evergreen consultants LLC
2918 Van Hoof Road • Green Bay, WI 54313
Phone: 920.615.0019 • Website: www.evergreenwis.com

Fox Run

Professionally Assured Wetland Delineation Report

Project Number: WKS19-008-01
Property Address:
2300 W St Paul Avenue, City of Waukesha, Waukesha County, Wisconsin
Parcel ID: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018

October 28, 2019

Report Request by

EXCEL ENGINEERING
Always a better plan

100 Camelot Drive
Fond du Lac, WI 54935

evergreen consultants LLC
2918 Van Hoof Road • Green Bay, WI 54313
Phone: 920.615.0019 • Website: www.evergreenwis.com

Field Work Certification:

Ben J LaCount, PLS, Planner, Wetland Scientist
Wisconsin DNR Professional Assured Wetland Delineator
Lead Wetland Delineator
(920) 265-4105 *ben@evergreenwis.com*

Chad M Fradette, EP, Chemist, Wetland Scientist
Wisconsin DNR Professional Assured Wetland Delineator
(920) 615-0019 *chad@evergreenwis.com*

Shyann P Banker, Environmental Specialist
(920) 915-2629 *shyann@evergreenwis.com*

Table of Contents

Executive Summary

Evergreen Consultants LLC (Evergreen) was retained by Excel Engineering, to perform a professionally assured wetland delineation. The delineation/project area is all of Waukesha County Tax Parcels WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018, located in part of the Southeast ¼ of the Southeast ¼ of Section 08 of Township 06 North, Range 19 East and part of the Southwest ¼ of the Southwest ¼ of Section 09 of Township 06 North, Range 19 East, located at 2300 W St Paul Avenue, City of Waukesha, Waukesha County, Wisconsin.

The project area is shown on the Wetland Delineation Map as the Site Boundary, hereafter described as the "Site". The Wetland Delineation Map is in Appendix A. Evergreen was directed to delineate the project area for future planning purposes. The property had once been actively farmed but buildings and roads were constructed within and around the Site prior to 1980.

The wetland delineation was certified complete on October 28, 2019 by Benjamin J La Count, PLS, Wisconsin DNR Professionally Assured Wetland Delineator, with assistance from Chad M Fradette, EP, Chemist, WDNR Professionally Assured Wetland Delineator, and Shyann P Banker, Environmental Specialist. Mr. La Count was the Lead Wetland Delineator for the project.

One wetland area was identified during fieldwork:

- Wetland 1 is an area infested with reed canary grass located within an excavated drainage ditch adjacent to the north Site Boundary. The wetland receives artificial hydrology from a culvert discharge which drains into the ditch/wetland.

It is our opinion that Wetland 1 within the Site meets the definition of an artificial wetland as defined in WI Statute 281.36 (4n)(a)1. Wetland 1 is an excavated drainage ditch that receives artificial hydrology from a culvert which drains into the ditch/wetland, the wetland was created during construction of the Site.

Since Benjamin J LaCount and Chad M Fradette are WDNR Professionally Assured Wetland Delineators WDNR concurrence is already granted for five years and some wetlands on-site may have concurrence for 15 years if the conditions of WI Statute 23.321 (5)(b) 1 apply. For wetlands to be confirmed as exempt from state regulatory authority an exemption determination application must be submitted to the DNR Wetland ID Program whose staff makes the final decision.

Benjamin J LaCount, PLS
WI Professionally Assured Wetland Delineator
Lead Wetland Delineator

Chad M Fradette, EP, Chemist
WI Professionally Assured Wetland Delineator

Shyann P Banker
Environmental Specialist

1.0 INTRODUCTION

1.1 Purpose

Evergreen was retained by Excel Engineering to perform a professionally assured wetland delineation.

One wetland area was identified during fieldwork:

- Wetland 1 is an area infested with reed canary grass located within an excavated drainage ditch adjacent to the north Site Boundary. The wetland receives artificial hydrology from a culvert discharge which drains into the ditch/wetland.

1.2 Personnel

The wetland delineation was certified complete on October 28, 2019 by Benjamin J La Count, PLS, Wisconsin DNR Professionally Assured Wetland Delineator, with assistance from Chad M Fradette, EP, Chemist, WDNR Professionally Assured Wetland Delineator, and Shyann P Banker, Environmental Specialist. Mr. La Count was the Lead Wetland Delineator for the project.

Mr. LaCount is a Professional Land Surveyor and WDNR Professionally Assured Wetland Delineator and has over ten years of experience conducting wetland delineations. Mr. LaCount has completed the Basic and Advanced Wetland Delineation Training, Basic Plant Identification for Wetlands and Grasses/Sedges/Rushes courses sponsored by UW-La Crosse Continuing Education/Extension. Mr. LaCount has also completed the Advanced Hydric Soils and Problematic Wetland Delineation courses conducted by the Wetland Training Institute and the Advanced Wetland Plant ID: Grasses/Sedges/Rushes and Aerial Photo Review courses conducted by the USACE and the University of Minnesota Wetland Delineator Certification Program.

Mr. Fradette is an Environmental Professional, Analytical Chemist, WDNR Professionally Assured Wetland Delineator and has over sixteen years of experience conducting wetland delineations. Mr. Fradette biannually attends Advanced Wetland Delineation Training course and has completed Grasses/Sedges/Rushes course sponsored by UW-La Crosse Continuing Education/Extension. Mr. Fradette has also completed the Advanced Hydric Soils and Problematic Wetland Delineation courses conducted by the Wetland Training Institute and the Advanced Wetland Plant ID: Grasses/Sedges/Rushes and Aerial Photo Review courses conducted by the USACE and the University of Minnesota Wetland Delineator Certification Program.

Mrs. Shyann Banker, Environmental Specialist has three years of experience conducting wetland delineations. Mrs. Banker has completed the Basic and Advanced Wetland Delineation Training and Basic Plant Identification for Wetlands courses sponsored by UW-La Crosse Continuing Education/Extension.

2.0 METHODOLOGY

Wetland boundaries were determined based on the comprehensive wetland delineation method as defined in the *Corps of Engineers Wetlands Delineation Manual* (USACE, Waterways Experiment Station, Wetlands Research Program Technical Report Y-87-1) and the *Regional Supplement to the 1987 Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Regions* (NC/NE Regional Supplement) (USACE ERDC, 2012).

Soil data, aerial photographs and topographic information available on Waukesha County's GIS website were reviewed prior to the site visit to determine areas for investigation and included: areas shown as having hydric inclusionary soils as shown on the NRCS National Cooperative Soil Survey and the WDNR

Surface Water Data Viewer. Vegetation, soils and hydrology were investigated during the Site visits to determine the location of wetland boundaries.

2.1 Resources

The following resources were used:

Site topography:	USGS Quadrangle Maps
	Waukesha County Light Detection and Ranging (LiDAR) Topography
Soils:	Waukesha County Soil Survey
	Natural Resource Conservation Service (NRCS) Web Soil Survey (NRCS 2019).
Land Use:	Historic and recent aerial photographs
Wetlands:	Wisconsin Wetland Inventory (viewed via the Surface Water Data Viewer)
	National Wetland Inventory (NWI)

2.2 Equipment Used

The following equipment was used:

Six-foot stick tape
Soil auger, trenching shovel
Munsell soil color charts
Leica Zeno GG04 GPS

2.3. Vegetation

Vegetation was documented on the NC/NE Regional Supplement data forms. Percent cover of each species for the herbaceous stratum (5-foot radius plot), shrub/sapling stratum (15-foot radius plot) and tree and woody vine stratum (30-foot radius plot) were estimated. Rectangular sample plots were used when plant communities would overlap using circular sample plots or when a community was narrower than the radius. Wetland indicator status was taken from the Lichvar, R.W. 2016, *The National Wetland Plant List, State of Wisconsin 2016 Wetland Plant List*. Dominant species were determined by applying the 50/20 rule. The Dominance Test Worksheet and Prevalence Index Worksheet were completed. Hydrophytic Vegetation Indicators were applied, and a decision was made regarding the dominance of hydrophytic vegetation.

2.4. Soils

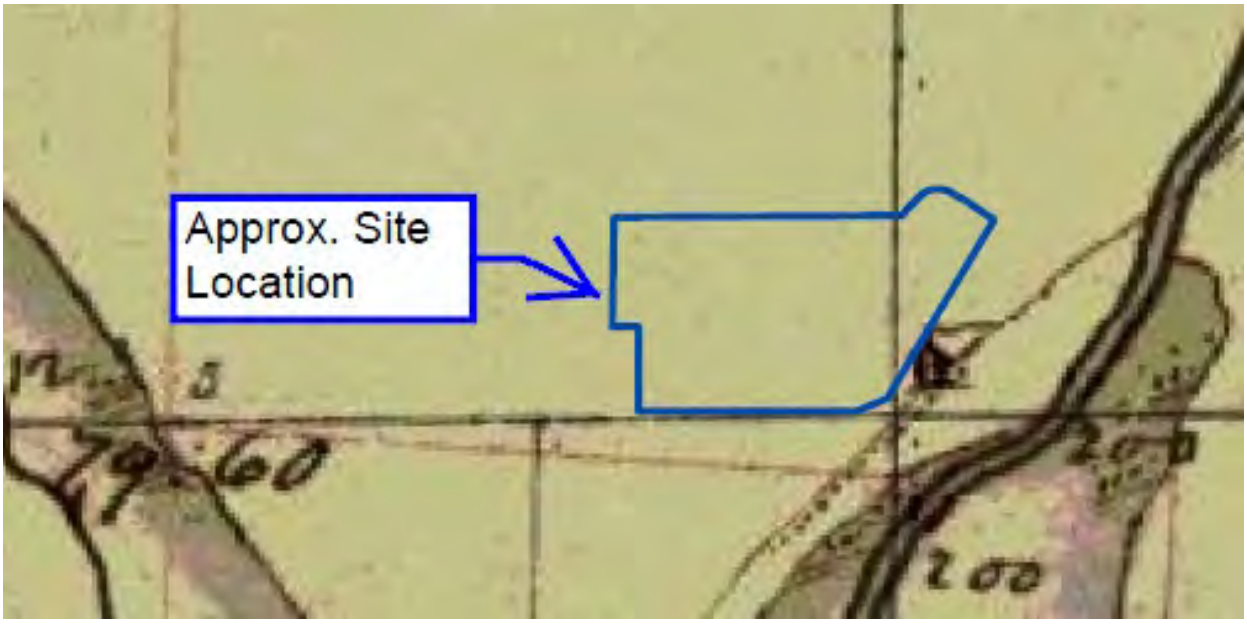
Soil test pits were excavated with a trenching shovel and a soil probe to a depth of at least 24" at each sampling point. The presence and percentage of mottling, matrix color, and texture was documented on the NC/NE Regional Supplement data forms for each layer. The Munsell Soil Color Charts were used to determine the hue, value and chroma of observed moist soils. After the profile was documented it was determined if a hydric soil indicator was met at that sample point.

2.5. Hydrology

Before an on-site investigation, FSA aerial slides and aerial photographs were reviewed for the presence of surface water or saturated soil conditions. Each sample point was investigated for saturated soil conditions, water table and surface water and if present they were measured and recorded on the NC/NE Regional Supplement data form. The area was also investigated for Primary and Secondary Hydrologic Indicators as listed on the NC/NE Regional Supplement data form.

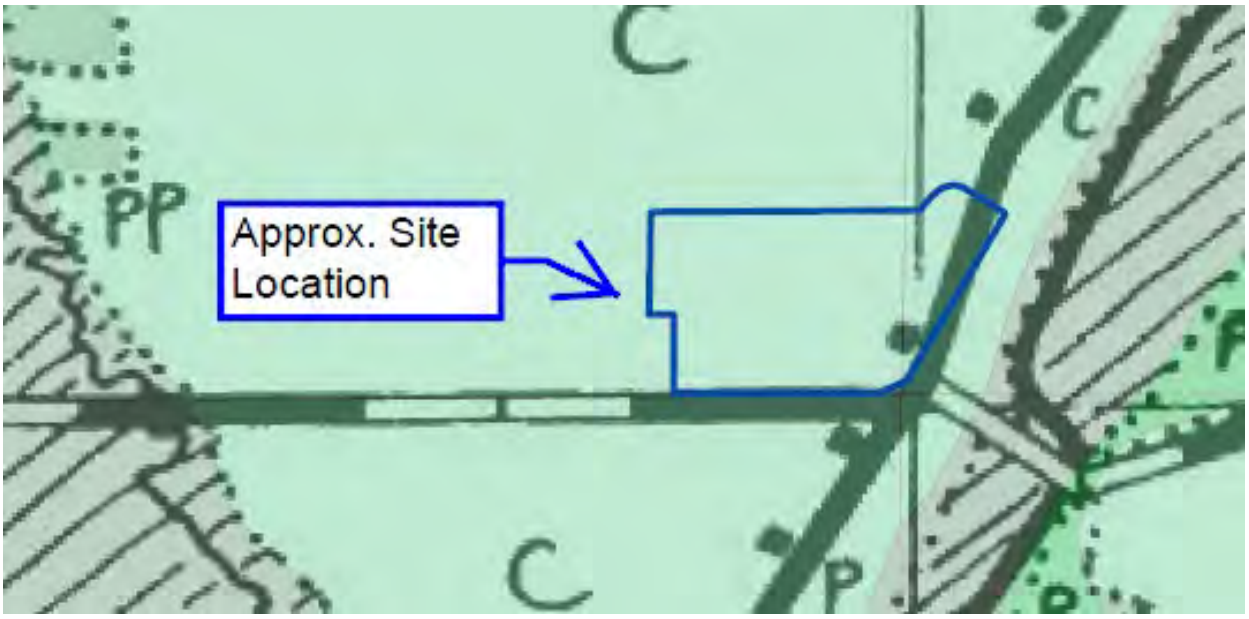
3.0 SITE CHARACTERISTICS

3.1 Land Use



1837 Original Survey

The Original Survey, created in 1837, shows the Site spanning Sections 8 and 9, with a house and trail adjacent to the east Site boundary. The Original Survey Notes describe the vegetation in this area as bur oak, black oak, and white oak.



