WETLAND DELINEATION REPORT

Rubbert Site

December, 2012

(Stantec Project # 193702031)

Stantec

WETLAND DELINEATION REPORT

RUBBERT WETLAND MITIGATION SITE
WisDOT PROJECT I.D. 6200-11-01
WINNEBAGO COUNTY, WISCONSIN

December 21, 2012

Prepared For:

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INTRODUCTION

Stantec Consulting Services, Inc. (Stantec) performed vegetation community mapping as well as a wetland determination and delineation at the Wisconsin Department of Transportation (WisDOT) Rubbert Wetland Mitigation Site in the Town of Clayton, Winnebago County, Wisconsin ("the Project"). The Project was constructed in 2007 by WisDOT to compensate for wetland impacts associated with upgrades to the U. S. Highway 45 (USH 45) corridor. The Project site is approximately 45.8 acres, and is located in Section 17, Township 20 North, Range 16 East (Figure 1). The site is bordered by Winnebago County Trunk II to the south, an abandoned railroad right-of-way to the west, and agricultural lands to the east and north.

The Project site was constructed to establish wetland hydrology on drained agricultural land. Wetland hydrology was established through the construction of a berm and basin on the south and east sides of the project, as well as the removal of drain tile. The purpose and objective of the wetland determination and delineation was to identify the extent and spatial arrangement of wetlands within the Project site. In addition to the wetland delineation, a reconnaissance of the Project was conducted to develop of a vegetation community map, and to determine the distribution and extent of invasive species. Invasive species of concern included purple loosestrife (*Lythrum salicaria*), common reed grass (*Phragmites australis*) and reed canary grass (*Phalaris arundinacea*). The wetland delineation and site reconnaissance was completed by Melissa Curran and Nik Bertagnoli of Stantec on September 7, 2012. One wetland area was identified on the Project.

Wetlands that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act (CWA) and the jurisdictional regulatory authority lies with the United States Army Corps of Engineers (USACE). Additionally, the Wisconsin Department of Natural Resources (WDNR) has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapter 30 Wisconsin State Statutes, Act 6, and Wisconsin Administrative Code NR 103. Stantec recommends this report be submitted to the WDNR and USACE for final jurisdictional review and concurrence.

METHODS

Wetland determinations were based on the criteria and methods outlined in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (2009), *United States Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1 (1987), and subsequent guidance documents (USACE 1991, 1992), Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers (USACE 1996), and the *Basic Guide to Wisconsin's Wetlands and their Boundaries* (Wisconsin Department of Administration Coastal Management Program 1995).

The wetland determination involved the use of available resources to assist in the assessment such as USGS topographic maps, Natural Resources Conservation Service (NRCS) soil survey, Wisconsin Wetland Inventory (WWI) mapping, a wetland delineation conducted by Stantec staff in 2011, and aerial photography. In addition to these resources, climate data from the National Weather Service (NWS) and the United States Geological Survey (USGS) were also analyzed to help justify conclusions that were reached in the field.

On-site wetland determinations were made using the three criteria (vegetation, soil and hydrology) and technical approach defined in the NC/NE Regional Supplement. According to procedures described in the NC/NE Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands.

The wetland boundary was surveyed with a Global Positioning System (GPS) capable of sub-meter accuracy and mapped using Geographical Information System (GIS) software.

The vegetation community mapping and invasive species survey was accomplished through use of a meander survey and aerial photography interpretation.

RESULTS

Site Description

The majority of the Project site is comprised of restored wet meadow, emergent and mesic prairie communities. The wet meadow and emergent communities are located in the east half of the Project, while the mesic prairie community is located in the west half of the Project.

The USGS Topographic Map (Figure 1) indicates the Project site is located in a relatively flat area adjacent to an intermittent waterway, known as Arrowhead River, which flows south along the eastern edge of the Property.

Soils mapped on the Project site by the *NRCS Soil Survey of Winnebago County* include Menasha clay (Mn), Poy silty clay loam (Pt), and Neenah silty clay loam (NhA) (Figure 2). According to the NRCS List of Hydric Soils for Winnebago County, Menasha and Poy soils are hydric, while Neenah soils contain hydric inclusions. Menasha soils consist of very deep, poorly drained soils formed in clayey lacustrine deposits on glacial lake basins and stream terraces. The Poy series consists of very deep poorly

drained soils that are moderately deep to sandy deposits. They formed primarily in clayey water-laid deposits overlying sandy deposits on glacial lake basins and stream terraces. The Neenah series consists of very deep, somewhat poorly drained soils formed in clayey lacustrine deposits on glacial lake basins and stream terraces. The wetland identified on the Project is mostly located within the Menasha and Poy map units. It is important to note that the soil map was created prior to construction of the Project.

The Wisconsin Wetland Inventory (WWI) map indicates the presence of a shrub wetland in the northwest portion of the Project (Figure 3). The area identified as shrub wetland on the WWI met jurisdictional wetland requirements prior to construction of the mitigation site. It is important to note that the wetland map was created prior to construction of the Project.

According to the NWS Oshkosh Weather Station 2.19 inches of rain was recorded in August, and up until the time of the delineation, 0.25 inches of rain had been recorded in September. Rainfall for both August and September was below normal. According to the USGS' Waterwatch Data, stream flows near the Project were below normal. Based on the recorded precipitation and stream flows present near the Project, it was assumed that direct observations of wetland hydrology (inundation or saturation to the surface) may be observed.

Wetland Delineation

One wetland was identified and delineated within the Project. USACE data sheets were completed for eight sample points along transects through the wetlands and adjacent uplands and are contained in Appendix A. Photographs of the wetland and adjacent lands are contained in Appendix B. The wetland boundaries and sample point locations are shown on Figure 4. Results of the wetland delineation completed by Stantec in 2011 are provided in Appendix C. The wetlands are summarized in Table 1 and described in detail in the following sections.

Table 1. Summary of the wetlands identified within the Project.

Wetland	Wetland Type	Adjacent Surface Waters	Acreage (on-site)
Wetland 1a (W-1a) Restoration Area	WDNR: Shallow Marsh (E1K)/ Wet Meadow (E2K) WisDOT: SM & WM	Directly adjacent to the Arrowhead River	24.7 acres
Wetland 1b (W-1b) Pre-construction wetland	WDNR: Shrub (S3K)/ Forested Wetland (T3K) WisDOT: SS and WS	Directly adjacent to the Arrowhead River	N.A. Not part of this assessment.

Wetland 1(W-1)

Wetland 1a (W-1a) is a 24.7 acre restored wet meadow/shallow marsh located in the east portion of the Project. Results of the 2012 delineation show the wetland boundary continued to expand, increasing from 2011 by approximately 0.88 acres. This expansion was due to the replacement of cover crops by wet meadow species during the 2011 and 2012 growing seasons.

Vegetation

Dominant plant species identified within W-1a include reed canary grass (*Phalaris arundinacea*), field nut sedge (*Cyperus esculentus*), common sneezeweed (*Helenium autumnale*), shining aster (*Aster puniceus*), black bulrush (*Scirpus atrovirens*), narrow-leaved cattail (*Typha angustifolia*), and blue-joint grass (*Calamagrostis canadensis*). The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally inundated/saturated hydroperiod. Primary indicators of wetland hydrology included oxidized rhizospheres on living roots. Secondary indicators of wetland hydrology included the FAC-neutral test and geomorphic position. Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mostly mapped by the NRCS as Menasha clay loam (Figure 2). The soils observed at the sample points were not consistent with the Menasha series' characteristics. NRCS field indicators of hydric soil including F6 – Redox Dark Surface and F2 – Loamy Depleted Matrix were observed.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, and topography consisting of the following: 1) Transition from a wet meadow/emergent wetland complex dominated by hydrophytes to a mesic prairie dominated by upland species; 2) Transition from areas with sufficient evidence of wetland hydrology to areas that lacked wetland hydrology indicators; and 3) Transition from a depressional landscape to a gently sloping landscape.

Pre-construction Wetland

A pre-construction wetland complex (W-1b) is located in the northwest portion of the Project (Figure 4). W-1b is a shrub/forested wetland dominated by reed canary grass in the herbaceous layer, common buckthorn (*Rhamnus cathartica*) and red-osier dogwood (*Cornus stolonifera*) in the shrub layer, and green ash (*Fraxinus pennsylvanica*) in the tree canopy.

