			
Approved K. Anderson		Sheet 9 of 9	

USDA United States Department of Agriculture
Natural Resources Conservation Service

WISCONSIN STANDARD
DRAWING NO. WI-001 03/16

CONSTRUCTION PLAN

PRACTICE(S) 580 – Streambank and Shoreline Protection

LANDOWNER Jill Coleman

ADDRESS 28026 US HWY 14, Richland Center, WI 53581

LANDOWNER PHONE NO. 608-647-3321 COUNTY Richland

TOWNSHIP IBeuna Vista T 9 N, R 2 E, Sec. 6

FIELD OFFICE Richland Center TELEPHONE NO. 608-647-8874 ext 109

DIGGERS HOTLINE

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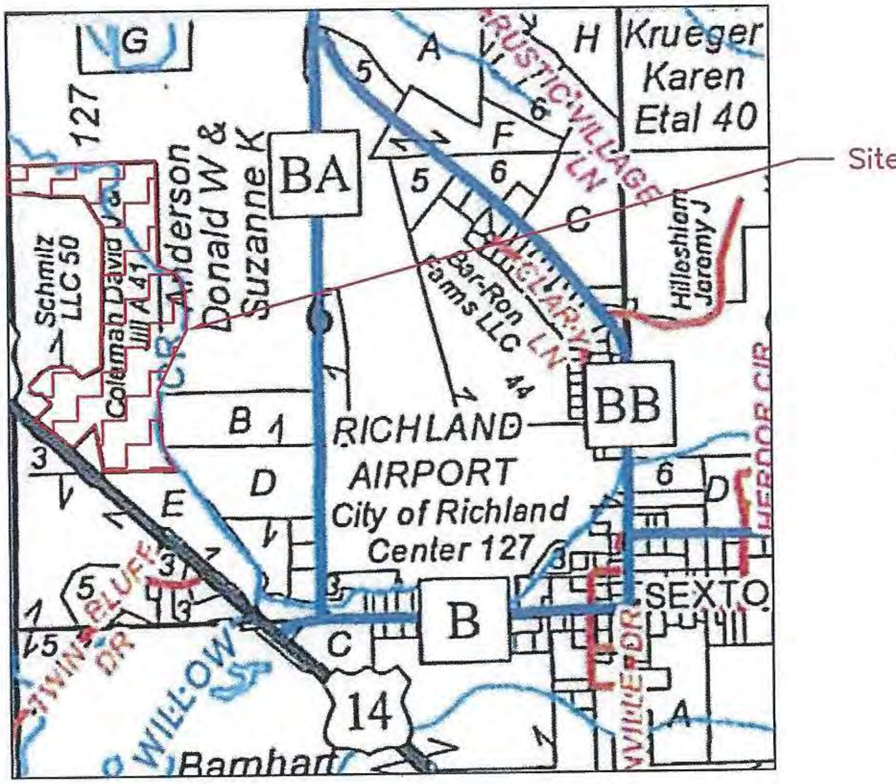
TDD
1-800-542-2289

Website
www.diggershotline.com



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Not to Scale

LOCATION MAP

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the Richland County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities. (Call Diggers Hotline) Ticket # ______

Landowner Acceptance: See WI Jobsheet 819

Designed by: Todd Gerlanft Date: 2/2018

Checked by: Brittany Sinker Date: 2/2018

Approved by: Todd Gerlanft Date: 2-2018

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: ______ Date: ______

Job Approval Class IV

Sheet 1 of 7

CONSTRUCTION NOTES

1. It is the landowner's responsibility to secure a Diggers Hotline (1-800-242-8511) ticket number. Then notify the owners of any utility, such as buried cable or pipelines that may be present in the construction area, before the start of construction, so that they may locate and stake such utilities.

2. Construction is not to be started until all needed permits and approval have been received including but not limited to, zoning, DNR, and Army Corp of Engineers. Contact Jeff Shure, WI DNR 3911 Fish Hatchery Road, Fitchburg, WI, 53711 for a permit.

3. The area should be cleared of all trees, brush and other debris. All organic matter shall be removed. This will require a minimum of a half-foot stripping line.

4. This project must be staked by the NRCS technician prior to the start of construction.

5. To the extent that it is needed, all suitable materials removed from the excavations shall be placed back over rock. All unsuitable excavated materials shall be disposed as specified by the technician.

6. Use only rock that is approved by NRCS and meets criteria in Wisconsin Construction Specification 9.

7. Shape banks to be protected with rock to a side slope, and banks above rock to a side slope, as specified in the construction plan. Banks that are shaped only and require no rock, should be 3:1 or flatter.

8. Dig toe to the depth specified in the construction plan.

9. "KEY-IN" the upstream and downstream ends of the riprap with double the rock thickness for a distance of 5 feet. Provide a smooth transition from the face of the bank slope to the face of the rock.

10. Place rock and distribute sizes to assure a tight fit. Do not place rock by dumping rock over the bank.

11. Spoil from the excavation must not be spread in the FEMA mapped flood plain. Spread spoil out in a layer of less than 6" and seed down. Do not spread spoil in wetlands.

12. All disturbed areas and spoil must be seeded and mulched.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	SHEET NUMBER	WI. CONSTRUCTION SPEC. OR JOB SHEET NUMBER
Bank Shaping for Rock	Linear Ft	3028	4–6	Wisconsin Construction Spec #2
6" D50 Rock Rip–Rap	Cu Yds	3340	4–6	Wisconsin Construction Spec #9
Seeding & Mulching	Acres	2.1	7	Wisconsin Drawing #710

ALL QUANTITIES ARE CALCULATED ON NEAT LINES AND GRADES. THE ESTIMATED QUANTITIES LISTED REPRESENT ALL WORK ITEMS NECESSARY TO COMPLETE THIS PROJECT. ITEMS NOT SPECIFICALLY LISTED SHALL BE CONSIDERED INCIDENTAL TO THOSE LISTED. GEOTEXTILE QUANTITY DOES NOT INCLUDE OVERLAP.

CONTRACTORS MUST SATISFY THEMSELVES OF THE ACCURACY OF THE ESTIMATED QUANTITIES IN THE BID SCHEDULE BY EXAMINATION OF THE SITE AND A REVIEW OF THE DRAWINGS AND SPECIFICATIONS.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BRING ANY OMISSIONS OR DISCREPANCIES IN THE BID SCHEDULE TO THE ATTENTION OF THE OWNER AND NRCS. FAILURE TO DO SO SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM ANY OBLIGATION IN RESPECT TO THE BID.

PROMPT CLARIFICATION OF NOTED OMISSIONS AND DISCREPANCIES WILL BE SUPPLIED BY NRCS.

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

ESTIMATED QUANTITIES

CLIENT: Jill Coleman

COUNTY: RICHLAND

Designed STC Date 2/2018

Drawn

Checked BAS 2/2018

Approved

Drawing Name WI–005

Date 6/07

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

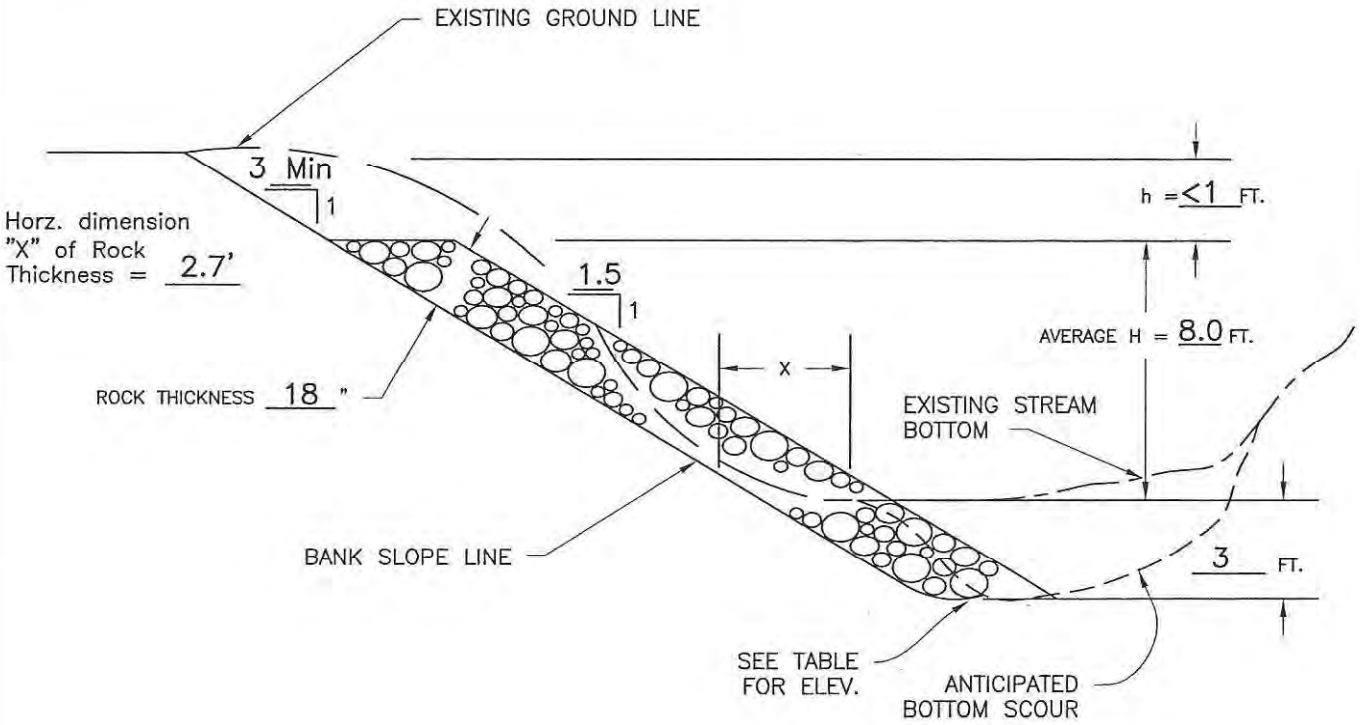
Location Map

CLIENT: Jill Coleman

COUNTY: RICHLAND

		Date
Designed	STC	2/2018
Drawn		
Checked	DD	2/2018
Approved		

Drawing Name	WI-002
Date	10/2006
	Sheet 4 of 7



TYPICAL CROSS SECTION

GRADATION OF ROCK

PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	12
60–85	9
25–50	6
5–20	3
0–5	1.2

QUANTITY ESTIMATE *

BANK SLOPING FOR RIPRAP	3028	LIN. FT.
BANK SLOPING (SEEDING ONLY)	0	LIN. FT.
ROCK FOR RIPRAP (WI CONST. SPEC. 9)	3340	CU. YD.
SEEDING	2.1	ACRES

* ESTIMATED TO THE NEAT LINES AND GRADE

NOTE:

1. DOUBLE THE ROCK THICKNESS FOR A DISTANCE OF 5 FEET AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE RIPRAP. BLEND THE ROCK SURFACE TO MATCH THE EXISTING STABLE BANK SURFACE.
2. TOE PROTECTION SHALL BE PROVIDED TO A MINIMUM DEPTH OF THE ANTICIPATED BOTTOM SCOUR, WHICH WILL BE BELOW THE EXISTING STREAM BOTTOM.

EXCAVATED TOE

TYPICAL OF ALL SITES ON FANCY CREEK

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

STREAMBANK PROTECTION
NO FILTER OR GEOTEXTILE
(PARTIAL BANK HEIGHT)

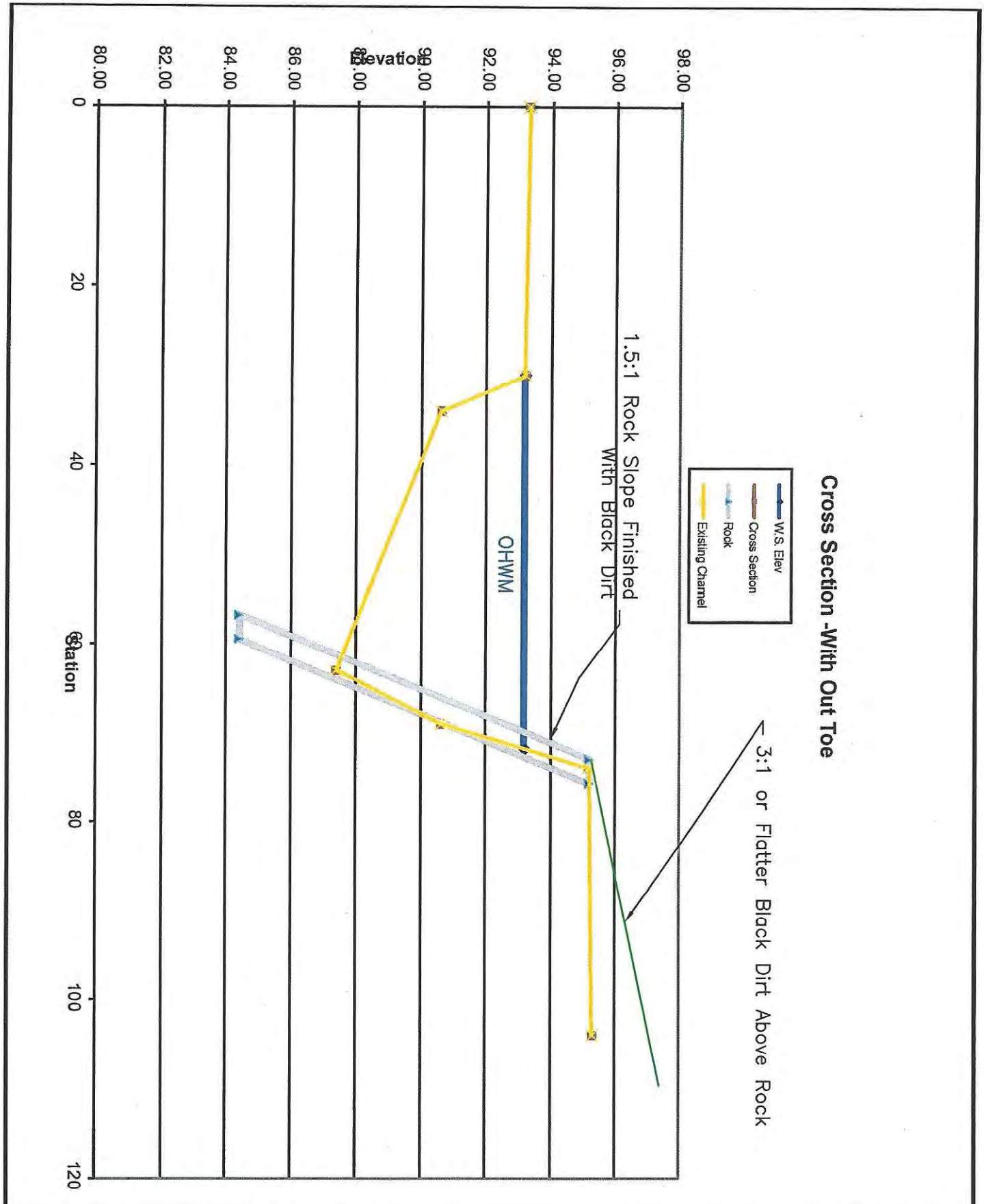
CLIENT: Jill Coleman

COUNTY: RICHLAND

		Date
Designed	STC	2/2018
Drawn		
Checked	BAS	2/2018
Approved		

File Name: WI-404E-ET

Date: 6/07



NRCS
Natural Resources Conservation Service
United States Department of Agriculture

AVERAGE CROSS SECTION

CLIENT: Jill Coleman

COUNTY: RICHLAND

		Date
Designed	STC	2/2018
Drawn		
Checked	BAS	2/2018
Approved		

Drawing Name: WI-012

Date: 4/2009

SEEDING DATES

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	July 31	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	October 15	Temporary *
Late Fall	November 1	through	Snow Cover	Dormant
Winter	No snow cover	through	April 14	Frost Seed

MATERIALS

Apply Ag Lime (80–85) at the rate of 2 tons per acre.
Apply 150 pounds per acre of 20 – 10 – 10 fertilizer.
Mulch with 1–1/2 tons per acre of straw or hay reasonably free from grain and weed seed. If other mulch materials are used, the rate of application shall meet the manufacturer's recommendations.
* Seed a temporary cover crop of Annual Ryegrass at a rate of 25 pounds/acre.
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)[1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX Custom	LOCATION Disturbed Areas ACRES 3.2		SEEDING MIX	LOCATION ACRES	
SPECIES	RATE	POUNDS	SPECIES	RATE	POUNDS
Alsike Clover	2.0	6.4			
Timothy	3.0	9.6			
Redtop	1.0	3.2			

1. PLS = (% Germination X % Purity)

SEEDBED PREPARATION

During the recommended seeding periods, seedbed preparation shall immediately follow construction activities. Prepare a fine, firm seedbed to a minimum depth of 3 inches.

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer. Seed grasses and legumes no more than 1/4 inch deep. Seed may be broadcast or drilled as appropriate to the site. Seeding shall be done prior to mulching, except for dormant seedings.

MULCHING

Mulching shall be done prior to seeding and immediately after seedbed preparation when seeding is accomplished as a dormant seeding. Spread mulch uniformly. Straw mulch materials shall be stabilized by the use of a disk, by a suitable non–asphaltic tackifier, or by netting. A disk harrow shall have the disks set straight and the harrow shall be used to anchor the straw mulch into the soil. The tackifier shall be applied uniformly over the mulch material at the specified rate, or by injecting it into the mulch material as it is being applied. The netting shall be stapled per the manufacturer's recommendations.

CONSTRUCTION PLAN

PRACTICE(S) 580 – Streambank and Shoreline Protection 500 – Obstruction Removal

LANDOWNER Paul Denman

ADDRESS 28632 CTY BA, Richland Center, WI 53581

LANDOWNER PHONE NO. 608-647-6621 COUNTY Richland

TOWNSHIP Beuna Vista T 9 N, R 2 E, Sec. 6

FIELD OFFICE Richland Center TELEPHONE NO. 608-647-8874 ext 109

DIGGERS HOTLINE

Call 3 Work Days Before You Dig!

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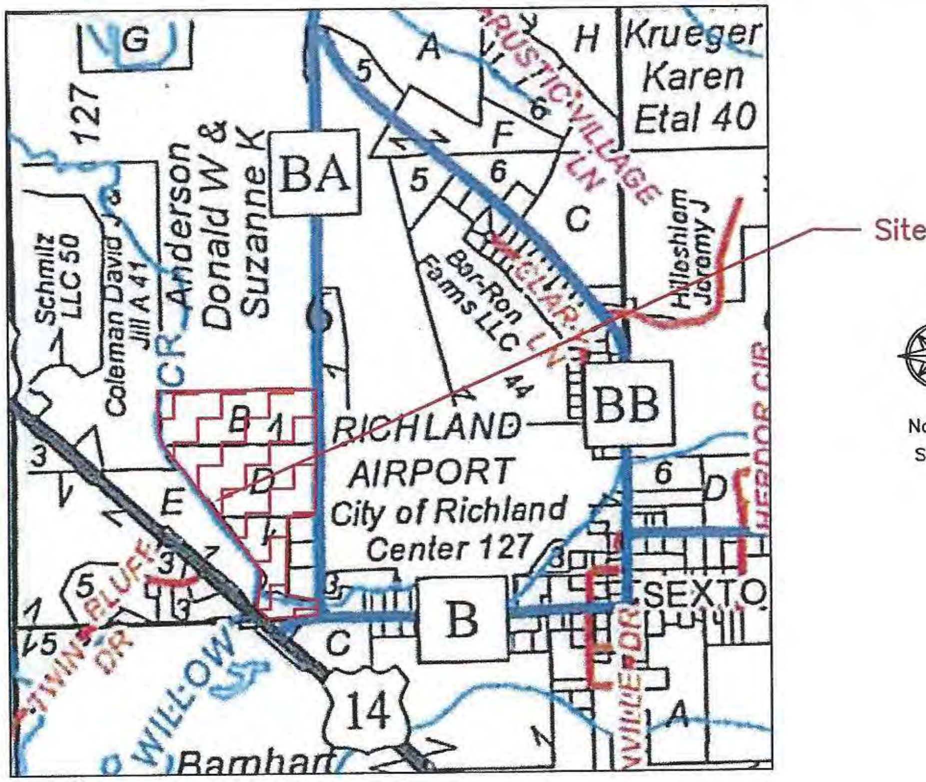
Website
www.diggershotline.com



N

Not to Scale

LOCATION MAP

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the Richland County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities. (Call Diggers Hotline) Ticket # ____________

Landowner Acceptance: See WI Jobsheet 819

Designed by: [signature] Date: 1-23-2019

Checked by: [signature] Date: 2/6/19

Approved by: [signature] Date: 2-06-2019

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: ____________ Date: ____________

Job Approval Class IV

CONSTRUCTION NOTES

1. It is the landowner's responsibility to secure a Diggers Hotline (1-800-242-8511) ticket number. Then notify the owners of any utility, such as buried cable or pipelines that may be present in the construction area, before the start of construction, so that they may locate and stake such utilities.