1945 Bordner Survey

The Bordner Survey, created in 1945, shows the Site as cleared cropland, with a house adjacent to the southeast corner and hard surfaced road adjacent to the east and south Site boundaries. The Original Survey, Survey Notes and Bordner Survey are in Appendix C.

Aerial photographs from 1937, 1980-2008, 2010, 2011, 2014, 2015, 2017, and 2018 were reviewed.

1937- The Site was cropland.

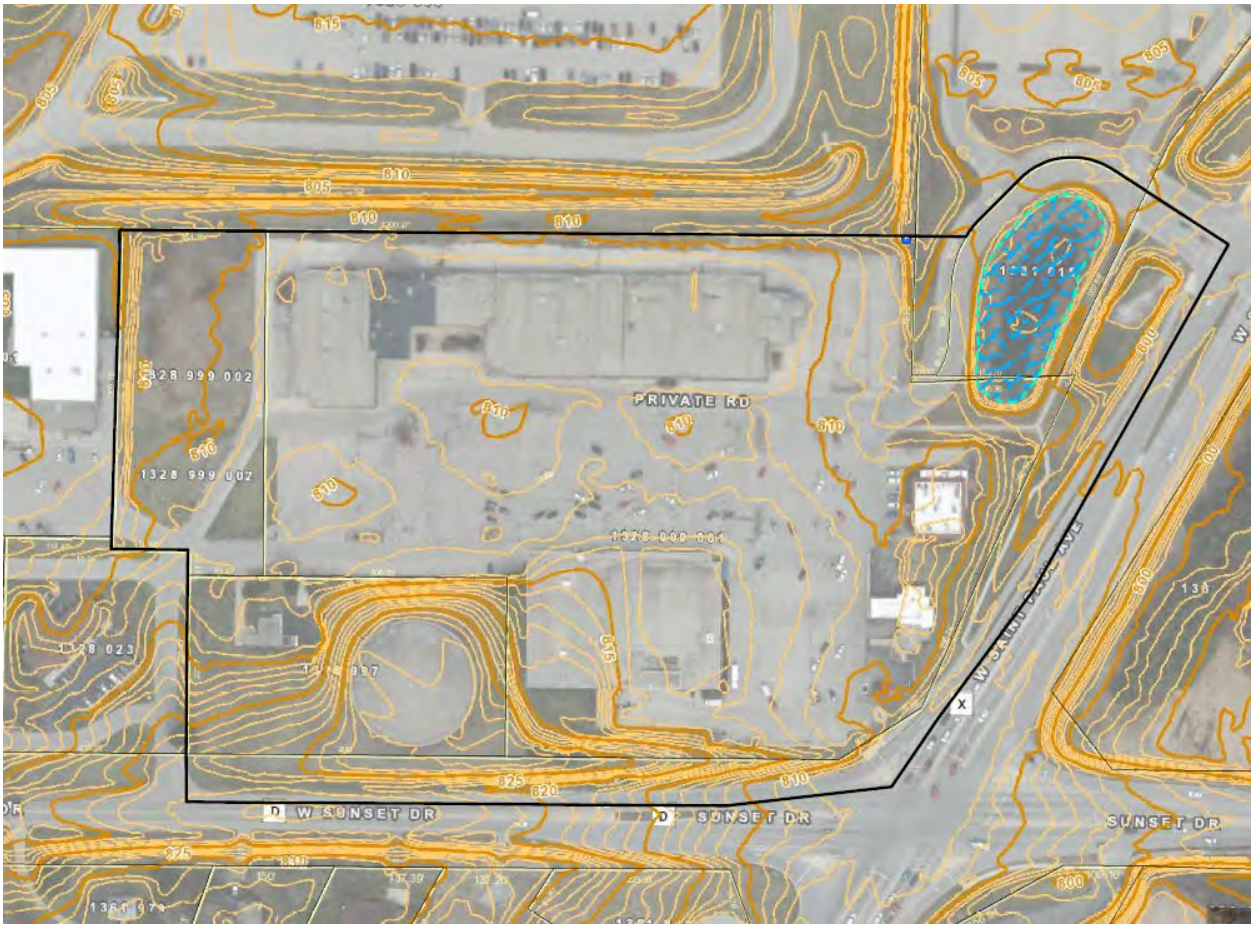
1980- Roads and buildings were constructed within and around the Site.

2002- A pond was constructed in the northeast corner of the Site.

2018- Current state of the Site.

3.2 Topography

The topography at the Site ranges from an elevation of 828 feet down to 805 feet. The topography of the Site slopes down towards the north. The Topographic Map is in Appendix A.



Topographic Map

3.3 *Precipitation*

Precipitation information was reviewed from the Waukesha 1.6 NW, Waukesha County, WI Station. A 90 Day Antecedent Precipitation Rolling Total from August through October 2019 is shown below. Precipitation was in the normal range from the beginning of August until mid-September, with two small spikes above the normal range in mid-August and the end of August. In the mid-September, precipitation spiked above normal and remained high above the normal range until the Site visit in late October. Raw precipitation data is in Appendix F. The antecedent precipitation for approximately 90 days prior to the Site visit in October was wetter than normal.

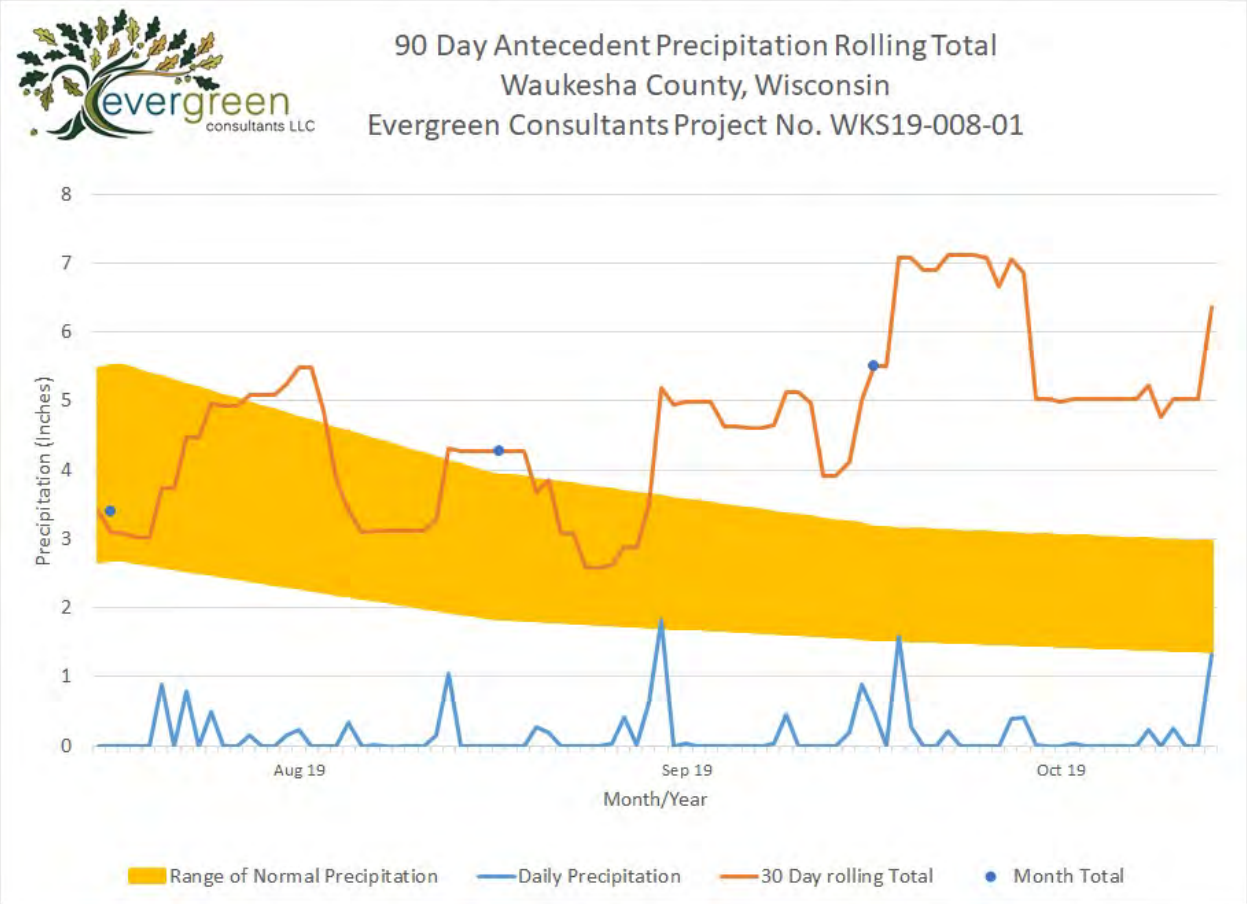


Chart 1. 90 Day Antecedent precipitation Rolling Total Summary between August-October 2019 in Waukesha County, Wisconsin

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	10/27/2019	**Landowner/Project**	WKS19-008-01
Weather Station	Waukesha 1.6 NW	**State**	Wisconsin
County	Waukesha County	**Growing Season**	yes
Photo/obs Date	10/28/2019	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	October	1.55	3.16	4.78	W	3	3	9
2nd Prior Month*	September	1.84	3.91	5.50	W	3	2	6
3rd Prior Month*	August	2.69	5.50	4.28	N	2	1	2
	*compared to photo/observation date						**Sum**	**17**

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been wetter than normal**

Table 1. Precipitation Summary between August and October 2019 in Waukesha County, Wisconsin

Precipitation values are measured in inches.
Sources: National Oceanic & Atmospheric Administration, Midwest Regional Climate Center

3.4 Wetland Mapping

The Wisconsin Wetland Inventory (WWI), viewed via the Surface Water Data Viewer, and the National Wetland Inventory (NWI) were reviewed.

Surface Water Data Viewer

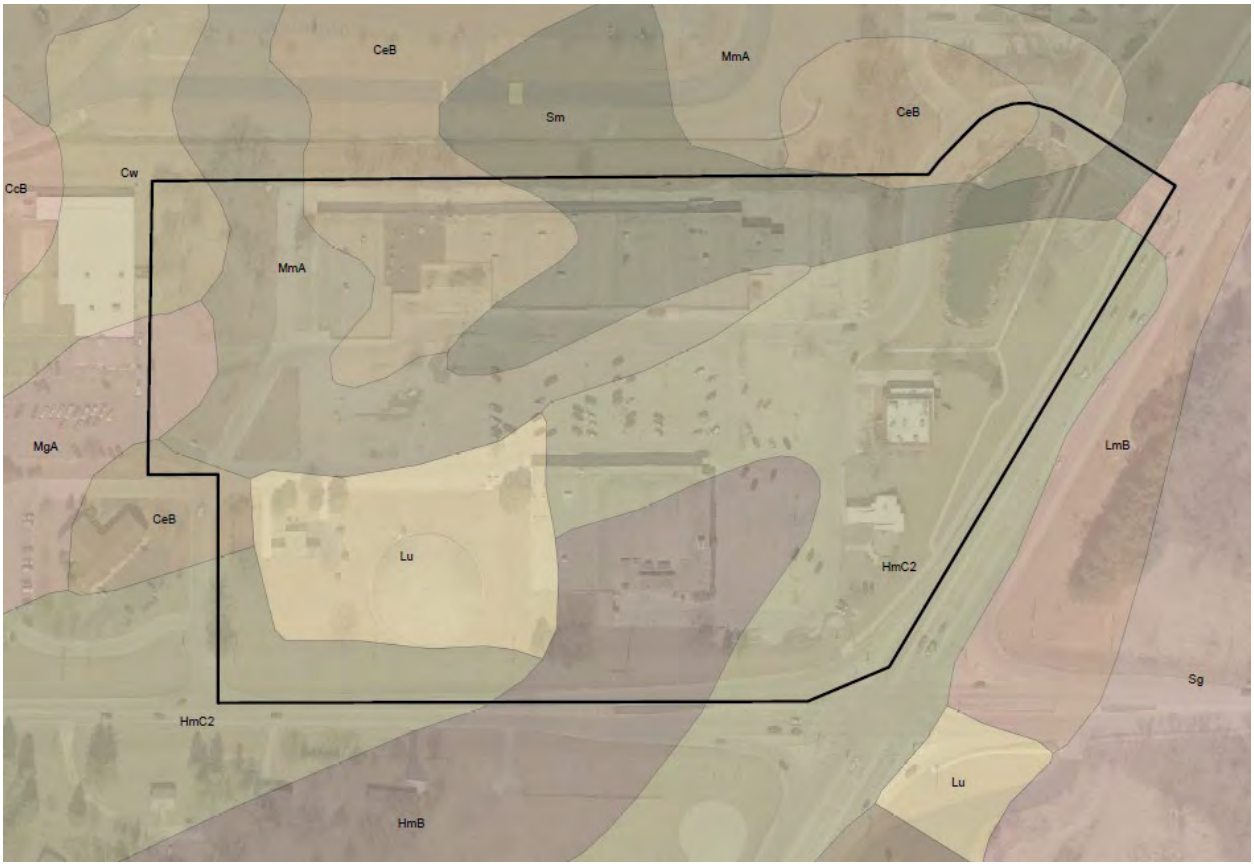
The Surface Water Data Viewer shows wetland indicator soils in the north half of the Site and an excavated pond in the northeast corner.