Uplands

Uplands within the Project consist of a mesic prairie planting dominated by, Queen Anne's-lace (*Daucus carota*), big blue-stem (*Andropogon gerardii*), common goldenrod (*Solidago canadensis*), Kentucky bluegrass (*Poa pratensis*), velvet leaf (*Abutilon theophrasti*), Virginia wild rye (*Elymus virginicus*), common ragweed (*Ambrosia artemisiifolia*), alsike clover (*Trifoium hybridum*), and switch grass (*Panicum virgatum*).

Indicators of hydric soil and wetland hydrology were not observed at the upland data plots. Upland plots were located approximately 2-3 feet higher in elevation than the adjacent wetland plots. The uplands are located in a gently sloping landscape (~2-6%), and are not located in topographic positions that are conducive to wetland formation.

Vegetation Community Mapping

Three vegetation communities were identified on the Project (Figure 6) including shallow marsh (SM), wet meadow (M), and upland mesic prairie. A brief description of each community is provided below.

Shallow Marsh (SM)

The shallow marsh comprises 20.22 acres of the site and is dominated by narrow-leaved cattail (*typha angustfolia*). Invasive species of concern within this plant community include reed canary grass, which currently comprises less than 5 percent of the areal coverage.

Wet Meadow (M)

The wet meadow comprises 4.51 acres of the site and is dominated by species such as fox sedge (*Carex vulpinoidea*), black bulrush, and swamp aster (*Aster puniceus*). Other common species include monkey flower, common sneezeweed (*Helenium autumnale*), common ironweed (*Vernonia fasciculata*), grass-leaved goldenrod (*Euthamia graminifolia*), and swamp milkweed (*Asclepias incarnata*). Invasive species of concern include reed canary grass.

Mesic Prairie

The mesic prairie comprises 11.67 acres of the site and is dominated by species such as Canada wild-rye, Queen Anne's lace, and timothy. Other common species include red clover (*Trifolium pratense*), common goldenrod (*Solidago canadensis*), common dandelion (*Taraxacum officinale*), white sweet-clover (*Melilotus alba*), and big blue-stem. Invasive species of concern are minimal, represented by only reed canary grass with an estimated 5 percent areal coverage.

Invasive Species

Stantec conducted a reconnaissance of the Project to determine the presence and distribution of select non-native invasive plant species. Species targeted for evaluation included reed canary grass, purple loosestrife, and common reed grass. Results of the reconnaissance are illustrated on Figure 5 and briefly described below:

A) Reed Canary Grass: This species was noted as scattered pockets throughout the wet meadow, shallow marsh and mesic prairie communities of the Project. Larger clones with an established localized areal coverage greater than 20 percent were located throughout the Project (Figure 5). Many of these areas had been treated with herbicide. Herbicide treatments to areas with greater than 30 percent areal coverage of reed canary grass are recommended to reduce the extent of this species within the Project. Adaptive management techniques, including a combination of mowing, herbicide treatments and re-seeding with native species, are recommended. Further monitoring is also recommended to ensure that new infestations do not occur within the Project.

B) Purple Loosestrife: This species was not observed during the 2012 growing season.

C) Common Reed Grass: This species was located in a dense clump along the ditch on the south portion of the project area adjacent to Winnebago County Trunk II (Figure 5). Herbicide

treatments and continued monitoring is recommended to ensure this species does not expand its range within the project.

D) Stantec also noted scattered clones of white sweet clover throughout the mesic prairie (Figure 5). This species can become invasive in upland areas. Eradication of this species is recommended.

Other

Other aspects not specifically required for this project's report were given consideration during the site visit. These other aspects include incidental wildlife observations, habitat quality, and structural observations.

Wildlife Observations

Wildlife observed during the site visit included mallards (*Anas platyrhynchos*), blue winged teal (*Anas discors*), and red-winged blackbirds (*Agelaius phoeniceus*).

Habitat Quality

The Project provides high quality shallow marsh habitat for many species. Dabbling ducks and geese such as mallards, Canada geese (*Branta canadensis*), and blue-winged teal likely use the project for nesting, while other waterfowl such as coots (*Fulica americana*), shovelers (*Spatula clypeata*), and green-winged teal (*Anas carolinensis*) likely use the area as a stop-over area during spring and fall migration. Wading birds such as the great blue heron and great egret (*Casmerodius albus*) likely use the Project as a food source, while the American bittern (*Botaurus lentiginosus*) likely uses the area as a stop-over during migration. Other wading birds that may use the Project include the rails (*Rallus* and *Laterallus* sp.). The semi-permanent to permanent hydroperiod of the wetland provides habitat to amphibian species such as the Leopard frog (*Rana pipiens*), green frog, and tiger salamander (*Ambystoma tigrinum*). Mammals adapted to aquatic conditions, such as muskrat and mink (*Mustela vison*) likely use the Project as denning and foraging habitat.

Environmental Considerations

This report is limited to the identification of state and/or federally regulated wetlands within the Project site. However, there may be other regulated environmental features within the site, including but not limited to historical or archeological features, endangered or threatened species, navigable waters and/or floodplains, etc. Federal, state, and local units of government and regional planning organizations may have regulatory authority to control or restrict land uses within or in close proximity to these features. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

CONCLUSION

Stantec performed a wetland determination and delineation and habitat mapping of the WisDOT Rubbert Wetland Mitigation Site in the Town of Clayton, Winnebago County, Wisconsin. The Property is located in Section 17, Township 20 North, Range 16 East, Town of Clayton, Winnebago County, Wisconsin. The purpose and objective of the wetland determination and delineation was to identify the extent and

spatial arrangement of wetlands within the Project. In addition to the wetland delineation, a reconnaissance of the Project was conducted to aid in the development of a vegetation community map, and to determine the distribution and extent of invasive species. Invasive species of concern included purple loosestrife, common reed grass, and reed canary grass.

One 24.7 acre wetland was identified on the Project. Adjacent uplands are comprised of mesic prairie. Wetlands and their boundaries were surveyed and mapped. Three distinct plant communities were observed at the site: wet meadow (M), shallow marsh (SM), and upland mesic prairie. Reed canary grass and purple loosestrife were both observed within the Project area, and common reed grass was observed on the Project boundary. Reed canary grass was noted in both the upland mesic prairie and wet meadow communities. One dense clump of common reed grass was noted on the south project boundary adjacent to Winnebago County Trunk II.

The USACE has regulatory authority over waters of the U.S. including adjacent wetlands, and the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapter 30 Wisconsin State Statutes, Act 6, and NR 103 Wisconsin Administrative Code. Local jurisdictions may have additional regulatory authority through shoreland or wetland zoning ordinances.

Prior to beginning work at this site or disturbing or altering wetlands, waterways, or adjacent lands in any way, Stantec recommends that the owner obtain the necessary permits or other agency regulatory review and concurrence with regard to the proposed work to comply with applicable regulations. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

The information provided by Stantec regarding wetland boundaries is a scientific-based analysis of the wetland and upland conditions present on the site at the time of the fieldwork. The delineation was performed by experienced and qualified professionals using standard practices and sound professional judgment. The ultimate decision on wetland boundaries rests with the USACE and, in some cases, the WDNR or a local unit of government. As a result, there may be adjustments to boundaries based upon review by a regulatory agency. An agency determination can vary from time to time depending on various factors including, but not limited to recent precipitation patterns and the season of the year. In addition, the physical characteristics of the site can change over time, depending on the weather, vegetation patterns, drainage activities on adjacent parcels, or other events. Any of these factors can change the nature and extent of wetlands on the site.