2. Construction is not to be started until all needed permits and approval have been received including but not limited to, zoning, DNR, and Army Corp of Engineers. Contact Jeff Shure, WI DNR 3911 Fish Hatchery Road, Fitchburg, WI, 53711 for a permit.

3. The area should be cleared of all trees, brush and other debris. All organic matter shall be removed. This will require a minimum of a half-foot stripping line.

4. This project must be staked by the NRCS technician prior to the start of construction.

5. To the extent that it is needed, all suitable materials removed from the excavations shall be placed back over rock. All unsuitable excavated materials shall be disposed as specified by the technician.

6. Use only rock that is approved by NRCS and meets criteria in Wisconsin Construction Specification 9.

7. Shape banks to be protected with rock to a side slope, and banks above rock to a side slope, as specified in the construction plan. Banks that are shaped only and require no rock, should be 3:1 or flatter.

8. Dig toe to the depth specified in the construction plan.

9. "KEY-IN" the upstream and downstream ends of the riprap with double the rock thickness for a distance of 5 feet. Provide a smooth transition from the face of the bank slope to the face of the rock.

10. Place rock and distribute sizes to assure a tight fit. Do not place rock by dumping rock over the bank.

11. Spoil from the excavation must not be spread in the FEMA mapped flood plain. Spread spoil out in a layer of less than 6" and seed down. Do not spread spoil in wetlands.

12. All disturbed areas and spoil must be seeded and mulched.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	SHEET NUMBER	WI. CONSTRUCTION SPEC. OR JOB SHEET NUMBER
Obstruction Removal	Acres	0.7	4	Wisconsin Construction Spec #1
Bank Shaping for Rock	Linear Ft	1400	4–6	Wisconsin Construction Spec #2
6" D50 Rock Rip–Rap	Cu Yds	1536	4–6	Wisconsin Construction Spec #9
Seeding & Mulching	Acres	1.25	7	Wisconsin Drawing #710

ALL QUANTITIES ARE CALCULATED ON NEAT LINES AND GRADES. THE ESTIMATED QUANTITIES LISTED REPRESENT ALL WORK ITEMS NECESSARY TO COMPLETE THIS PROJECT. ITEMS NOT SPECIFICALLY LISTED SHALL BE CONSIDERED INCIDENTAL TO THOSE LISTED. GEOTEXTILE QUANTITY DOES NOT INCLUDE OVERLAP.

CONTRACTORS MUST SATISFY THEMSELVES OF THE ACCURACY OF THE ESTIMATED QUANTITIES IN THE BID SCHEDULE BY EXAMINATION OF THE SITE AND A REVIEW OF THE DRAWINGS AND SPECIFICATIONS.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BRING ANY OMISSIONS OR DISCREPANCIES IN THE BID SCHEDULE TO THE ATTENTION OF THE OWNER AND NRCS. FAILURE TO DO SO SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM ANY OBLIGATION IN RESPECT TO THE BID.

PROMPT CLARIFICATION OF NOTED OMISSIONS AND DISCREPANCIES WILL BE SUPPLIED BY NRCS.

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

ESTIMATED QUANTITIES

CLIENT: Paul Denman

COUNTY: RICHLAND

Designed STC Date 6/2018

Drawn

Checked BAS 2/2019

Approved

Drawing Name WI-005

Date 6/07

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

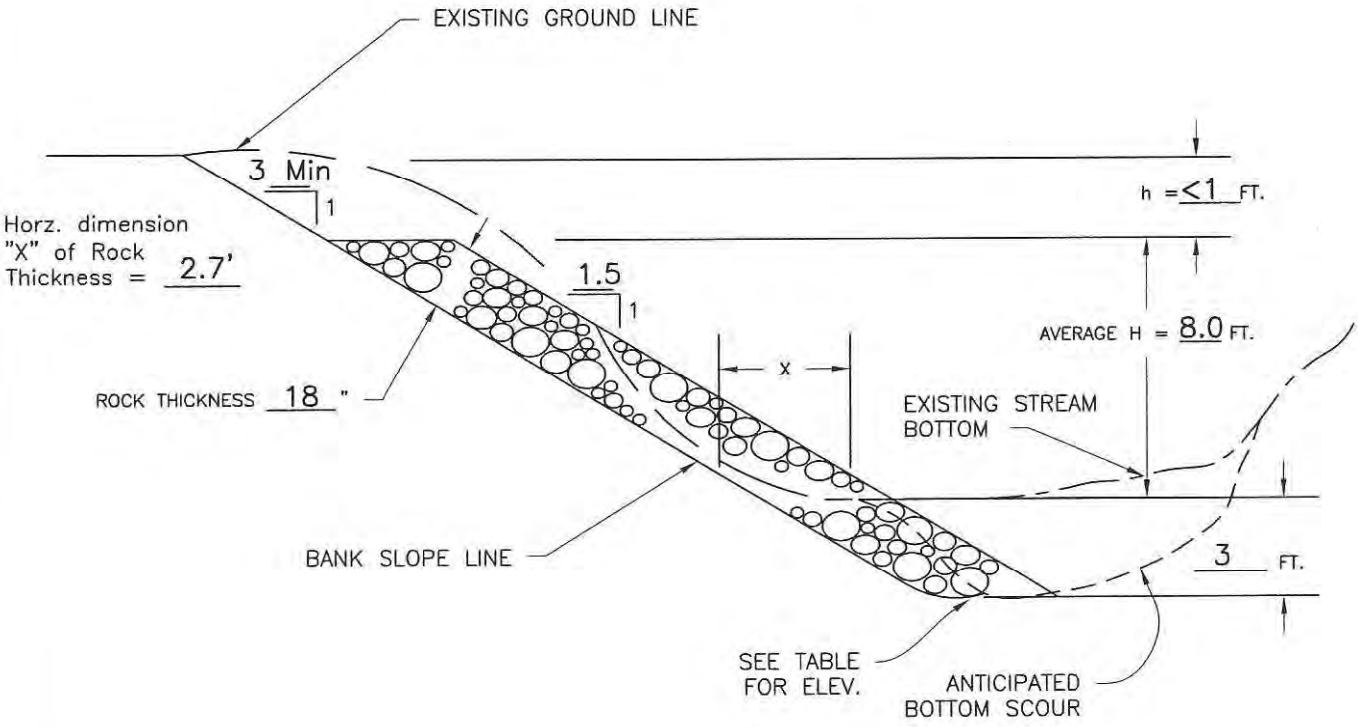
Location Map

CLIENT: Paul Denman

COUNTY: RICHLAND

		Date
Designed	STC	6/2018
Drawn		
Checked	bs	2/2019
Approved		

Drawing Name
WI-002
Date
10/2006
Sheet 4 of 7



TYPICAL CROSS SECTION

GRADATION OF ROCK

PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	12
60–85	9
25–50	6
5–20	3
0–5	1.2

QUANTITY ESTIMATE *

BANK SLOPING FOR RIPRAP	1400	LIN. FT.
BANK SLOPING (SEEDING ONLY)	0	LIN. FT.
ROCK FOR RIPRAP (WI CONST. SPEC. 9)	1536	CU. YD.
SEEDING	1.25	ACRES

* ESTIMATED TO THE NEAT LINES AND GRADE

NOTE:

1. DOUBLE THE ROCK THICKNESS FOR A DISTANCE OF 5 FEET AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE RIPRAP. BLEND THE ROCK SURFACE TO MATCH THE EXISTING STABLE BANK SURFACE.
2. TOE PROTECTION SHALL BE PROVIDED TO A MINIMUM DEPTH OF THE ANTICIPATED BOTTOM SCOUR, WHICH WILL BE BELOW THE EXISTING STREAM BOTTOM.

EXCAVATED TOE

TYPICAL OF ALL SITES ON FANCY CREEK

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

STREAMBANK PROTECTION
NO FILTER OR GEOTEXTILE
(PARTIAL BANK HEIGHT)

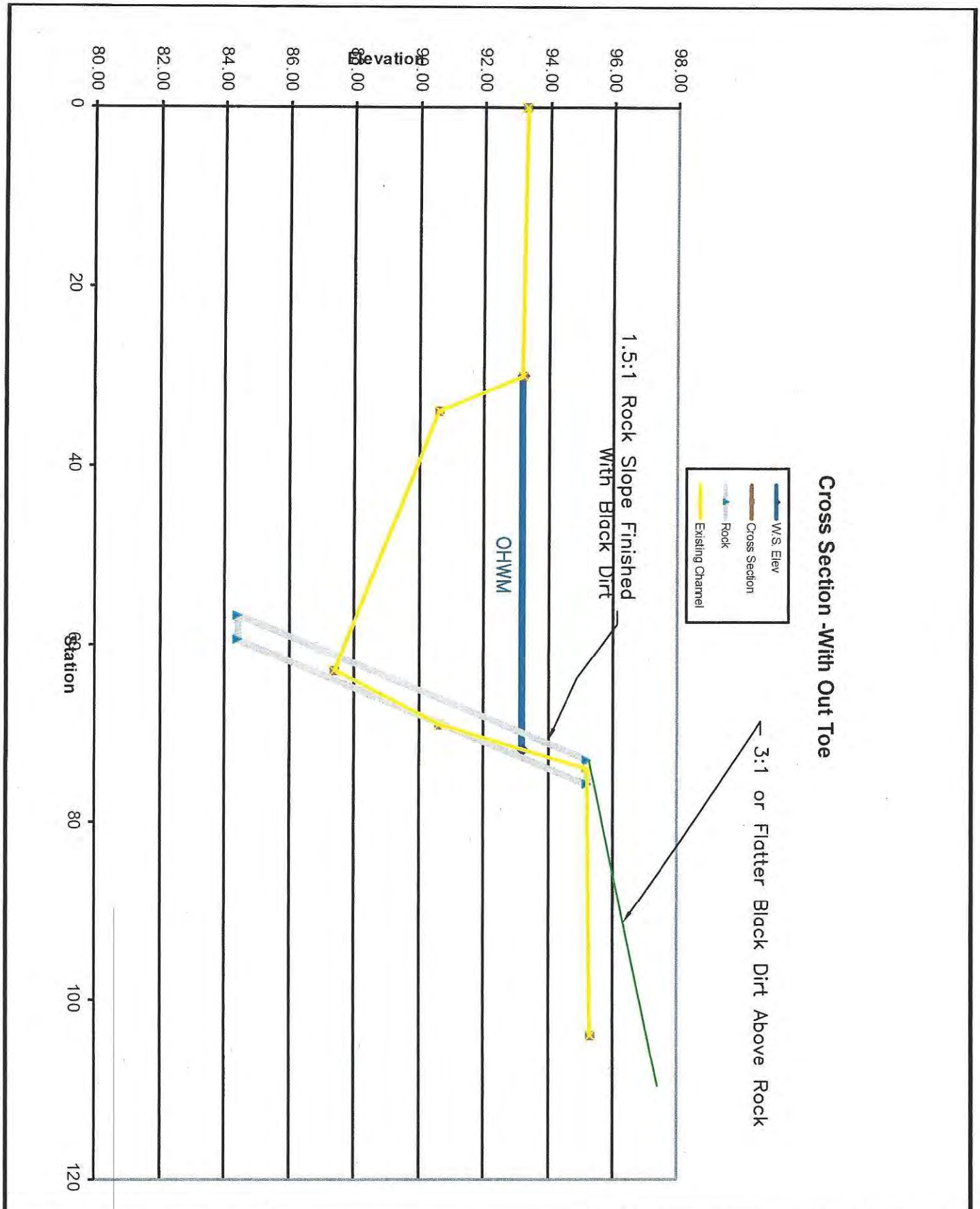
CLIENT: Paul Denman

COUNTY: RICHLAND

		Date
Designed	STC	6/2018
Drawn		
Checked	BAS	2/2019
Approved		

File Name: WI-404E-ET

Date: 6/07



NRCS
Natural Resources Conservation Service
United States Department of Agriculture

AVERAGE CROSS SECTION

CLIENT: Paul Denman

COUNTY: RICHLAND

		Date
Designed	STC	6/2018
Drawn		
Checked	BAS	2/2019
Approved		

Drawing Name	WI-012
Date	4/2009
Sheet	6 of 7

SEEDING DATES

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	July 31	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	October 15	Temporary *
Late Fall	November 1	through	Snow Cover	Dormant
Winter	No snow cover	through	April 14	Frost Seed

MATERIALS

Apply Ag Lime (80–85) at the rate of 2 tons per acre.
Apply 150 pounds per acre of 20 – 10 – 10 fertilizer.
Mulch with 1–1/2 tons per acre of straw or hay reasonably free from grain and weed seed. If other mulch materials are used, the rate of application shall meet the manufacturer's recommendations.
* Seed a temporary cover crop of Annual Ryegrass at a rate of 25 pounds/acre.
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)[1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX Custom	LOCATION Disturbed Areas ACRES 1.25		SEEDING MIX	LOCATION ACRES	
SPECIES	RATE	POUNDS	SPECIES	RATE	POUNDS
Alsike Clover	2.0	2.5			
Timothy	3.0	3.75			
Redtop	1.0	3.2			

1. PLS = (% Germination X % Purity)

SEEDBED PREPARATION

During the recommended seeding periods, seedbed preparation shall immediately follow construction activities. Prepare a fine, firm seedbed to a minimum depth of 3 inches.

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer. Seed grasses and legumes no more than 1/4 inch deep. Seed may be broadcast or drilled as appropriate to the site. Seeding shall be done prior to mulching, except for dormant seedings.

MULCHING

Mulching shall be done prior to seeding and immediately after seedbed preparation when seeding is accomplished as a dormant seeding. Spread mulch uniformly. Straw mulch materials shall be stabilized by the use of a disk, by a suitable non–asphaltic tackifier, or by netting. A disk harrow shall have the disks set straight and the harrow shall be used to anchor the straw mulch into the soil. The tackifier shall be applied uniformly over the mulch material at the specified rate, or by injecting it into the mulch material as it is being applied. The netting shall be stapled per the manufacturer's recommendations.

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

INTRODUCED SPECIES
SEEDING ESTABLISHMENT

CLIENT: Paul Denman
COUNTY: RICHLAND

		Date
Designed	STC	6/2018
Drawn		
Checked	BAS	6/2018
Approved		

File Name Date
WI–710 6/07

CONSTRUCTION PLAN

PRACTICE(S) 580 - Streambank Protection

LANDOWNER Dale Servais

ADDRESS 28960 Pine St. PO Box 101, Sextonville, WI 53584

LANDOWNER PHONE NO. 608-963-0234 COUNTY Richland

TOWNSHIP Willow T 11 N, R 2 E/W, Sec. 31

FIELD OFFICE Richland County LCD TELEPHONE NO. 608-647-2100

DIGGERS HOTLINE

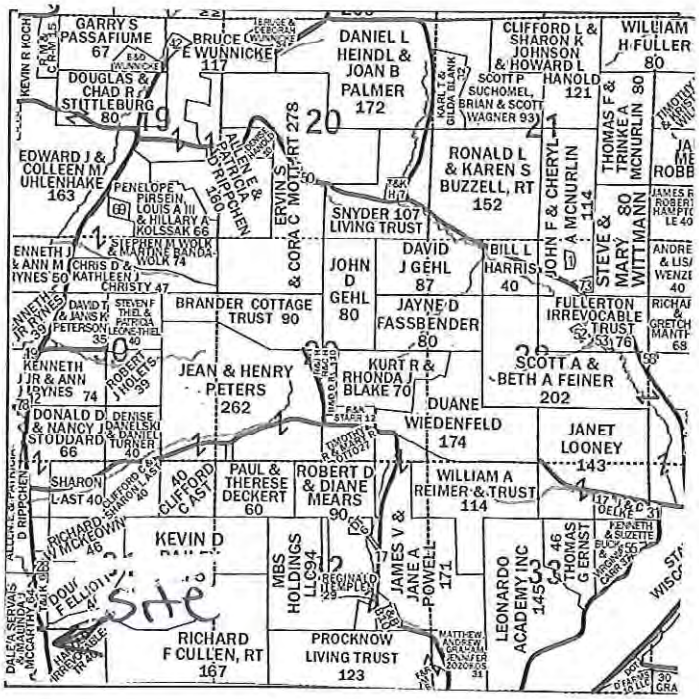
Call 3 Work Days
Before You Dig!

Nationwide
811

Toll Free
1-800-242-8511

TDD
1-800-542-2289

Website
www.diggershotline.com



N

Not to Scale

LOCATION MAP

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the Richland County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities.
Call Diggers Hotline! Ticket Number _____

CONSTRUCTION DRAWINGS AND SPECIFICATIONS ACCEPTANCE

I have reviewed and understand the construction plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any continued NRCS technical assistance or program cost sharing applied for. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws. Modification of these construction plans or specifications must be approved by the NRCS before installation. I assume all responsibility for negotiations and contract agreements with the construction contractors.

Landowner Signature: _____ Date: _____

Designed by: Ken Anderson Date: 02/05/2020

Checked by: _____ Date: _____

Approved by: _____ Date: _____

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: _____ Date: _____

Job Approval Class _____

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	SHEET NUMBER	WI. CONSTRUCTION SPEC. OR JOB SHEET NUMBER
6" D50 Rock	CuYds	308	3-6	WCS - #9
Sloping & Shaping	LinFt	410	5,6	WCS - #2
Lunkers	No	4	7	-
Cross Channel Log	No	1	8	-
Vortex Weir	No	2	9	-
Seeding & Mulching	Ac	1	11,12	-

Quantities are estimated to the neat lines and grades of in-place materials shown on the construction plan unless otherwise stated. Truck yardage, loose fill, shrinkage, etc., must be calculated and compensated for by the contractor preparing a bid or constructing the project.

