

# Memorandum

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**To:** Holly Kovarik, Sauk River Watershed District - District Administrator  
Mike Haymen, Sauk River Watershed District - Ditch/Permit Coordinator

**From:** Jeremy Schultz, P.E. Wenck Associates, Inc.  
Chris Meehan, P.E, Wenck Associates, Inc.

**Date:** December 8<sup>th</sup> 2009

**Subject:** CD 9 Repair Report

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The following is the Report on Repair of County Ditch 9 and branches.

## Location

County Ditch 9 (CD 9) runs from west to east in Stearns County beginning approximately 3 miles west of Greenwald and ending approximately 2.5 miles east of Greenwald where it flows in to a natural stream. CD 9 has one branch that begins near County Road 29 a half mile west of Meire Grove and flows south through open ditch and drain tile for 2.6 miles before it flows in to the main branch of CD9.

## Findings

### Main Ditch:

Station 0+00 to 15+00 – Outlet from Ellering Lake to the natural outlet. Vegetative growth is minimal in the ditch. A single ditch blockage of rock exists at approximately station 2+00, the blockage should be removed. The channel from 0+00 to 1+00 is filled with sediment and vegetation and should be excavated.

Station 15+00 to 23+00 - Lake Ellering: No work required.

Station 23+00 to 50+38 – Lake Ellering to Overton Road. This section of the ditch is completely overgrown with vegetation and trees. Cleaning is necessary. Sediment has deposited in 3 of the 4 culverts at Overton Road which should be cleaned out.

Station 50+38 to Station 164+67 – Overton Road to T.H. 4. The ditch has extensive vegetation growth in most sections and also has dense tree growth between stations 82+00 and 89+00. Siltation has occurred between the private culvert at station 70+88 to station 92+00 and should be excavated. Several small beaver dams are also present and should also be removed. A 24" pipe is shown on the ditch plans along side the box culvert at T.H. 4 but could not be found. The invert of this pipe is 0.7' below the box culvert invert. This pipe should be located and cleaned out.

Station 164+67 to 226+91- T.H. 4 to Osprey Road. The ditch has impeding vegetation and several trees that should be removed. The ditch is currently at or below the approved grade and should not be excavated.

Station 226+91 to Station 255+94 – Osprey Road to 375<sup>th</sup> Ave. This section consists of ditch and wetland. The ditch sections between Osprey Road and station 232+00 and station 250+00 to 375<sup>th</sup> Ave. have impeding vegetation and trees that should be removed. The wetland should not be excavated.

Station 255+94 to 259+50 - No work needed.

259+50 to 283+98 - The ditch has impeding vegetation and sparse trees that should be removed. The ditch is currently at or below the approved grade and should not be excavated.

Station 283+98 to Station 295+00 - Recently cleaned. No work needed.

Station 295+00 to Station 352+18 – The ditch has impeding vegetation, several trees and cattails that should be removed. The ditch is currently at or below the approved grade and should not be excavated.

Station 352+18 to Station 401+28 – County Road 191 to end of County Ditch #9. The ditch has impeding vegetation, sparse trees and cattails that should be removed. The ditch is currently at or below the approved grade and should not be excavated.

#### Branch No. 1

Station 0 to Station 24+70 – Main ditch to draitile outlet. The ditch has impeding vegetation, several trees and cattails that should be removed. Sediment has deposited between the private culvert at station 12+28 and the draitile outlet that should be excavated.

Station 24+70 to 70+58 - 24" drain tile. Sediment has deposited on the upstream and downstream ends of the draitile line to a depth of 6" to 8". Ditch cleanout is scheduled downstream of the draitile in December of 2009. The draitile should be inspected one and two years after the downstream ditch cleanout is completed to determine if a full draitile cleanout is necessary.

Station 70+58 to Station 115+60 – 24" Draitile inlet to 12" draitile outlet. The ditch has impeding vegetation and trees that should be removed. The ditch is currently at or below the approved grade and should not be excavated.

#### Necessity

The system of CD 9 is generally out of repair although there are sections of the main branch that do not require repair or have recently been repaired. The repair will consist of re-establishing the grade, removing vegetation and trees from the ditch channel, and re-establishing vegetation on the channel banks to limit erosion. The repair is necessary to return the original design capacity of the ditch system. If repairs are not performed existing blockages and sedimentation may create flooding.

#### Land Affected by Removal – Excavation and Spoil Banks

It is estimated that there are approximately 41,500 linear feet of land adjacent to the ditch that will be effected by tree removal and grading spoil banks. Tree removal will consist of removing trees along the bank to allow movement of equipment to spread the spoils. Trees should be mulched on site or taken off site to prevent future impediments to channel maintenance. The spoil banks will have breaks to allow natural drainage from adjacent properties in to the ditch. The spoil banks and disturbed areas will be reseeded with a fast growing vegetation to limit the amount of erosion.

Estimated Cost

<b>Item No.</b>	<b>Item</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Extended Amount</b>
1	Mobilization	LS	1	\$2,500	\$2,500
2	Excavation	CY	540	\$12	\$6,480
3	Tree & Vegetation Removal	LF	41,500	\$1.00	\$41,500
4	Erosion Control & Seeding	LS	1	\$3,000	\$2,000
<b>Total</b>					<b>\$52,480</b>