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FIGURES

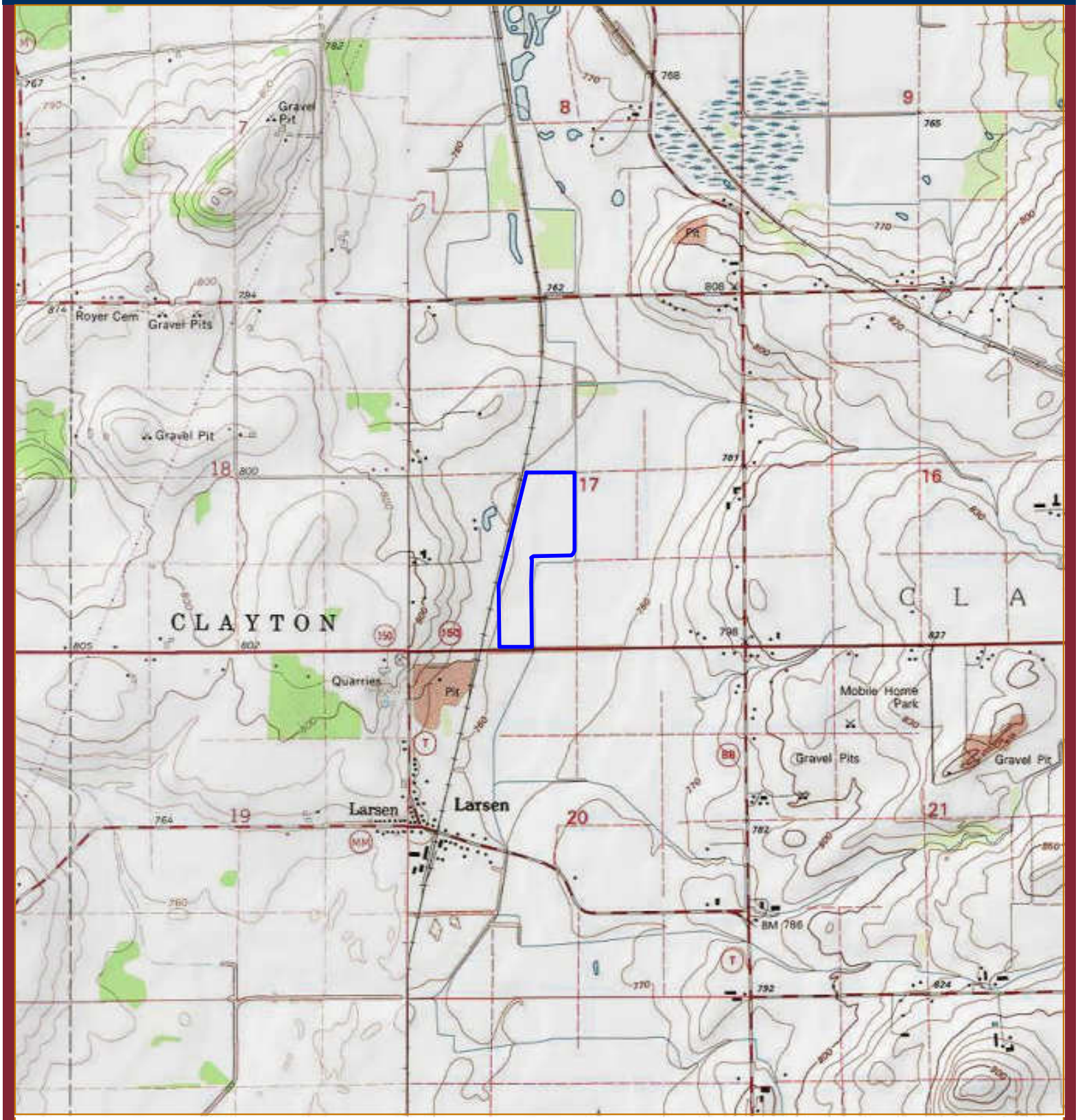
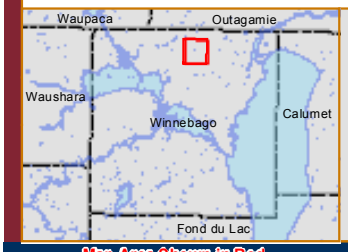


Figure 1. Project Location and Topography
WI DOT - Rubbert Site



Map Area Shown in Red

Location

S17, T20N, R16E;
Winnebago County, WI

Project Information

Project Number: 193702031
Last Modified: December 20, 2012

N

0 2,000
Feet

Legend

Approximate Project Boundary

Data Sources Include: USGS 7.5' Topographic Quadrangle - Oshkosh NE

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	Initials	Date
Prepared by	SAF	12/20/2012
Peer Review by	AS	12/20/2012
Final Review by	MC	12/20/2012

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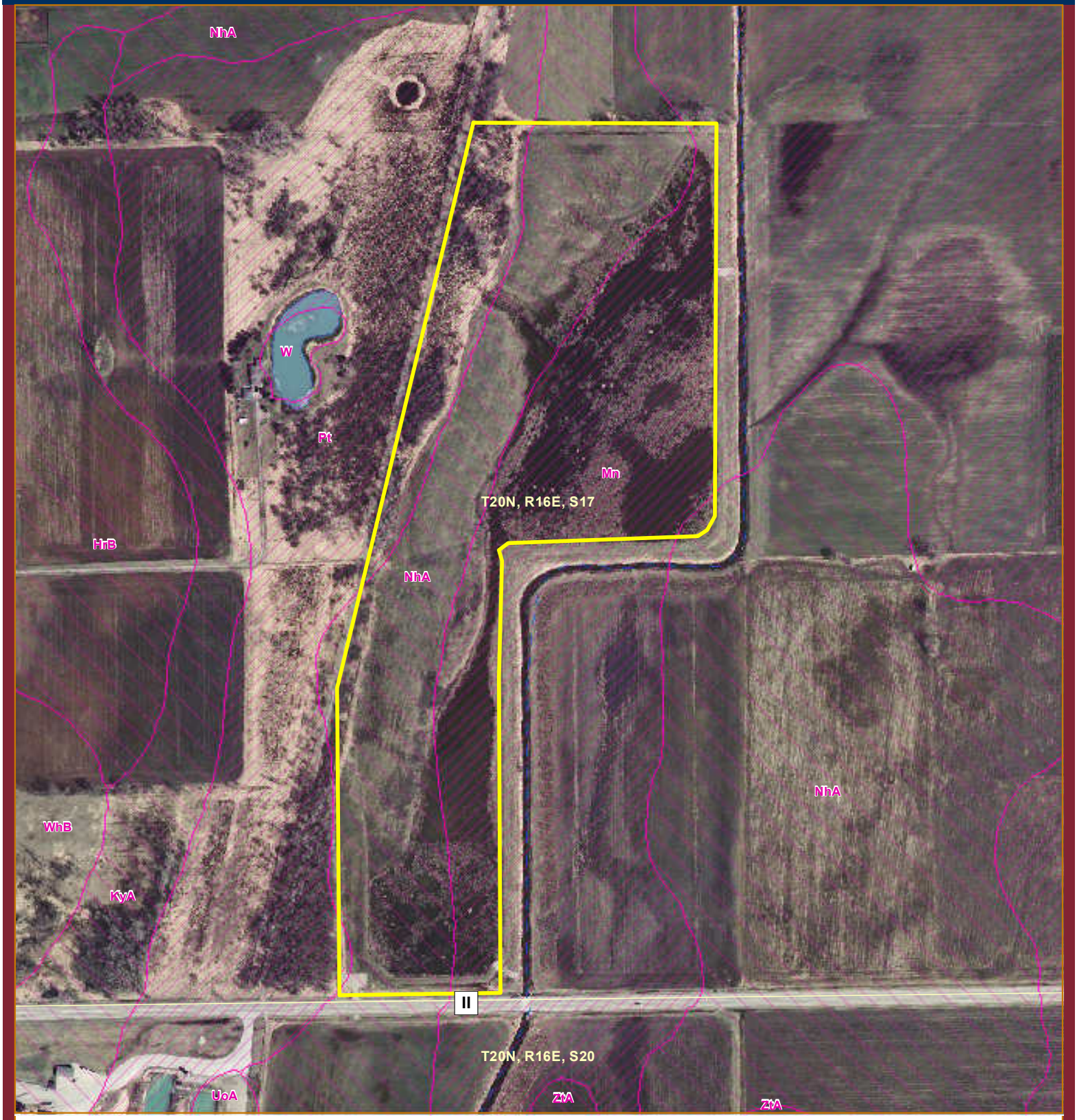

Figure 2. NRCS Soil Survey Data
WI DOT - Rubbert Site

Map Area Shown in Red

Location

S17, T20N, R16E;
Winnebago County, WI

Project Information

Project Number: 193702031
Last Modified: December 20, 2012

0 200 400
Feet

Legend

- Approximate Project Boundary
- NRCS Soil Survey Data
  - Hydric Soils
  - Poss. Hydric Inclusions
  - Non-Hydric
- DNR 24k Hydrography
  - Perennial Stream
  - Intermittent Stream
  - Waterbody