National Wetland Inventory Map

The National Wetland Inventory Map shows an excavated pond in the northeast corner. The surface Water Data Viewer and National Wetland Inventory Maps are in Appendix A.

3.5 Mapped Soils

The NRCS Web Soil Survey and the Soil Survey of Waukesha County, Wisconsin, indicate the presence of the following soil types:



Report—Hydric Rating by Map Unit (WI)

Hydric Rating by Map Unit (WI)–Milwaukee and Waukesha Counties, Wisconsin				
Map Unit Symbol	**Map Unit Name**	**Hydric Percent of Map Unit**	**Hydric Category**	**Landform Hydric Minor Components**
CeB	Casco loam, 2 to 6 percent slopes	0	WI Nonhydric	—
Cw	Colwood silt loam, 0 to 2 percent slopes	100	WI Hydric	Depressions
HmB	Hochheim loam, 2 to 6 percent slopes	0	WI Nonhydric	—
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	0	WI Nonhydric	—
LmB	Lamartine silt loam, 0 to 3 percent slopes	15	WI Predominantly Nonhydric	Drainageways
Lu	Loamy land	10	WI Predominantly Nonhydric	Depressions
MgA	Martinton silt loam, 1 to 3 percent slopes	7	WI Predominantly Nonhydric	Depressions
MmA	Matherton silt loam, 1 to 3 percent slopes	7	WI Predominantly Nonhydric	Depressions
Sm	Sebewa silt loam, 0 to 2 percent slopes	96	WI Predominantly Hydric	Lakebeds (relict)

Note: NRCS County Soil Survey Report is in Appendix E.

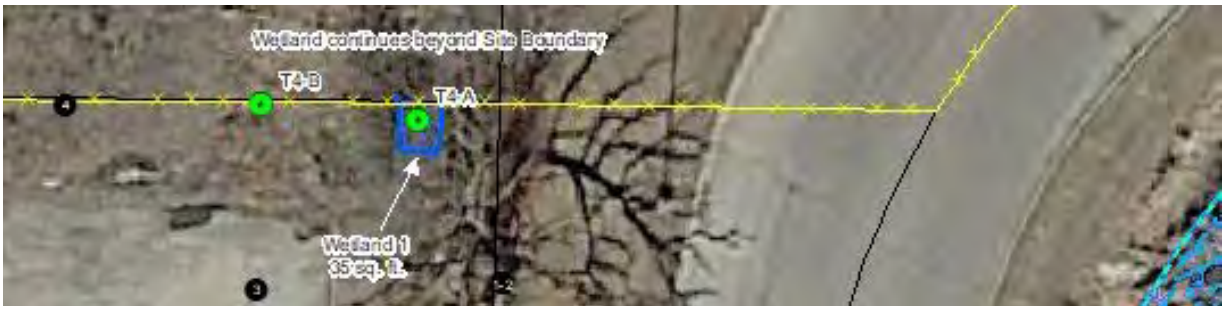
4.0 FIELD INVESTIGATIONS

One wetland area was identified during fieldwork:

- Wetland 1 is an area infested with reed canary grass located within an excavated drainage ditch adjacent to the north Site Boundary. The wetland receives artificial hydrology from a culvert discharge which drains into the ditch/wetland.

Determination Forms are in Appendix G.

Wetland 1: Wetland 1 (35 sq. ft.) is an artificial degraded wet meadow infested with reed canary grass located within a ditch adjacent to the north Site boundary and extends beyond the Site boundary to the north.



Wetland 1 would be considered **E2Kx** (emergent/wet meadow, narrow-leaved persistent with wet soil, palustrine, excavated). The wetland boundary for Wetland 1 is located along a topography break within an excavated ditch. The wet meadow receives stormwater from a culvert which empties into the ditch. The wetland meets wetland criteria for hydrophytic vegetation, hydric soil, and wetland hydrology.

The primary hydrology indicators observed in Wetland 1 include surface water (A1), high water table (A2), and saturation (A3). The secondary hydrology indicators observed in Wetland 1 include geomorphic position (D2) and a positive FAC-neutral test (D5). The wetland receives artificial hydrology from a culvert which empties into the south end of the wetland/ditch.

Photo taken standing above the wetland facing northeast.

The dominant hydrophytic vegetation observed:

- *Phalaris arundinacea* (reed canary grass, FACW)

The soil in Wetland 1 meets hydric soil indicator redox dark surface (F6). The soils observed presented redox dark surface (F6), with a dark surface with prominent or distinct redoximorphic features within a layer at least four inches thick.

This is a picture standing near Wetland 1 facing the culvert which drains into the wetland.

Upland: Upland within the Site are mowed areas, shrubby areas, and some fallow areas adjacent to the parking lot of a retail mall.

Shrubby area adjacent to the parking lot.

Mowed grassy area.

4.1 Hydrology Assessments with Aerial Photographs

Aerial photographs from 1937, 1980-2008, 2010, 2011, 2014, 2015, 2017, and 2018 were reviewed. In 1937, the Site was cropland. Prior to 1980, roads and buildings were constructed within and around the Site. A pond was constructed in the northeast corner of the Site in 2002. A hydrology assessment was not completed as the Site has been cultivated since prior to 1980.

4.2 Rare Species and Natural Communities

No species or communities of concern were observed during site activities.

4.3 Mapping

The wetland boundaries were flagged with pink flags. Benjamin La Count, a Professional Land Surveyor, surveyed the wetland boundary. The surveyed wetland boundaries are shown on the Wetland Delineation Map located in Appendix A, Site Maps.

5.0 CONCLUSIONS

Investigation of the area determined that wetlands exist as shown on the attached figures and Wetland Delineation Map. The wetlands identified for this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers, state regulation under the jurisdiction of Wisconsin DNR, and local jurisdiction under Waukesha County, and the City of Waukesha.

- Wetland 1 is an area infested with reed canary grass located within an excavated drainage ditch adjacent to the north Site Boundary. The wetland receives artificial hydrology from a culvert discharge which drains into the ditch/wetland.

It is our opinion that Wetland 1 within the Site meets the definition of an artificial wetland as defined in WI Statute 281.36 (4n)(a)1. Wetland 1 is an excavated drainage ditch that receives artificial hydrology from a culvert which drains into the ditch/wetland, the wetland was created during construction of the Site.

6.0 DISCLAIMER

If wetlands are proposed to be impacted a Section 404 Letter of Permission Authorization will need to be obtained from USACE and according to Section 281.36, Wisconsin Statutes and NR 299 and NR 103, Wisconsin Administrative Code a permit from the WDNR would be necessary.

Since Benjamin J LaCount and Chad M Fradette are WDNR Professionally Assured Wetland Delineators WDNR concurrence is already granted for five years and some wetlands on-site may have concurrence for 15 years if the conditions of WI Statute 23.321 (5)(b) 1 apply. For wetlands to be confirmed as exempt from state regulatory authority an exemption determination application must be submitted to the DNR Wetland ID Program whose staff makes the final decision.

7.0 REFERENCES

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Appendix A:

Site Maps

Fox Run
Site Location Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Project #: WKS19-008-01

0 500 1,000 2,000
Feet

N
W E
S

Legend

Site Boundary

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Fox Run
Wetland Delineation Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Part of Parcel No: WAKC1331016
Project #: WKS19-008-01

0 60 120 240
Feet

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Legend

- Sample Point
- Picture Location
- Site Boundary
- Wetland Line
- Wetland
- Wisconsin Parcels Lines 2017
- Stormwater Pond
- Ordinary High Water Mark

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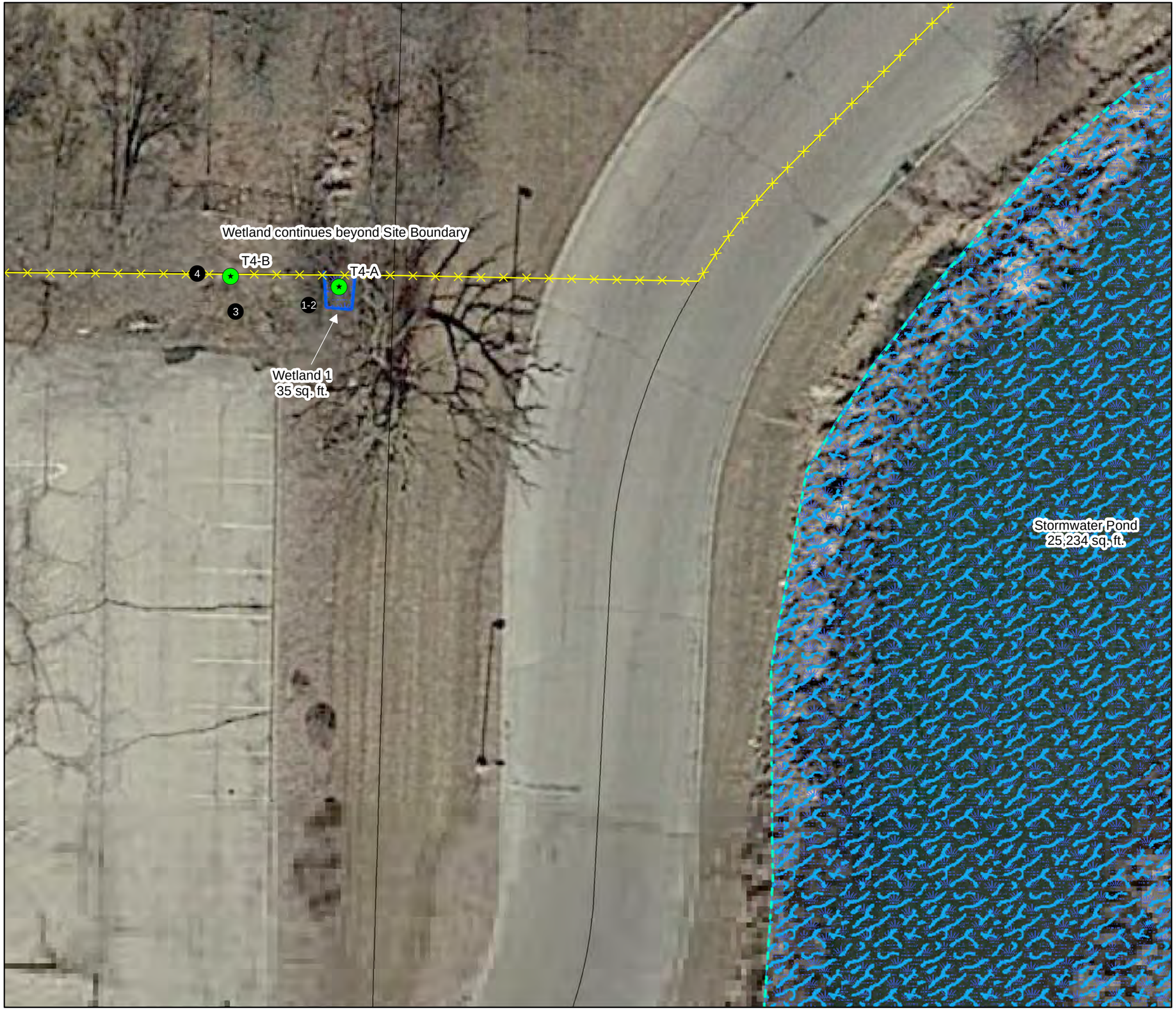

Fox Run
Wetland Delineation Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin
- Wetland 1 -

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Part of Parcel No: WAKC1331016
Project #: WKS19-008-01

0 10 20 40
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Legend

- Sample Point
- Picture Location
- Site Boundary
- Wetland Line
- Wetland
- Wisconsin Parcels Lines 2017

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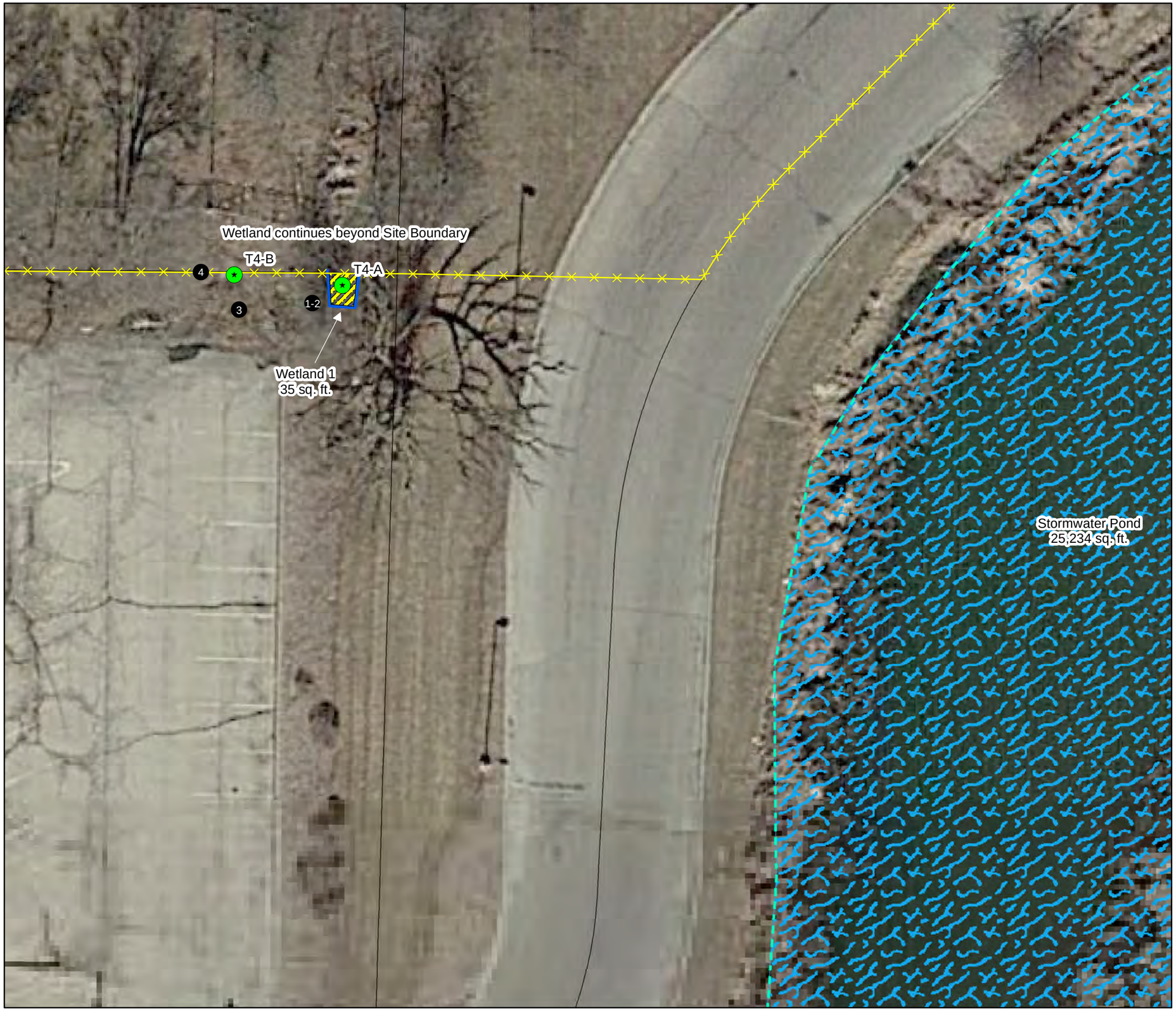