USDA United States Department of Agriculture
Natural Resources Conservation Service

ESTIMATED QUANTITIES

CLIENT: Dale Servais
COUNTY: Richland

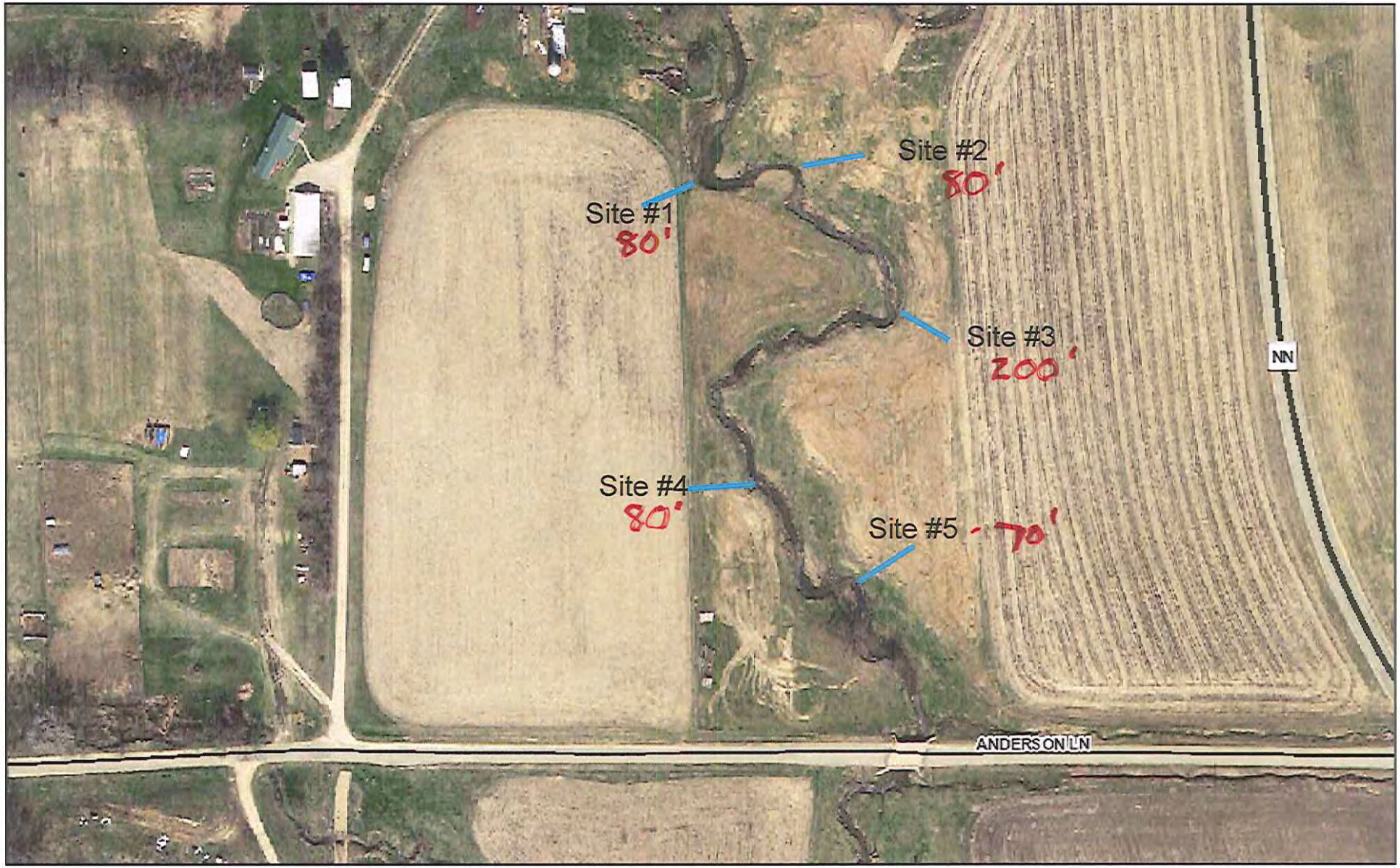
Designed KAnderson 2/10/12 (Date)
Drawn KAnderson 2/10/12
Checked
Approved

Drawing Name WI-005
Date 06/14
Sheet 2 of 12

Construction Notes

1. Construction is not to be started until all needed permits and approval have been received. Contact Jeff Schure, DNR Water Specialist, at (608) 275-3228 for a permit.
2. It is the Landowners responsibility to secure a Diggers Hotline (1-800-242-8511) ticket number. Diggers will notify the owners of any utility, such as buried cable or pipelines that may be present in the construction area, before the start of construction, so that they may locate and stake such utilities.
3. This project must be staked by a LCD technician prior to the start of any construction. Technician will be present to assist with the installation of trout structures.
4. Use only rock that is approved by NRCS and meets criteria in Wisconsin Construction Spec.9.
5. Place rock and distribute sizes to assure a tight fit. Do not dump rock over the bank.
6. Spread spoil out in a layer of less than 6" and seed down. Do not spread spoil in wetlands.
7. All disturbed areas and spoil must be seeded and mulched.

Dale Servais



1/31/2020 10:32:49 AM

1:2,257

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.08 km

Roads

City Streets

Town Roads

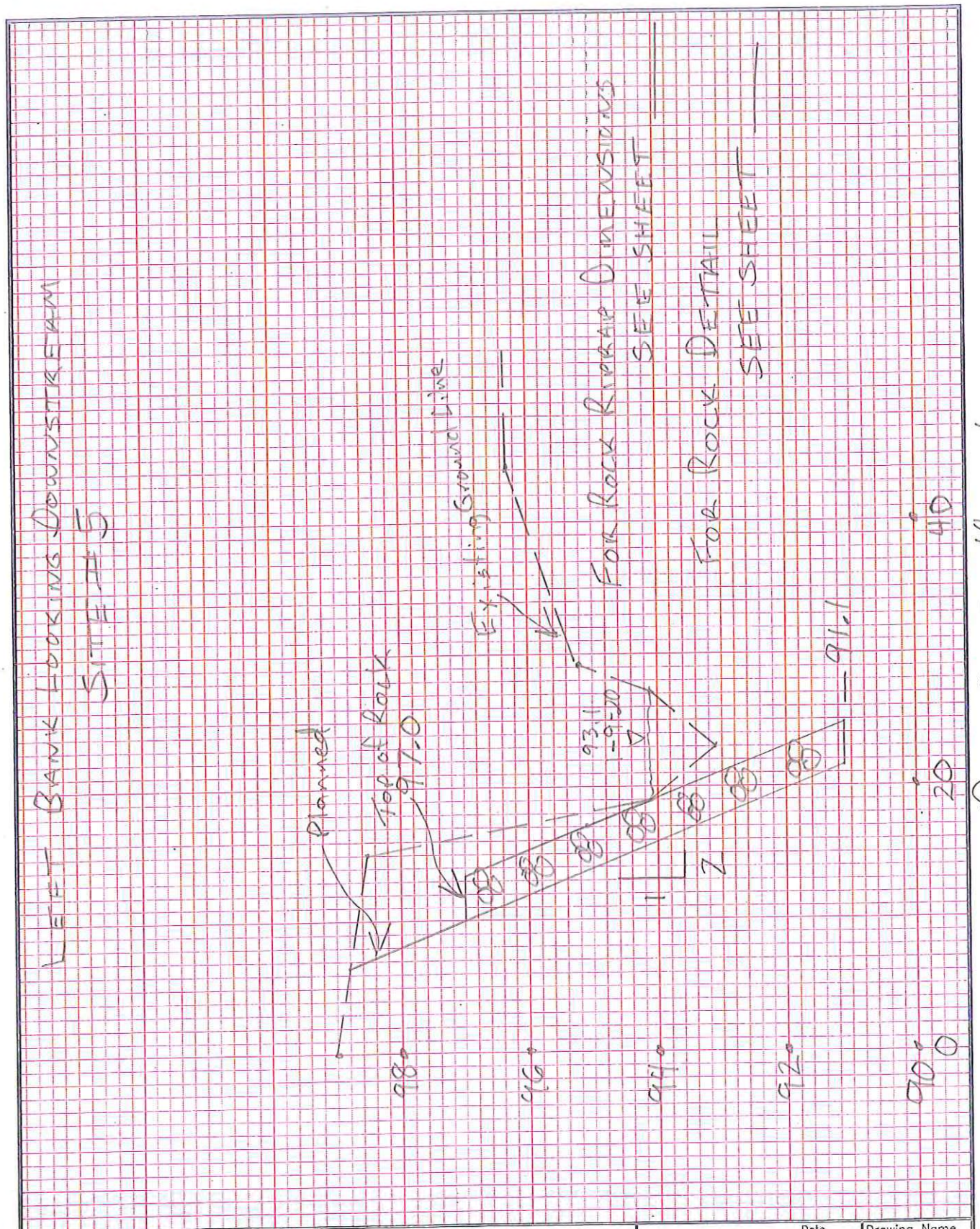
US Hwy

County Highway

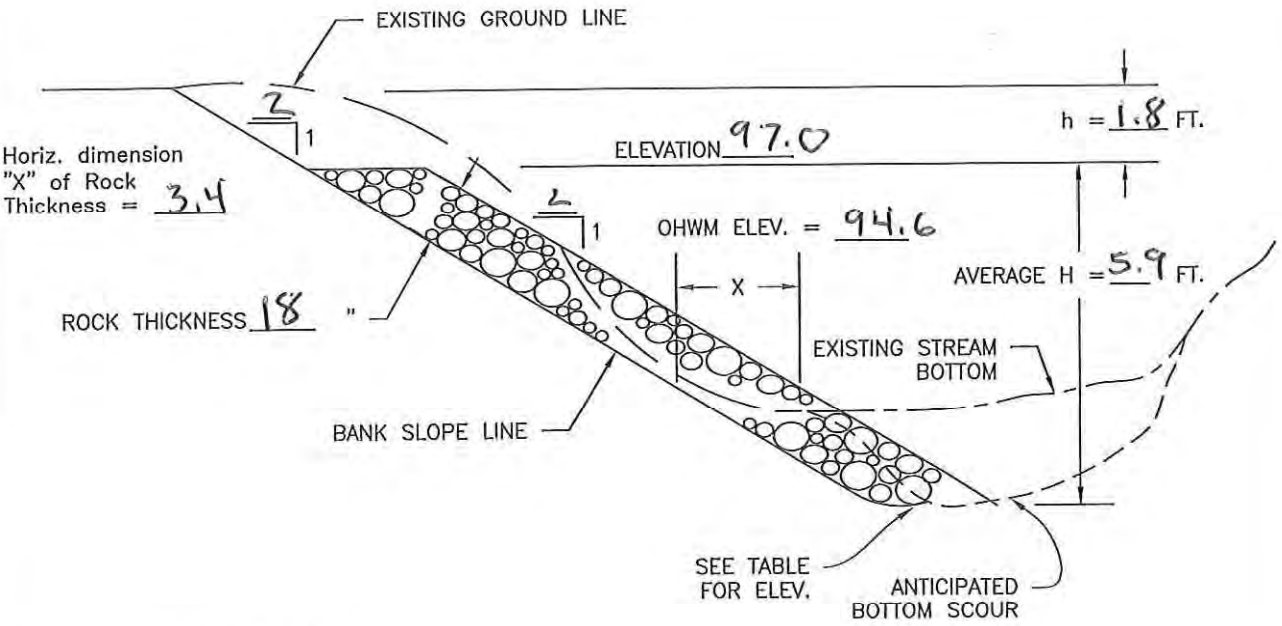
State Highway

Web AppBuilder for ArcGIS

Sheet 4 of 12



USDA United States Department of Agriculture Natural Resources Conservation Service	CROSS SECTION CLIENT: Dale Servais COUNTY: Richland	Date Designed K. Anderson 2/10/20 Drawn K. Anderson 2/10/20 Checked Approved	Drawing Name WI-008color Date 6/2014 Sheet 5 of 12



TYPICAL CROSS SECTION

GRADATION OF ROCK

PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	12
60–85	9
25–50	6
5–20	3
0–5	1

STATION	ELEVATION

QUANTITY ESTIMATE *

BANK SLOPING FOR RIPRAP	70	LIN. FT.
BANK SLOPING (SEEDING ONLY)	70	LIN. FT.
ROCK FOR RIPRAP (WI CONST. SPEC. 9)	52	CU. YD.
SEEDING	0.2	ACRES

* ESTIMATED TO THE NEAT LINES AND GRADE

NOTE:

1. DOUBLE THE ROCK THICKNESS FOR A DISTANCE OF 5 FEET AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE RIPRAP. BLEND THE ROCK SURFACE TO MATCH THE EXISTING STABLE BANK SURFACE.
2. TOE PROTECTION SHALL BE PROVIDED TO A MINIMUM DEPTH OF THE ANTICIPATED BOTTOM SCOUR, WHICH WILL BE BELOW THE EXISTING STREAM BOTTOM.

EXCAVATED TOE

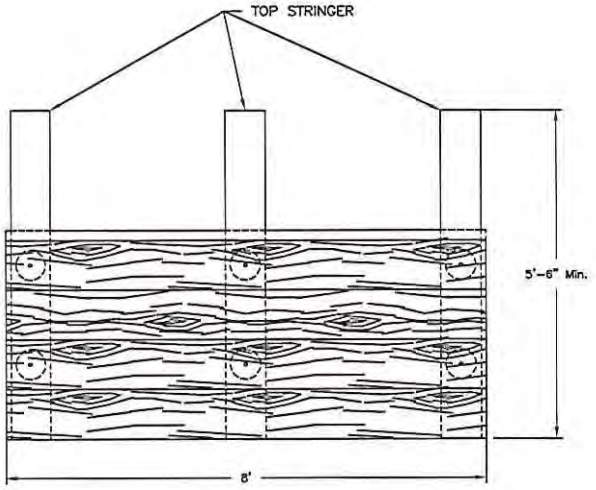
SITE 5

USDA United States Department of Agriculture
Natural Resources Conservation Service

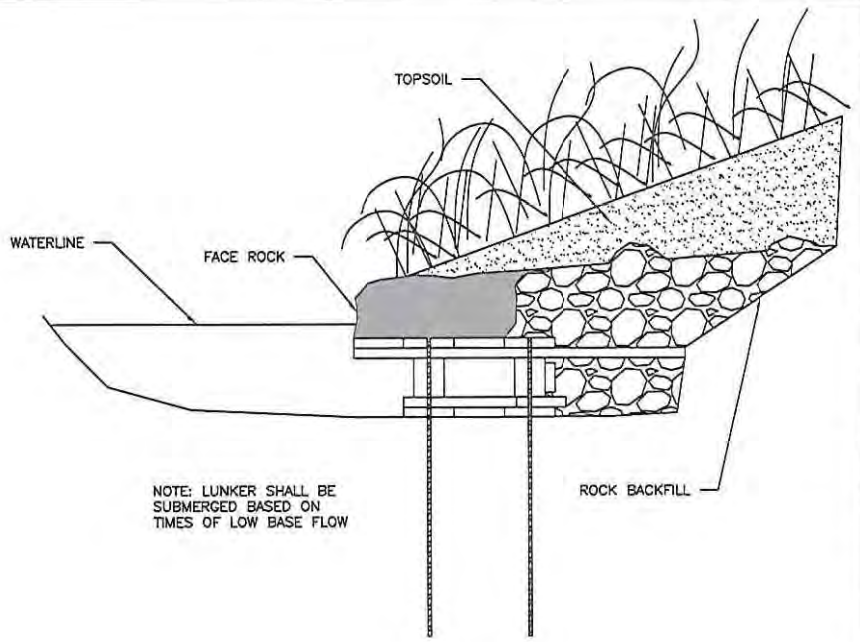
STREAMBANK PROTECTION
NO FILTER OR GEOTEXTILE
(PARTIAL BANK HEIGHT)

CLIENT: Dale Servais
COUNTY: Richland

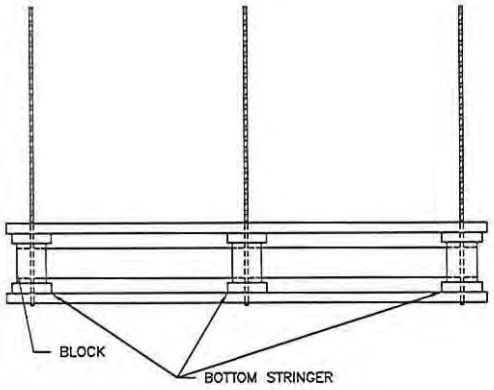
	Date	
Designed	K. Anderson 2/10/16	File Name WI-404E-ET
Drawn	K. Anderson 2/10/16	Date 11/2016
Checked		
Approved		Sheet 6 of 12



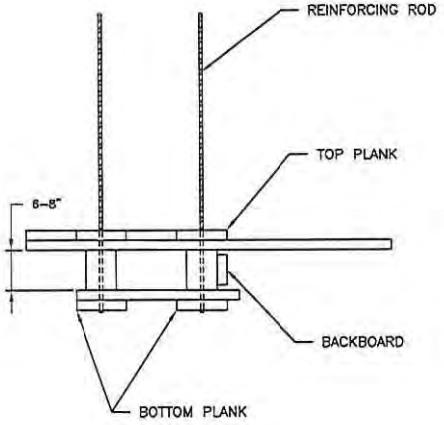
TOP VIEW



CONSTRUCTED SIDE VIEW



FRONT VIEW



SIDE VIEW

BILL OF MATERIALS LUNKER STRUCTURE		
ITEM	SIZE	QUANTITY
TOP PLANK	2" X 8" X 8' OAK BOARD	4
TOP STRINGER	2" X 8" X 5'-6" Min OAK BOARD	3
BLOCK	6" DIA. X 8" OAK BLOCK	6
BOTTOM STRINGER	2" X 8" X 30" BOARD	3
BOTTOM PLANK	2" X 8" X 8' OAK BOARD	2
BACKBOARD	2" X 8" X 8' OAK BOARD	1
#5 REINFORCING ROD	1/2" X 5' DEFORMED STEEL	6
RINGSHANK NAILS	20D GALVANIZED	60

10 Total Boards 2" X 8" X 8 Feet Long

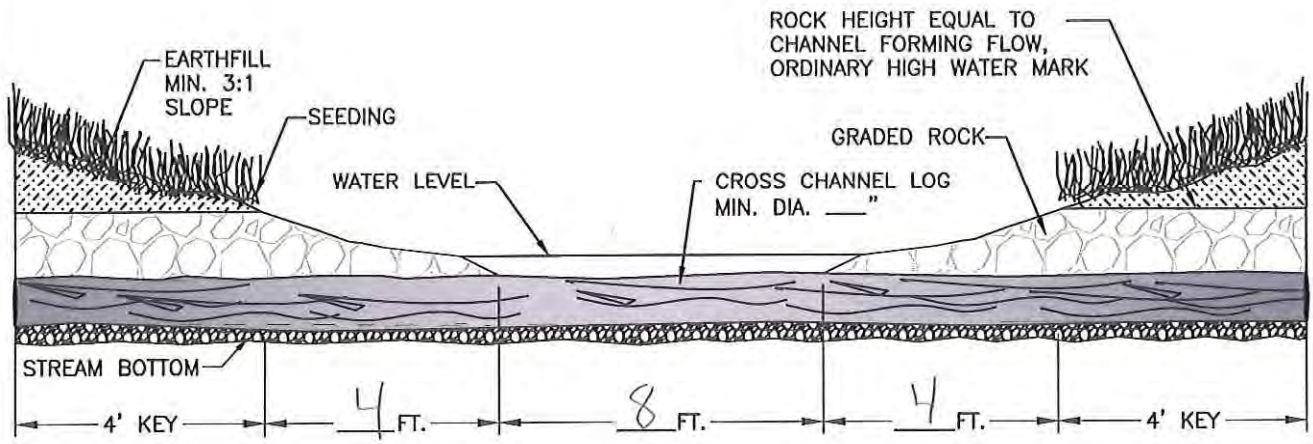
Designed K. Anderson 2/10/17
Drawn K. Anderson 2/10/17
Checked
Approved