Data Sources Include: USGS, WDOA, NRCS, WDNR, Orthophotography: 2010 WROC

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	Initials	Date
Prepared by	SAF	12/20/2012
Peer Review by	AS	12/20/2012
Final Review by	MC	12/20/2012

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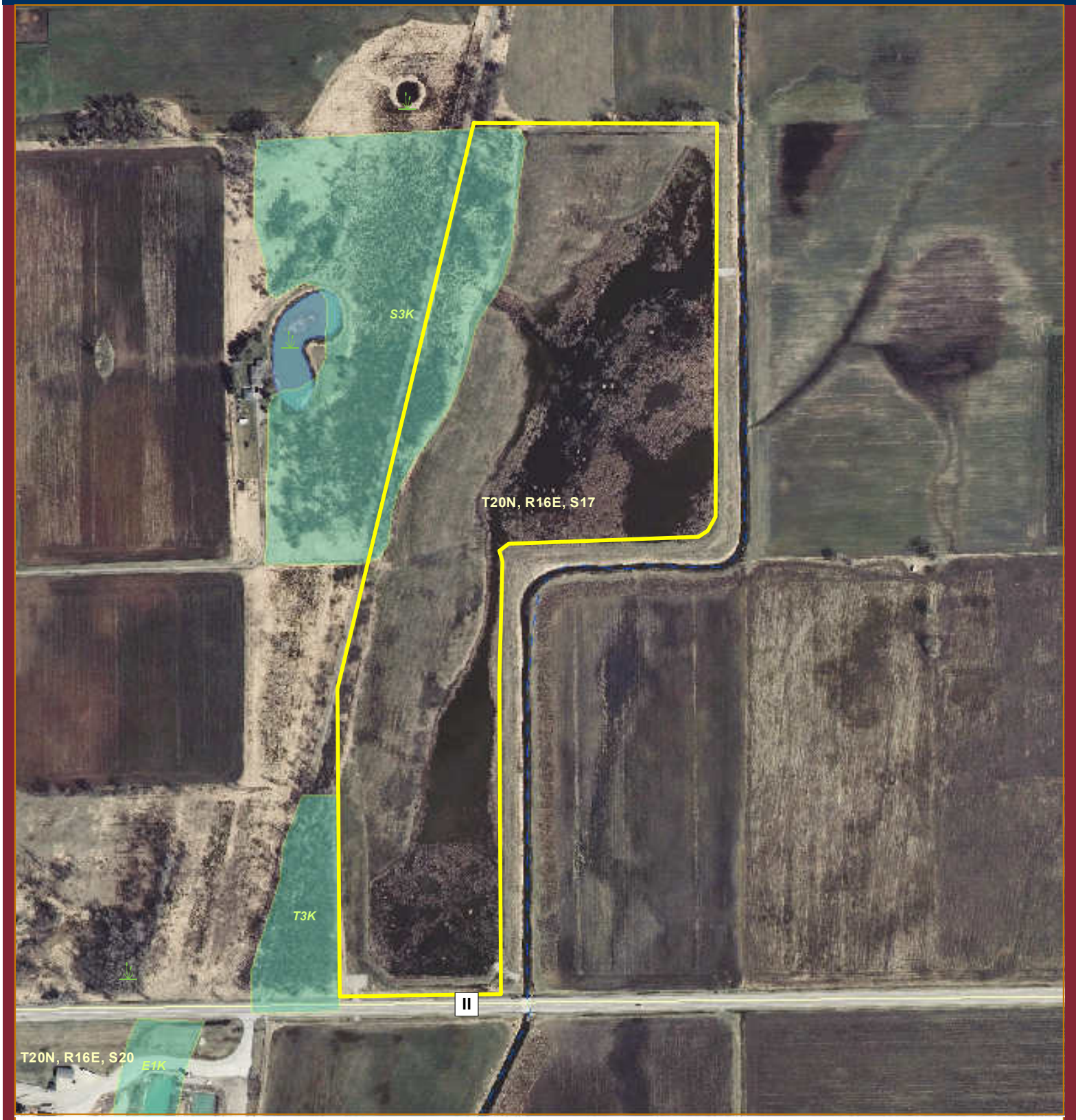

Figure 3. Wisconsin Wetland Inventory Data
WI DOT - Rubbert Site

Map Area Shown in Red

Location

S17, T20N, R16E;
Winnebago County, WI

Project Information

Project Number: 193702031
Last Modified: December 20, 2012

N

0 200 400
Feet

Legend

- Approximate Project Boundary
- WWI Points
- WWI Data
- DNR 24k Hydrography
- Perennial Stream
- Intermittent Stream
- Waterbody

Data Sources Include: USGS, WDOA, WDOT, WDNR, Orthophotography: 2010 WROC

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	Initials	Date
Prepared by	SAF	12/20/2012
Peer Review by	AS	12/20/2012
Final Review by	MC	12/20/2012

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Figure 4. Field Delineated Wetland Site
WI DOT - Rubbert Site

Map Area Shown in Red

Location

S17, T20N, R16E;
Winnebago County, WI

Project Information

Project Number: 193702031
Last Modified: December 20, 2012

N

0 200 400
Feet

Legend

- Approximate Project Boundary
- Pre-Construction Wetlands (W-1b)
- Post-Construction Wetland (W-1a)
- Sample Point

DNR 24k Hydrography

- Perennial Stream
- Intermittent Stream
- Waterbody

Data Sources Include: USGS, WDOT, WDNR, Orthophotography: 2010 WROC

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	Initials	Date
Prepared by	SAF	12/20/2012
Peer Review by	AS	12/20/2012
Final Review by	MC	12/20/2012

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Figure 5. Invasive Species Data
WI DOT - Rubbert Site

Map Area Shown in Red

Location

S17, T20N, R16E;
Winnebago County, WI

Project Information

Project Number: 193702031
Last Modified: December 20, 2012

0 200 400
Feet

Legend

- Approximate Project Boundary
- Giant Reed Grass
- Reed Canary Grass

Data Sources Include: USGS, WDOA, WDOT, WDNR, Orthophotography: 2010 WROC

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	Initials	Date
Prepared by	SAF	12/20/2012
Peer Review by	AS	12/20/2012
Final Review by	MC	12/20/2012

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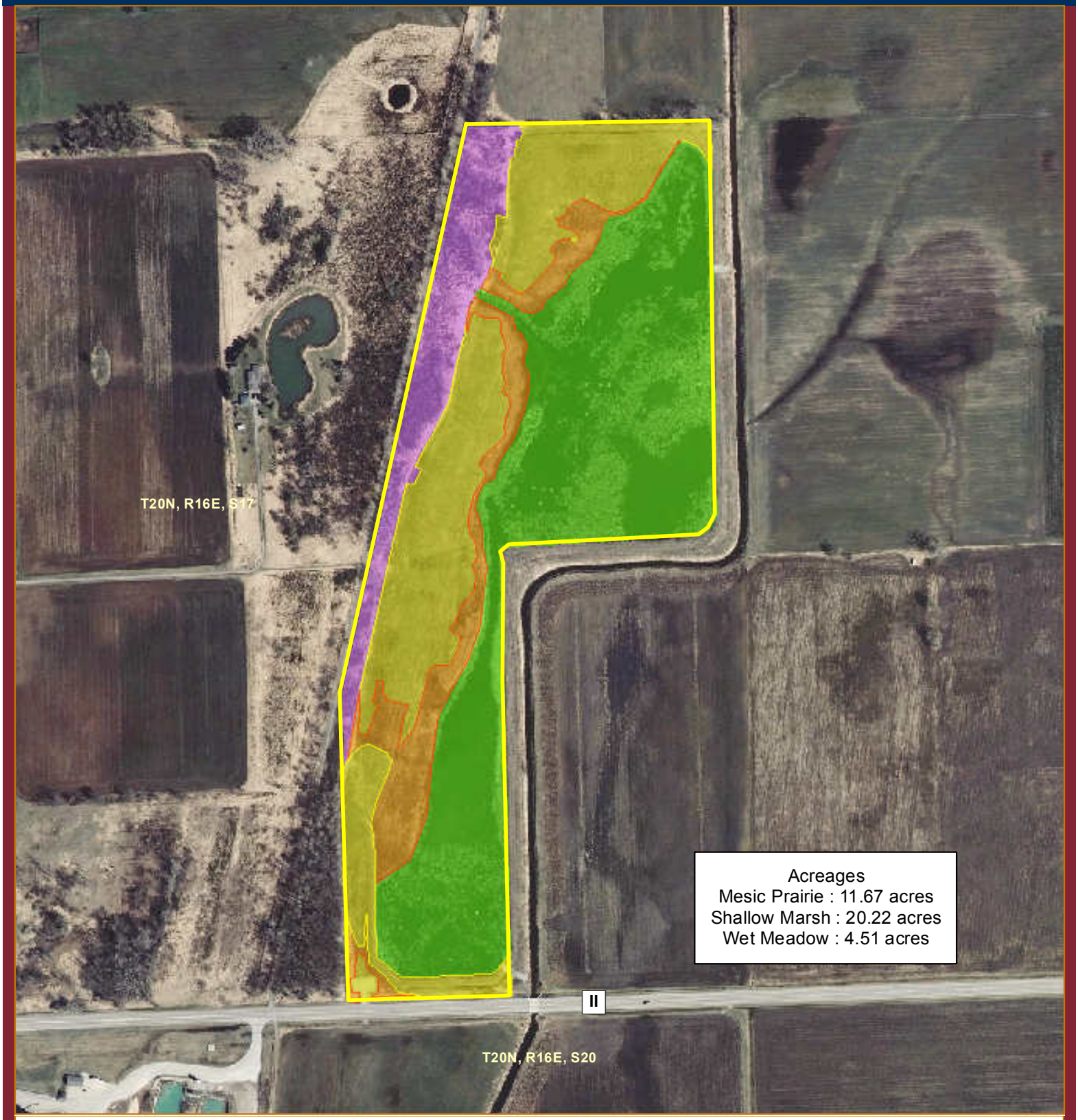