Fox Run
Wetland Delineation Map with Potentially Exempt Wetlands
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin
- Wetland 1 -

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Part of Parcel No: WAKC1331016
Project #: WKS19-008-01

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Legend

- Sample Point
- Picture Location
- Site Boundary
- Wetland Line
- Wetland
- Wisconsin Parcels Lines 2017
- Potentially Exempt Wetland

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Fox Run
Surface Water Data Viewer Map
2300 W St Paul Avenue
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Waukesha County, Wisconsin

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Project #: WKS19-008-01

0 75 150 300
Feet

N
W E
S

Legend

- Site Boundary
- WWI Wetlands
- Wetland Indicator Soils

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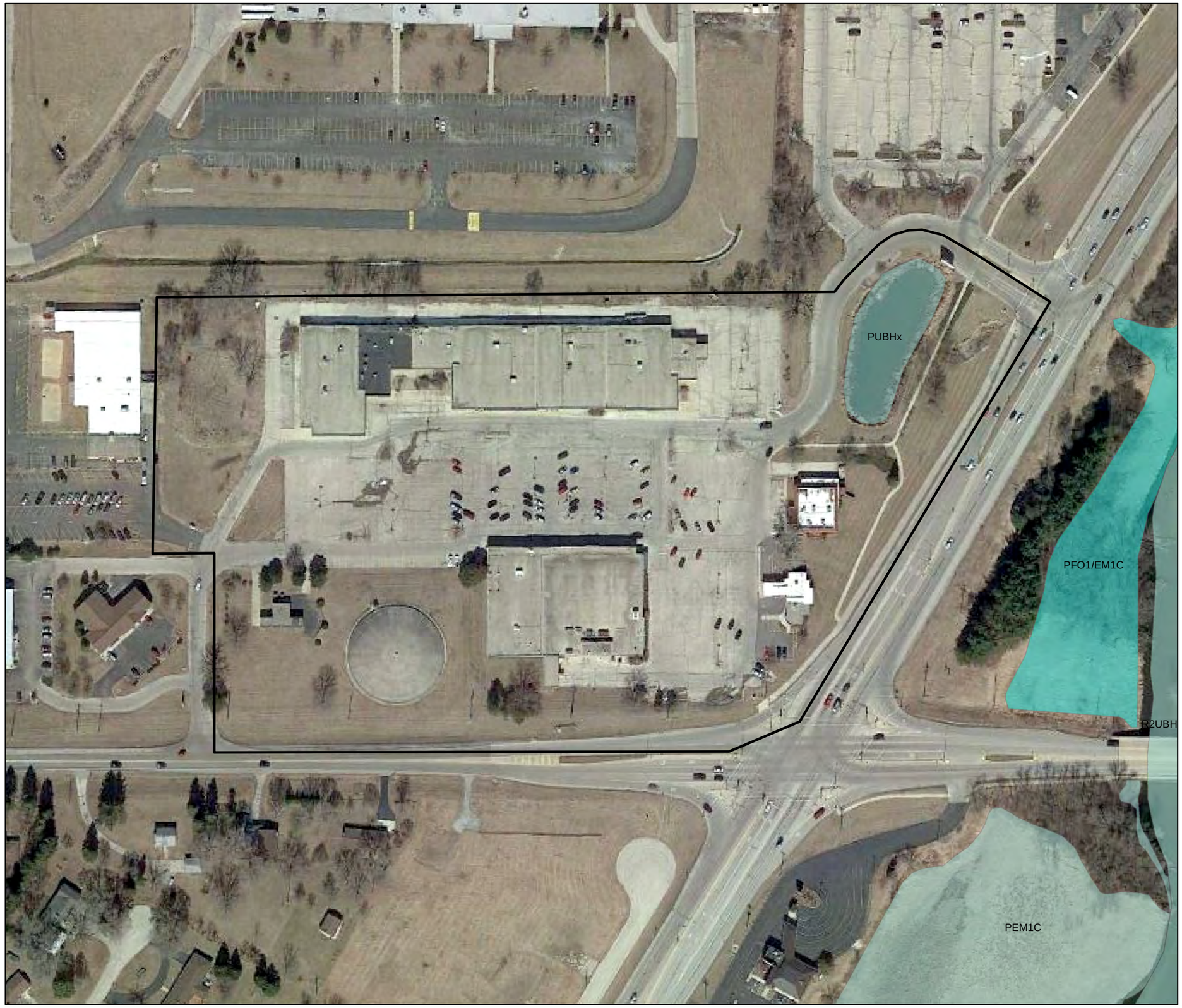
Fox Run
National Wetland Inventory Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Project #: WKS19-008-01



0 75 150 300
Feet

N
W E
S

Legend

- Site Boundary

WI_Wetlands

- PEM1C
- PFO1/EM1C
- PUBHx
- R2UBH

evergreen consultants LLC
2918 Van Hoof Road • Green Bay, WI 54313
Phone: 920.615.0019 • Website: www.evergreenwis.com

Fox Run
NRCS Soil Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997
WAKC1328999002, & WAKC1331018
Project #: WKS19-008-01

0 75 150 300
Feet

N
W E
S

Legend

- Site Boundary

Soil Type

- CeB - Casco loam
- Cw - Colwood silt loam
- HmB - Hochheim loam
- HmC2 - Hochheim loam
- LmB - Lamartine silt loam
- Lu - Loamy land
- MgA - Martinton silt loam
- MmA - Matherton silt loam
- Sm - Sebewa silt loam

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Fox Run
Topographic Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Part of Parcel No: WAKC1331016
Project #: WKS19-008-01

0 65 130 260
Feet

N
W E
S

Legend

- Site Boundary
- Wetland Line
- Wetland
- Wisconsin Parcels Lines 2017
- Stormwater Pond
- Ordinary High Water Mark

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2907 Baylite Drive • Green Bay, WI 54313
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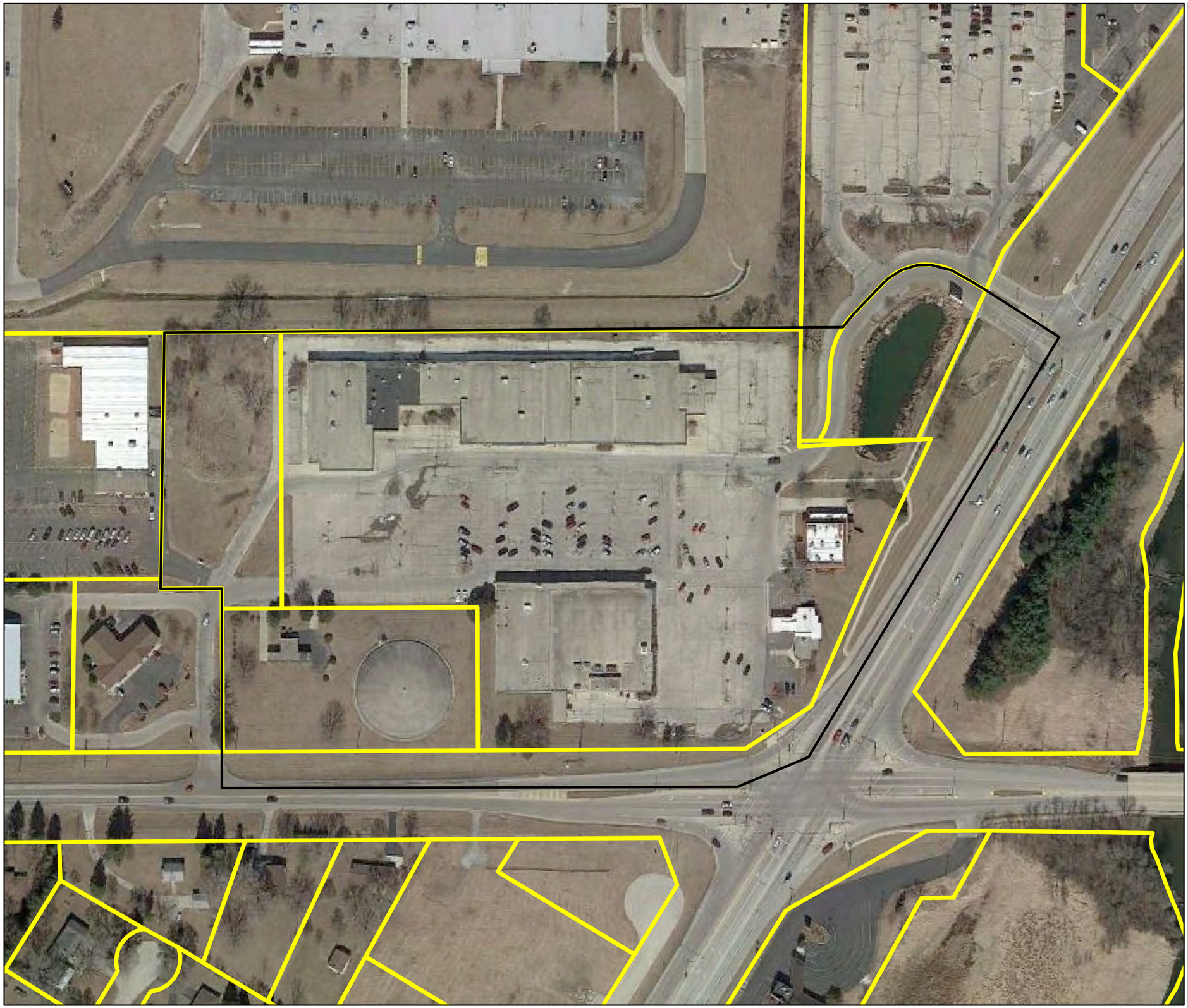

Fox Run
Parcel Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Project #: WKS19-008-01

0 75 150 300
Feet

N
W E
S

Legend

Site Boundary

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Fox Run
Quadrangle Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Project #: WKS19-008-01

0 500 1,000 2,000
Feet

N
W E
S

Legend

Site Boundary

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Appendix B:

Site Pictures

1- Standing near T1-A facing the small wetland where a culvert drains into Wetland 1.

2- Standing near Wetland 1 and T4-A facing the culvert which drains into the wetland.

3- Standing near T4-B facing south.

4- Standing near T4-B facing west.

5- Standing near T1-A facing east.

6- Standing near T2-A facing east.

7- Standing near T2-A facing south.

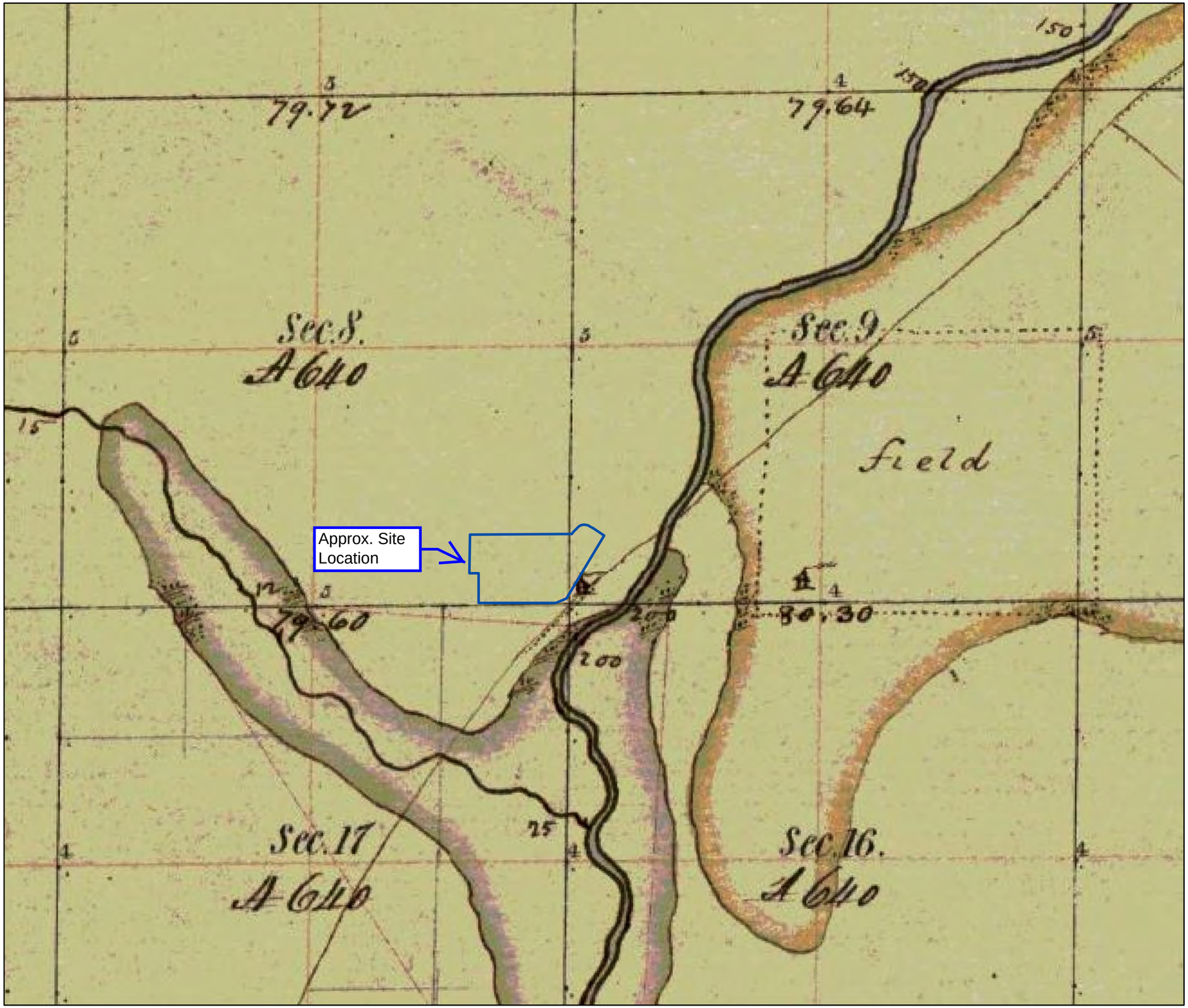
8- Standing near T3-A facing southwest.