LUNKER STRUCTURE DETAIL

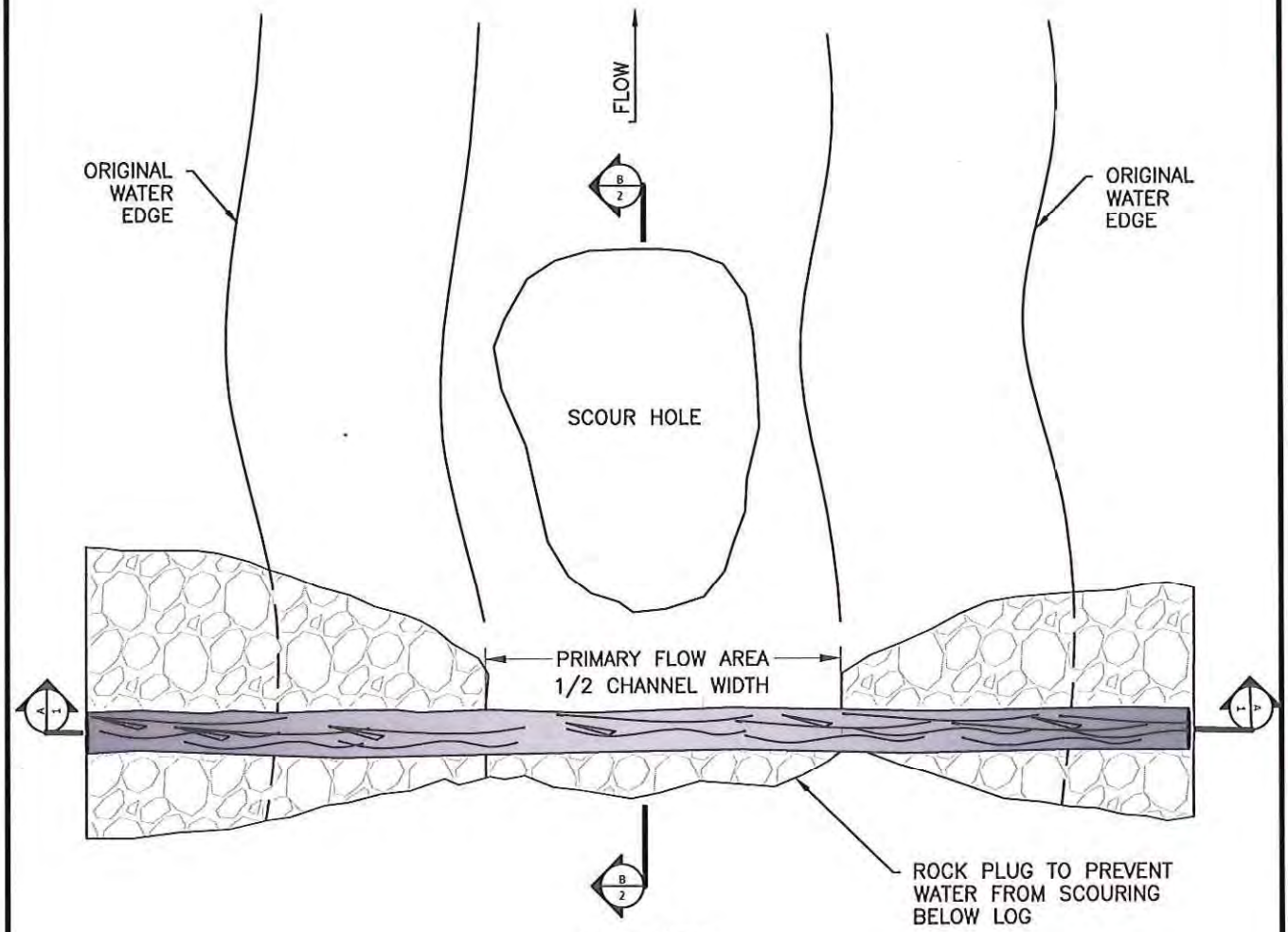
CLIENT: Dale Servais
COUNTY: Richland

United States Department of Agriculture
Natural Resources Conservation Service

File Name WI-930
Date 08/14
Sheet 1 of 1

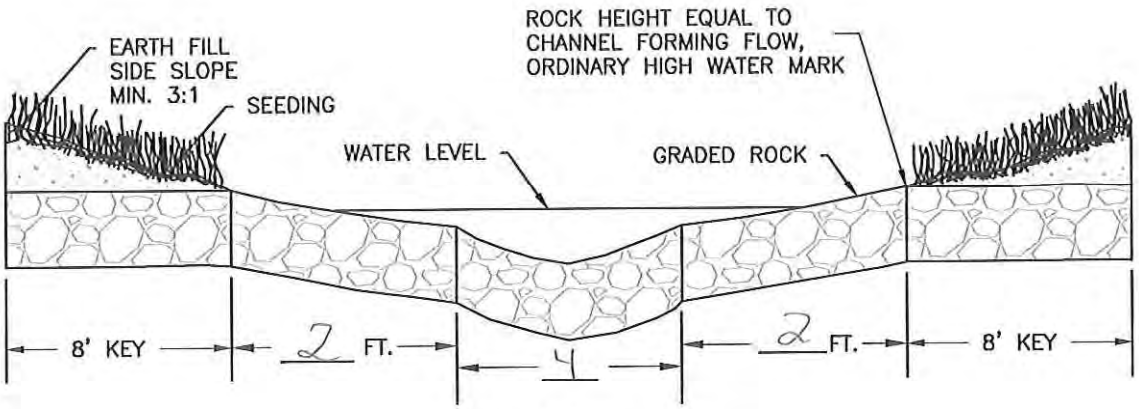


CROSS SECTION A–A



PLAN VIEW

USDA United States Department of Agriculture Natural Resources Conservation Service	CROSS CHANNEL LOG CLIENT: Dale Servais COUNTY: Richland	Designed K. Anderson 7/10/x Drawn K. Anderson 7/10/20 Checked Approved	File Name WI–935 Date 08/14 Sheet 8 of 12



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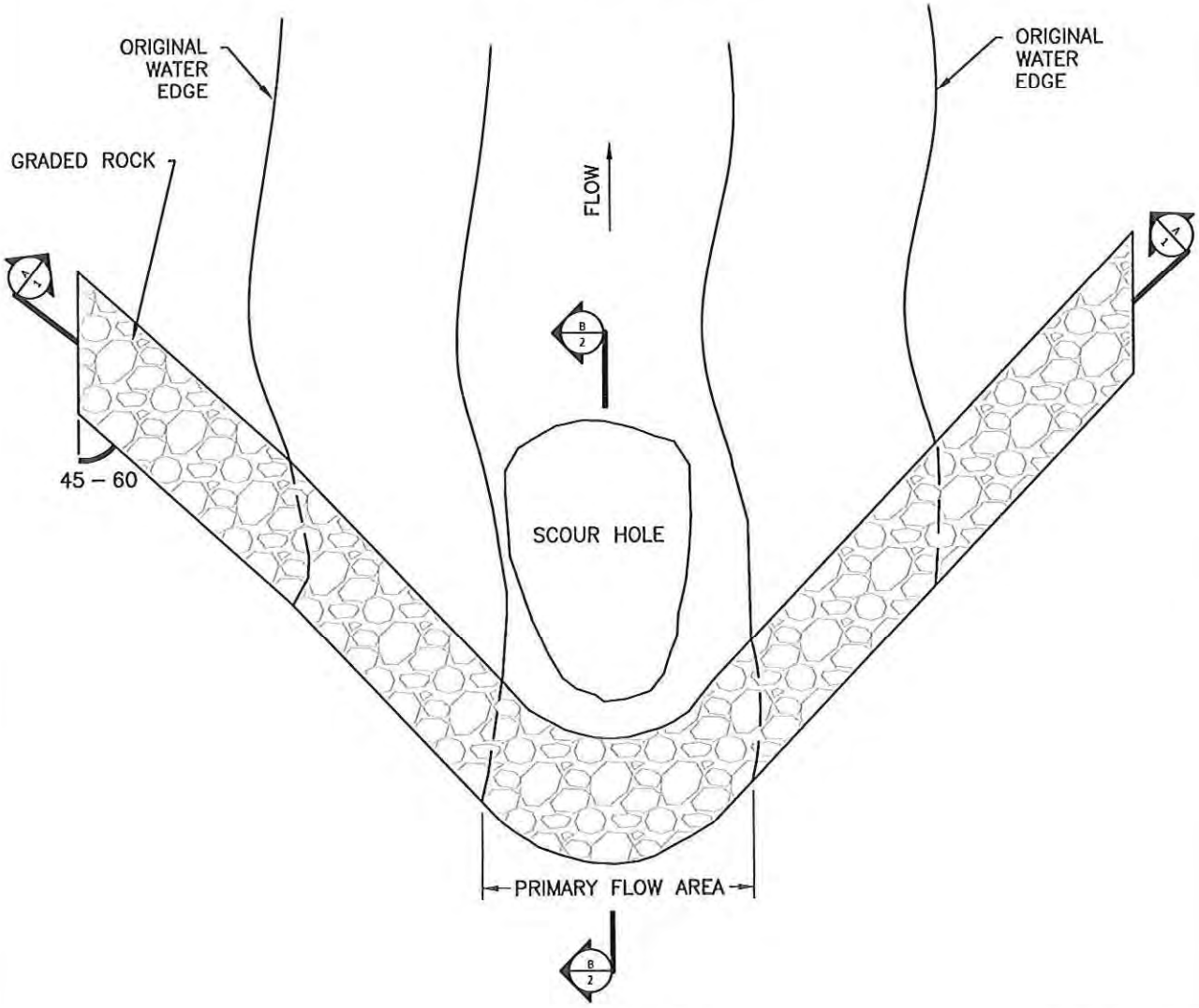
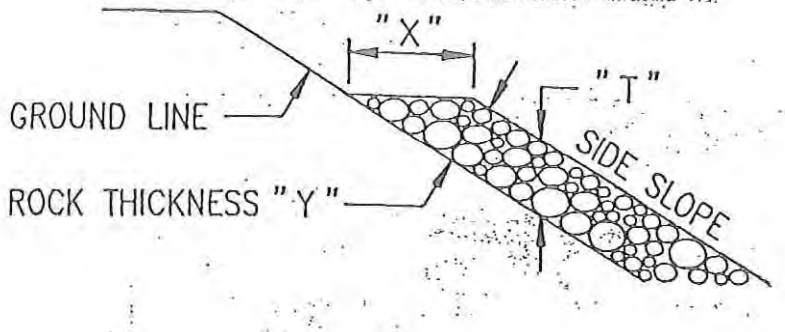


PLAN VIEW

USDA United States Department of Agriculture Natural Resources Conservation Service	VORTEX WEIR CLIENT: Dale Servais COUNTY: Richland	Date Designed K. Anderson 2/10/20 Drawn K. Anderson 2/10/20 Checked Approved	File Name WI–932 Date 08/14 Sheet 9 of 12

ROCK RIPRAP SECTION DIMENSIONS



VALUE OF ROCK TOP WIDTH "X" IN FEET

Rock Thickness "Y" inches	Side Slope 1–1/2:1	2:1	3:1
12	1.8	2.2	3.2
15	2.3	2.8	4.0
18	2.7	3.4	4.7
21	3.2	3.9	5.5
24	3.6	4.5	6.3
27	4.1	5.0	7.1
30	4.5	5.6	7.9
33	5.0	6.2	8.7
36	5.4	6.7	9.5
39	5.9	7.3	10.3
42	6.3	7.8	11.1
45	6.8	8.4	11.9
48	7.2	9.0	12.7

VERTICAL "T" VS NORMAL TO SLOPE "Y" THICKNESS DIMENSIONS

Rock Thickness "Y" inches	Side Slope 1–1/2:1	2:1	3:1
12	1.2	1.1	1.0
15	1.5	1.4	1.3
18	1.8	1.7	1.6
21	2.1	2.0	1.8
24	2.4	2.2	2.1
27	2.7	2.5	2.4
30	3.0	2.8	2.6
33	3.3	3.1	2.9
36	3.6	3.4	3.2
39	3.9	3.6	3.4
42	4.2	3.9	3.7
45	4.5	4.2	4.0
48	4.8	4.5	4.2

SEEDING DATES

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	July 31	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	October 15	Temporary *
Late Fall	November 1	through	snow cover	Dormant
Winter	snow cover	through	Spring Seeding	Frost Seed Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20–10–10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K20) per acre. Apply two tons/ac of 80–89 lime or equivalent. (see page 2 for equivalent)

* Seed a temporary cover crop of Annual Ryegrass at a rate of 25 pounds/acre. (_____ Bushels/acre)
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)[1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX _____	LOCATION Rip Rap ACRES 1.0		SEEDING MIX _____	LOCATION _____ ACRES _____	
SPECIES	RATE	POUNDS	SPECIES	RATE	POUNDS
Alsike Clover	1.2	1.2			
Timothy	4.8	4.8			
**					

1. PLS = (% Germination X % Purity)
** Companion Crop

Total % Germination may also be termed Total % Viable Seed on a tag. If a tag only shows % Germination, the user must include percentage of the seed that germinated during the lab test (% Germination) plus the percentage of hard and/or dormant seed. Hard seed and dormant seed are seeds that are still capable of germinating and producing a plant but did not germinate under the conditions of the test in the lab.

Additional native seeds may be required by permitting agencies. These additions are allowed.
Seed mixture shall meet all requirements of the WI weed laws.
Species identified as restricted or prohibited by law shall not be planted.
Certified seed shall be used, and the seeding rates will be based on pure live seed.
For dormant seedings, increase the seeds per square foot by 15%.

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.
Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates 1/4 to 1/2 inch deep.

USDA United States Department of Agriculture
Natural Resources Conservation Service

INTRODUCED SPECIES SEEDING ESTABLISHMENT
CLIENT: Dale Servais
COUNTY: Richland

	Date	
Designed	K. Anderson 2/10/20	File Name WI–710
Drawn	K Anderson 2/10/20	Date 12/2019
Checked		
Approved		Sheet 1 of 12

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer.

Seed may be broadcast or drilled as appropriate to the site.
Seed, fertilize, and lime as soon as possible after construction.
Seeding perpendicular to direction of flow is required to limit erosion.
Seed grasses and legumes no more than 1/4 inch deep.
Consider seeding at a lower rate and making 2 passes to ensure more uniform distribution.

TEMPORARY SEEDING OPTIONS

Select one of the following species for temporary cover if:

1) The required seeds or plant stock are not available or
   the normal permanent seeding period for the species has passed
   - Forage Sorghum – 1/2 bushel per acre (May 15–July 15)
   - Sorghum – Sudangrass Hybrid – 1 bushel per acre (May 15–July 15)
   - Sudangrass – 1 bushel per acre (May 15–July 15)
   - Winter Wheat – 2 bushels per acre (Aug 1–Oct 1)
   - Winter Cereal Rye – 2 bushels per acre (Aug 1–Oct 15)
   - Oats – 2 bushels per acre (Apr 1–Sept 1)
   - Annual Ryegrass – 20 Pounds per acre (Apr 1–Sept 1)

2) Triazine herbicide carryover will not allow establishment of permanent cover immediately.
   - Forage Sorghum – 1/2 Bushel per acre (May 15–July 15)
   - Sorghum – Sudangrass Hybrid – 1 Bushel per acre (May 15–July 15)
   - Sudangrass – 1 Bushel per acre (May 15–July 15)

DORMANT SEEDING

Seed is broadcast and incorporated, no–tilled, or drilled into the seedbed.
Seedbed preparations and conditions are similar to conventional seeding.

MULCHING (Mulching is required.) (Mulching is not required.)

Mulching shall be done immediately after seedbed preparation and seeding.
Mulch shall be applied immediately after final grading for areas seeded at a later date.

Mulch material shall be relatively free of disease, pesticides, chemicals, noxious weed seeds, and other pests and pathogens.

Spread straw and hay mulch uniformly and at the rate of 1.5–2.0 tons per acre (60–70 bales). This application results in a layer of 6 to 7 stems, 1 to 2 inches thick, and provides a minimum 70% ground cover. Some soil surface can be seen after the application. Crimping (disking), wood cellulose fiber, tackifiers, netting, pinning, or other acceptable methods of anchoring will be used if needed to hold the mulch in place.

If other mulch materials are used, the rate of application shall meet the manufacturer's recommendations.

Two (2) tons/ac of 80–89 lime or equivalent from UW–EXT A3671

Lime Quality	Tons/AC.
40–49	3.9
50–59	3.2
60–69	2.7
70–79	2.3
90–99	1.9
100+	1.6

USDA United States Department of Agriculture
Natural Resources Conservation Service

WISCONSIN STANDARD
DRAWING NO. WI–001C 03/16

CONSTRUCTION PLAN

PRACTICE(S) 580 - Streambank Protection

LANDOWNER Dale Servais

ADDRESS 28960 Pine St. PO Box 101, Sextonville, WI 53584

LANDOWNER PHONE NO. 608-963-0234 COUNTY Richland

TOWNSHIP Ithaca T 10 N, R 2 E/W, Sec. 6

FIELD OFFICE Richland County LCD TELEPHONE NO. 608-647-2100

DIGGERS HOTLINE

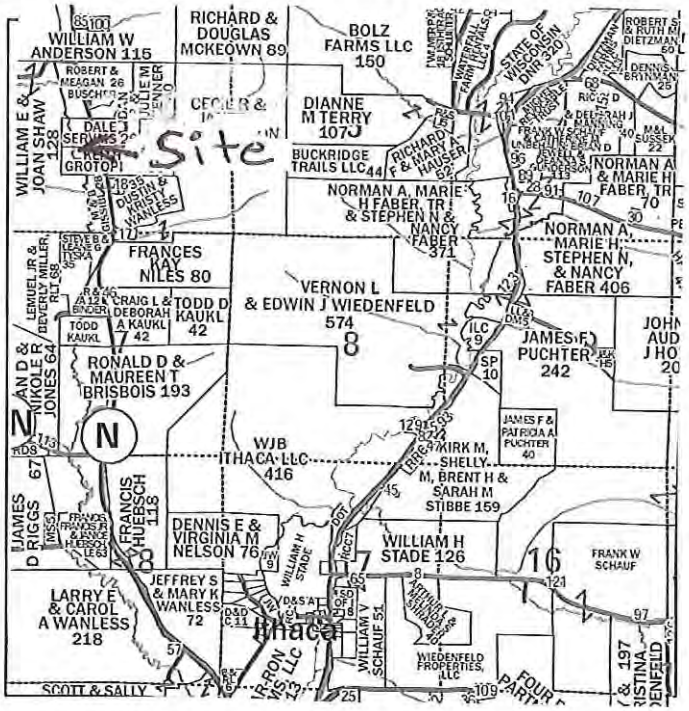
Call 3 Work Days
Before You Dig!

Nationwide
811

Toll Free
1–800–242–8511

TDD
1–800–542–2289

Website
www.diggershotline.com



N

Not to Scale

LOCATION MAP

NOTICE TO LANDOWNERS AND EXCAVATORS

Any representation made by the USDA, Natural Resources Conservation Service, or the Richland County LCD, as to the approximate location or nonexistence of above or under ground hazards does not relieve the owner of the property or the excavator that is hired to complete construction, from notifying Diggers Hotline of the pending construction. You will be liable for damages resulting from construction activities.
Call Diggers Hotline! Ticket Number _____

CONSTRUCTION DRAWINGS AND SPECIFICATIONS ACCEPTANCE

I have reviewed and understand the construction plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any continued NRCS technical assistance or program cost sharing applied for. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws. Modification of these construction plans or specifications must be approved by the NRCS before installation. I assume all responsibility for negotiations and contract agreements with the construction contractors.

Landowner Signature: _____ Date: _____

Designed by: Ken Anderson Date: 02/05/2020

Checked by: _____ Date: _____

Approved by: _____ Date: _____

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as–built drawings) reflect changes made during construction.

Construction Approved by: _____ Date: _____

Job Approval Class _____ Sheet 1 of 12

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	SHEET NUMBER	WI. CONSTRUCTION SPEC. OR JOB SHEET NUMBER
6" D50 Rock	CuYds	795	5,6	WCS - #9
Sloping & Shaping	LinFt	960	3-6	WCS - #2
Lunkers	No	4	7	-
Vortex Weir	No	2	9	-
Cross Channel Log	No	3	8	-
Seeding & Mulching	Ac	1	11, 12	-

Quantities are estimated to the neat lines and grades of in-place materials shown on the construction plan unless otherwise stated. Truck yardage, loose fill, shrinkage, etc., must be calculated and compensated for by the contractor preparing a bid or constructing the project.

USDA United States Department of Agriculture
Natural Resources Conservation Service

ESTIMATED QUANTITIES

CLIENT: Dale Servais-Grotophurst
COUNTY: Richland

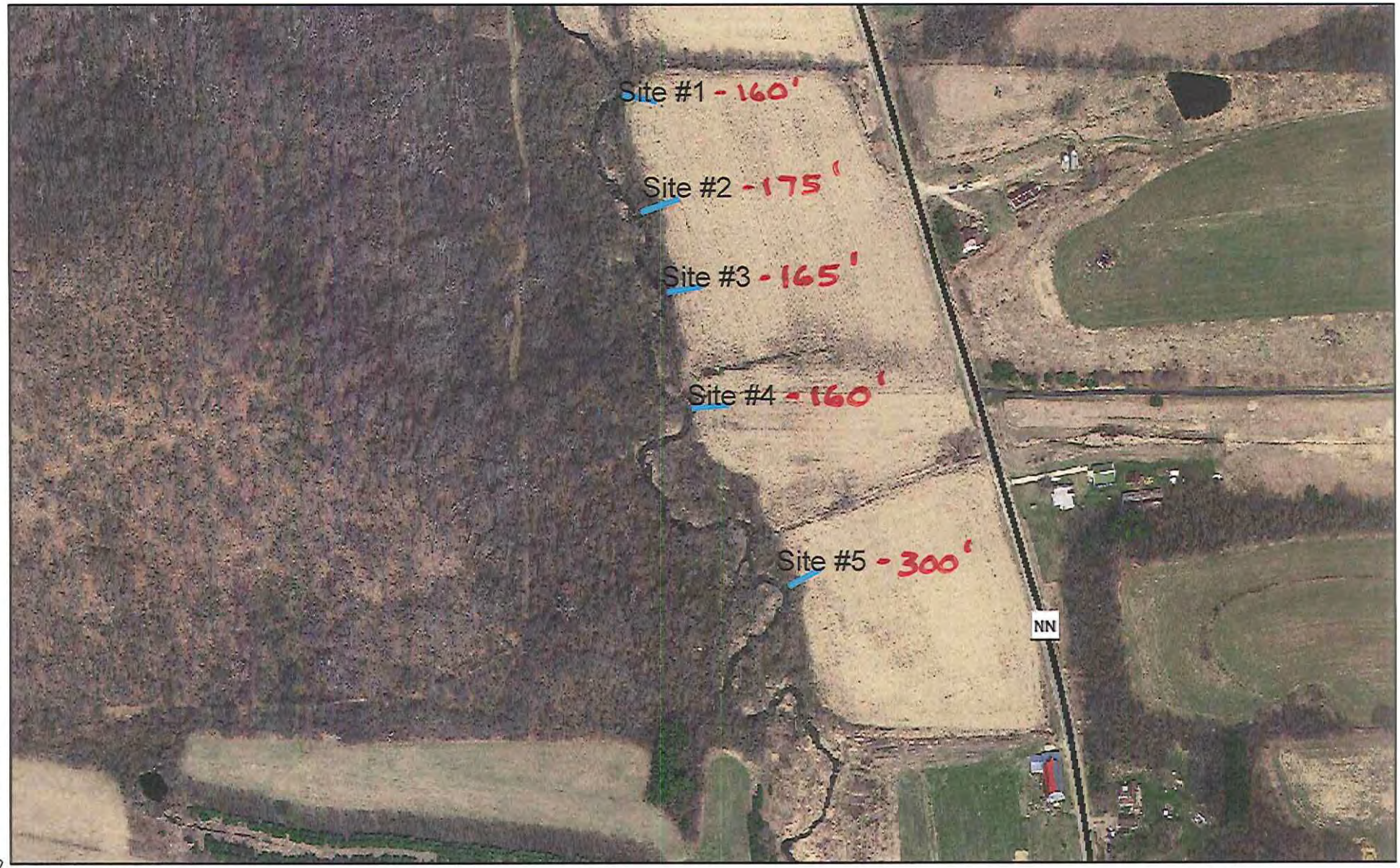
Date
Designed KAnderson
Drawn KAnderson
Checked
Approved

Drawing Name WI-005
Date 06/14
Sheet 7 of 12

Construction Notes

1. Construction is not to be started until all needed permits and approval have been received. Contact Jeff Schure, DNR Water Specialist, at (608) 275-3228 for a permit.
2. It is the Landowners responsibility to secure a Diggers Hotline (1-800-242-8511) ticket number. Diggers will notify the owners of any utility, such as buried cable or pipelines that may be present in the construction area, before the start of construction, so that they may locate and stake such utilities.
3. This project must be staked by a LCD technician prior to the start of any construction. Technician will be present to assist with the installation of trout structures.
4. Use only rock that is approved by NRCS and meets criteria in Wisconsin Construction Spec.9.
5. Place rock and distribute sizes to assure a tight fit. Do not dump rock over the bank.
6. Spread spoil out in a layer of less than 6" and seed down. Do not spread spoil in wetlands.
7. All disturbed areas and spoil must be seeded and mulched.

Dale Servais



1/31/2020 10:39:31 AM

Roads
City Streets
Town Roads
US Hwy
County Highway
State Highway

1:4,514

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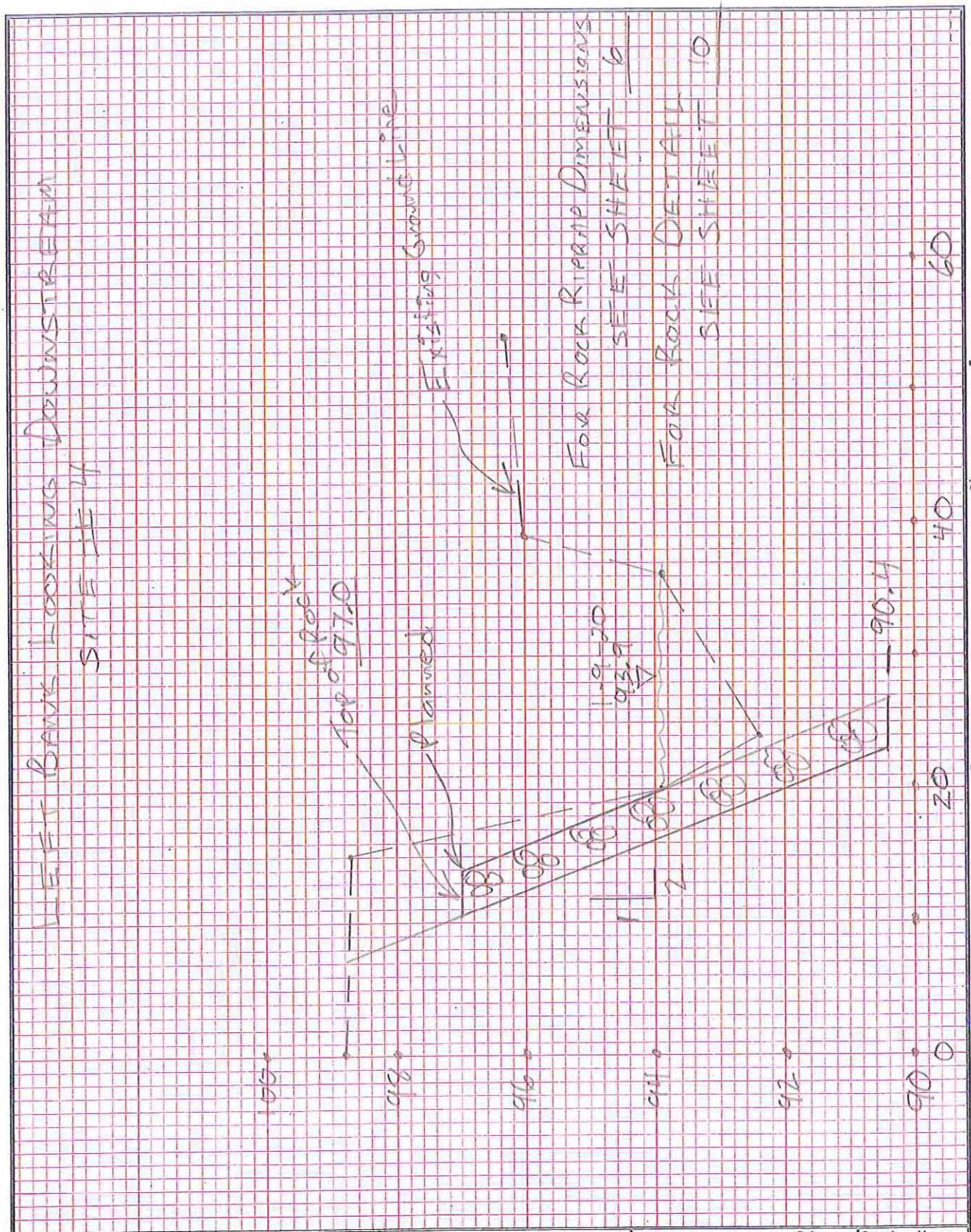
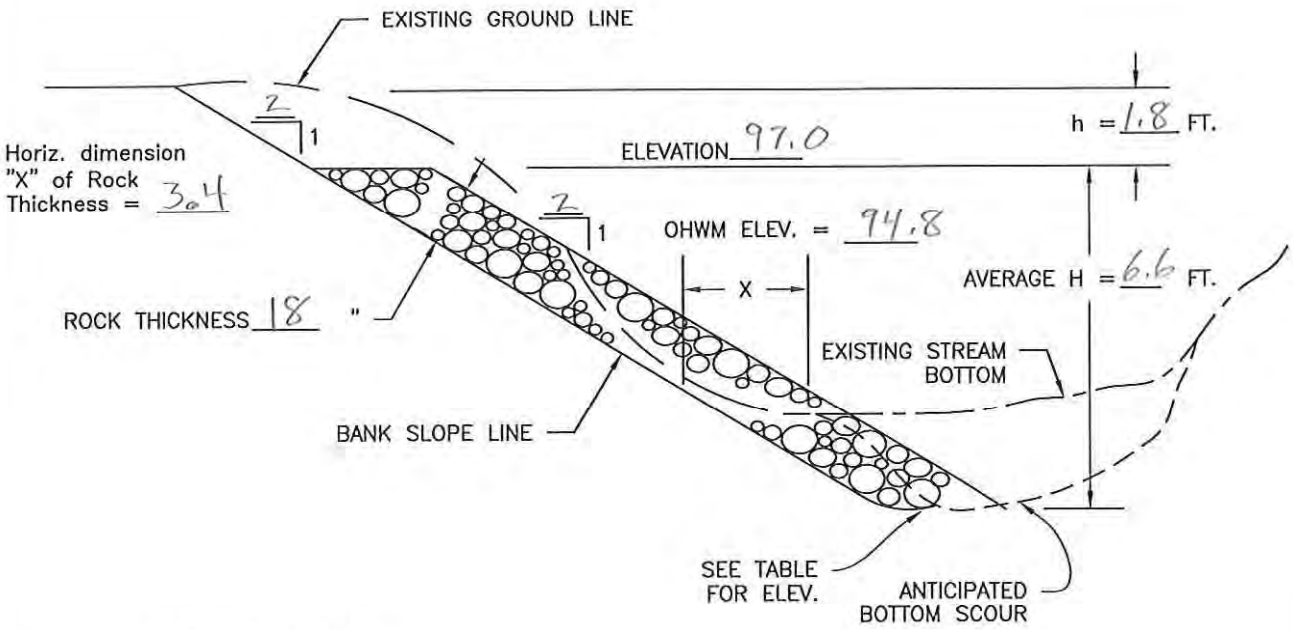
0 0.04 0.09 0.17 km

Web AppBuilder for ArcGIS

Sheet 4 of 5



USDA United States Department of Agriculture Natural Resources Conservation Service	CROSS SECTION CLIENT: Dale Servais COUNTY: Richland	Designed K. Anderson 7/6/20 Drawn K. Anderson 7/6/20 Checked Approved	Drawing Name WI-008color Date 6/2014 Sheet 5 of 12



TYPICAL CROSS SECTION

GRADATION OF ROCK

PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	12
60–85	9
25–50	6
5–20	3
0–5	1

STATION	ELEVATION

QUANTITY ESTIMATE *

BANK SLOPING FOR RIPRAP	160	LIN. FT.
BANK SLOPING (SEEDING ONLY)	160	LIN. FT.
ROCK FOR RIPRAP (WI CONST. SPEC. 9)	132	CU. YD.
SEEDING	0.3	ACRES

* ESTIMATED TO THE NEAT LINES AND GRADE

NOTE:

1. DOUBLE THE ROCK THICKNESS FOR A DISTANCE OF 5 FEET AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE RIPRAP. BLEND THE ROCK SURFACE TO MATCH THE EXISTING STABLE BANK SURFACE.
2. TOE PROTECTION SHALL BE PROVIDED TO A MINIMUM DEPTH OF THE ANTICIPATED BOTTOM SCOUR, WHICH WILL BE BELOW THE EXISTING STREAM BOTTOM.

EXCAVATED TOE

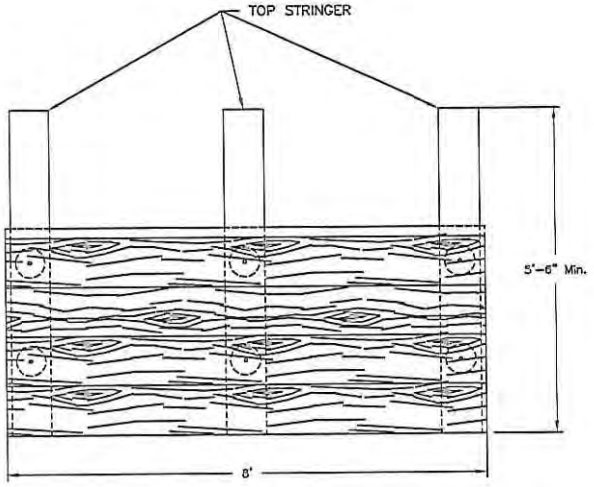
SITE 4

USDA United States Department of Agriculture
Natural Resources Conservation Service

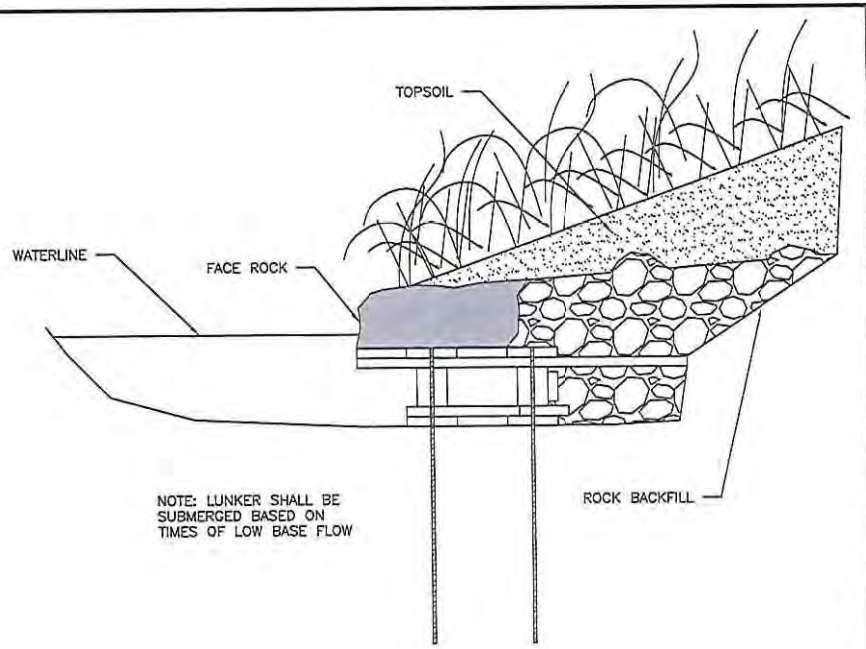
STREAMBANK PROTECTION
NO FILTER OR GEOTEXTILE
(PARTIAL BANK HEIGHT)

CLIENT: Dale Servais
COUNTY: Richland

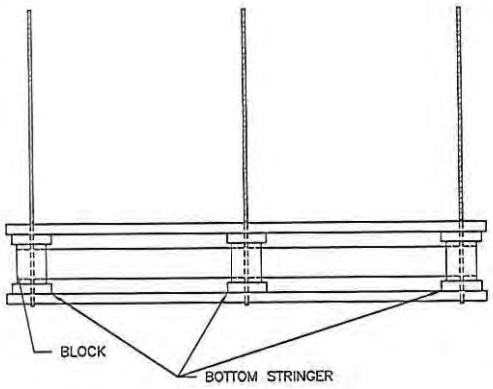
	Date	
Designed	K. Anderson 2/6/20	File Name WI-404E-ET
Drawn	K. Anderson 2/6/20	Date 11/2016
Checked		
Approved		Sheet 6 of 12



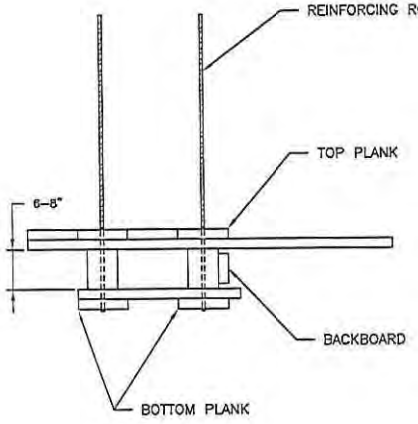
TOP VIEW



CONSTRUCTED SIDE VIEW



FRONT VIEW



SIDE VIEW

BILL OF MATERIALS LUNKER STRUCTURE		
ITEM	SIZE	QUANTITY
TOP PLANK	2" X 8" X 8' OAK BOARD	4
TOP STRINGER	2" X 8" X 5'-6" Min OAK BOARD	3
BLOCK	6" DIA. X 8" OAK BLOCK	6
BOTTOM STRINGER	2" X 8" X 30" BOARD	3
BOTTOM PLANK	2" X 8" X 8' OAK BOARD	2
BACKBOARD	2" X 8" X 8' OAK BOARD	1
#5 REINFORCING ROD	⅝" X 5' DEFORMED STEEL	6
RINGSHANK NAILS	20D GALVANIZED	60

10 Total Boards 2" X 8" X 8 Feet Long

Designed K. Anderson Date 2/5/20
Drawn K. Anderson 2/5/20
Checked
Approved

LUNKER STRUCTURE DETAIL

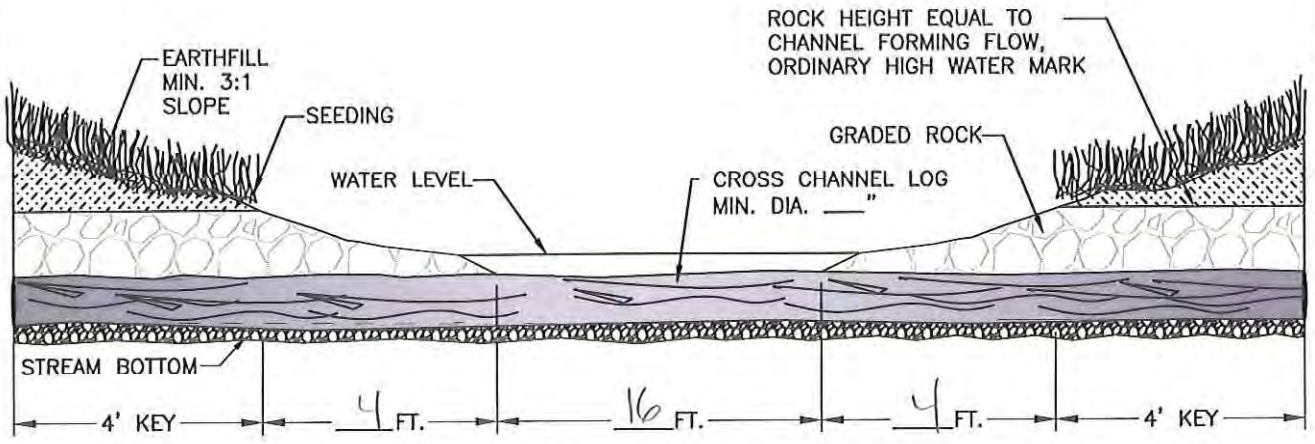
CLIENT: Duke Sevenair
COUNTY: Richland

United States Department of Agriculture
Natural Resources Conservation Service

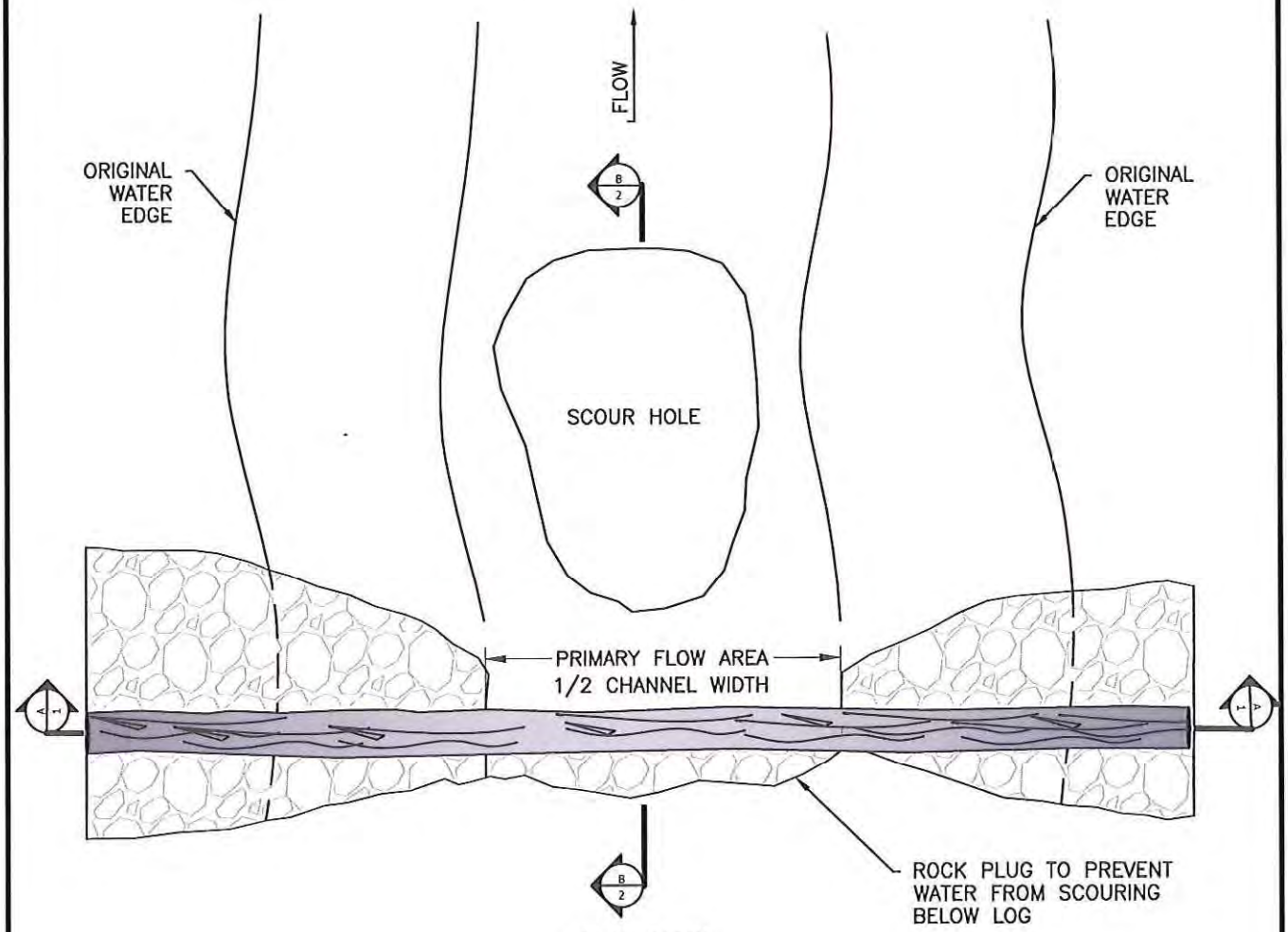
File Name WI-930

Date 08/14

Sheet 7 of 18

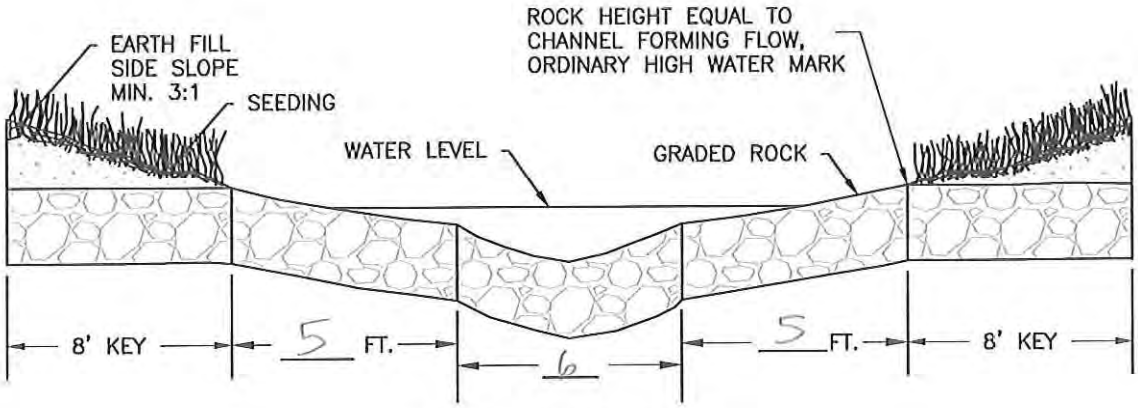


CROSS SECTION A–A

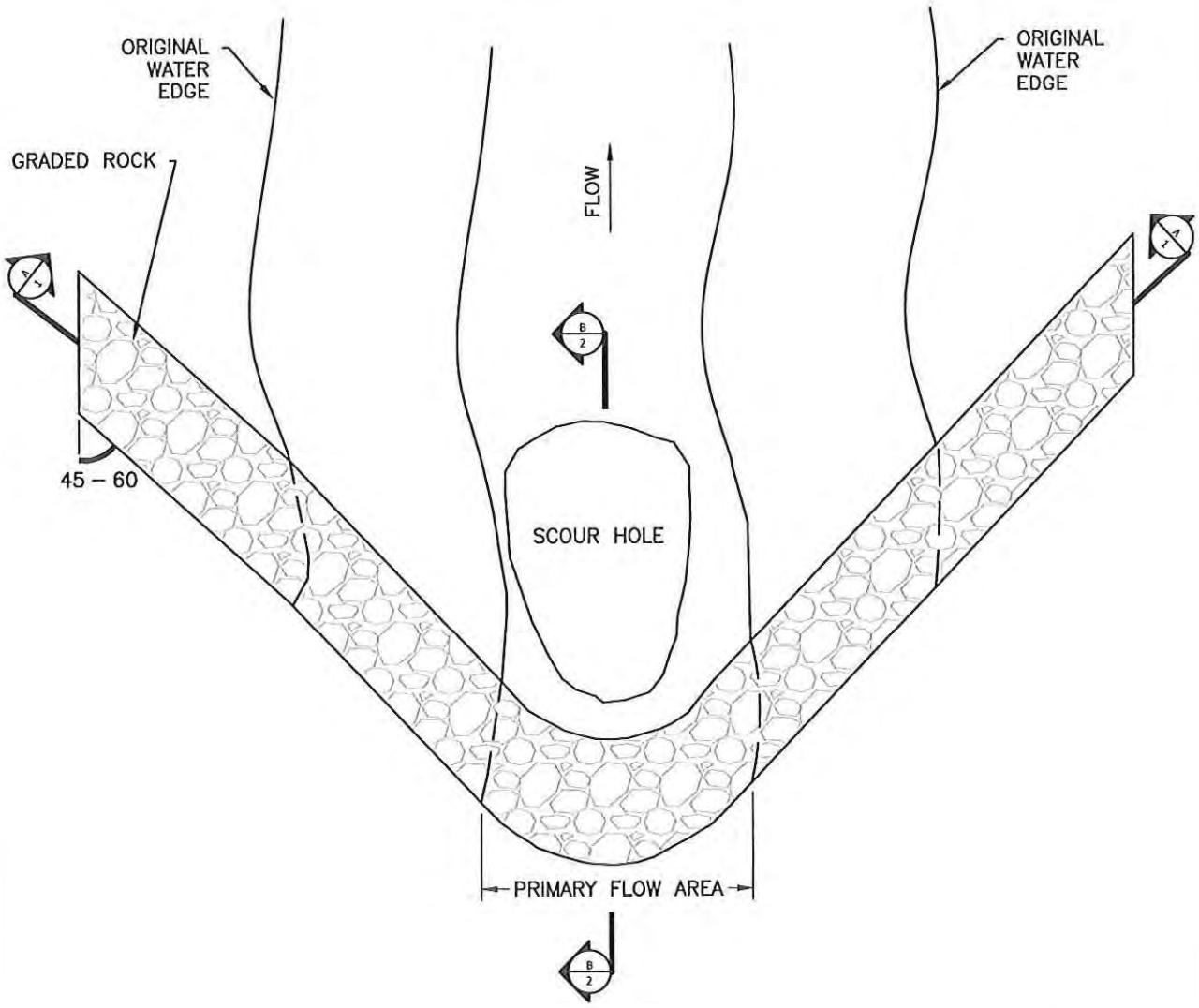


PLAN VIEW

USDA United States Department of Agriculture Natural Resources Conservation Service	CROSS CHANNEL LOG CLIENT: Dale Servais COUNTY: Richland	Date Designed K. Anderson 2-5-20 Drawn K. Anderson 2-5-20 Checked ____ Approved ____	File Name WI–935 Date 08/14 Sheet 8 of 12



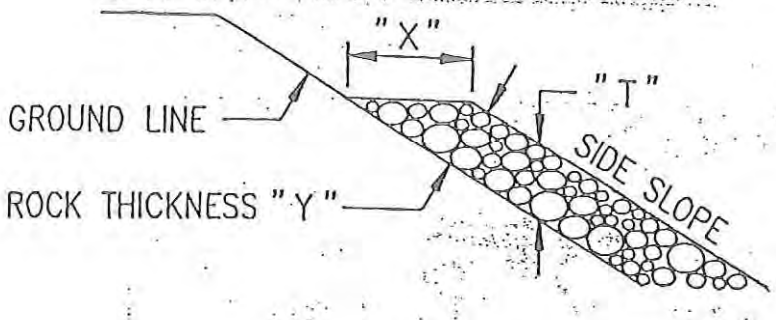
CROSS SECTION A–A



PLAN VIEW

USDA United States Department of Agriculture Natural Resources Conservation Service	VORTEX WEIR CLIENT: Dale Servais COUNTY: Richland	Designed K. Anderson 2/5/20 (Date) Drawn K. Anderson 2/5/20 Checked Approved	File Name WI–932 Date 08/14 Sheet 9 of 12

ROCK RIPRAP SECTION DIMENSIONS



VALUE OF ROCK TOP WIDTH "X" IN FEET

Rock Thickness "Y" inches	Side Slope 1–1/2:1	2:1	3:1
12	1.8	2.2	3.2
15	2.3	2.8	4.0
18	2.7	3.4	4.7
21	3.2	3.9	5.5
24	3.6	4.5	6.3
27	4.1	5.0	7.1
30	4.5	5.6	7.9
33	5.0	6.2	8.7
36	5.4	6.7	9.5
39	5.9	7.3	10.3
42	6.3	7.8	11.1
45	6.8	8.4	11.9
48	7.2	9.0	12.7

VERTICAL "T" VS NORMAL TO SLOPE "Y" THICKNESS DIMENSIONS

Rock Thickness "Y" inches	Side Slope 1–1/2:1	2:1	3:1
12	1.2	1.1	1.0
15	1.5	1.4	1.3
18	1.8	1.7	1.6
21	2.1	2.0	1.8
24	2.4	2.2	2.1
27	2.7	2.5	2.4
30	3.0	2.8	2.6
33	3.3	3.1	2.9
36	3.6	3.4	3.2
39	3.9	3.6	3.4
42	4.2	3.9	3.7
45	4.5	4.2	4.0
48	4.8	4.5	4.2

SEEDING DATES

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	July 31	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	October 15	Temporary *
Late Fall	November 1	through	snow cover	Dormant
Winter	snow cover	through	Spring Seeding	Frost Seed Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20–10–10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K20) per acre. Apply two tons/ac of 80–89 lime or equivalent. (see page 2 for equivalent)

* Seed a temporary cover crop of Annual Ryegrass at a rate of 25 pounds/acre. (_____Bushels/acre)
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)[1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX _____	LOCATION / ACRES Rip Rap 1.0		SEEDING MIX _____	LOCATION / ACRES _____	
SPECIES	RATE	POUNDS	SPECIES	RATE	POUNDS
Alsike Clover	1.2	1.2			
Timothy	4.8	4.8			
**					

1. PLS = (% Germination X % Purity)
** Companion Crop

Total % Germination may also be termed Total % Viable Seed on a tag. If a tag only shows % Germination, the user must include percentage of the seed that germinated during the lab test (% Germination) plus the percentage of hard and/or dormant seed. Hard seed and dormant seed are seeds that are still capable of germinating and producing a plant but did not germinate under the conditions of the test in the lab.

Additional native seeds may be required by permitting agencies. These additions are allowed.
Seed mixture shall meet all requirements of the WI weed laws.
Species identified as restricted or prohibited by law shall not be planted.
Certified seed shall be used, and the seeding rates will be based on pure live seed.
For dormant seedings, increase the seeds per square foot by 15%.

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.
Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates 1/4 to 1/2 inch deep.

USDA United States Department of Agriculture
Natural Resources Conservation Service

INTRODUCED SPECIES SEEDING ESTABLISHMENT
CLIENT: Dale Servais
COUNTY: Richland

Designed K. Anderson 2/5/20 (Date)
Drawn K. Anderson 2/5/20
Checked _____
Approved _____

File Name WI–710
Date 12/2019
Sheet 11 of 18

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer.

Seed may be broadcast or drilled as appropriate to the site.
Seed, fertilize, and lime as soon as possible after construction.
Seeding perpendicular to direction of flow is required to limit erosion.
Seed grasses and legumes no more than 1/4 inch deep.
Consider seeding at a lower rate and making 2 passes to ensure more uniform distribution.

TEMPORARY SEEDING OPTIONS

Select one of the following species for temporary cover if:

1) The required seeds or plant stock are not available or
   the normal permanent seeding period for the species has passed
   - Forage Sorghum – 1/2 bushel per acre (May 15–July 15)
   - Sorghum – Sudangrass Hybrid – 1 bushel per acre (May 15–July 15)
   - Sudangrass – 1 bushel per acre (May 15–July 15)
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   - Annual Ryegrass – 20 Pounds per acre (Apr 1–Sept 1)

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   - Forage Sorghum – 1/2 Bushel per acre (May 15–July 15)
   - Sorghum – Sudangrass Hybrid – 1 Bushel per acre (May 15–July 15)
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DORMANT SEEDING

Seed is broadcast and incorporated, no–tilled, or drilled into the seedbed.
Seedbed preparations and conditions are similar to conventional seeding.

MULCHING (Mulching is required.) (Mulching is not required.)

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Mulch shall be applied immediately after final grading for areas seeded at a later date.

Mulch material shall be relatively free of disease, pesticides, chemicals, noxious weed seeds, and other pests and pathogens.

Spread straw and hay mulch uniformly and at the rate of 1.5–2.0 tons per acre (60–70 bales). This application results in a layer of 6 to 7 stems, 1 to 2 inches thick, and provides a minimum 70% ground cover. Some soil surface can be seen after the application. Crimping (disking), wood cellulose fiber, tackifiers, netting, pinning, or other acceptable methods of anchoring will be used if needed to hold the mulch in place.

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Two (2) tons/ac of 80–89 lime or equivalent from UW–EXT A3671

Lime Quality	Tons/AC.
40–49	3.9
50–59	3.2
60–69	2.7
70–79	2.3
90–99	1.9
100+	1.6

CONSTRUCTION PLAN

PRACTICE(S) 580 - Streambank Protection

LANDOWNER Allen Rippchen

ADDRESS 28006 Rippchen Ln., Richland Center, WI 53581

LANDOWNER PHONE NO. 608-585-4014 COUNTY Richland

TOWNSHIP Willow T 11 N, R 2 E/W, Sec. 31

FIELD OFFICE Richland County LCD TELEPHONE NO. 608-647-2100

DIGGERS HOTLINE

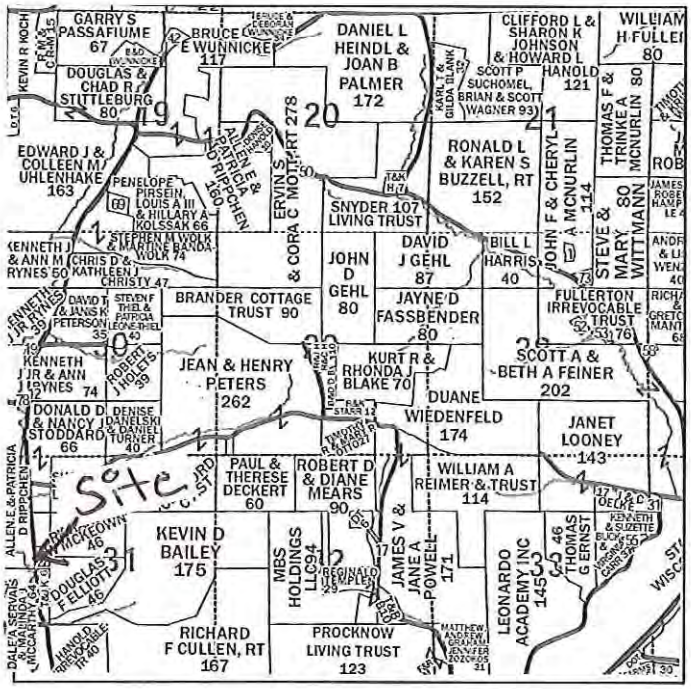
Call 3 Work Days Before You Dig!

Nationwide 811

Toll Free 1-800-242-8511

TDD 1-800-542-2289

Website www.diggershotline.com



N

Not to Scale

LOCATION MAP

NOTICE TO LANDOWNERS AND EXCAVATORS

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Call Diggers Hotline! Ticket Number _____

CONSTRUCTION DRAWINGS AND SPECIFICATIONS ACCEPTANCE

I have reviewed and understand the construction plans and specifications and agree to complete the work accordingly. Failure to meet these plans and specifications may jeopardize any continued NRCS technical assistance or program cost sharing applied for. I understand that it is my responsibility to secure all necessary permits and licenses, and to complete the work in accordance with all local, state, and federal laws. Modification of these construction plans or specifications must be approved by the NRCS before installation. I assume all responsibility for negotiations and contract agreements with the construction contractors.

Landowner Signature: _____ Date: _____

Designed by: Ken Anderson Date: 02/05/2020

Checked by: _____ Date: _____

Approved by: _____ Date: _____

The installed practices comply with applicable NRCS technical standards and specifications. The "redlined" construction plans (as-built drawings) reflect changes made during construction.

Construction Approved by: _____ Date: _____

Job Approval Class _____

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	SHEET NUMBER	WI. CONSTRUCTION SPEC. OR JOB SHEET NUMBER
6" D50 Rock	CuYds	181	3-6	WCS - #9
Sloping & Shaping	LinFt	190	5,6	WCS - #2
Lunkers	No	3	7	- - -
Seeding & Mulching	Ac	1	9,10	- - -

Quantities are estimated to the neat lines and grades of in-place materials shown on the construction plan unless otherwise stated. Truck yardage, loose fill, shrinkage, etc., must be calculated and compensated for by the contractor preparing a bid or constructing the project.

USDA United States Department of Agriculture
Natural Resources Conservation Service

ESTIMATED QUANTITIES

CLIENT: Allen Rippchen
COUNTY: Richland

Designed KAnderson Date
Drawn KAnderson
Checked
Approved

Drawing Name WI-005
Date 06/14
Sheet 2 of 10

Construction Notes

1. Construction is not to be started until all needed permits and approval have been received. Contact Jeff Schure, DNR Water Specialist, at (608) 275-3228 for a permit.
2. It is the Landowners responsibility to secure a Diggers Hotline (1-800-242-8511) ticket number. Diggers will notify the owners of any utility, such as buried cable or pipelines that may be present in the construction area, before the start of construction, so that they may locate and stake such utilities.
3. This project must be staked by a LCD technician prior to the start of any construction. Technician will be present to assist with the installation of trout structures.
4. Use only rock that is approved by NRCS and meets criteria in Wisconsin Construction Spec.9.
5. Place rock and distribute sizes to assure a tight fit. Do not dump rock over the bank.
6. Spread spoil out in a layer of less than 6" and seed down. Do not spread spoil in wetlands.
7. All disturbed areas and spoil must be seeded and mulched.

Allen Rippchen

1/31/2020 10:43:14 AM

1:2,257

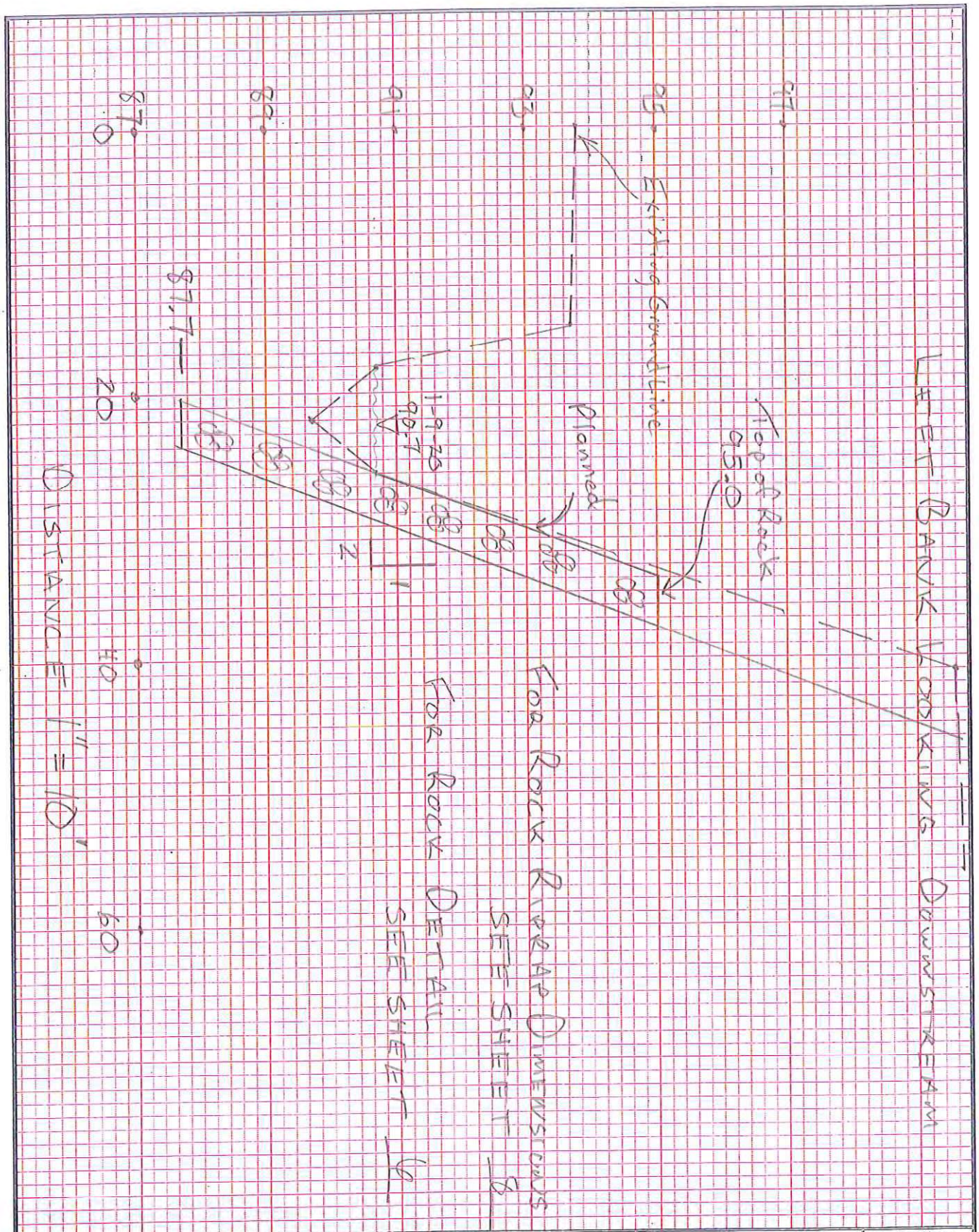
0 0.01 0.03 0.05 mi

0 0.02 0.04 0.08 km

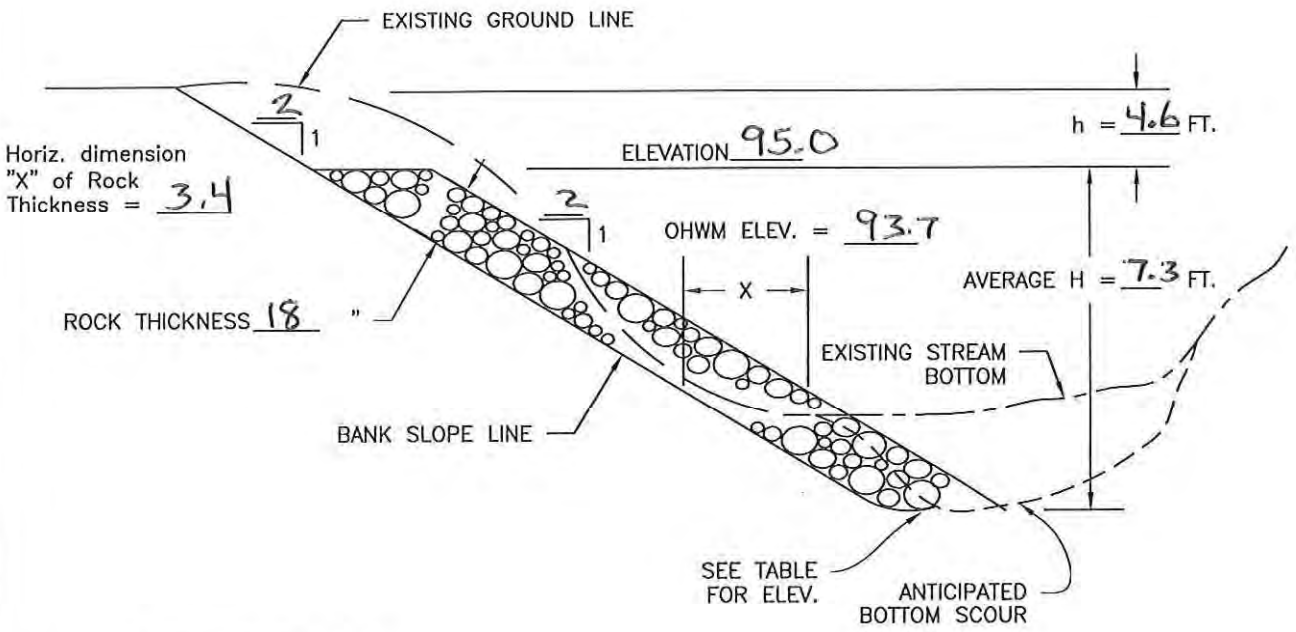
Roads

- Town Roads
- County Highway
- City Streets
- US Hwy
- State Highway

Web AppBuilder for ArcGIS



USDA United States Department of Agriculture Natural Resources Conservation Service	CROSS SECTION CLIENT: Allen Rippchon COUNTY: Richland	Designed K.Anderson 2/5/20 Drawn K.Anderson 2/5/20 Checked Approved	Drawing Name WI-008color Date 6/2014 Sheet 5 of 10



TYPICAL CROSS SECTION

GRADATION OF ROCK

PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	12
60–85	9
25–50	6
5–20	3
0–5	1

STATION	ELEVATION

QUANTITY ESTIMATE *

BANK SLOPING FOR RIPRAP	190	LIN. FT.
BANK SLOPING (SEEDING ONLY)	190	LIN. FT.
ROCK FOR RIPRAP (WI CONST. SPEC. 9)	181	CU. YD.
SEEDING	1.0	ACRES

* ESTIMATED TO THE NEAT LINES AND GRADE

NOTE:

1. DOUBLE THE ROCK THICKNESS FOR A DISTANCE OF 5 FEET AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE RIPRAP. BLEND THE ROCK SURFACE TO MATCH THE EXISTING STABLE BANK SURFACE.
2. TOE PROTECTION SHALL BE PROVIDED TO A MINIMUM DEPTH OF THE ANTICIPATED BOTTOM SCOUR, WHICH WILL BE BELOW THE EXISTING STREAM BOTTOM.

EXCAVATED TOE

SITE 1

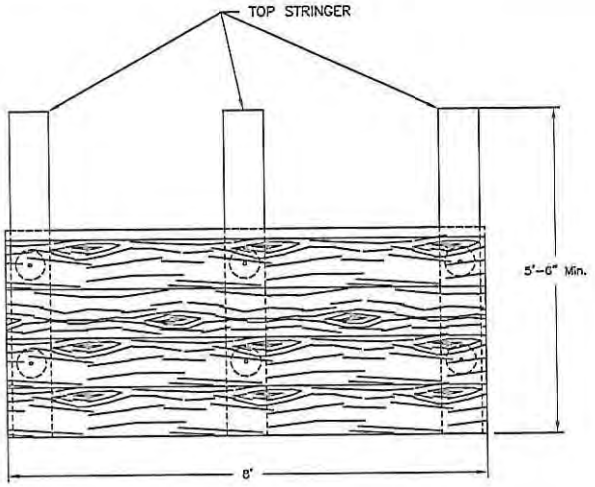
USDA United States Department of Agriculture
Natural Resources Conservation Service

STREAMBANK PROTECTION
NO FILTER OR GEOTEXTILE
(PARTIAL BANK HEIGHT)

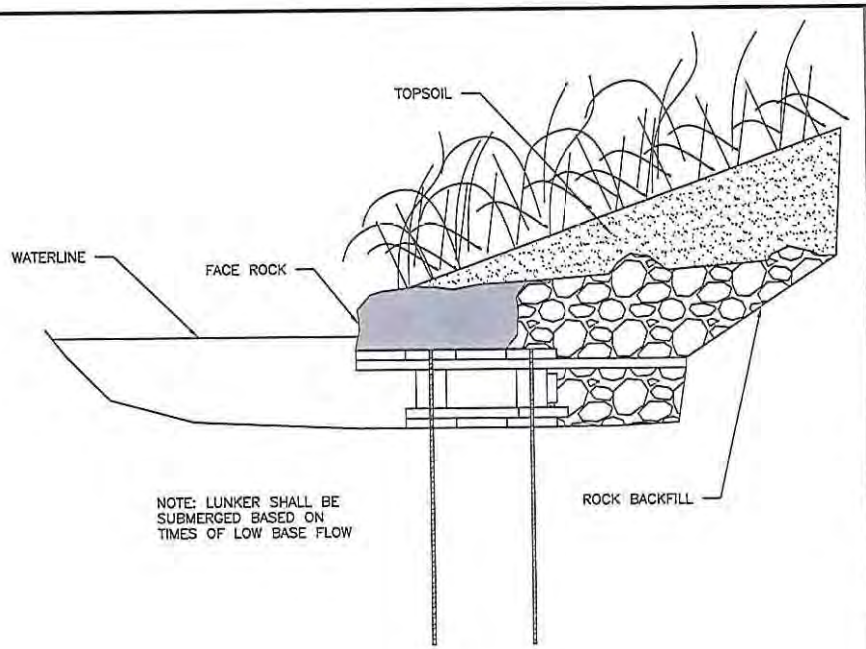
CLIENT: Allen Rippchen
COUNTY: Richland

Designed K. Anderson Date
Drawn K. Anderson 2/5/2016
Checked
Approved

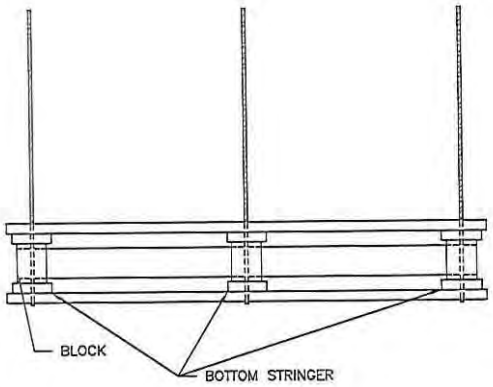
File Name WI-404E-ET
Date 11/2016
Sheet 6 of 10



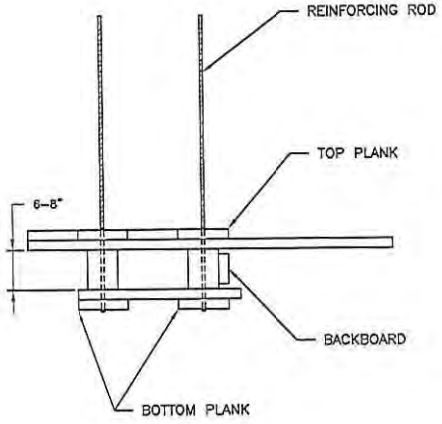
TOP VIEW



CONSTRUCTED SIDE VIEW



FRONT VIEW



SIDE VIEW

BILL OF MATERIALS LUNKER STRUCTURE		
ITEM	SIZE	QUANTITY
TOP PLANK	2" X 8" X 8' OAK BOARD	4
TOP STRINGER	2" X 8" X 5'-6" Min OAK BOARD	3
BLOCK	6" DIA. X 8" OAK BLOCK	6
BOTTOM STRINGER	2" X 8" X 30" BOARD	3
BOTTOM PLANK	2" X 8" X 8' OAK BOARD	2
BACKBOARD	2" X 8" X 8' OAK BOARD	1
#5 REINFORCING ROD	⅝" X 5' DEFORMED STEEL	6
RINGSHANK NAILS	20D GALVANIZED	60
10 Total Boards	2" X 8" X 8 Feet Long	

Designed K.Anderson 2/5/20
Drawn K.Anderson 2/5/20
Checked
Approved

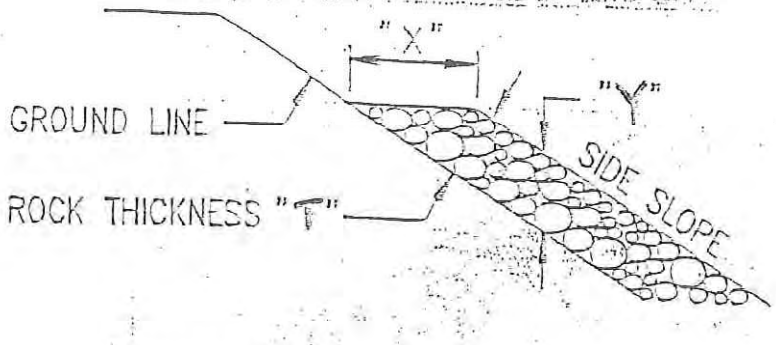
LUNKER STRUCTURE DETAIL

CLIENT: Allen River Inn
COUNTY: Richland

United States Department of Agriculture
Natural Resources Conservation Service

File Name WI-930
Date 08/14
Sheet 7 of 10

ROCK RIPRAP SECTION DIMENSIONS



VALUE OF ROCK TOP WIDTH "X" IN FEET

Rock Thickness "T" inches	Side Slope 1-1/2:1	2:1	3:1
12	1.8	2.2	3.2
15	2.3	2.8	4.0
(18)	2.7	3.4	4.7
21	3.2	3.9	5.5
24	3.6	4.5	6.3
27	4.1	5.0	7.1
30	4.5	5.6	7.9
33	5.0	6.2	8.7
36	5.4	6.7	9.5
39	5.9	7.3	10.3
42	6.3	7.8	11.1
45	6.8	8.4	11.9
48	7.2	9.0	12.7

VERTICAL "Y" VS NORMAL TO SLOPE "T" THICKNESS DIMENSIONS

Rock Thickness "T" inches	Side Slope 1-1/2:1	2:1	3:1
12	1.2	1.1	1.0
15	1.5	1.4	1.3
(18)	1.8	1.7	1.6
21	2.1	2.0	1.8
24	2.4	2.2	2.1
27	2.7	2.5	2.4
30	3.0	2.8	2.6
33	3.3	3.1	2.9
36	3.6	3.4	3.2
39	3.9	3.6	3.4
42	4.2	3.9	3.7
45	4.5	4.2	4.0
48	4.8	4.5	4.3

SEEDING DATES

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	July 31	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	October 15	Temporary *
Late Fall	November 1	through	snow cover	Dormant
Winter	snow cover	through	Spring Seeding	Frost Seed Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20–10–10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K20) per acre. Apply two tons/ac of 80–89 lime or equivalent. (see page 2 for equivalent)

* Seed a temporary cover crop of Annual Ryegrass at a rate of 25 pounds/acre. (_____ Bushels/acre)
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS)[1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX _____	LOCATION ACRES Riprap 1.0		SEEDING MIX _____	LOCATION ACRES _____	
SPECIES	RATE	POUNDS	SPECIES	RATE	POUNDS
Alsike Clover	1.2	1.2			
Timothy	4.8	4.8			
**					

1. PLS = (% Germination X % Purity)
** Companion Crop

Total % Germination may also be termed Total % Viable Seed on a tag. If a tag only shows % Germination, the user must include percentage of the seed that germinated during the lab test (% Germination) plus the percentage of hard and/or dormant seed. Hard seed and dormant seed are seeds that are still capable of germinating and producing a plant but did not germinate under the conditions of the test in the lab.

Additional native seeds may be required by permitting agencies. These additions are allowed.
Seed mixture shall meet all requirements of the WI weed laws.
Species identified as restricted or prohibited by law shall not be planted.
Certified seed shall be used, and the seeding rates will be based on pure live seed.
For dormant seedings, increase the seeds per square foot by 15%.

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.
Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates 1/4 to 1/2 inch deep.

USDA United States Department of Agriculture
Natural Resources Conservation Service

INTRODUCED SPECIES SEEDING ESTABLISHMENT
CLIENT: Allen Rippchen
COUNTY: Richland

	Date	File Name
Designed K. Anderson	2/5/20	WI–710
Drawn K. Anderson	2/5/20	Date 12/2019
Checked		
Approved		Sheet 9 of 10

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer.

Seed may be broadcast or drilled as appropriate to the site.
Seed, fertilize, and lime as soon as possible after construction.
Seeding perpendicular to direction of flow is required to limit erosion.
Seed grasses and legumes no more than 1/4 inch deep.
Consider seeding at a lower rate and making 2 passes to ensure more uniform distribution.

TEMPORARY SEEDING OPTIONS

Select one of the following species for temporary cover if:

1) The required seeds or plant stock are not available or the normal permanent seeding period for the species has passed
   - Forage Sorghum – 1/2 bushel per acre (May 15–July 15)
   - Sorghum – Sudangrass Hybrid – 1 bushel per acre (May 15–July 15)
   - Sudangrass – 1 bushel per acre (May 15–July 15)
   - Winter Wheat – 2 bushels per acre (Aug 1–Oct 1)
   - Winter Cereal Rye – 2 bushels per acre (Aug 1–Oct 15)
   - Oats – 2 bushels per acre (Apr 1–Sept 1)
   - Annual Ryegrass – 20 Pounds per acre (Apr 1–Sept 1)

2) Triazine herbicide carryover will not allow establishment of permanent cover immediately.
   - Forage Sorghum – 1/2 Bushel per acre (May 15–July 15)
   - Sorghum – Sudangrass Hybrid – 1 Bushel per acre (May 15–July 15)
   - Sudangrass – 1 Bushel per acre (May 15–July 15)

DORMANT SEEDING

Seed is broadcast and incorporated, no–tilled, or drilled into the seedbed.
Seedbed preparations and conditions are similar to conventional seeding.

MULCHING (Mulching is required.) (Mulching is not required.)

Mulching shall be done immediately after seedbed preparation and seeding.
Mulch shall be applied immediately after final grading for areas seeded at a later date.

Mulch material shall be relatively free of disease, pesticides, chemicals, noxious weed seeds, and other pests and pathogens.

Spread straw and hay mulch uniformly and at the rate of 1.5–2.0 tons per acre (60–70 bales). This application results in a layer of 6 to 7 stems, 1 to 2 inches thick, and provides a minimum 70% ground cover. Some soil surface can be seen after the application. Crimping (disking), wood cellulose fiber, tackifiers, netting, pinning, or other acceptable methods of anchoring will be used if needed to hold the mulch in place.

If other mulch materials are used, the rate of application shall meet the manufacturer's recommendations.

Two (2) tons/ac of 80–89 lime or equivalent from UW–EXT A3671

Lime Quality	Tons/AC.
40–49	3.9
50–59	3.2
60–69	2.7
70–79	2.3
90–99	1.9
100+	1.6

Attachment #11

DELTA 3
Platteville, Wisconsin
Dubuque, Iowa
P 608.348.5355
P 563.542.9005
E mail@delta3eng.biz
W www.delta3eng.biz

January 31, 2025

Ms. Jordan Main
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Re: Annual Water Quality Trading Report #3
Sextonville Sanitary District #1, WI

Dear Jordan:

As requested and required by Schedule 4.2 Annual Water Quality Trading (WQT) Report of the District's Wisconsin Pollutant Discharge Elimination System (WPDES) Permit #WI-0060038-09-0, below, please find the Annual WQT Report for the Sextonville Sanitary District #1 Wastewater Treatment Facility. Please review for approval.

I. WQT Credit Use

Table 1 provides a summary of Total Phosphorus (TP) Credits used each month in 2024. Table 2 provides a summary of annual TP Credits Used since 2022.

Table 1 – 2024 Monthly Credits Used

Month	Credits Used
Jan. ('24)	-
Feb. ('24)	-
Mar. ('24)	-
Apr. ('24)	-
May ('24)	114.93
Jun. ('24)	-
Jul. ('24)	-
Aug. ('24)	-
Sept. ('24)	-
Oct. ('24)	200.95
Nov. ('24)	8.25
Dec. ('24)	-
Total:	**324.13**

Table 2 – Summary of Annual TP Credits Used

Year	Credits Used
2022	408.36
2023	219.87
2024	324.13

II. Source of Credits

The Sextonville Sanitary District #1 WQT Plan (WQT-2020-0003) was approved on 3-16-2020. TP Credits were generated from a streambank stabilization project as described in the District's WQT Plan. The WQT Plan approved **608 lbs./yr.** of TP Credits which were included in the latest WPDES Permit. Construction of the WQT Project was completed in Spring 2021 and credits were registered on 5-19-2021. The District is currently using TP Credits to comply with the WWTF's Effluent TP Limit.

III. Annual Inspection

Annual inspection was completed in November 2024 with no major deficiencies identified. Vegetation has been well established since completion of construction. Monthly inspections also identified no deficiencies. Please see Appendix A for the Streambank Inspection Forms for 2024. Photos are provided in Appendix B. Annual inspections will begin to be performed in the Spring of each year to ensure the trading practices remain in place and satisfy the WQT Plan. The Sextonville Sanitary District #1 has operated and will continue to operate in accordance with the terms and conditions of its WPDES Permit and WQT Plan.

Additionally, the DNR performed a trade practice inspection with District staff on April 11, 2022. The DNR provided an inspection report on January 17, 2023. The inspection report summary results are provided in Table 3 below. The District has completed the maintenance items identified in Table 3 below in 2023.

Table 3 – DNR Inspection Report Summary

Site	Inspected	Vegetation Status	Rip Rap Condition	Compliance Status	Notes
Ripchen 1	Yes	3	Good	Yes	Cattle access to stream needs to be remedied
Servais 1a	Yes	3	Moderate	Yes	Rip rap has come loose
Servais 2a	Yes	3	Good	Yes	
Servais 5a	Yes	2.5	Good	Yes	
Servais 1b	Yes	4	Good	Yes	
Servais 2b	Yes	4	Good	Yes	
Servais 3b	Yes	4	Good	Yes	
Servais 4b	Yes	4	Good	Yes	
Servais 5b	Yes	3.5	Good	Yes	
Coleman 6	Yes	2	Adequate	Yes	Vegetation low in density
Denman 1	Yes	3	N/A	Yes	
Denman 2	Yes	3	Adequate	Yes	Erosion occurring at the locations with no rip rap and vegetation is struggling to establish

If you have any questions, please feel free to contact me at (608) 348-5355. Thank you.

Sincerely,
DELTA 3 Engineering, Inc.

Logan Hoppman

Logan Hoppman, P.E.
Civil/Environmental Engineer

LMH:lh

Cc: Jordan Fure – Delta 3 Engineering, Inc.
Bart Nies – Delta 3 Engineering, Inc.
Malinda McCarthy – Sanitary District Clerk-Treasurer
Dale Servais – WWTF Operator

Appendix A

Streambank Inspection Forms

BMP Inspection Form

Date: 11/13/2024

Inspector: Jordan Fure P.E.

Reason for Inspection: Annual Inspection

Site	Condition of BMP	Required Maintenance	Maintenance Estimate (Time or Cost)	Date Completed	Comments
Allen Rippchen Site 1	Good	-	-	-	
North Servias Site 1A	Good	-	-	-	
South Servias Site 1B	Good	-	-	-	
North Servias Site 2A	Good	-	-	-	
South Servias Site 2B	Good	-	-	-	
North Servias Site 3A	Good	-	-	-	
South Servias Site 3B	Good	-	-	-	
North Servias Site 4A	Good	-	-	-	
South Servias Site 4B	Good	-	-	-	
North Servias Site 5A	Good	-	-	-	
South Servias Site 5B	Good	-	-	-	
Lions Club Site 1	Good	-	-	-	

Paul Denman Site 1	Good	-	-	-	
Paul Denman Site 2	Good	-	-	-	
Jim Coleman Site 1	Good	-	-	-	
Jim Coleman Site 2	Good	-	-	-	
Jim Coleman Site 3	Good	-	-	-	
Jim Coleman Site 4	Good	-	-	-	
Jim Coleman Site 5	Good	-	-	-	
Jim Coleman Site 6	Good	-	-	-	

Appendix B

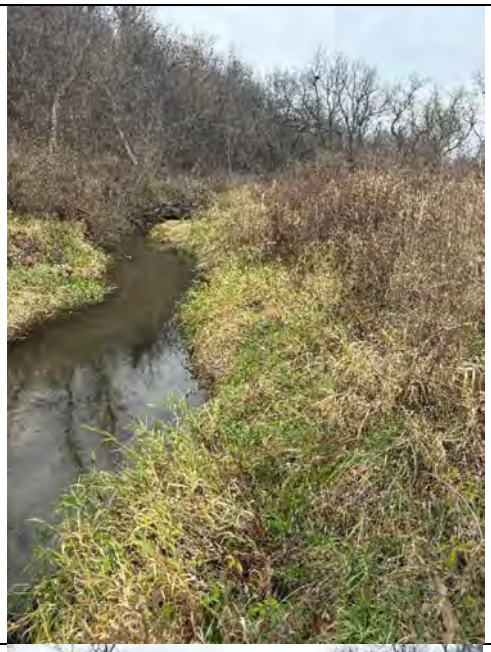
Photos

Photo Number	Site Photo	Comments
1		Allen Rippchen - Site 1 Direction: West Date Taken: 11/13/24 Comments: None
2		Allen Rippchen - Site 1 Direction: South Date Taken: 11/13/24 Comments: None
3		North Servias - Site 1A Direction: West Date Taken: 11/13/24 Comments: None

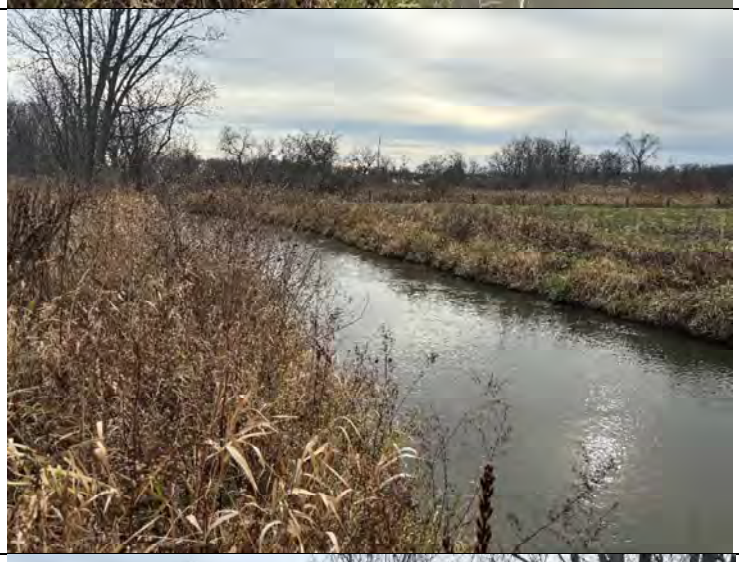
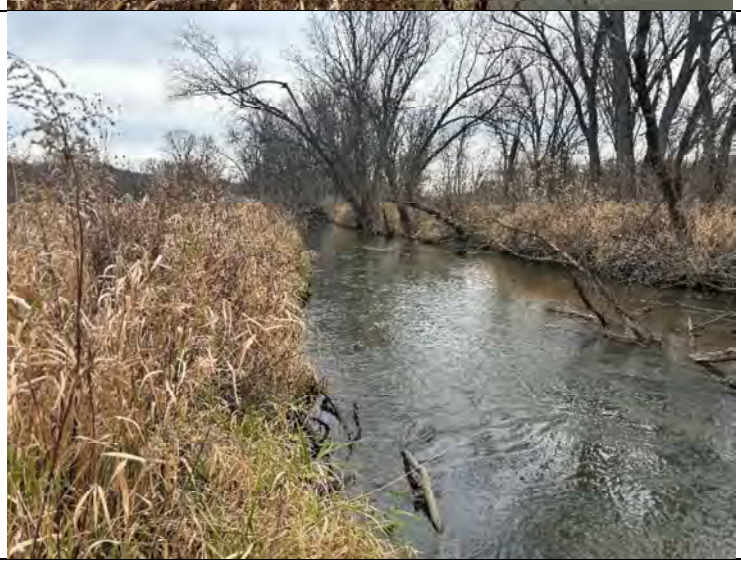
4		North Servias - Site 2A Direction: East Date Taken: 11/13/24 Comments: None
5		North Servias - Site 3A Direction: West Date Taken: 11/13/24 Comments: None
6		North Servias - Site 4A Direction: South Date Taken: 11/13/24 Comments: None

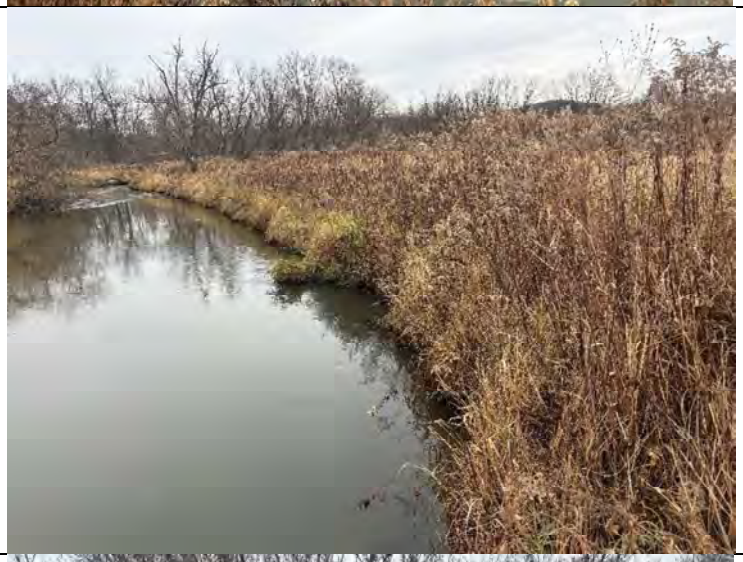
7		North Servias - Site 5A Direction: Northwest Date Taken: 11/13/24 Comments: None
8		South Servias - Site 1B Direction: Southeast Date Taken: 11/13/24 Comments: None

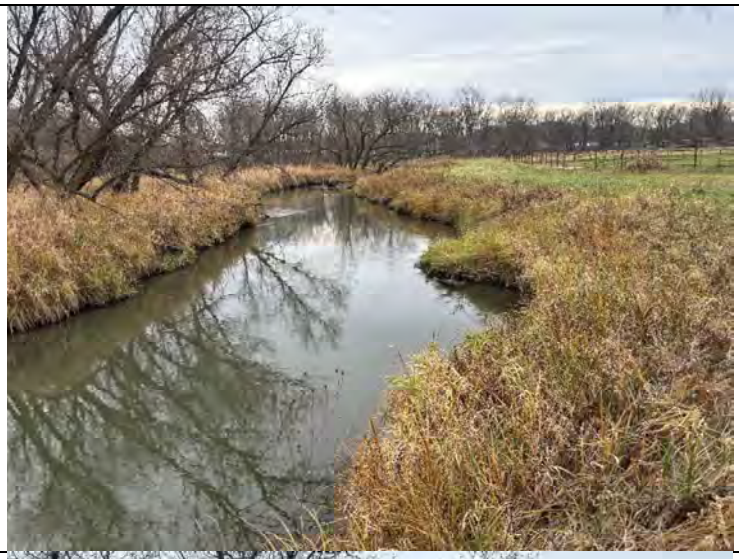
9		South Servias - Site 2B Direction: Northwest Date Taken: 11/13/24 Comments: Northwest
10		South Servias - Site 3B Direction: Southeast Date Taken: 11/13/24 Comments: None
11		South Servias - Site 4B Direction: South Date Taken: 11/13/24 Comments: None

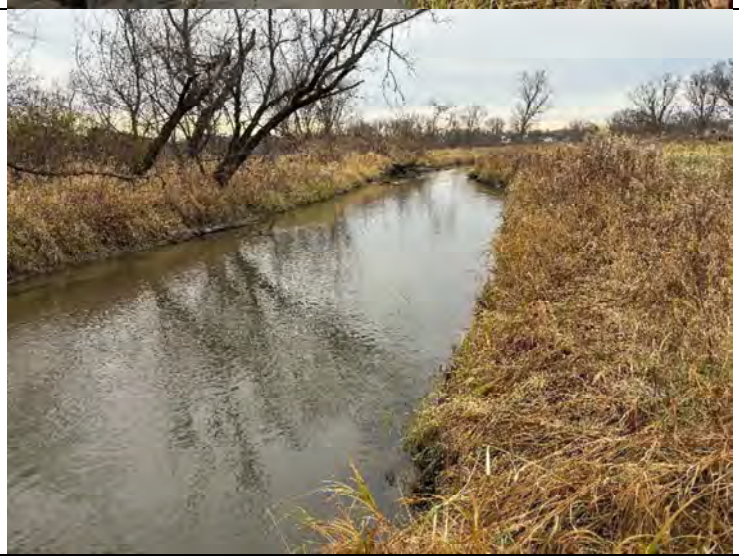
12		South Servias - Site 4B Direction: North Date Taken: 11/13/24 Comments: None
13		South Servias - Site 5B Direction: South Date Taken: 11/13/24 Comments: None
14		South Servias - Site 5B Direction: West Date Taken: 11/13/24 Comments: None

15		Lions Club - Site 1 Direction: West Date Taken: 11/13/24 Comments: None
16		Lions Club - Site 1 Direction: South Date Taken: 11/13/24 Comments: None
17		Lions Club - Site 1 Direction: Southwest Date Taken: 11/13/24 Comments: None

18		Paul Denman - Site 1 Direction: South Date Taken: 11/13/24 Comments: None
19		Paul Denman - Site 2 Direction: South Date Taken: 11/13/24 Comments: None
20		Paul Denman - Site 2 Direction: South Date Taken: 11/13/24 Comments: None

21		Jim Coleman - Site 1 Direction: West Date Taken: 11/13/24 Comments: None
22		Jim Coleman - Site 2 Direction: East Date Taken: 11/13/24 Comments: None
23		Jim Coleman - Site 2 Direction: West Date Taken: 11/13/24 Comments: None

24		Jim Coleman - Site 3 Direction: Southeast Date Taken: 11/13/24 Comments: None
25		Jim Coleman - Site 4 Direction: Southeast Date Taken: 11/13/24 Comments: None
26		Jim Coleman - Site 5 Direction: South Date Taken: 11/13/24 Comments: None

27		Jim Coleman - Site 6 Direction: South Date Taken: 11/13/24 Comments: None
28		Jim Coleman - Site 6 Direction: South Date Taken: 11/13/24 Comments: None

DELTA 3
Platteville, Wisconsin
Dubuque, Iowa
P 608.348.5355
P 563.542.9005
E mail@delta3eng.biz
W www.delta3eng.biz

January 31, 2024

Ms. Jordan Main
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Re: Annual Water Quality Trading Report #2
Sextonville Sanitary District #1, WI

Dear Jordan:

As requested and required by Schedule 4.2 Annual Water Quality Trading (WQT) Report of the District's Wisconsin Pollutant Discharge Elimination System (WPDES) Permit #WI-0060038-09-0, below, please find the Annual WQT Report for the Sextonville Sanitary District #1 Wastewater Treatment Facility. Please review for approval.

I. WQT Credit Use

Table 1 provides a summary of Total Phosphorus (TP) Credits used each month in 2023. Table 2 provides a summary of annual TP Credits Used since 2022. WQT Credit usage has decreased since 2022.

Table 1 – 2023 Monthly Credits Used

Month	Credits Used
Jan. ('23)	-
Feb. ('23)	-
Mar. ('23)	-
Apr. ('23)	-
May ('23)	108.14
Jun. ('23)	*40.65*
Jul. ('23)	-
Aug. ('23)	-
Sept. ('23)	-
Oct. ('23)	-
Nov. ('23)	71.08
Dec. ('23)	-
Total:	**219.87**

*Note: June DMR did not include WQT credit usage, however, the District discharged wastewater in June and would have used 40.65 credits to satisfy TP limits.

Table 2 – Summary of Annual TP Credits Used

Year	Credits Used
2022	408.36
2023	219.87

II. Source of Credits

The Sextonville Sanitary District #1 WQT Plan (WQT-2020-0003) was approved on 3-16-2020. The WQT Plan approved 608 lbs./yr. of TP Credits which were included in the latest WPDES Permit. Construction of the WQT Project was completed in Spring 2021 and credits were registered on 5-19-2021. The District is currently using TP Credits to comply with the WWTF's Effluent TP Limit.

III. Annual Inspection

Annual inspection was completed in April 2023 with no major deficiencies identified. Vegetation has been well established since completion of construction. Monthly inspections also identified no deficiencies. Annual inspections will continue to be performed in the Spring of each year to ensure the trading practices remain in place and satisfy the WQT Plan. The Sextonville Sanitary District #1 has operated and will continue to operate in accordance with the terms and conditions of its WPDES Permit and WQT Plan.

Additionally, the DNR performed a trade practice inspection with District staff on April 11, 2022. The DNR provided an inspection report on January 17, 2023. The inspection report summary results are provided in Table 3 below. The District has completed the maintenance items identified in Table 3 below in 2023.

Table 3 – Inspection Report Summary

Site	Inspected	Vegetation Status	Rip Rap Condition	Compliance Status	Notes
Ripchen 1	Yes	3	Good	Yes	Cattle access to stream needs to be remedied
Servais 1a	Yes	3	Moderate	Yes	Rip rap has come loose
Servais 2a	Yes	3	Good	Yes	
Servais 5a	Yes	2.5	Good	Yes	
Servais 1b	Yes	4	Good	Yes	
Servais 2b	Yes	4	Good	Yes	
Servais 3b	Yes	4	Good	Yes	
Servais 4b	Yes	4	Good	Yes	
Servais 5b	Yes	3.5	Good	Yes	
Coleman 6	Yes	2	Adequate	Yes	Vegetation low in density
Denman 1	Yes	3	N/A	Yes	
Denman 2	Yes	3	Adequate	Yes	Erosion occurring at the locations with no rip rap and vegetation is struggling to establish

If you have any questions, please feel free to contact me at (608) 348-5355. Thank you.

Sincerely,
DELTA 3 Engineering, Inc.

Logan Hoppman

Logan Hoppman, E.I.T.
Civil/Environmental Engineer

LMH:lh

Cc: Jordan Fure – Delta 3 Engineering, Inc.
Dale Servais – Operator

EVERY ANGLE COVERED

DELTA 3
Platteville, Wisconsin
Dubuque, Iowa
P 608.348.5355
P 563.542.9005
E mail@delta3eng.biz
W www.delta3eng.biz

January 31, 2023

Ms. Caitlin O'Connell
Wisconsin Department of Natural Resources
1500 N. Johns Street
Dodgeville, WI 53533

Re: Annual Water Quality Trading Report #1
Sextonville Sanitary District #1, WI

Dear Caitlin:

As requested and required by Schedule 4.2 Annual Water Quality Trading (WQT) Report of the Village's Wisconsin Pollutant Discharge Elimination System (WPDES) Permit #WI-0060038-09-0, below, please find the Annual WQT Report for the Sextonville Sanitary District #1 Wastewater Treatment Facility. Please review for approval.

I. WQT Credit Use

Table 1 provides a summary of Total Phosphorus (TP) Credits used each month in 2022.

Table 1 – 2022 Monthly Credits Used

Month	Credits Used
Jan. ('22)	-
Feb. ('22)	-
Mar. ('22)	-
Apr. ('22)	-
May ('22)	206.45
Jun. ('22)	103.2
Jul. ('22)	-
Aug. ('22)	-
Sept. ('22)	-
Oct. ('22)	-
Nov. ('22)	98.71
Dec. ('22)	-
Total:	**408.36**

II. Source of Credits

The Sextonville Sanitary District #1 WQT Plan (WQT-2020-0003) was approved on 3-16-2020. The WQT Plan approved 608 lbs./yr. of TP Credits which were included in the latest WPDES Permit. Construction of the WQT Project was completed in Spring 2021 and credits were registered on 5-19-2021. The District is currently using TP Credits to comply with the WWTF's Effluent TP Limit.

III. Annual Inspection

The DNR performed a trade practice inspection with District staff on April 11, 2022. The DNR provided an inspection report on January 17, 2023. The inspection report summary results are provided in Table 2 below.

Table 2 – Inspection Report Summary

Site	Inspected	Vegetation Status	Rip Rap Condition	Compliance Status	Notes
Ripchen 1	Yes	3	Good	Yes	Cattle access to stream needs to be remedied
Servais 1a	Yes	3	Moderate	Yes	Rip rap has come loose
Servais 2a	Yes	3	Good	Yes	
Servais 5a	Yes	2.5	Good	Yes	
Servais 1b	Yes	4	Good	Yes	
Servais 2b	Yes	4	Good	Yes	
Servais 3b	Yes	4	Good	Yes	
Servais 4b	Yes	4	Good	Yes	
Servais 5b	Yes	3.5	Good	Yes	
Coleman 6	Yes	2	Adequate	Yes	Vegetation low in density
Denman 1	Yes	3	N/A	Yes	
Denman 2	Yes	3	Adequate	Yes	Erosion occurring at the locations with no rip rap and vegetation is struggling to establish

The District plans to perform maintenance to the areas identified during Spring 2023. Maintenance will include minor regrading, rip-rap stabilization, and reseeding. Annual inspection will continue to be performed in the Spring of each year to ensure the trading practices remain in place and satisfy the WQT Plan. The Sextonville Sanitary District #1 has operated and will continue to operate in accordance with the terms and conditions of its WPDES Permit and WQT Plan.

If you have any questions, please feel free to contact me at (608) 348-5355. Thank you.

Sincerely,
DELTA 3 Engineering, Inc.

Jordan Fure, P.E.
Project Engineer

JDF: jf

Cc: Dale Servais – Operator

EVERY ANGLE COVERED