Figure 6. Plant Communities
WI DOT - Rubbert Site

Map Area Shown in Red

Location

S17, T20N, R16E;
Winnebago County, WI

Project Information

Project Number: 193702031
Last Modified: December 20, 2012

N

0 200 400
Feet

Legend

- Approximate Project Boundary

Plant Communities

- Mesic Prairie
- Shallow Marsh
- Wet Meadow
- Pre-existing Wetlands

Data Sources Include: USGS, WDOT, WDNR, Orthophotography: 2010 WROC

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	Initials	Date
Prepared by	SAF	12/20/2012
Peer Review by	AS	12/20/2012
Final Review by	MC	12/20/2012

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APPENDIX A

US ARMY CORPS OF ENGINEERS DATA SHEETS

WETLAND DETERMINATION DATA FORM
Northcentral and Northeast Region

Project/Site:	Ruppert Mitigation Bank Site	Stantec Project #:	193702031	Date:	09/07/12
Applicant:	Wisconsin Department of Transportation			County:	Winnebago
Investigator #1:	Curran, M.	Investigator #2:	Bertagnoli, N.	State:	Wisconsin
Soil Unit:	Neenah silty clay loam	NWI/WWI Classification:	N/A	Wetland ID:	W1
Landform:	Hillslope	Local Relief:	Convex	Sample Point:	A-1u
Slope (%):	2-6%	Latitude: N/A	Longitude: N/A	Community ID:	Mesic Prairie
				Section:	17
				Township:	20 N
				Range:	16 Dir: E

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☑, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes	☑ No	Hydric Soils Present?	☐ Yes ☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: According to the Army Corps of Engineers NC/NE Supplement, three parameters are required to meet jurisdictional wetland requirements. Although hydric soils are present at the sample plot, the lack of hydrophytic vegetation and wetland hydrology indicate the sample plot is located in a mesic prairie.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

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

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

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: The sample plot is located on a knoll, approximately 2 feet higher in elevation than the adjacent wetland plot. No evidence of wetland hydrology was observed at the sample plot.

SOILS

Map Unit Name: Neenah silty clay loam — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquollic Hapludalfs — Field Observations Confirm Mapped Type? ☐ Yes ☑ No

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	6	1	10YR 3/2	50	--	--	--	--	Clay loam
			10YR 4/3	50	--		--	--	
6	14	2	10YR 2/3	60	10YR 4/6	10	C	M	Clay
			10YR 4/2	30					
14	18	3	10YR 4/2	90	10YR 4/6	10	C	M	Clay
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (**LRR R, MLRA 149B**)
- ☐ S8 - Polyvalue Below Surface (**LRR R, MLRA 149B**)
- ☐ S9 - Thin Dark Surface (**LRR R, MLRA 149B**)
- ☐ F1 - Loamy Muck Mineral (**LRR K, L**)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☑ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (**LRR K, L, MLRA149B**)
- ☐ A16 - Coast Prairie Redox (**LRR K, L, R**)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (**LRR K, L**)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks: The soil at the sample plot meets the NRCS F6 - Redox Dark Surface indicator.

WETLAND DETERMINATION DATA FORM

Northcentral and Northeast Region

Project/Site: Ruppert Mitigation Bank Site Wetland ID: W1 Sample Point **A-1u**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*ABUTILON THEOPHRASTI*	20	Y	FACU
2.	*DAUCUS CAROTA*	40	Y	UPL
3.	*Elymus virginicus*	20	Y	FACW
4.	*Ambrosia artemisiifolia*	20	Y	FACU
5.	*SONCHUS ARVENSIS*	5	N	FAC
6	*Erigeron annuus*	10	N	FAC
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	115		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
5.	--	--	--	--
4.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***25.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	20	x 2 =	40
FAC spp.	15	x 3 =	45
FACU spp.	40	x 4 =	160
UPL spp.	40	x 5 =	200
Total	115 (A)		445 (B)

Prevalence Index = B/A = ***3.870***

Hydrophytic Vegetation Indicators:

☐ Yes	☑ No	Rapid Test for Hydrophytic Vegetation
☐ Yes	☑ No	Dominance Test is > 50%
☐ Yes	☑ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☑ No	Morphological Adaptations (Explain) *
☐ Yes	☑ No	Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) 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. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks: Vegetation at the sample plot is not hydrophytic.

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral and Northeast Region

Stantec

Project/Site:	Ruppert Mitigation Bank Site	Stantec Project #:	193702031	Date:	09/07/12
Applicant:	Wisconsin Department of Transportation			County:	Winnebago
Investigator #1:	Curran, M.	Investigator #2:	Bertagnoli, N.	State:	Wisconsin
Soil Unit:	Neenah silty clay loam	NWI/WWI Classification:	N/A	Wetland ID:	W1
Landform:	Depression	Local Relief:	Concave	Sample Point:	A-1w
Slope (%):	0-2%	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Wet Meadow
					Section: 17
					Township: 20 N
					Range: 16 Dir: E

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☑, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes	☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes	☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: The sample plot is located in a wet meadow.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

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

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

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks: The presence of 2 secondary indicators at the sample plot provides evidence of wetland hydrology.

SOILS

Map Unit Name: Neenah silty clay loam — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquollic Hapludalfs — Field Observations Confirm Mapped Type? ☐ Yes ☑ No

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	7	1	10YR 3/1	98	10YR 4/6	2	C	M	Clay loam
7	18	2	10YR 5/3	95	10YR 5/6	5	C	M	Clay
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (**LRR R, MLRA 149B**)
- ☐ S8 - Polyvalue Below Surface (**LRR R, MLRA 149B**)
- ☐ S9 - Thin Dark Surface (**LRR R, MLRA 149B**)
- ☐ F1 - Loamy Muck Mineral (**LRR K, L**)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☑ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (**LRR K, L, MLRA149B**)
- ☐ A16 - Coast Prairie Redox (**LRR K, L, R**)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (**LRR K, L**)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks: The soil at the sample plot meets the NRCS F6 - Redox Dark Surface indicator.

WETLAND DETERMINATION DATA FORM

Northcentral and Northeast Region

Project/Site: Ruppert Mitigation Bank Site Wetland ID: W1 Sample Point **A-1w**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*PHALARIS ARUNDINACEA*	30	Y	FACW
2.	*Cyperus esculentus*	55	Y	FACW
3.	*PENNISETUM GLAUCUM*	5	N	FAC
4.	*Epilobium coloratum*	5	N	OBL
5.	*Panicum capillare*	5	N	FAC
6	*Bidens frondosus*	1	N	FACW
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	101		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
5.	--	--	--	--
4.	--	--	--	--
	Total Cover =	0		

Remarks: Vegetation at the sample plot is hydrophytic.