9- Standing near T3-A facing east.

10- Standing south of the stormwater pond facing northeast.

Appendix C:

Original Survey, Notes, and Bordner Map



Fox Run
1837 Original Survey Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Project #: WKS19-008-01

0 500 1,000 2,000
Feet

N
W E
S

Legend

Site Boundary

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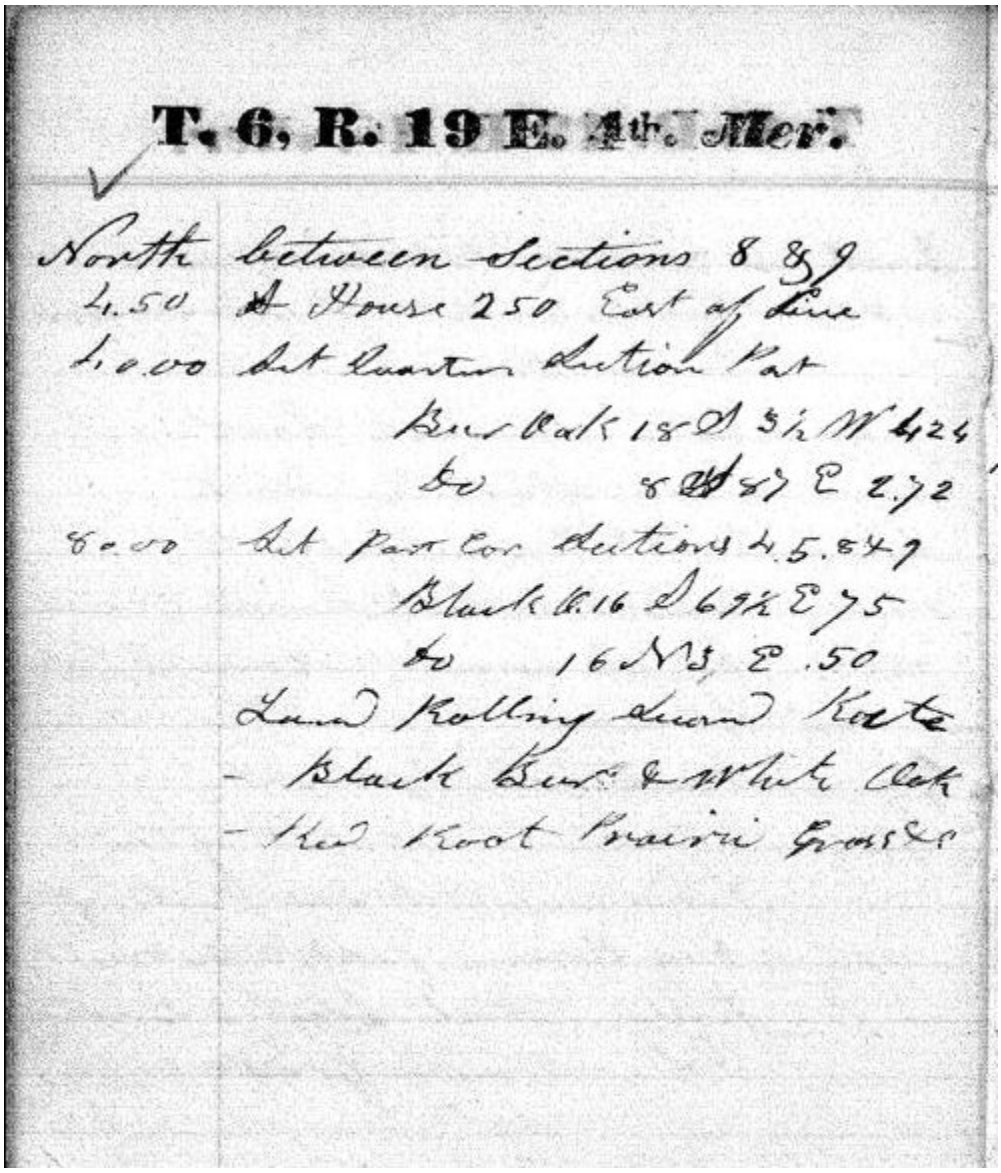

T. 6, R. 19 E. 4th. Mer.

North between Sections 8 & 9
4.50 A House 250 East of line
4.00 At Quarter Section Post
Burr Oak 18 Ds 3½ W 4.24
do 8 Ds 8½ E 2.72
80.00 At Post Cor Sections 4.5.8 & 9
Black O. 16 Ds 6¾ E 75
do 16 Ns E .50
Land Rolling Second Rate
- Black Burr & White Oak
- Red Root Prairie Grass &c

1837 Original Survey Notes

T. 6, R. 19 E. 4th. Mer.

East on random bet. Sec. 8 & 17
18.00 Enter Marsh & North
34.50 Stream 12 & 6, E
40.50 Leave Marsh & S. 5, E
79.60 Intersected 35 North of Post

April 19th 1836

West Corrected bet sections 8 & 17
39.60 Set quarter Section Post
Black Oak 10 N 35 E 1,81
Ba N 55½ E 2,72
79.60 Section Corner

1837 Original Survey Notes

Fox Run
1945 Bordner Survey Map
2300 W St Paul Avenue
City of Waukesha
Waukesha County, Wisconsin

All of Parcel No's: WAKC1328999001, WAKC1328997, WAKC1328999002, & WAKC1331018
Project #: WKS19-008-01

0 500 1,000 2,000
Feet

N
W E
S

Legend

Site Boundary

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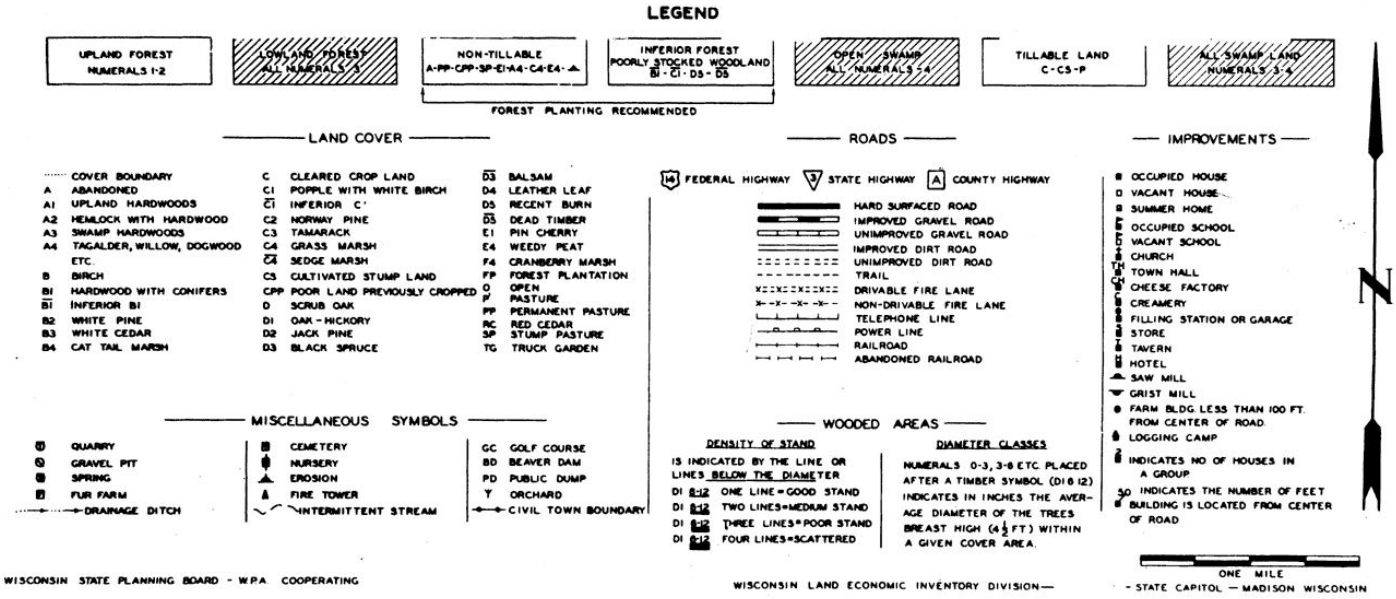
Phone: 920.615.0019 • Website: www.evergreenwis.com



1945 Bordner Survey Legend

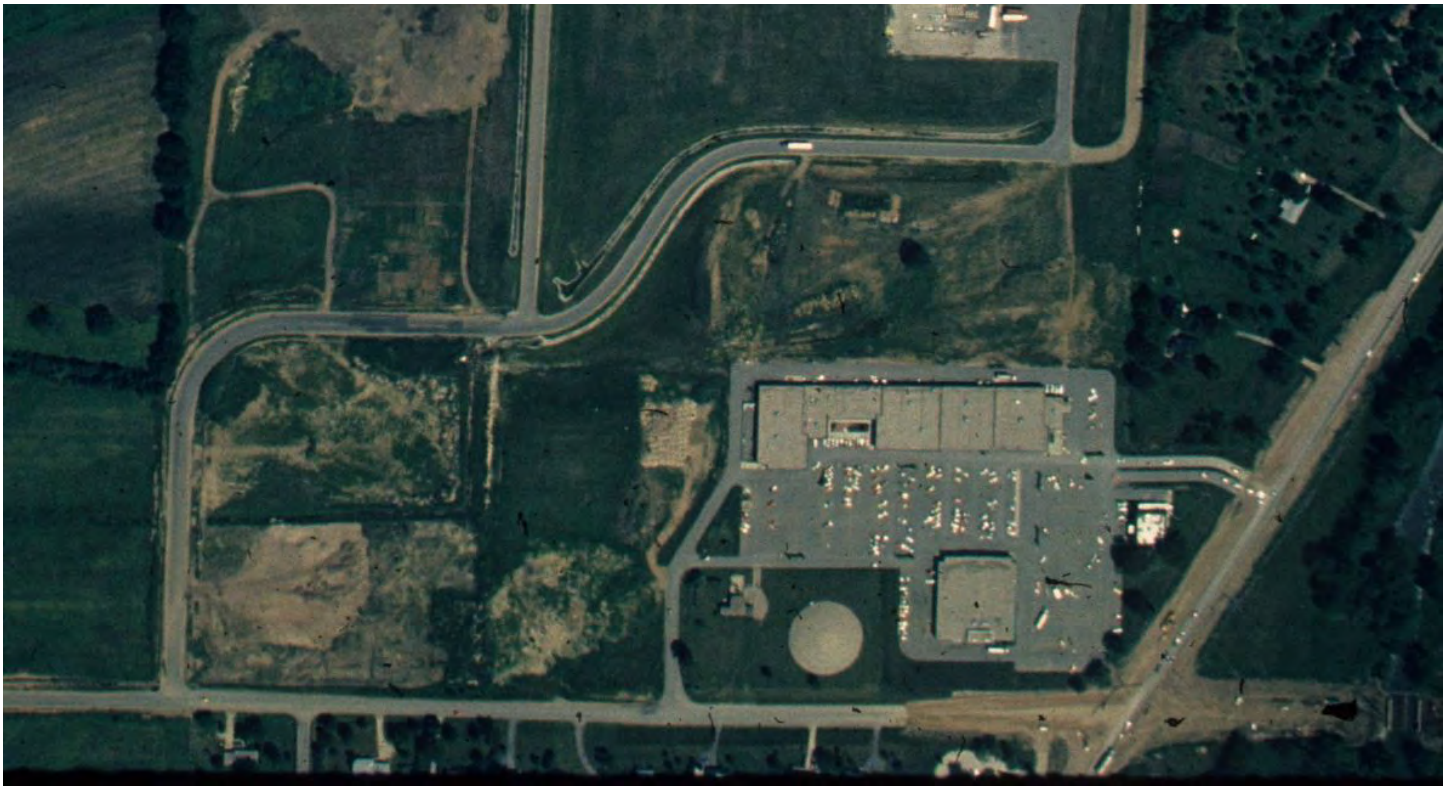
Appendix D:

Historic Aerial Photographs

Site Boundary

1937 Aerial

1980 Aerial - August

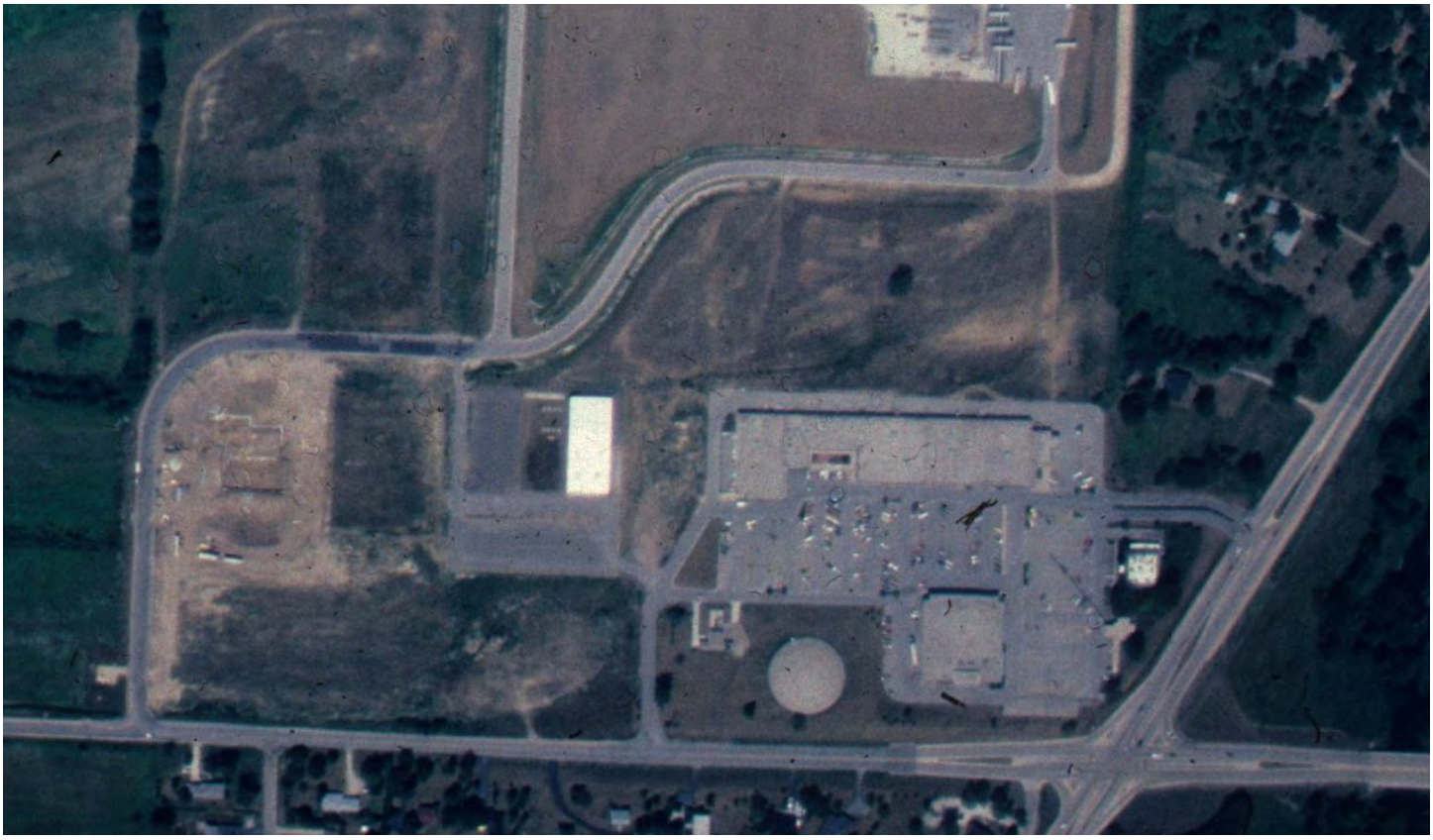


1981 Aerial - June

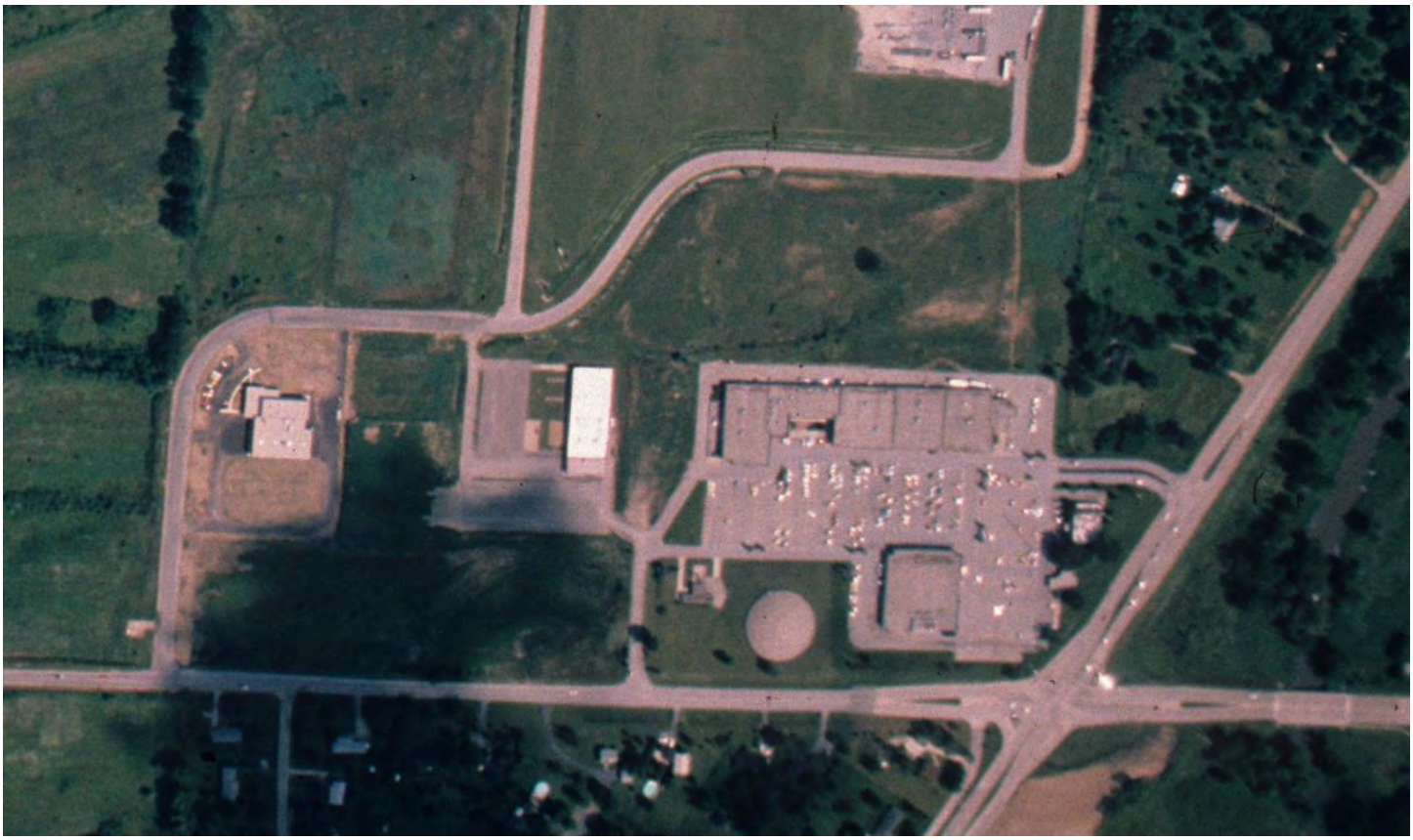
1982 Aerial - July

1983 Aerial - July

1984 Aerial - July



1985 Aerial - July



1986 Aerial - August

1987 Aerial - September

1988 Aerial - July

1989 Aerial - July

1990 Aerial - July

1991 Aerial - August

1992 Aerial - August

1993 Aerial

1994 Aerial

1995 Aerial - June

1996 Aerial - August

1997 Aerial - June

1998 Aerial - June

1999 Aerial - June

2000 Aerial - June

2001 Aerial - June

2002 Aerial

2003 Aerial - June

2004 Aerial - August

2005 Aerial

2006 Aerial

2007 Aerial

2008 Aerial

2010 Aerial

2011 Aerial

2014 Aerial

2015 Aerial

2017 Aerial

2018 Aerial

Appendix E:

NRCS County Soil Survey Report

United States Department of Agriculture

NRCS

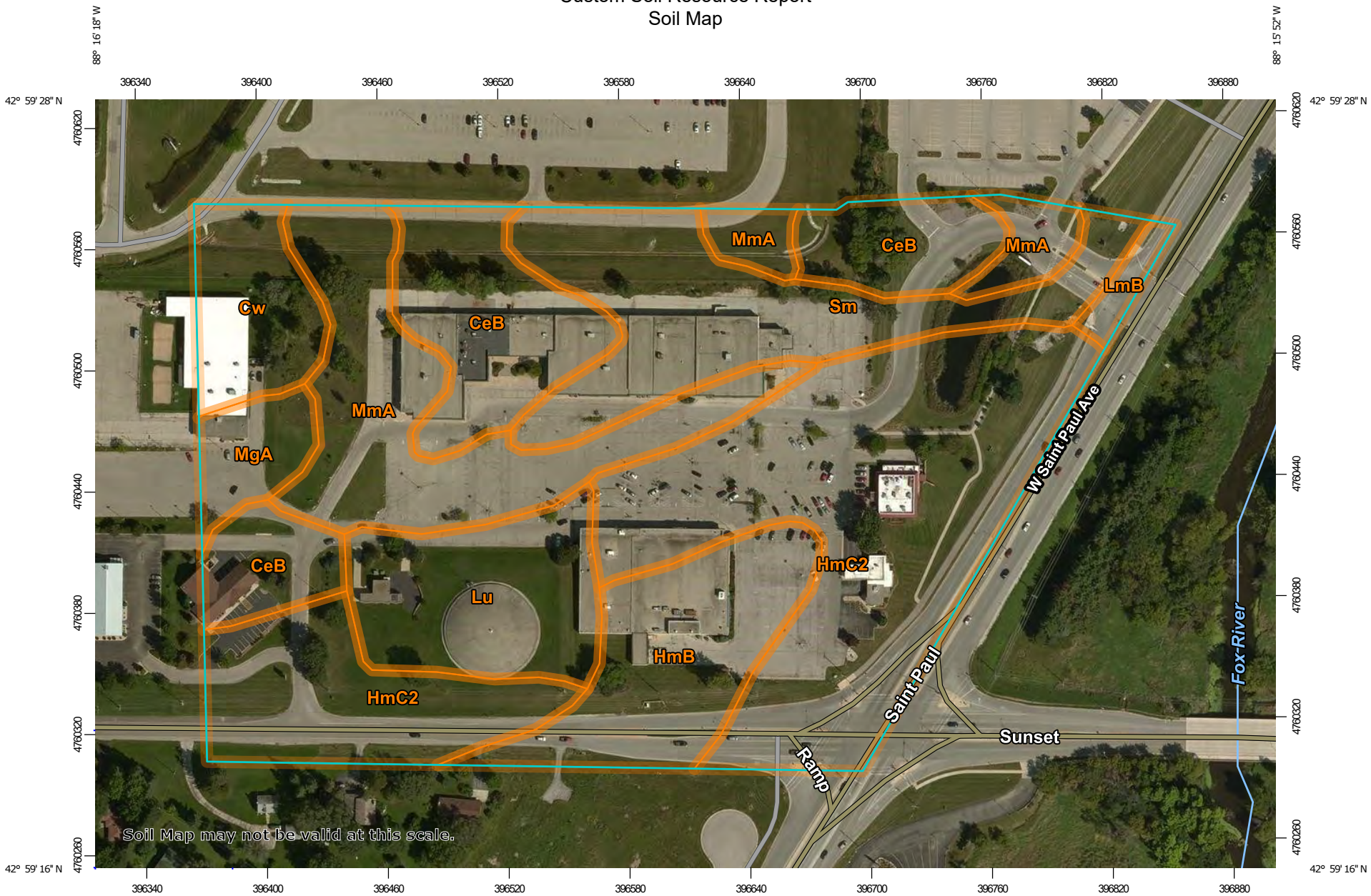
Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Milwaukee and Waukesha Counties, Wisconsin

October 25, 2019

Custom Soil Resource Report
Soil Map



Map Scale: 1:2,680 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Milwaukee and Waukesha Counties, Wisconsin
Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 7, 2014—Sep 22, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CeB	Casco loam, 2 to 6 percent slopes	4.0	14.0%
Cw	Colwood silt loam, 0 to 2 percent slopes	1.3	4.8%
HmB	Hochheim loam, 2 to 6 percent slopes	2.5	9.0%
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	9.2	32.7%
LmB	Lamartine silt loam, 0 to 3 percent slopes	0.2	0.9%
Lu	Loamy land	2.3	8.3%
MgA	Martinton silt loam, 1 to 3 percent slopes	0.7	2.6%
MmA	Matherton silt loam, 1 to 3 percent slopes	4.2	14.9%
Sm	Sebewa silt loam, 0 to 2 percent slopes	3.6	12.8%
Totals for Area of Interest		**28.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

Milwaukee and Waukesha Counties, Wisconsin

CeB—Casco loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2tjw7
Elevation: 800 to 1,140 feet
Mean annual precipitation: 29 to 35 inches
Mean annual air temperature: 43 to 48 degrees F
Frost-free period: 134 to 192 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Casco and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Casco