Dominance Test Worksheet

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	5	x 1 =	5
FACW spp.	86	x 2 =	172
FAC spp.	10	x 3 =	30
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	101 (A)		207 (B)

Prevalence Index = B/A = ***2.050***

Hydrophytic Vegetation Indicators:

☐ Yes	☑ No	Rapid Test for Hydrophytic Vegetation
☑ Yes	☐ No	Dominance Test is > 50%
☑ Yes	☐ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☑ No	Morphological Adaptations (Explain) *
☐ Yes	☑ No	Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) 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. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral and Northeast Region

Project/Site:	Ruppert Mitigation Bank Site	Stantec Project #:	193702031	Date:	09/07/12
Applicant:	Wisconsin Department of Transportation			County:	Winnebago
Investigator #1:	Curran, M.	Investigator #2:	Bertagnoli, N.	State:	Wisconsin
Soil Unit:	Neenah silty clay loam	NWI/WWI Classification:	N/A	Wetland ID:	W1
Landform:	Hillslope	Local Relief:	Convex	Sample Point:	A-2u
Slope (%):	2-6%	Latitude: N/A	Longitude: N/A	Community ID:	Mesic Prairie
				Section:	17
				Township:	20 N
				Range:	16 Dir: E

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☑, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes	☐ No	Hydric Soils Present?	☐ Yes ☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: According to the Army Corps of Engineers NC/NE Supplement, three parameters are required to meet jurisdictional wetland requirements. Although hydrophytic vegetation is present at the sample plot, the lack of hydric soils and wetland hydrology indicate the sample plot is located in a mesic prairie.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

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

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

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: No evidence of wetland hydrology was observed at the sample plot.

SOILS

Map Unit Name: Neenah silty clay loam — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquollic Hapludalfs — Field Observations Confirm Mapped Type? ☐ Yes ☑ No

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	10	1	10YR 3/2	90	--	--	--	--	Clay loam
			10YR 4/3	10	--		--	--	
10	18	2	10YR 4/3	60	10YR 4/6	15	C	M	Clay
			Gley 1 5/10Y	25					
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (**LRR R, MLRA 149B**)
- ☐ S8 - Polyvalue Below Surface (**LRR R, MLRA 149B**)
- ☐ S9 - Thin Dark Surface (**LRR R, MLRA 149B**)
- ☐ F1 - Loamy Muck Mineral (**LRR K, L**)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (**LRR K, L, MLRA149B**)
- ☐ A16 - Coast Prairie Redox (**LRR K, L, R**)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (**LRR K, L**)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks: The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface for long periods of time during the growing season in most years.

WETLAND DETERMINATION DATA FORM

Northcentral and Northeast Region

Project/Site: Ruppert Mitigation Bank Site Wetland ID: W1 Sample Point **A-2u**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*POA PRATENSIS*	60	Y	FAC
2.	*Heliopsis helianthoides*	10	N	NI
3.	*Monarda fistulosa*	10	N	FACU
4.	*Panicum virgatum*	10	N	FAC
5.	*Andropogon gerardii*	5	N	FAC
6	*Elymus virginicus*	1	N	FACW
7.	*Solidago rigida*	1	N	FACU
8.	*Solidago canadensis*	1	N	FACU
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	98		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
5.	--	--	--	--
4.	--	--	--	--
	Total Cover =	0		

Remarks: Vegetation at the sample plot is hydrophytic.

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 spp.	0	x 1 =	0
FACW spp.	1	x 2 =	2
FAC spp.	75	x 3 =	225
FACU spp.	12	x 4 =	48
UPL spp.	10	x 5 =	50
Total	98 (A)		325 (B)

Prevalence Index = B/A = ***3.316***

Hydrophytic Vegetation Indicators:

☐ Yes	☑ No	Rapid Test for Hydrophytic Vegetation
☑ Yes	☐ No	Dominance Test is > 50%
☐ Yes	☑ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☑ No	Morphological Adaptations (Explain) *
☐ Yes	☑ No	Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) 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. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral and Northeast Region

Project/Site:	Ruppert Mitigation Bank Site	Stantec Project #:	193702031	Date:	09/07/12
Applicant:	Wisconsin Department of Transportation			County:	Winnebago
Investigator #1:	Curran, M.	Investigator #2:	Bertagnoli, N.	State:	Wisconsin
Soil Unit:	Neenah silty clay loam	NWI/WWI Classification:	N/A	Wetland ID:	W1
Landform:	Depression	Local Relief:	Concave	Sample Point:	A-2w
Slope (%):	0-2%	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Wet Meadow
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☑ Yes ☐ No	Section:	17
Are Vegetation ☐ , Soil ☑, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	20 N
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?		☑ Yes ☐ No		Range:	16 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes ☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes ☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: The sample plot is located in a wet meadow.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)**:**

Primary:

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

Secondary:

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

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks: The presence of 2 secondary indicators at the sample plot provides evidence of wetland hydrology.

SOILS

Map Unit Name: Neenah silty clay loam — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquollic Hapludalfs — Field Observations Confirm Mapped Type? ☐ Yes ☑ No

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	6	1	10YR	3/2	70	10YR	4/6	10	C	M	Clay loam
			10YR	4/3	20						
6	18	2	10YR	4/3	55	10YR	4/6	15	C	M	Clay
			Gley 1	6/5G	30						
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑)**:**

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

Indicators for Problematic Soils [1]

- ☐ A10 - 2 cm Muck (**LRR K, L, MLRA149B**)
- ☐ A16 - Coast Prairie Redox (**LRR K, L, R**)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (**LRR K, L**)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A — **Hydric Soil Present?** ☑ Yes ☐ No

Remarks: The soil at the sample plot meets the NRCS F6 - Redox Dark Surface indicator.

WETLAND DETERMINATION DATA FORM

Northcentral and Northeast Region

Project/Site: Ruppert Mitigation Bank Site Wetland ID: W1 Sample Point **A-2w**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*Calamagrostis canadensis*	40	Y	OBL
2.	*Euthamia graminifolia*	10	N	FAC
3.	*Helenium autumnale*	10	N	FACW
4.	*Aster puniceus*	30	Y	OBL
5.	*Panicum virgatum*	5	N	FAC
6	*Aster novae-angliae*	1	N	FACW
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	96		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
5.	--	--	--	--
4.	--	--	--	--
	Total Cover =	0		

Remarks: Vegetation at the sample plot is hydrophytic.

Dominance Test Worksheet

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	70	x 1 =	70
FACW spp.	11	x 2 =	22
FAC spp.	15	x 3 =	45
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	96 (A)		137 (B)

Prevalence Index = B/A = ***1.427***

Hydrophytic Vegetation Indicators:

- ☑ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) 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. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral and Northeast Region

Project/Site:	Ruppert Mitigation Bank Site	Stantec Project #:	193702031	Date:	09/07/12
Applicant:	Wisconsin Department of Transportation			County:	Winnebago
Investigator #1:	Curran, M.	Investigator #2:	Bertagnoli, N.	State:	Wisconsin
Soil Unit:	Neenah silty clay loam	NWI/WWI Classification:	N/A	Wetland ID:	W1
Landform:	Hillslope	Local Relief:	Convex	Sample Point:	A-3u
Slope (%):	2-6%	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Mesic Prairie
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)		☑ Yes ☐ No		Section:	17
Are Vegetation ☐ , Soil ☑, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	20 N
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?		☑ Yes ☐ No		Range:	16 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☐ Yes ☑ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: The sample plot is located in a mesic prairie.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:

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

Secondary:

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

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: No evidence of wetland hydrology was observed at the sample plot.

SOILS

Map Unit Name: Neenah silty clay loam — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquollic Hapludalfs — Field Observations Confirm Mapped Type? ☐ Yes ☑ No

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	6	1	10YR 3/1	100	--	--	--	--	Clay loam
6	8	2	10YR 4/3	85	10YR 4/6	15	C	M	Clay
8	12	3	10YR 4/3	40	10YR 4/6	15	C	M	Clay
			10YR 5/2	35					
12	18	4	10YR 4/3	80	10YR 5/6	20	C	M	Silt loam
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):

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

Indicators for Problematic Soils [1]

- ☐ A10 - 2 cm Muck (**LRR K, L, MLRA149B**)
- ☐ A16 - Coast Prairie Redox (**LRR K, L, R**)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (**LRR K, L**)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A — **Hydric Soil Present?** ☐ Yes ☑ No

Remarks: The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface for long periods of time during the growing season in most years.

WETLAND DETERMINATION DATA FORM

Northcentral and Northeast Region

Project/Site: Ruppert Mitigation Bank Site Wetland ID: W1 Sample Point **A-3u**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*DAUCUS CAROTA*	20	Y	UPL
2.	*TARAXACUM OFFICINALE*	10	N	FACU
3.	*Monarda fistulosa*	10	N	FACU
4.	*TRIFOLIUM HYBRIDUM*	40	Y	FAC
5.	*Andropogon gerardii*	10	N	FAC
6	*Solidago canadensis*	10	N	FACU
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	100		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
5.	--	--	--	--
4.	--	--	--	--
	Total Cover =	0		

Remarks: Vegetation at the sample plot is not hydrophytic.

Dominance Test Worksheet

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***50.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	50	x 3 =	150
FACU spp.	30	x 4 =	120
UPL spp.	20	x 5 =	100
Total	100 (A)		370 (B)

Prevalence Index = B/A = ***3.700***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) 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. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral and Northeast Region

Stantec

Project/Site:	Ruppert Mitigation Bank Site	Stantec Project #:	193702031	Date:	09/07/12
Applicant:	Wisconsin Department of Transportation			County:	Winnebago
Investigator #1:	Curran, M.	Investigator #2:	Bertagnoli, N.	State:	Wisconsin
Soil Unit:	Neenah silty clay loam	NWI/WWI Classification:	N/A	Wetland ID:	W1
Landform:	Depression	Local Relief:	Concave	Sample Point:	A-3w
Slope (%):	0-2%	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Wet Meadow
					Section: 17
					Township: 20 N
					Range: 16 Dir: E

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☑, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes	☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes	☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: The sample plot is located in a wet meadow.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

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

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

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks: The presence of 1 primary and 1 secondary indicator at the sample plot provides evidence of wetland hydrology.

SOILS

Map Unit Name: Neenah silty clay loam — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquollic Hapludalfs — Field Observations Confirm Mapped Type? ☐ Yes ☑ No

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	8	1	10YR	3/1	95	10YR	4/6	5	C	PL	Clay loam
8	16	2	10YR	4/2	85	10YR	4/6	15	C	M	Clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
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NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (**LRR R, MLRA 149B**)
- ☐ S8 - Polyvalue Below Surface (**LRR R, MLRA 149B**)
- ☐ S9 - Thin Dark Surface (**LRR R, MLRA 149B**)
- ☐ F1 - Loamy Muck Mineral (**LRR K, L**)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☑ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (**LRR K, L, MLRA149B**)
- ☐ A16 - Coast Prairie Redox (**LRR K, L, R**)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (**LRR K, L**)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks: The soil at the sample plot meets the NRCS F6 - Redox Dark Surface indicator.

WETLAND DETERMINATION DATA FORM

Northcentral and Northeast Region

Project/Site: Ruppert Mitigation Bank Site Wetland ID: W1 Sample Point **A-3w**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*Juncus dudleyi*	5	N	NI
2.	*Scirpus atrovirens*	80	Y	OBL
3.	*Helenium autumnale*	5	N	FACW
4.	*Aster puniceus*	5	N	OBL
5.	*Populus deltoides*	1	N	FAC
6	*Vernonia fasciculata*	1	N	FACW
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	97		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
5.	--	--	--	--
4.	--	--	--	--
	Total Cover =	0		

Remarks: Vegetation at the sample plot is hydrophytic.

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 spp.	85	x 1 =	85
FACW spp.	6	x 2 =	12
FAC spp.	1	x 3 =	3
FACU spp.	0	x 4 =	0
UPL spp.	5	x 5 =	25
Total	97 (A)		125 (B)

Prevalence Index = B/A = ***1.289***

Hydrophytic Vegetation Indicators:

- ☑ Yes ☐ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) 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. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral and Northeast Region

Project/Site:	Ruppert Mitigation Bank Site	Stantec Project #:	193702031	Date:	09/07/12
Applicant:	Wisconsin Department of Transportation			County:	Winnebago
Investigator #1:	Curran, M.	Investigator #2:	Bertagnoli, N.	State:	Wisconsin
Soil Unit:	Neenah silty clay loam	NWI/WWI Classification:	N/A	Wetland ID:	W1
Landform:	Hillslope	Local Relief:	Convex	Sample Point:	A-4u
Slope (%):	2-6%	Latitude: N/A	Longitude: N/A	Community ID:	Mesic Prairie
				Section:	17
				Township:	20 N
				Range:	16 Dir: E

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐ , Soil ☑, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes	☑ No	Hydric Soils Present?	☐ Yes ☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: According to the Army Corps of Engineers NC/NE Supplement, three parameters are required to meet jurisdictional wetland requirements. Although hydrophytic vegetation is present at the sample plot, the lack of hydric soilsand wetland hydrology indicate the sample plot is located in a mesic prairie.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

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

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

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: No evidence of wetland hydrology was observed at the sample plot.

SOILS

Map Unit Name: Neenah silty clay loam — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquollic Hapludalfs — Field Observations Confirm Mapped Type? ☐ Yes ☑ No

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	7	1	10YR 3/1	100	--	--	--	--	Clay loam
7	12	2	10YR 5/3	80	10YR 4/6	20	C	M	Clay
12	16	3	5Y 6/1	90	10YR 5/6	10	C	M	Silty clay loam
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (**LRR R, MLRA 149B**)
- ☐ S8 - Polyvalue Below Surface (**LRR R, MLRA 149B**)
- ☐ S9 - Thin Dark Surface (**LRR R, MLRA 149B**)
- ☐ F1 - Loamy Muck Mineral (**LRR K, L**)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (**LRR K, L, MLRA149B**)
- ☐ A16 - Coast Prairie Redox (**LRR K, L, R**)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (**LRR K, L**)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks: The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface for long periods of time during the growing season in most years.

WETLAND DETERMINATION DATA FORM

Northcentral and Northeast Region

Project/Site: Ruppert Mitigation Bank Site Wetland ID: W1 Sample Point **A-4u**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*Panicum virgatum*	30	Y	FAC
2.	*Andropogon gerardii*	40	Y	FAC
3.	*Erigeron annuus*	15	N	FAC
4.	*TRIFOLIUM HYBRIDUM*	10	N	FAC
5.	*Aster ericoides*	5	N	FACU
6	*Monarda fistulosa*	1	N	FACU
7.	*Solidago canadensis*	1	N	FACU
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	102		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
5.	--	--	--	--
4.	--	--	--	--
	Total Cover =	0		

Remarks: Vegetation at the sample plot is hydrophytic.

Dominance Test Worksheet

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	95	x 3 =	285
FACU spp.	7	x 4 =	28
UPL spp.	0	x 5 =	0
Total	102 (A)		313 (B)

Prevalence Index = B/A = ***3.069***

Hydrophytic Vegetation Indicators:

☐ Yes	☑ No	Rapid Test for Hydrophytic Vegetation
☑ Yes	☐ No	Dominance Test is > 50%
☐ Yes	☑ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☑ No	Morphological Adaptations (Explain) *
☐ Yes	☑ No	Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) 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. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral and Northeast Region

Project/Site:	Ruppert Mitigation Bank Site	Stantec Project #:	193702031	Date:	09/07/12
Applicant:	Wisconsin Department of Transportation			County:	Winnebago
Investigator #1:	Curran, M.	Investigator #2:	Bertagnoli, N.	State:	Wisconsin
Soil Unit:	Neenah silty clay loam	NWI/WWI Classification:	N/A	Wetland ID:	W1
Landform:	Depression	Local Relief:	Concave	Sample Point:	A-4w
Slope (%):	0-2%	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Shallow Marsh
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)		☑ Yes	☐ No	Section:	17
Are Vegetation ☐ , Soil ☑, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	20 N
Are Vegetation ☐ , Soil ☐, or Hydrology ☐ naturally problematic?		☑ Yes	☐ No	Range:	16 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes	☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes	☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: The sample plot is located in a shallow marsh.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐)**:**

Primary:

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

Secondary:

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

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks: The presence of 2 secondary indicators at the sample plot provides evidence of wetland hydrology.

SOILS

Map Unit Name: Neenah silty clay loam — Series Drainage Class: somewhat poorly

Taxonomy (Subgroup): Aquollic Hapludalfs — Field Observations Confirm Mapped Type? ☐ Yes ☑ No

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	9	1	10YR	3/2	70	10YR	5/6	30	C	M	Clay loam
9	12	2	Gley 1	6/5GY	95	10YR	4/6	5	C	M	Clay
12	15	3	Gley 1	6/5GY	45	10YR	4/6	10	C	M	Clay
			10YR	3/2	45						
15	18	4	10YR	5/4	50	10YR	4/6	30	C	M	Clay
			Gley 1	6/5GY	20						
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑)**:**

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

Indicators for Problematic Soils [1]

- ☐ A10 - 2 cm Muck (**LRR K, L, MLRA149B**)
- ☐ A16 - Coast Prairie Redox (**LRR K, L, R**)
- ☐ S3 - 5cm Mucky Peat of Peat (**LRR K, L, R**)
- ☐ S7 - Dark Surface (**LRR K, L**)
- ☐ S8 - Polyvalue Below Surface (**LRR K, L**)
- ☐ S9 - Thin Dark Surface (**LRR K, L**)
- ☐ F12 - Iron-Manganese Masses (**LRR K, L, R**)
- ☐ F19 - Piedmont Floodplain Soils (**MLRA 149B**)
- ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**)
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks: The soil at the sample plot meets the NRCS F6 - Redox Dark Surface and F2 - Loamy Gleyed Matrix indicators.

WETLAND DETERMINATION DATA FORM

Northcentral and Northeast Region

Project/Site: Ruppert Mitigation Bank Site Wetland ID: W1 Sample Point **A-4w**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*TYPHA ANGUSTIFOLIA*	80	Y	OBL
2.	*Mimulus ringens*	10	N	OBL
3.	*Helenium autumnale*	1	N	FACW
4.	*PHALARIS ARUNDINACEA*	1	N	FACW
5.	*SETARIA VIRIDIS*	1	N	NI
6	*Panicum capillare*	1	N	FAC
7.	*PLANTAGO MAJOR*	5	N	FAC
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	99		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
5.	--	--	--	--
4.	--	--	--	--
	Total Cover =	0		

Remarks: Vegetation at the sample plot is hydrophytic.

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 spp.	90	x 1 =	90
FACW spp.	2	x 2 =	4
FAC spp.	6	x 3 =	18
FACU spp.	0	x 4 =	0
UPL spp.	1	x 5 =	5
Total	99 (A)		117 (B)

Prevalence Index = B/A = ***1.182***

Hydrophytic Vegetation Indicators:

☑ Yes	☐ No	Rapid Test for Hydrophytic Vegetation
☑ Yes	☐ No	Dominance Test is > 50%
☑ Yes	☐ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☑ No	Morphological Adaptations (Explain) *
☐ Yes	☑ No	Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) 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. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

APPENDIX B

SITE PHOTOGRAPHS

Photo 01. A-1w, View N

Photo 2. A-1w, View S

Photo 3. A-1u, View N

Photo 4. A-1u, View S

Photo 5. A-2w, View N

Photo 6. A-2w, View S

Photo 7. A-2u, View N

Photo 8. A-2u, View S

Photo 9. A-3w, View N

Photo 10. A-3w, View E

Photo 11. A-3u, View N

Photo 12. A-3u, View S

Photo 13. A-4w, View N

Photo 14. A-4w, View E

Photo 15. A-4u, View N

Photo 16. A-4u, View S

APPENDIX C

2011 WETLAND DELINEATION FIGURE

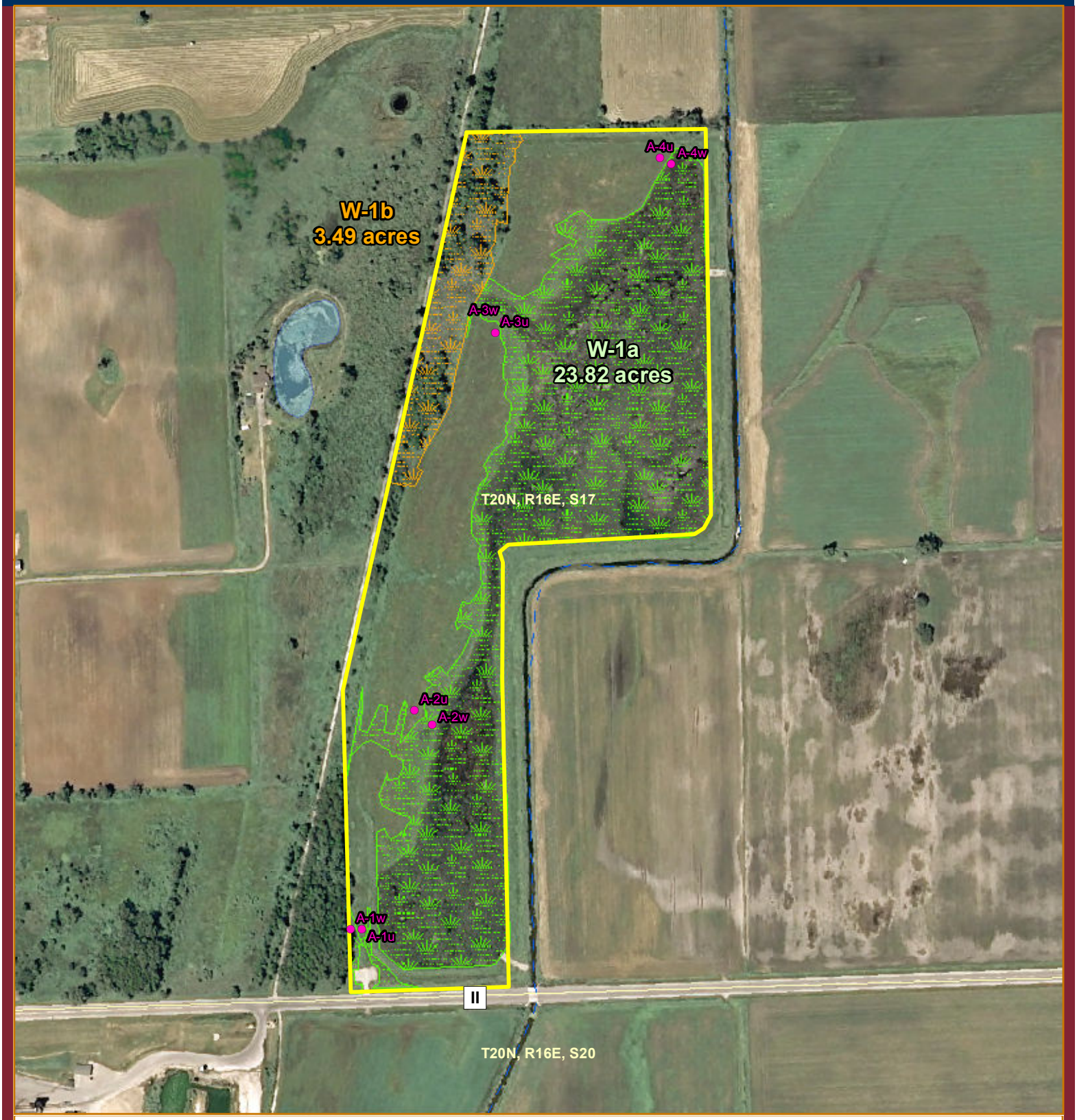

Figure 4. Field Delineated Wetland Site
WI DOT - Rubbert Site

Map Area Shown in Red

Location

S17, T20N, R16E;
Winnebago County, WI

Project Information

Project Number: 193701211
Last Modified: September 26, 2011

N

0 200 400

Feet

Legend

- Approximate Project Boundary
- Sample Point
- Section Line

Delineated Wetland Polygon

- Post Mitigation Wetlands (W-1a)
- Pre-Construction Wetlands (W-1b)

DNR 24k Hydrography

- Perennial Stream
- Intermittent Stream
- Waterbody

Data Sources Include: USGS, WDOA, WDOT, WDNR, Orthophotography: 2010 NAIP

Stantec

	Initials	Date
Prepared by	SAF	08-12-2011
Peer Review by	AS	09-19-2011
Final Review by	TN	09-26-2011

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