Setting

Landform: Outwash plains
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium over calcareous, stratified sandy and gravelly outwash

Typical profile

Ap - 0 to 8 inches: loam
Bt - 8 to 17 inches: clay loam
2C - 17 to 79 inches: stratified sand to gravel

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 11 to 20 inches to strongly contrasting textural stratification
Natural drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Forage suitability group: Low AWC, adequately drained (G095BY002WI)
Hydric soil rating: No

Minor Components

Fox

Percent of map unit: 8 percent
Landform: Outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Boyer

Percent of map unit: 7 percent
Landform: Outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Cw—Colwood silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tjx2
Elevation: 570 to 1,020 feet
Mean annual precipitation: 31 to 37 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 194 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Colwood and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colwood

Setting

Landform: Lakebeds (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy glaciolacustrine deposits over stratified silt and fine sand glaciolacustrine deposits

Typical profile

Ap - 0 to 10 inches: silt loam
Bg - 10 to 24 inches: sandy clay loam
2Cg - 24 to 79 inches: stratified very fine sand to silt

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 20 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Forage suitability group: High AWC, high water table (G095BY007WI)
Hydric soil rating: Yes

Minor Components

Pella

Percent of map unit: 8 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Palms

Percent of map unit: 7 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

HmB—Hochheim loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2t03x
Elevation: 820 to 1,330 feet
Mean annual precipitation: 29 to 31 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 155 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hochheim and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim

Setting

Landform: Drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 9 inches: loam
Bt - 9 to 17 inches: clay loam
C - 17 to 33 inches: gravelly loam
Cd - 33 to 79 inches: gravelly loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to densic material
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Theresa

Percent of map unit: 7 percent
Landform: Drumlins
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Lamartine

Percent of map unit: 3 percent
Landform: Drumlins

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

HmC2—Hochheim loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t03r
Elevation: 900 to 1,340 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 175 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hochheim, eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim, Eroded

Setting

Landform: Drumlins
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bt - 7 to 16 inches: clay loam
C - 16 to 33 inches: gravelly sandy loam
Cd - 33 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to densic material
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Theresa

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Hochheim

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

LmB—Lamartine silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2t043
Elevation: 590 to 1,140 feet
Mean annual precipitation: 29 to 35 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Lamartine and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lamartine

Setting

Landform: Interdrumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear

Parent material: Loess over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
Bt1 - 8 to 20 inches: silty clay loam
2Bt2 - 20 to 28 inches: clay loam
2C - 28 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Forage suitability group: High AWC, high water table (G095BY007WI)
Hydric soil rating: No

Minor Components

Pella

Percent of map unit: 8 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Ossian

Percent of map unit: 7 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Lu—Loamy land

Map Unit Setting

National map unit symbol: g94q
Elevation: 670 to 1,100 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 37 to 55 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Loamy land and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loamy Land

Setting

Parent material: Loamy mine spoil or earthy fill

Typical profile

H1 - 0 to 10 inches: loam

Properties and qualities

Slope: 1 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Pella

Percent of map unit: 10 percent
Landform: Depressions
Hydric soil rating: Yes

MgA—Martinton silt loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: g94y
Elevation: 670 to 1,100 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 37 to 55 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Martinton and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Martinton

Setting

Landform: Lakebeds (relict), beach terraces
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous silty and clayey lacustrine deposits

Typical profile

Ap,A - 0 to 11 inches: silt loam
AB,Btg,Bt1-2 - 11 to 35 inches: silty clay loam
CB,C - 35 to 60 inches: stratified sandy loam to silty clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 0.57 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 30 percent
Available water storage in profile: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Forage suitability group: High AWC, high water table (G095BY007WI)
Hydric soil rating: No

Minor Components

Montgomery
Percent of map unit: 7 percent
Landform: Depressions
Hydric soil rating: Yes

Saylesville
Percent of map unit: 3 percent
Landform: Lakebeds (relict)
Hydric soil rating: No

MmA—Matherton silt loam, 1 to 3 percent slopes

Map Unit Setting
National map unit symbol: g950
Elevation: 670 to 1,100 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 37 to 55 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Matherton and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Matherton

Setting
Landform: Outwash plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy glaciofluvial deposits over stratified sandy and gravelly outwash

Typical profile
A,E - 0 to 11 inches: silt loam
EBg,Btg,Bt - 11 to 35 inches: sandy clay loam
2Cg - 35 to 60 inches: Error

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None

Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 25 percent
Available water storage in profile: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Forage suitability group: Mod AWC, high water table (G095BY004WI)
Hydric soil rating: No

Minor Components

Sebewa

Percent of map unit: 7 percent
Landform: Depressions
Hydric soil rating: Yes

Fox

Percent of map unit: 3 percent
Landform: Outwash plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sm—Sebewa silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2szfk
Elevation: 780 to 1,140 feet
Mean annual precipitation: 29 to 35 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 124 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Sebewa and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sebewa

Setting

Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy outwash over sandy and gravelly outwash

Typical profile

Ap - 0 to 11 inches: silt loam
Btg - 11 to 27 inches: clay loam
2Cg - 27 to 79 inches: coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 24 to 30 inches to strongly contrasting textural stratification
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Adrian

Percent of map unit: 6 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Ionia

Percent of map unit: 3 percent
Landform: Rises
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Fox

Percent of map unit: 1 percent
Landform: Rises
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Federal Register. February, 28, 2012. Hydric soils of the United States.
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Rating by Map Unit (WI)

Hydric Rating by Map Unit (WI)–Milwaukee and Waukesha Counties, Wisconsin				
Map Unit Symbol	**Map Unit Name**	**Hydric Percent of Map Unit**	**Hydric Category**	**Landform Hydric Minor Components**
CeB	Casco loam, 2 to 6 percent slopes	0	WI Nonhydric	—
Cw	Colwood silt loam, 0 to 2 percent slopes	100	WI Hydric	Depressions
HmB	Hochheim loam, 2 to 6 percent slopes	0	WI Nonhydric	—
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	0	WI Nonhydric	—
LmB	Lamartine silt loam, 0 to 3 percent slopes	15	WI Predominantly Nonhydric	Drainageways
Lu	Loamy land	10	WI Predominantly Nonhydric	Depressions
MgA	Martinton silt loam, 1 to 3 percent slopes	7	WI Predominantly Nonhydric	Depressions
MmA	Matherton silt loam, 1 to 3 percent slopes	7	WI Predominantly Nonhydric	Depressions
Sm	Sebewa silt loam, 0 to 2 percent slopes	96	WI Predominantly Hydric	Lakebeds (relict)

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of

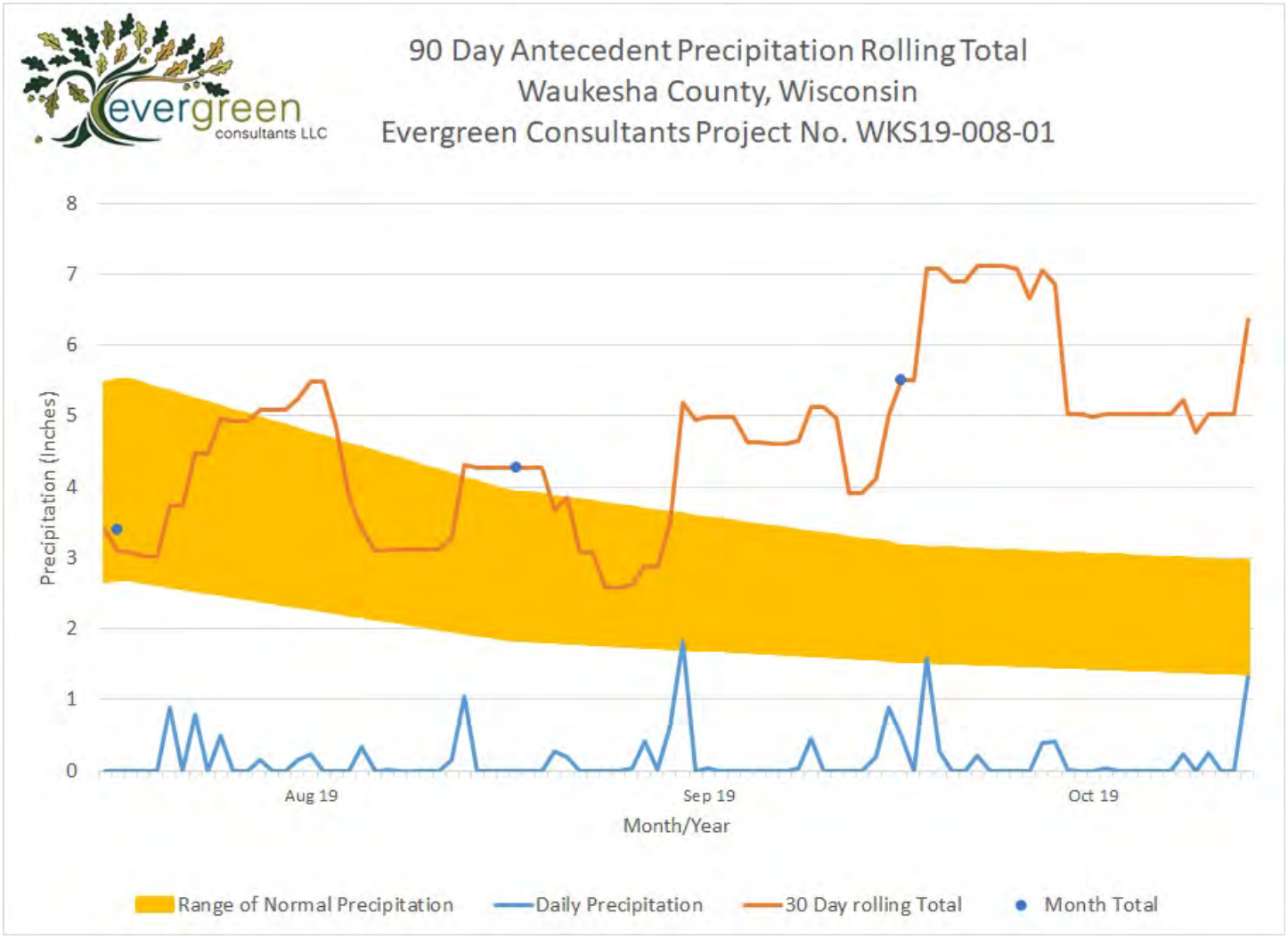
Report—Hydric Soil List - All Components

Hydric Soil List - All Components–WI602-Milwaukee and Waukesha Counties, Wisconsin					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
CeB: Casco loam, 2 to 6 percent slopes	Casco	80-90	Outwash plains	No	—
	Fox	5-11	Outwash plains	No	—
	Boyer	5-9	Outwash plains	No	—
Cw: Colwood silt loam, 0 to 2 percent slopes	Colwood	80-90	Lakebeds (relict)	Yes	2,3
	Pella	5-10	Drainageways	Yes	2,3
	Palms	5-10	Depressions	Yes	1,3
HmB: Hochheim loam, 2 to 6 percent slopes	Hochheim	85-92	Drumlins	No	—
	Theresa	5-8	Drumlins	No	—
	Lamartine	3-7	Drumlins	No	—
HmC2: Hochheim loam, 6 to 12 percent slopes, eroded	Hochheim-Eroded	85-92	Drumlins	No	—
	Theresa	4-8	Drumlins	No	—
	Hochheim	4-7	Drumlins	No	—
LmB: Lamartine silt loam, 0 to 3 percent slopes	Lamartine	80-91	Interdrumlins	No	—
	Pella	6-11	Drainageways	Yes	2,3
	Ossian	3-9	Depressions	Yes	2,3
Lu: Loamy land	Loamy land	90	—	No	—
	Pella	10	Depressions	Yes	2
MgA: Martinton silt loam, 1 to 3 percent slopes	Martinton	90	Lakebeds (relict),beach terraces	No	—
	Montgomery	7	Depressions	Yes	2,3
	Saylesville	3	Lakebeds (relict)	No	—
MmA: Matherton silt loam, 1 to 3 percent slopes	Matherton	90	Outwash plains	No	—
	Sebewa	7	Depressions	Yes	2,3
	Fox	3	Outwash plains	No	—
Sm: Sebewa silt loam, 0 to 2 percent slopes	Sebewa	80-95	Depressions	Yes	2,3
	Adrian	3-12	Lakebeds (relict)	Yes	1,3
	Ionia	1-5	Rises	No	—
	Fox	0-3	Rises	No	—

Hydric Soils–Milwaukee and Waukesha Counties, Wisconsin				
Map symbol and map unit name	**Component**	**Percent of map unit**	**Landform**	**Hydric criteria**
Cw—Colwood silt loam, 0 to 2 percent slopes				
	Colwood	85	Lakebeds (relict)	2, 3
	Pella	8	Drainageways	2, 3
	Palms	7	Depressions	1, 3
LmB—Lamartine silt loam, 0 to 3 percent slopes				
	Pella	8	Drainageways	2, 3
	Ossian	7	Depressions	2, 3
Lu—Loamy land				
	Pella	10	Depressions	2
MgA—Martinton silt loam, 1 to 3 percent slopes				
	Montgomery	7	Depressions	2, 3
MmA—Matherton silt loam, 1 to 3 percent slopes				
	Sebewa	7	Depressions	2, 3
Sm—Sebewa silt loam, 0 to 2 percent slopes				
	Sebewa	90	Depressions	2, 3
	Adrian	6	Lakebeds (relict)	1, 3

Appendix F:

Precipitation Information


90 Day Antecedent Precipitation Rolling Total
Waukesha County, Wisconsin
Evergreen Consultants Project No. WKS19-008-01
evergreen
consultants LLC
Precipitation (Inches)
8
7
6
5
4
3
2
1
0
Aug 19
Sep 19
Oct 19
Month/Year
Range of Normal Precipitation
Daily Precipitation
30 Day rolling Total
Month Total

NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19

Date	10/27/2019	**Landowner/Project**	WKS19-008-01
Weather Station	Waukesha 1.6 NW	**State**	Wisconsin
County	Waukesha County	**Growing Season**	yes
Photo/obs Date	10/28/2019	**Soil Name**	

shaded cells are locked or calculated

Long-term rainfall statistics (from WETS table or State Climatology Office)

	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns
1st Prior Month*	October	1.55	3.16	4.78	W	3	3	9
2nd Prior Month*	September	1.84	3.91	5.50	W	3	2	6
3rd Prior Month*	August	2.69	5.50	4.28	N	2	1	2
							Sum	**17**

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

Conclusions: **prior period has been wetter than normal**

WETS Station: WAUKESHA, WI
Requested years: 1981 - 2010

Month	30% chance precip less than	30% chance precip more than	A
Jan	0.83	1.71	
Feb	0.84	1.72	
Mar	1.04	2.12	
Apr	2.51	4	
May	2.55	4.34	
Jun	3.02	5.7	
Jul	2.57	4.59	
Aug	2.69	5.5	
Sep	1.84	3.91	
Oct	1.55	3.16	
Nov	1.35	2.93	
Dec	1.12	2.16	

STATION	NAME	DATE	PRCP	S
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/1/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/2/2019	0.11	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/3/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/4/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/5/2019	0.2	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/6/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/7/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/8/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/9/2019	0.06	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/10/2019	0.01	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/11/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/12/2019	0.06	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/13/2019	0.77	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/14/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/15/2019	0.01	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/16/2019	0.03	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/17/2019	0.01	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/18/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/19/2019	0.22	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/20/2019	0.26	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/21/2019	0.01	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/22/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/23/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/24/2019	0.03	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/25/2019	0.49	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/26/2019	0.08	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/27/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/28/2019	0.93	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/29/2019	1.05	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	6/30/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/1/2019	0.31	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/2/2019	0.01	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/3/2019	0.06	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/4/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/5/2019	0.18	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/6/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/7/2019	0.05	

STATION	NAME	DATE	PRCP
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/8/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/9/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/10/2019	0.03
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/11/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/12/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/13/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/14/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/15/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/16/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/17/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/18/2019	0.63
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/19/2019	0.98
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/20/2019	0.79
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/21/2019	0.33
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/22/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/23/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/24/2019	0
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US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/26/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/27/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/28/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/29/2019	0.03
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/30/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	7/31/2019	0
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US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/2/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/3/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/4/2019	0.89
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/5/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/6/2019	0.79
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/7/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/8/2019	0.49
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/9/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/10/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/11/2019	0.16
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/12/2019	0
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/13/2019	0

STATION	NAME	DATE	PRCP	S
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US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/16/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/17/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/18/2019	0	
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US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/23/2019	0	
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US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/26/2019	0.16	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/27/2019	1.04	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/28/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/29/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/30/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	8/31/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/1/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/2/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/3/2019	0.28	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/4/2019	0.19	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/5/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/6/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/7/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/8/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/9/2019	0.04	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/10/2019	0.41	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/11/2019	0.01	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/12/2019	0.62	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/13/2019	1.83	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/14/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/15/2019	0.04	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/16/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/17/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/18/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/19/2019	0	

STATION	NAME	DATE	PRCP	S
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/20/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/21/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/22/2019	0.04	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/23/2019	0.46	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/24/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/25/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/26/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/27/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/28/2019	0.2	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/29/2019	0.89	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	9/30/2019	0.49	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/1/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/2/2019	1.58	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/3/2019	0.28	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/4/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/5/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/6/2019	0.22	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/7/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/8/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/9/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/10/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/11/2019	0.4	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/12/2019	0.42	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/13/2019	0.01	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/14/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/15/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/16/2019	0.04	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/17/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/18/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/19/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/20/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/21/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/22/2019	0.24	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/23/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/24/2019	0.26	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/25/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/26/2019	0	
US1WIWK0054	WAUKESHA 1.6 NW, WI US	10/27/2019	1.33	

Appendix G:

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: WKS19-008-01 **City/County:** City of Waukesha/ Waukesha County **Sampling Date:** 28-Oct-19

Applicant/Owner: Excel Engineering **State:** WI **Sampling Point:** T1-A

Investigator(s): Benjamin L LaCount, Chad M Fradette **Section, Township, Range:** S. 08 T. 06N R. 19E

Landform (hillslope, terrace, etc.): hillslope **Local relief (concave, convex, none):** convex **Slope:** 1.5 % / 0.9 °

Subregion (LRR or MLRA): LRR K **Lat.:** 42.99045 **Long.:** -88.26851 **Datum:** NAD83

Soil Map Unit Name: Sm- Sebewa silt loam, 0 to 2 percent slopes **NWI classification:** none

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Grassy strip between pavement and fence behind retail mall. Area graded and filled in the past, storm sewer buried through this area.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Antecedent precipitation has been above normal prior to the Site visit.

VEGETATION - Use scientific names of plants

Sampling Point: T1-A

Tree Stratum (Plot size: Linear 20'x100')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus pumila*	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	

Sapling/Shrub Stratum (Plot size: Linear 20'x50')			
1. *Rhamnus cathartica*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	

Herb Stratum (Plot size: 5 ft radius)			
1. *Schedonorus arundinaceus*	60	☑	FACU
2. *Sonchus arvensis*	20	☑	FACU
3. *Medicago sativa*	20	☑	UPL
4. *Elymus repens*	20	☑	FACU
5. *Daucus carota*	10	☐	UPL
6. *Ambrosia artemisiifolia*	5	☐	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	135	= Total Cover	

Woody Vine Stratum (Plot size: Linear 20'x100')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	5	x 3 =	15	
FACU species	115	x 4 =	460	
UPL species	30	x 5 =	150	
Column Totals:	150	(A)	625	(B)

Prevalence Index = B/A = 4.167

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: T1-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc²	Texture	Remarks
0-4	10YR	3/2	100					Sandy Loam	fill
4-15	10YR	3/4	100					Loamy Sand	fill with gravel
15-								breaker rock	Refusal on rock

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Refusal on breaker rock at fifteen inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: WKS19-008-01 **City/County:** City of Waukesha/ Waukesha County **Sampling Date:** 28-Oct-19

Applicant/Owner: Excel Engineering **State:** WI **Sampling Point:** T2-A

Investigator(s): Benjamin L LaCount, Chad M Fradette **Section, Township, Range:** S. 08 T. 06N R. 19E

Landform (hillslope, terrace, etc.): hillslope **Local relief (concave, convex, none):** convex **Slope:** 1.5 % / 0.9 °

Subregion (LRR or MLRA): LRR K **Lat.:** 42.99040 **Long.:** -88.27063 **Datum:** NAD83

Soil Map Unit Name: Cw- Colwood silt loam, 0 to 2 percent slopes **NWI classification:** none

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ **(If no, explain in Remarks.)**

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: (Explain alternative procedures here or in a separate report.)

Shrubby area that has been partially cleared this year. Area has been filled and graded in the past.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Antecedent precipitation has been above normal prior to the Site visit.

VEGETATION - Use scientific names of plants

Sampling Point: T2-A

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus pumila*	30	☑	FACU
2. *Ulmus americana*	20	☑	FACW
3. *Populus deltoides*	20	☑	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Rhamnus cathartica*	80	☑	FAC
2. *Cornus racemosa*	5	☐	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	85	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Alliaria petiolata*	20	☑	FACU
2. *Solidago altissima*	15	☑	FACU
3. *Rhamnus cathartica*	30	☑	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	135	x 3 =	405	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	220	(A)	705	(B)

Prevalence Index = B/A = 3.205

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)

Reviewing remnant vegetation.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: T2-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc[2]	Texture	Remarks
0-8	7.5YR	3/2	100						Sandy Loam	fill soils
8-20	10YR	4/4	100						Loamy Sand	fill soils
20-24	10YR	4/4	50						Loamy Sand	fill soils
	7.5YR	3/4	50						Sandy Clay	mixed fill

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

At least 24 inches of fill soil placed decades ago based on tree growth.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: WKS19-008-01 **City/County:** City of Waukesha/ Waukesha County **Sampling Date:** 28-Oct-19

Applicant/Owner: Excel Engineering **State:** WI **Sampling Point:** T3-A

Investigator(s): Benjamin L LaCount, Chad M Fradette **Section, Township, Range:** S. 08 T. 06N R. 19E

Landform (hillslope, terrace, etc.): depression **Local relief (concave, convex, none):** concave **Slope:** 0.5 % / 0.3 °

Subregion (LRR or MLRA): LRR K **Lat.:** 42.98977 **Long.:** -88.27040 **Datum:** NAD83

Soil Map Unit Name: MmA- Matherton silt loam, 1 to 3 percent slopes **NWI classification:** none

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☑ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ○ No ◉

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Area with small depressions within fill soil holding water from recent rains.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	3
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Antecedent precipitation has been above normal prior to the Site visit. *3 inches of surface water from recent rain impounded in small depressions. Parking lot drains to this area. Area in fill soil, lacks hydric indicators and has no vegetation. Ignoring surfae water as a normal indicator.

VEGETATION - Use scientific names of plants

Sampling Point: T3-A

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Poa pratensis*	80	☑	FACU
2. *Elymus repens*	5	☐	FACU
3. *Plantago major*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	90	x 4 =	360	
UPL species	0	x 5 =	0	
Column Totals:	90	(A)	360	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: T3-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc²	Texture	Remarks
0-3	10YR	2/2	100					Sandy Loam	fill soils
3-15	10YR	4/4	100					Loamy Sand	fill with gravel
15-								breaker rock	refusal on rock- fill base

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

Refusal on breaker rock at fifteen inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: WKS19-008-01 **City/County:** City of Waukesha/ Waukesha County **Sampling Date:** 28-Oct-19

Applicant/Owner: Excel Engineering **State:** WI **Sampling Point:** T4-A

Investigator(s): Benjamin L LaCount, Chad M Fradette **Section, Township, Range:** S. 08 T. 06N R. 19E

Landform (hillslope, terrace, etc.): ditch **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 42.99045 **Long.:** -88.26710 **Datum:** NAD83

Soil Map Unit Name: Sm- Sebewa silt loam, 0 to 2 percent slopes **NWI classification:** none

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present? Yes ◉ No ○	
Wetland Hydrology Present? Yes ◉ No ○	

Remarks: (Explain alternative procedures here or in a separate report.)

Ditch. Culvert empties into ditch.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉ No ○	Depth (inches):	4
Water Table Present?	Yes ◉ No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Antecedent precipitation has been above normal prior to the Site visit.

VEGETATION - Use scientific names of plants

Sampling Point: T4-A

Tree Stratum (Plot size: Linear 5'x50')	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: Linear 5'x50')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: Linear 5'x20')			
1. *Phalaris arundinacea*	100	☑	FACW
2. *Typha x glauca*	10	☐	OBL
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	= Total Cover	
Woody Vine Stratum (Plot size: Linear 5'x50')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10	
FACW species	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	110	(A)	210	(B)

Prevalence Index = B/A = 1.909

Hydrophytic Vegetation Indicators:

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)

Adjacent vegetation across fence.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: T4-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-5	10YR	2/2	95	7.5YR	4/6	5	C	M	Silt Loam	
5-10	10YR	4/4	85	7.5YR	3/4	15	C	M	Sandy Clay	
10-15	10YR	4/2	85	10YR	4/6	5	C	M	Sandy Clay	
	10YR	3/2	10						Sandy Loam	gravel and rocks
15-24	10YR	4/1	100						Loamy Sand	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: WKS19-008-01 **City/County:** City of Waukesha/ Waukesha County **Sampling Date:** 28-Oct-19

Applicant/Owner: Excel Engineering **State:** WI **Sampling Point:** T4-B

Investigator(s): Benjamin L LaCount, Chad M Fradette **Section, Township, Range:** S. 08 T. 06N R. 19E

Landform (hillslope, terrace, etc.): hillslope **Local relief (concave, convex, none):** convex **Slope:** 5.0 % / 2.9 °

Subregion (LRR or MLRA): LRR K **Lat.:** 42.99046 **Long.:** -88.26718 **Datum:** NAD83

Soil Map Unit Name: Sm- Sebewa silt loam, 0 to 2 percent slopes **NWI classification:** none

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☑ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Hillslope with some mowed areas and some fallow area. Reviewed vegetation in fallow areas.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Antecedent precipitation has been above normal prior to the Site visit.

VEGETATION - Use scientific names of plants

Sampling Point: T4-B

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus pumila*	30	☑	FACU
2. *Quercus macrocarpa*	30	☑	FACU
3. *Fraxinus americana*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Fraxinus americana*	2	☐	FACU
2. *Rhamnus cathartica*	10	☑	FAC
3. *Cornus alba*	5	☑	FACW
4. *Ulmus pumila*	5	☑	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
	22	= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Solidago gigantea*	5	☐	FACW
2. *Solidago altissima*	5	☐	FACU
3. *Bromus inermis*	30	☑	UPL
4. *Phalaris arundinacea*	20	☐	FACW
5. *Daucus carota*	20	☐	UPL
6. *Poa pratensis*	60	☑	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	140	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	30	x 2 =	60	
FAC species	10	x 3 =	30	
FACU species	137	x 4 =	548	
UPL species	50	x 5 =	250	
Column Totals:	227	(A)	888	(B)

Prevalence Index = B/A = 3.912

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: T4-B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc²	Texture	Remarks
0-8	10YR	3/2	100					Sandy Clay Loam	with gracel, fill
8-15	10YR	4/3	100					Sandy Loam	with gravel, fill
15-24								rock	4-6 inches of breaker rock

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: