# Wetland Delineation Report and Wetland MnRAM Report

# MNRAM 3.0

## *Stones Throw*

## *Prepared for: The Beard Group*

Hassan Township, Minnesota

SMI No. 80038-001

June 2006

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# Wetland Functional Assessment Summary
## Stones Throw

| Wetland ID | Hydrogeomorphology | Hydrologic Regime | Flood Storage | Downstream Water Quality | Wetland Water Quality | Shoreline Protection |
|---|---|---|---|---|---|---|
| 27-120-23-25-001-H | Depressional/Isolated (no discernable inlets or outlets) | Moderate | Moderate | High | Moderate | Not Applicable |
| 27-120-23-25-001-I | Depressional/Isolated (no discernable inlets or outlets), Slope | High | Moderate | High | Moderate | Not Applicable |
| 27-120-23-25-001-J | Depressional/Isolated (no discernable inlets or outlets) | Moderate | Moderate | Moderate | Moderate | Not Applicable |
| 27-120-23-36-001-A | Depressional/Flow-through (apparent inlet and outlet), Depressional/Flow-through (apparent inlet and outlet) | High | High | High | High | Not Applicable |
| 27-120-23-36-001-B | Riverine (within the river/stream banks), Floodplain (outside waterbody banks) | Moderate | Moderate | Moderate | Low | High |
| 27-120-23-36-001-C | Depressional/Isolated (no discernable inlets or outlets) | Moderate | Moderate | Moderate | Moderate | Not Applicable |
| 27-120-23-36-001-D | Depressional/Isolated (no discernable inlets or outlets) | | Moderate | Moderate | Low | Not Applicable |
| 27-120-23-36-001-E | Depressional/Tributary (outlet but no perennial inlet or drainage entering from upstream subwatershed) | Moderate | Moderate | Moderate | Moderate | Not Applicable |
| 27-120-23-36-001-F | Depressional/Isolated (no discernable inlets or outlets) | | Moderate | Moderate | Moderate | Not Applicable |
| 27-120-23-36-001-K | Depressional/Isolated (no discernable inlets or outlets), Extensive Peatland/Organic Flat | Low | Low | Moderate | Moderate | Moderate |

# Wetland Functional Assessment Summary
## Stones Throw

| Wetland ID | Wildlife Habitat | Fishery Habitat | Amphibian Habitat | Aesthetics, Recreation, Education | Commercial | Ground-Water Interaction | Additional Information: Wetland Restoration Potential | Additional Information: Wetland Stormwater Sensitivity | Additional Information: Stormwater Treatment Needs |
|---|---|---|---|---|---|---|---|---|---|
| 27-120-23-25-001-H | Moderate | Low | Moderate | Moderate | Not Applicable | Combination Discharge, Recharge | Not Applicable | Moderate | Moderate |
| 27-120-23-25-001-I | Exceptional | Low | High | Moderate | Not Applicable | Combination Discharge, Recharge | Not Applicable | Moderate | Moderate |
| 27-120-23-25-001-J | Moderate | Low | Moderate | Moderate | Not Applicable | Combination Discharge, Recharge | Not Applicable | Moderate | Moderate |
| 27-120-23-36-001-A | Moderate | Low | Not Applicable | Moderate | Not Applicable | Combination Discharge, Recharge | Moderate | High | High |
| 27-120-23-36-001-B | Moderate | Moderate | Low | Moderate | Not Applicable | Combination Discharge, Recharge | Low | Moderate | Low |
| 27-120-23-36-001-C | Moderate | Low | Moderate | Moderate | Not Applicable | Combination Discharge, Recharge | Not Applicable | Moderate | Moderate |
| 27-120-23-36-001-D | Moderate | Low | Low | | Not Applicable | Combination Discharge, Recharge | Not Applicable | Moderate | Low |
| 27-120-23-36-001-E | Not Applicable | Low | Not Applicable | Moderate | Not Applicable | Combination Discharge, Recharge | Not Applicable | Moderate | Moderate |

# Wetland Functional Assessment Summary
# Stones Throw

| Wetland ID | Wildlife Habitat | Fishery Habitat | Amphibian Habitat | Aesthetics, Recreation, Education | Commercial | Ground-Water Interaction | Additional Information | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Wetland Restoration Potential | Wetland Stormwater Sensitivity | Stormwater Treatment Needs |
| 27-120-23-36-001-F | Moderate | Not Applicable | Not Applicable | Moderate | Low | Combination Discharge, Recharge | Not Applicable | Exceptional | Moderate |
| 27-120-23-36-001-K | Moderate | Moderate | Low | Low | Low | Combination Discharge, Recharge | Moderate | Exceptional | Moderate |

# Wetland Delineation Report

*Stones Throw*

*Prepared for: The Beard Group*

Hassan Township, Minnesota

SMI No. 80038-001

June 2006

DRAFT

# Stones Throw

# Wetland Delineation Report

# Hassan Township, Minnesota

SMI No. 80038-001

June 2006

The procedures described in this report and the field methods used constitute an official wetland delineation in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual.

The field delineation was completed by Amy Jo Petersen and Todd Udvig. The delineation is based upon the Routine On-site Determination Method as described in the 1987 Manual. The methodology meets the standards and criteria described in the manual and conforms to the applicable standards and regulations in force at the time the fieldwork was completed. The results reflect conditions present at the time of the delineation.

I hereby certify that this report was prepared by me or under my direct supervision.

Prepared by: _____

Date

CWD No.: _____

Reviewed by: _____

Date

CWD No.: _____

DRAFT

Schoell & Madson, Inc.
15050 23rd Ave N
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# Wetland Delineation Report

## Stones Throw

DRAFT

Hassan Township, Minnesota

## Introduction

This wetland delineation report outlines the location, methods and results for an approximate 622.92 acres site in Hassan Township. The purpose of the evaluation was to identify areas meeting the technical criteria for wetlands, delineate the jurisdictional extent of the wetland basins and classify the wetland habitats within the site. This field delineation will be the basis on which the proposed project will address potential wetland impacts or avoidance. A field review of the site identified 16 wetland basins within the site.

This report describes the methodology and results of the field delineations performed on May 31st through June 9, 2006 and August 8, 2006. Figures referenced in the text are included at the end of the document.

### Site Description

The property is located in Hassan Township, Hennepin County, MN within the following sections (Figure 1):

Section 36, Township 119 North, Range 23 West

Section 25, Township 120 North, Range 23 West

Section 24, Township 120 North, Range 23 West

The area under investigation is comprised of wetlands, sod farms, farmsteads, cropland, woodlands and a floodplain area that surrounds Rush Creek. Wetlands occur at various locations around the site. Many of the wetlands are isolated basins while some wetland areas were associated with Rush Creek.

# Wetland Delineation

## Wetlands Definition

Wetlands are defined jointly by the U.S. Army Corps of Engineers [USACE (Federal Register, 1982)] and the U.S. Environmental Protection Agency [EPA (Federal Register, 1980)] as follows:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

According to (USACE), one positive indicator, except in certain situations, from each of three elements must be found in order to make a positive wetland determination. The three criteria are as follows:

- Greater than 50 percent dominance of hydrophytic plant species;
- Presence of hydric soil;
- The area is either permanently or periodically inundated, or soil is saturated to the surface during the growing season of the dominant vegetation.

## Methodology

### Wetlands Survey

Topographic maps, the U. S. Fish and Wildlife Service National Wetland Inventory (NWI) maps, Soil Survey for Hennepin County, the Hennepin County hydric soils list and the Minnesota Department of Natural Resources Protected Waters Inventory (PWI) map were reviewed prior to visiting the site to locate potential wetland habitats. Figure 2 is a copy of the NWI maps and Figure 3 is a copy of the soils map for the project area. Figure 4 is a copy of the Protected Waters Inventory map of the site. These sources indicated that wetland areas were investigated in greater detail during the field delineation.

### Field Procedures

The project site was evaluated on May 31, 2006 through June 9, 2006 and August 8, 2006, for areas meeting wetland criteria in accordance with the Corps of Engineers Wetlands Delineation Manual (USACE, 1987). The 1987 Manual requires that soil inundation or saturation occur within 12 inches of the surface and that all three wetland parameters, as discussed above, be present.

The Routine Onsite Determination Method (RODM) was applied for this delineation. Field notes, soil samples, and photographs were taken at representative locations within the wetland basins and in the adjacent upland areas.

Collected information was transferred to RODM data sheets, which are included in Appendix A. Photographs will be retained on file at Schoell and Madson, Inc (SMI). Each data sheet is referenced to a sample location along the identified wetland boundary by the plot ID number.

Wetland plant species nomenclature follows the "National List of Plant Species that Occur in Wetlands" (U.S. Department of the Interior, 1988). Identification was aided when necessary with regional field guides.

Soils were observed for hydric soil characteristics. Soils were examined by digging pits at representative locations and periodically along the wetland boundary. Pits were dug to a depth necessary to confirm hydric soil characteristics, up to a maximum depth of 24 inches. Soil color determinations were made using MUNSELL Soil Color Charts (Kollmorgen Instruments Corporation, 2000). Site soil characteristics were compared to those mapped and described in the Soil Survey for Hennepin County.

Wetland boundaries were located and marked with sequentially numbered, pink "Wetland Delineation" pin flags and tree flags for optimal visibility. Schoell & Madson Inc surveyed the locations of the marked areas. The wetland edge is considered the highest extent of the wetland basin; areas above the boundary fail to meet the three required wetland parameters while areas below the edge meet the wetland parameters required by the field delineation methodology. The results of the delineation are presented at the end of this document.

**Wetland Classification**

Classification of the wetland basins are included on the (RODM) data sheets in Appendix A. Wetland classification follows the methods described in Wetlands and Deepwater Habitats of the United States (Cowardin, et al., 1979) and used by the U.S. Fish and Wildlife Service National Wetland Inventory. The Circular 39 classification (Shaw and Fredine, 1956) is also provided.

## Results

The field delineation was conducted under near normal temperature conditions and above normal precipitation conditions for the delineations completed in May and June and below normal precipitation for delineations completed in August as compared to the historical average for the region. Most of the vegetation was identifiable, including all dominant species.

Sixteen wetland basins were identified, delineated and classified. The (RODM) data forms indicate the dominant species of vegetation and the soil and hydrologic characteristics at a representative location around the basins. A review of the wetland delineation boundary line was conducted and field reviewed by----

### Wetland A

Wetland A is located in the northeast corner of the property (Figure 5). The boundary of this wetland was delineated based on site topography and site conditions. Wetland A was not identified on the NWI map (Figure 2).

Wetland A was classified as a Type 2 inland fresh meadow dominated by green bulrush (*Scripus atrovirens*) sedges (*Carex sp.*), prairie dropseed (*Sporobolus heterolepis*), and slender rush (*Juncus tenuis*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Drainage patterns were observed as this wetland was in a topographically low position and as indicated by aerial photographs. The data was collected at representative sample locations within the wetland and upland areas.

The soil profile within the wetland consisted of 0-18 inches of dark (10YR 2/1) clay loam. These soil conditions concur with the local soil survey, which classified the soils in the wetland area as Minnetonka silty clay loam (USDA, 2004). Minnetonka silty clay loam soils are listed on the federal and county hydric soils lists.

Vegetation within the upland areas was dominated by Canada goldenrod (*Solidago canadensis*), red clover (*Trifolium pratense*), common ragweed (*Ambrosia artemisiifolia*), Canada wild rye (*Elymus canadensis*) and indian grass (*Sorghastrum nutans*) in the herbaceous layer. The vegetation found was consistent with upland site species. The soil profile in the adjacent upland area was 0-18 inches of dark (10YR 2/1) clay loam. The soils concur with the local soil survey, which is classified as Minnetonka silty clay loam (USDA, 2001).

**Wetland B**

Wetland B borders Rush creek along the north and south edge between Highway 101 and County Road 116 (Figure 5). The boundary of this wetland was delineated based on site topography and site conditions. Wetland B was identified on the NWI map as a Type 1 and 3 wetland complex (Figure 2).

Wetland B was classified as a Type 1, 2, and 3 wetland complex by SMI. The herbaceous layer was mostly dominated by sedges (*Carex sp.*), reed canary grass (*Phalaris arundinacea*), and smartweed (*Polygonum pensylvanicum*). Green ash (*Fraxinus pennsylvanica*) was prevalent in the north lobe of the wetland. The vegetation within the wetland boundary was characteristic for this type of wetland. However, part of this site is atypical due to farmed areas within the wetland boundary.

Data for representative sample locations were collected within the wetland and upland areas. Soils typically found in wetland basins were consistent with soils found on site. The soil profile within the wetland consisted of the following:

| Transects | | USDA Class |
|---|---|---|
| 1 | 0-16 inches of dark 10YR 2/1 loam | Glencoe |
| | 16-18 inches of tan 2.5 YR 3/1 sand | |
| 2 | 0-18 inches of dark 10YR 2/1 loam | Glencoe |
| 3 | 0-18 inches of dark 10YR 2/1 peat | Houghton |
| 4 | 0-18 inches of dark 10YR 2/1 peat / silty clay loam | Klossner |
| 5 | 0-16 inches of dark brown 10 YR 3/1 loamy sand | |
| | 16-18 inches of dark reddish gray 2.5 YR 3/1 sandy loam with strong brown 7.5 YR 4/6 mottles composing approximately 15 percent of the soil. | Cordova |

These soil conditions for transects 1-4 concur with the local soil survey, as noted above (USDA, 2004). Transect 5 did not concur with the local soil survey. The soil was moist to the surface consistently across the wetland area. One of the primary wetland hydrology indicators observed was a drainage pattern within the floodplain.

In addition, the plant communities that were observed were delayed in germination and growth due to prolonged floodwater conditions. Aerial photographs and creek data corresponded to field observations.

The upland vegetation was dominated by red clover (T*rifolium pratense*), and dandelion (*Taraxcum officinale*) in the herbaceous layer. In addition, the areas north of wetland B consist mostly of cropland, and tall grass prairie and a remnant area of mixed deciduous woods. The areas south of wetland B are comprised of mostly of cropland and a remnant area of maple basswood forest. Soil samples were taken from the adjacent upland areas at representative sampling stations. The soil profile within the upland consisted of the following:

| **Transects** | | **USDA Class** |
|---|---|---|
| 1 | 0-18 inches of dark 10YR 2/1 loam | Nessel |
| 2 | 0-16 inches of dark 10YR 2/1 loam | Angus-Kilkenny |
| | 16-18 inches of very dark gray 10YR 3/1 silty clay loam | |
| 3 | 0-16 inches of dark 10YR 2/1 loam | Angus-Kilkenny |
| | 16-18 inches of very dark gray 10YR 3/1 silty clay loam | |
| 4 | 0-16 inches of dark 10YR 2/1 loam | Angus-Kilkenny |
| | 16-18 inches of very dark gray 10YR 3/1 silty clay loam | |
| 5 | 0-16 inches of dark brown 10YR 3/1 loamy sand | |
| | 16-18 inches of dark reddish gray 2.5YR 3/1 sandy loam with strong brown 7.5 YR 4/6 mottles composing approximately 15 percent of the soil | Cordova |

The soil conditions for transects 1-4 concur with the local soil survey, as noted above (USDA, 2004). Transect 5 did not concur with the local soil survey.

**Wetland C**

Wetland C is an isolated basin located on the western half of the property, east of the field road that divides the southernmost sod fields. The boundary of this wetland was delineated based on site topography and site conditions. Wetland C was identified on the NWI map as a Type 1 wetland basin (Figure 2). However, Wetland C was classified by SMI.as a Type 3 wetland.

Wetland C was dominated by green bulrush (*Scripus atrovirens*), hybrid cattails (*Typha glauca*), bur reed (*Sparganium eurycarpum*) and sedges (*Carex sp.*), The vegetation found within the wetland boundary was characteristic for this type of wetland. Drainage patterns were observed, (side slopes of surrounding hillsides drain into this point) which is one of the primary wetland hydrology indicators used. Secondary indicators of wetland hydrology include a low topographic position observed in the field and shown by aerial photographs. In addition, oxidized root channels in the upper 12 inches of the soil profile were evident. The data was collected at representative sample locations within the wetland and upland areas.

The soil profile at the first transect within the wetland consisted of 0-18 inches of dark (10YR 2/1) clay loam. The second soil transect consisted of 0-8 inches of dark (10YR 2/1) clay loam, and 9-18 inches of dark gray (10YR 4/1) clay loam with 30 percent dark brown (7.5 YR 3/4) mottling. The soil conditions concur with the local soil survey, which classified the soils in the wetland area as poorly drained Cordova loam (USDA, 2001). Cordova loam soils are listed on the federal and county hydric soils lists.

Vegetation within the upland areas was dominated by a plowed corn field (*Zea mays*) in the herbaceous layer. The vegetation found was consistent with upland site species. The soil profile in the adjacent upland area was 0-12 inches of dark (10YR 2/1) clay loam at both soil transects. The soils concur with the local soil survey, which is classified as moderately drained Nessel loam soil series (USDA, 2004).

**Wetland D**

Wetland D is located directly east of Wetland C; this wetland is a drainage ditch at the end of the field road coming in from Highway 101. The boundary of this wetland was delineated based on site topography and site conditions. Wetland D was not identified on the NWI map (Figure 2). However, Wetland D was classified by SMI.as a Type 3 wetland.

Wetland D was dominated by reed canary grass (*Phalaris arundinacea*) and common ragweed (*Ambrosia artemisiifolia*). Hydrologic indicators observed included 1-2 inches of surface water and saturated soil to the surface. Drainage patterns were evident and the area was inundated which are both primary wetland hydrology indicators. The data was collected at representative sample locations within the wetland and upland areas.

The soil profile within the wetland consisted of 0-16 inches of dark (10YR 2/1) silty loam, and 16-20 inches of dark grayish brown (10YR 4/2) sandy loam. These soil conditions concur with the local soil survey, which classified the soils in the wetland area as poorly drained Cordova loam (USDA, 2004). Cordova loam soils are listed on the federal and county hydric soils lists.

Vegetation within the upland areas was dominated by common ragweed (*Ambrosia artemisiifolia*), daisy fleabane (*Erigeron strigosys*), and giant ragweed (*Ambrosia trifida*) in the herbaceous layer. Plowed cornfields (*Zea mays*) are adjacent to the upland vegetation listed previously. The vegetation found was consistent with upland site species. Soil samples were taken from the adjacent upland areas at representative sampling stations. As a result, the soil profile in the adjacent upland area was 0-18 inches of very dark brown (10YR 2/2) silt loam. The soils concur with the local soil survey, which is classified as well drained Angus loam soil series (USDA, 2004).

**Wetland E**

Wetland E is an isolated basin located in the southeastern corner of the property, adjacent to Hwy 101 and a private driveway. The boundary of this wetland was delineated based on site topography and site conditions. Wetland E was identified on the NWI map as a Type 1 wetland basin (Figure 2). However, Wetland E was classified by SMI as a Type 2 wetland.

Wetland E was dominated by reed canary grass (*Phalaris arundinacea*), rushes (*Eleocharis sp.*), eastern cottonwood (*Populus deltoides*) and box elder (*Acer negundo*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Inundation was observed and included pockets of surface water up to 3 inches within the wetland area. Drainage patterns and saturation in the upper 12 inches was observed which is one of the primary wetland hydrology indicators used. The data was collected at representative sample locations within the wetland and upland areas.

The soil profile within the wetland consisted of 0-18 inches of dark (10YR 2/1) loam. These soil conditions did not concur with the local soil survey, which classified the soils in the wetland area as poorly drained Glencoe loam (USDA, 2004).

Vegetation within the upland areas was dominated by a plowed cornfield (*Zea mays*) in the herbaceous layer. The vegetation found was consistent with upland site species. The soil profile in the adjacent upland area was 0-16 inches of dark (10YR 2/1) plow layer and plow pan, and 16-18 inches of grayish brown (10 YR 5/2) sand.

The soils did not concur with the local soil survey, which is classified as well drained Lester-Kilkenny complex (USDA, 2004).

**Wetland F**

Wetland F is an isolated basin located on the west side of the property, adjacent to Hwy 101 north of the field road within the plowed corn field. The boundary of this wetland was delineated based on site topography and site conditions. Wetland F was identified on the NWI map as a Type 1 wetland basin (Figure 2). A field investigation by SMI confirmed the wetland type as indicated on the NWI map.

Wetland E was dominated by smartweed (*Polygonum pensylvanicum*), and sedges (*Carex sp.*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Drainage patterns were observed which is one of the primary wetland hydrology indicators used. In addition, aerial photographs from 2006 indicated an occurrence of wetland hydrology. The data was collected at representative sample locations within the wetland and upland areas.

The soil profile within the wetland consisted of 0-18 inches of dark (10YR 2/1) loam. These soil conditions concur with the local soil survey, which classified the soils in the wetland area as somewhat poorly drained Dundas-Cordova complex (USDA, 2004). Dundas-Cordova soil complex is listed on the federal and county hydric soils lists.

Vegetation within the upland areas was dominated by plowed corn fields (*Zea mays*) in the herbaceous layer. The vegetation found was consistent with upland site species. The soil profile in the adjacent upland area was 0-12 inches of very dark brown (10YR 2/2) silty clay loam (plow layer), and 12-18 inches of very dark brown (10 YR 2/2) silty clay loam. The soils concur with the local soil survey, which is classified as Dundas-Cordova complex (USDA, 2001).

**Wetland G**

Wetland G was actually determined to be outside the property boundary, and is not included in this report.

**Wetland H**

Wetland H is located directly at the end of a field road off County Road 116 just before the intersection of Territorial road and County Road 116. The boundary of this wetland was delineated based on site topography and site conditions. Wetland H was not identified on the NWI map (Figure 2). However, Wetland H was classified by Schoell Madson, Inc.as a Type 3 wetland.

Wetland H was dominated by narrow-leaved cattail (*Typha angustifolia*), and water plantain (*Alisma subcordatum*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Three primary indicators of wetland hydrology that were found included indundated soil, saturated soil in the upper 12 inches of the profile, and drainage patterns in the wetland. A secondary wetland hydrology indicator found were floating algal mats. The data was collected at representative sample locations within the wetland and upland areas.

The soil profile at the first transect within the wetland consisted of 0-12 inches of very dark grayish brown (10YR 2/1) and brown (10 YR ¾) sand, silt, and clay mixed soils. While the lower portion of the soil profile illustrated 13-18 inches of dark gray (10YR 4/1) sand, silty and clay mixed soils. The soil did not concur with the local soil survey, which classified the soils in the wetland area as Pits, gravel-Udipsamments complex (USDA, 2004). Pits, gravel-Udipsamments complex soils are not listed on the federal and county hydric soils lists.

Vegetation within the upland areas was dominated by red clover (*Trifolium pratense*), reed canary grass (*Phalaris arundinacea*), and smooth brome grass (*Bromus inermis*) in the herbaceous layer. The vegetation found was consistent with upland site species. The soil profile in the adjacent upland area was 0-8 inches fill material. Data could not be collected greater than 8 inches due to a hard pan of buried debris. The soils did not concur with the local soil survey, which is classified as Pits, gravel-Udipsamments complex (USDA, 2004).

**Wetland I**

Wetland I is located north of Wetland H adjacent to the northern most pole barn. The boundary of this wetland was delineated based on site topography and site conditions. Wetland I was not identified on the NWI map (Figure 2). However, Wetland I was classified by Schoell Madson, Inc. as a Type 3 wetland.

Wetland I was dominated by narrow-leaved cattail (*Typha angustifolia*), hybrid cattail (*Typha glauca*), and reed canary grass (*Phalaris arundinacea*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Three primary indicators of wetland hydrology that were found included indundation, saturated soil in the upper 12 inches of the profile, and drainage patterns in the wetland. In addition, the wetland represented a sidehill seep, which was a primary wetland hydrology indicator. The data was collected at representative sample locations within the wetland and upland areas.

The soil profile within the wetland consisted of mixed fill material encompassing 0-4 inches of very dark gray (10YR 3/1) sandy loam, 5-12 inches of yellowish brown (10 YR 5/4) loamy sand, and 13-18 inches of dark grayish brown (10 YR 4/2) loamy sand. These soil conditions did concur with the local soil survey, which classified the soils in the wetland area as Pits, gravel-Udipsamments complex (USDA, 2004). Pits, gravel-Udipsamments complex soils are not listed on the federal and county hydric soils lists.

Vegetation within the upland areas was dominated by red clover (*Trifolium pratense*), Kentucky blue grass (*Poa pratensis*), and smooth brome grass (*Bromus inermis*) in the herbaceous layer. The vegetation found was consistent with upland site species. The soil profile in the adjacent upland area consisted of fill material encompassing 0-4 inches of dusky red (2.5YR 3/2) sand, 5-8 inches of gray (7.5YR 5/1) mixed sand, silt, and clay with dark olive brown mottles (2.5YR 3/4) at approximately 30 percent, and 9-18 inches of yellowish brown (10 YR 5/4) sandy loam with dark reddish brown mottles at approximately 30 percent. The soils concur with the local soil survey, which is classified as Pits, gravel-Udipsamments complex (USDA, 2001).

**Wetland J**

Wetland J is located just southwest Wetland H and south of the access road off County Road 116 and Territorial Rd. The boundary of this wetland was delineated based on site topography and site conditions. Wetland J was identified on the NWI map as a Type 3 and Type 7 wetland (Figure 2). Field observations confirmed the NWI classification.

Wetland J was dominated by reed canary grass (*Phalaris arundinacea*), black willow (*Salix nigra*), Virginia creeper (*Parthenocisus quinquefolia*), and box elder (*Acer negundo*). The vegetation found within the wetland boundary was characteristic for these types of wetlands. One of the primary indicators of wetland hydrology that were found included definite drainage patterns in the wetland which confirmed the aerial photographs. In addition, exposed roots were significant the area which was listed as a secondary wetland hydrology indicator. The data was collected at representative sample locations within the wetland and upland areas.

Soils typically found in wetland basins were consistent with soils found on site. The soil profile within the wetland consisted 0-18 inches of dark (10YR 2/1) sandy loam.

These soil conditions concur with the local soil survey, which classified the soils in the wetland area as somewhat poorly drained Hamel, overwash-Hamel complex (USDA, 2004). Hamel, overwash-Hamel complex soils are listed on the federal and county hydric soils lists.

Vegetation within the upland areas was dominated by smooth brome grass (*Bromus inermis*) northern bedstraw (*Galium boreale*) in the herbaceous layer. Common buckthorn (*Rhamnus cathartica*) and box elder (*Acer negundo*) was the dominant species the upper canopy. The vegetation found was consistent with upland site species. The soil profile in the adjacent upland area consisted of 0-18 inches of very dark grayish brown (10YR 3/2) sandy loam. These soil conditions concur with the local soil survey, which classified the soils in the wetland area as well drained Lester-Malardi complex.

**Wetland K**

Wetland K is located on the southwestern portion of the property (north of Rush Creek), where the field road off County Road 116 runs through the middle of the wetland area. The boundary of this wetland was delineated based on site topography and site conditions. Wetland K was identified on the NWI map as a Type 1 wetland (Figure 2). The majority of the wetland is currently being used as sod farm. The eastern portion of the wetland was a forested wetland (Type 7).

The sod field portion of Wetland K was dominated by Kentucky blue grass (*Poa pratensis*). The eastern portion of the wetland was dominated by reed canary grass (*Phalaris arundinacea)*, box elder (*Acer negundo*), and wood nettle (*Laportea canadensis*). The sod field portion of Wetland K has been extensively ditched and drains to the south. However, the drainage must be pumped over a dike along Rush Creek in order to initiate sod growth. This area was inundated during a late April site visit. An FSA slide review from 1982 to 2000 indicated this area to be inundated in most years. The data was collected at representative sample locations within the wetland and upland areas.

The soil profile within the wetland consisted 0-18 inches of dark (N 2/0) peat. These soil conditions concur with the local soil survey, which classified the soils in the wetland area as very poorly drained Houghton muck (USDA, 2004). Houghton muck soils are listed on the federal and county hydric soils lists.

Vegetation within the upland areas was dominated by plowed corn fields (*Zea mays*) and mixed deciduous woods. The vegetation found was consistent with upland site species.

The soil profile in the adjacent upland area consisted of 0-12 inches of brown (10YR 4/3) sandy loam and 13-18 inches of dark brown (10YR 3/3) sandy loam. These soil conditions concur with the local soil survey, which classified the soils in the wetland area as well drained Angus- Moon complex.

## Regulatory Considerations

Wetlands in the project area are regulated by several agencies at the local, regional, state, and federal levels including the (USACE) and the (EPA) at the federal level; the Minnesota Board of Water and Soil Resources (BWSR), Minnesota Department of Natural Resources (MNDNR) at the state level; and Hennepin County Environmental Services (Elm Creek WMO) at the local level. The Hennepin County Environmental Services has accepted the responsibility for the administration of the Minnesota Wetland Conservation Act (WCA) of 1991.

Construction plans that propose any direct alteration or indirect impact to wetlands or watercourses within the project area will require permits from the appropriate regulatory agencies. Violation of wetland regulations can result in substantial civil and/or criminal penalties.

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Protected Waters Inventory Map
Approximate Wetland Location Map
FSA Slides

# Appendix A

RODM Datasheets

# Wetland Delineation Report Supplement

Additional Ephemeral Wetland Areas

**Wetland L**

Wetland L is an ephemeral wetland basin located in the north wooded area. The boundary of this wetland was delineated based on site topography and site conditions. Wetland L was not identified on the NWI map (Figure 2). However, Wetland L was classified by SMI as a Type 1A ephemeral wooded wetland.

Wetland L was dominated by box elder (*Acer negundo*) and green ash (*Fraxinus pennsylvanica*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Two secondary wetland hydrology indicators found were exposed roots and a low topographic position. The data was collected at representative sample locations.

The soil profile within the wetland consisted of 0-1 inches of a duff layer, 1-7 inches of very dark gray (10YR 3/1) loam, and 7-18 inches of very dark gray (10YR 3/1) silty clay loam with dark yellowish brown (10YR 4/6) mottles at approximately 20 percent. These soils did not concur with the local soil survey, which classified the soils in the wetland area as Angus loam, however the soils met criteria for Cordova loam which is an inclusion of the NRCS classified Angus soil (USDA, 2001).

Vegetation in the upland areas was dominated by wood nettle (*Laportea canadensis*) in the herbaceous layer. The shrub and tree layer was dominated by box elder (*Acer negundo*), green ash (*Fraxinus pennsylvanica*), quaking aspen (*Populus tremuloides*), and sugar maple (Acer saccharum). Soil samples were taken from the adjacent upland areas at representative sampling stations. As a result, the soil profile in the adjacent upland area consisted of 0-1 inches of a duff layer, 1-15 inches of very dark grayish brown (10YR 3/2) silty clay loam, and 15-20 inches of gray (10YR 5/1) clay loam. The soils

did not concur with the local soil survey, which is classified as well drained Angus loam soil series (USDA, 2001). Hydrology was not found in the upper 18 inches of the soil profile within the upland areas.

**Wetland M**

Wetland M is an ephemeral wooded wetland basin located in the wooded area to the north. The boundary of this wetland was delineated based on site topography and site conditions. Wetland M was not identified on the NWI map (Figure 2). However, Wetland M was classified by SMI as a Type 1A ephemeral wooded wetland.

Wetland M was dominated by box elder (*Acer negundo*) and green ash (*Fraxinus pennsylvanica*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Two secondary wetland hydrology indicators found were obvious drainage patterns and a low topographic position. The data was collected at representative sample locations.

The soil profile within the wetland consisted of 0-12 inches of very dark gray (10YR 3/1) silty clay loam, and 12-18 inches of dark gray (10YR 4/1) silty clay loam with brown (10YR 4/3) mottles occurring at approximately 15 percent. These soils did not concur with the local soil survey, which classified the soils in the wetland area as well drained Angus loam (USDA, 2001).

Vegetation in the upland areas was dominated by wood nettle (*Laportea canadensis*) in the herbaceous layer. The shrub and tree layer was dominated by prickly ash (*Zanthoxylum americanum*), American basswood (*Tilia americana*), and green ash (*Fraxinus pennsylvanica*). Soil samples were taken from the adjacent upland areas at representative sampling stations. As a result, the soil profile in the adjacent upland area consisted of 0-4 inches of very dark grayish brown (10YR 3/2) silty clay loam, 4-15 inches of dark grayish brown (10YR 4/2) silty clay loam, and 15-18 inches of gray (10YR 6/1) silty clay loam. The soils did not concur with the local soil survey, which is classified as well drained Angus loam (USDA, 2001). Hydrology was not found in the upper 18 inches of the soil profile within the upland areas.

**Wetland N**

Wetland N is an ephemeral wetland basin located in the wooded area to the north. The boundary of this wetland was delineated based on site topography and site conditions. Wetland N was not identified on

the NWI map (Figure 2). However, Wetland N was classified by SMI as a Type 1A ephemeral wooded wetland.

Wetland N was dominated by box elder (*Acer negundo*) and green ash (*Fraxinus pennsylvanica*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Two secondary wetland hydrology indicators found were exposed roots and swooping at the base of the trees. In addition, Wetland N is located in a low topographic position. The data was collected at representative sample locations.

The soil profile within the wetland consisted of 0-4 inches of very dark grayish brown (10YR 3/2) silty clay loam, and 4-12 inches of dark gray (10YR 4/1) clay loam, and 12-24 inches of very dark grayish brown (10YR 3/2) silty clay loam. These soils did not concur with the local soil survey, which classified the soils in the wetland area as well drained Angus loam (USDA, 2001).

Vegetation in the upland areas was dominated by wood nettle (*Laportea canadensis*) in the herbaceous layer. The upper canopy was dominated by American basswood (*Tilia americana*), common hackberry (*Celtis occidentalis*), quaking aspen (*Populus tremuloides*), and sugar maple (*Acer saccharum*). Soil samples were taken from the adjacent upland areas at representative sampling stations. As a result, the soil profile in the adjacent upland area consisted of 0-4 inches of very dark grayish brown (10YR 3/2) silty clay loam, 4-12 inches of dark gray (10YR 4/1) clay loam, and 12-24 inches of very dark grayish brown (10YR 3/2) silty clay loam. The soils did not concur with the local soil survey, which is classified as well drained Angus loam (USDA, 2001). Hydrology was not found in the upper 18 inches of the soil profile within the upland areas.

**Wetland O**

Wetland O is an ephemeral wetland basin located in the wooded area to the north. The boundary of this wetland was delineated based on site topography and site conditions. Wetland O was not identified on the NWI map (Figure 2). However, Wetland O was classified by SMI as a Type 2 ephemeral wetland.

Wetland O was dominated by reed canary grass (*Phalaris arundinacea*), green ash (*Fraxinus pennsylvanica*), and box elder (*Acer negundo*). The vegetation found within the wetland boundary was characteristic for this type of wetland. Two secondary wetland hydrology indicators found were exposed roots and swooping at the base of the trees. In addition, Wetland O is located in a low

topographic position. The data was collected at representative sample locations.

The soil profile within the wetland consisted of 0-5 inches of very dark gray (10YR 3/1) silty loam with dark reddish brown (5YR 3/3) mottles at approximately 50 percent. While the lower portion of the soil profile consisted of 5-18 inches of very dark grayish brown (10YR 3/2) clay with black (10YR 2/1) mottles at approximately 30 percent. These soils did not concur with the local soil survey, which classified the soils in the wetland area as well drained Angus loam soil series (USDA, 2001).

Vegetation in the upland areas was dominated by wood nettle (*Laportea canadensis*) in the herbaceous layer. The upper canopy was dominated by red oak (*Quercus rubra*), sugar maple (Acer saccharum), quaking aspen (*Populus tremuloides*), ironwood (Ostrya virginiana), bitternut hickory (Carya cordiformis), and American basswood (*Tilia americana*). Soil samples were taken from the adjacent upland areas at representative sampling stations. As a result, the soil profile in the adjacent upland area consisted of 0-4 inches of very dark grayish brown (10YR 3/2) silty loam, 4-12 inches of grayish brown (10YR 5/2) clay. The soils did not concur with the local soil survey, which is classified as well drained Angus loam soil series (USDA, 2001). Hydrology was not found in the upper 18 inches of the soil profile within the upland areas.

**Wetland P**

Wetland P is an ephemeral wetland basin located in the wooded area to the north. The boundary of this wetland was delineated based on site topography and site conditions. Wetland P was not identified on the NWI map (Figure 2). However, Wetland P was classified by SMI as a Type 1A ephemeral wetland.

Wetland P was dominated by reed canary grass (*Phalaris arundinacea*), lakebank sedge (*Carex lacustris*), and jewelweed (*Impatiens capensis*) in the herbaceous layer. The upper canopy was dominated by green ash (*Fraxinus pennsylvanica*), and box elder (*Acer negundo*). The vegetation found within the wetland boundary was characteristic for this type of wetland. In addition, Wetland P is located in a low topographic position, a secondary wetland hydrology indicator. The data was collected at representative sample locations.

The soil profile within the wetland consisted of 0-12 inches of dark gray (10YR 4/1) silty clay loam with dark brown (10YR 3/3) mottles at approximately 10 percent. While the lower portion of the soil profile consisted of 12-18 inches of very dark gray (10YR 3/1) silty

clay loam with dark grayish brown (10YR 4/2) mottles at approximately 10 percent. These soils did not concur with the local soil survey, which classified the soils in the wetland area as well drained Angus loam (USDA, 2001).

Vegetation in the upland areas was dominated by wood nettle (*Laportea Canadensis*) in the herbaceous layer. The upper canopy was dominated by red oak (*Quercus rubra*), green ash (Fraxinus pennsylvanica), quaking aspen (*Populus tremuloides*), and American basswood (*Tilia americana*). Soil samples were taken from the adjacent upland areas at representative sampling stations. As a result, the soil profile in the adjacent upland area consisted of 0-8 inches of very dark grayish brown (10YR 3/2) silty clay loam, 8-12 inches of grayish brown (10YR 5/2) silty clay loam with black (10YR 2/1) mottles occurring at approximately 20 percent. The lower portion of the soil profile consisted of 12-15 inches of grayish brown (10YR 5/2) clay loam with dark yellowish brown (10YR 4/6) mottles occurring at approximately 10 percent. The soils did not concur with the local soil survey, which is classified as well drained Angus loam (USDA, 2001). Hydrology was not found in the upper 18 inches of the soil profile within the upland areas.

**Wetland Q**

Wetland Q is an ephemeral wetland basin located in the wooded area to the north. The boundary of this wetland was delineated based on site topography and site conditions. Wetland Q was not identified on the NWI map (Figure 2). However, Wetland Q was classified by SMI as a Type 2 wetland with a Type 1A wetland fringe to the south.

Wetland Q was dominated by reed canary grass (*Phalaris arundinacea*), and clearweed (*Pilea pumila*) in the herbaceous layer. The vegetation found within the wetland boundary was characteristic for this type of wetland. In addition, Wetland Q is located in a low topographic position, a secondary wetland hydrology indicator. In addition, exposed roots and swooping at the base of trees indicate significant hydrology within the wetland area. The data was collected at representative sample locations.

The soil profile within the wetland consisted of 0-12 inches of dark gray (10YR 2/1) silty clay loam. 12-15 inches of very dark grayish brown (10YR 3/2) silty clay loam, and 15-18 inches of dark grayish brown (10YR 4/2) clay loam with dark brown (7.5YR 3/4) mottles occurring at approximately 15 percent. These soils did not concur with the local soil survey, which classified the soils in the wetland area as well drained Angus loam (USDA, 2001).

Vegetation in the upland areas was dominated by Virginia creeper (*Parthenocissus quinquefolia*) in the herbaceous layer. The shrub layer was dominated by prickly ash (*Zanthoxylum americanum*) and common buckthorn (*Rhamnus cathartica*). The upper canopy was dominated by, green ash (*Fraxinus pennsylvanica*), red oak (*Quercus rubra*), and American elm (*Ulmus Americana*). Soil samples were taken from the adjacent upland areas at representative sampling stations. As a result, the soil profile in the adjacent upland area consisted of 0-4 inches of very dark grayish brown (10YR 3/2) silty clay loam, 4-12 inches of dark gray (10YR 4/1) clay loam, and 12-24 inches of dark brown (10 YR 3/2) silty clay loam. The soils did not concur with the local soil survey, which is classified as well drained Angus loam soil series (USDA, 2001). Hydrology was not found in the upper 18 inches of the soil profile within the upland areas.

**Wetland R**

Wetland R is an ephemeral wetland basin located in the wooded area to the north. The boundary of this wetland was delineated based on site topography and site conditions. Wetland R was not identified on the NWI map (Figure 2). However, Wetland R was classified by SMI as a Type 1A ephemeral wetland.

Wetland R was dominated by Canada clearweed (*Pilea pumila*) in the herbaceous layer. The upper canopy was dominated by green ash (*Fraxinus pennsylvanica*), and box elder (*Acer negundo*). The vegetation found within the wetland boundary was characteristic for this type of wetland. In addition, Wetland R is located in a low topographic position, a secondary wetland hydrology indicator. The data was collected at representative sample locations.

The soil profile within the wetland consisted of 0-6 inches of very dark grayish brown (10YR 3/2) silt loam and 6-14 inches of very dark gray (10YR 3/1) loam with strong brown (7.5YR 4/6) mottles at approximately 30 percent. The lower portion of the soil profile consisted of dark grayish brown (10YR 4/2) silt loam with strong brown (7.5YR 4/6) mottles at approximately 30 percent. These soils did not concur with the local soil survey, which classified the soils in the wetland area as well drained Angus loam (USDA, 2001).

Vegetation in the upland areas was dominated by wood nettle (*Laportea Canadensis*) in the herbaceous layer. The upper canopy was dominated by green ash (*Fraxinus pennsylvanica*), and box elder (*Acer negundo*). Soil samples were taken from the adjacent upland areas at representative sampling stations. As a result, the soil profile in the adjacent upland area consisted of 0-6 inches of very dark brown (10YR 2/2) loam, 10-14 inches of very dark grayish brown (10YR 3/2)

loam with (7.5Y 4/6) mottles occurring at approximately 30 percent. The soils did not concur with the local soil survey, which is classified as well drained Angus loam (USDA, 2001). Hydrology was not found in the upper 18 inches of the soil profile within the upland areas.

## List of Figures

Site Location Map
National Wetland Inventory Map
Hennepin County Soil Survey Map
Protected Waters Inventory Map
Approximate Wetland Location Map
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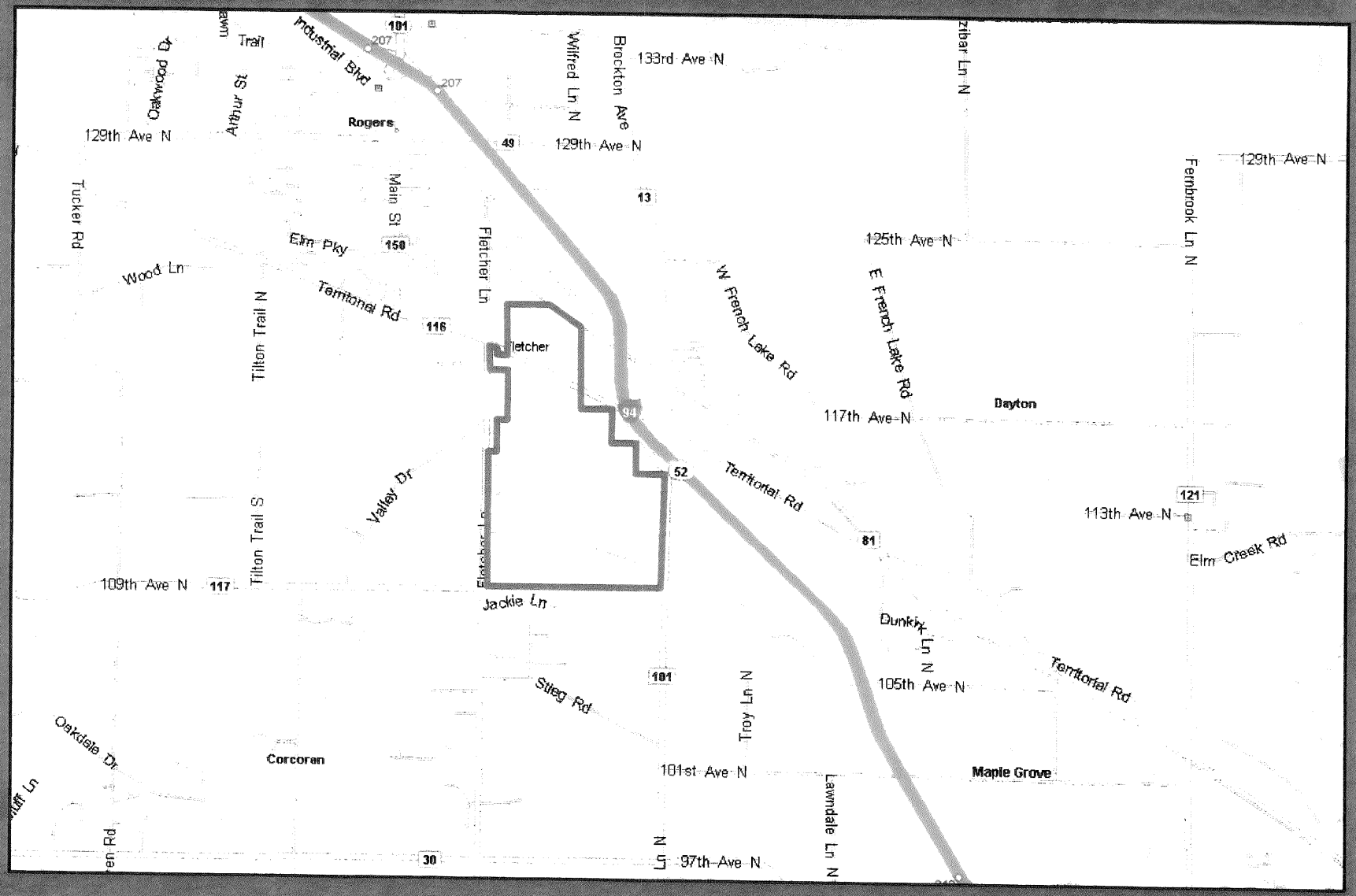



Schoell Madson
Planning Engineering Surveying
15050 23rd Avenue North
Plymouth, Minnesota 55447

# Location Map

Hassan Township/Rogers, MN.
SMI Project Number 80038-001

N
W E
S

Figure 1

Schoell Madson
Planning Engineering Surveying
15050 23rd Avenue North
Plymouth, Minnesota 55447

N
W
E
S

# NWI Exhibit

Hassan Township/Rogers, MN.
SMI Project Number 80038-001

0 350 700 1,400 Feet

Figure 2

Schoell Madson
Planning Engineering Surveying
5050 23rd Avenue North
Plymouth, Minnesota 55447

N
W E
S

# Soils Exhibit

Hassan Township/Rogers, MN.
SMI Project Number 80038-001

0 340 680 1,360 Feet

Figure 3

Schoell Madson
Planning Engineering Surveying
15050 23rd Avenue North
Plymouth, Minnesota 55447

N
W E
S

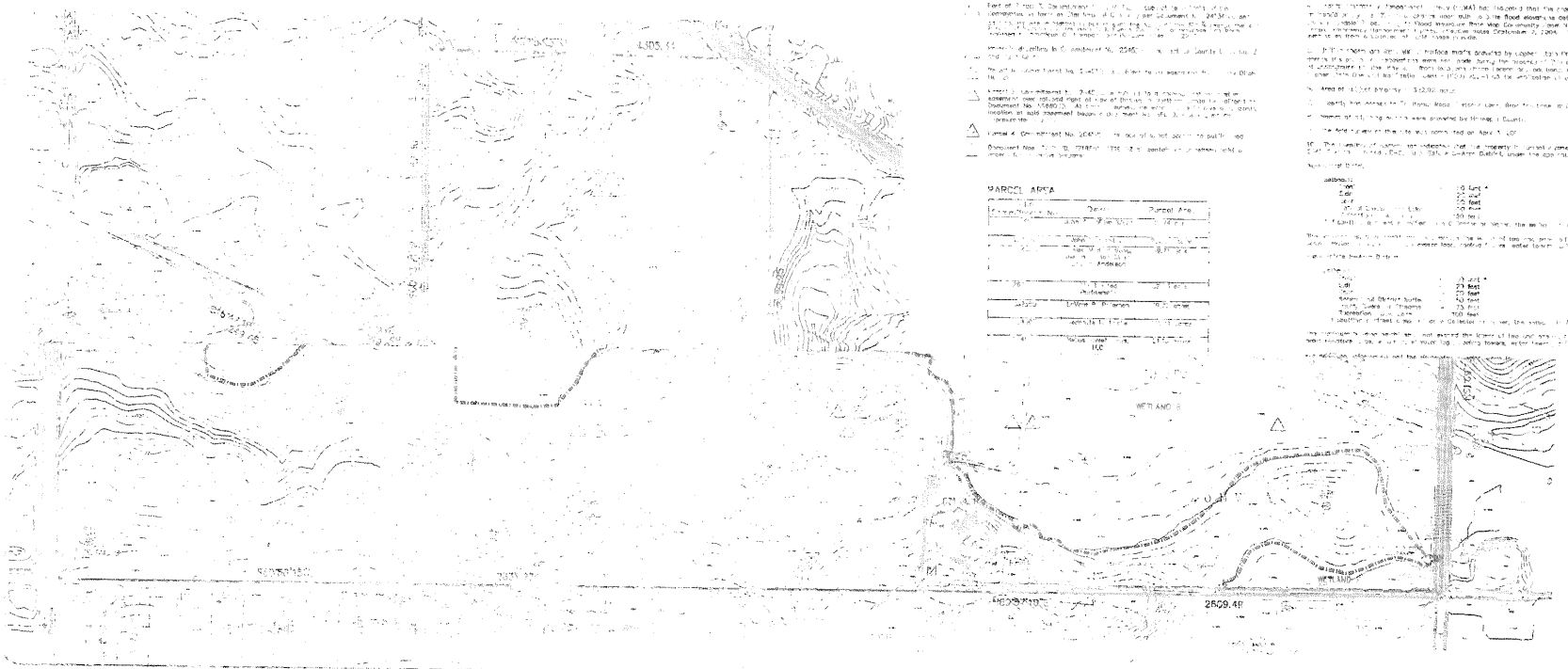
# PWI Exhibit

Hassan Township/Rogers, MN.
SMI Project Number 80038-001

0 350 700 1,400 Feet

Figure 4

# ALTA / ACSM LAND TITLE SURVEY




## SPECIAL NOTES

## GENERAL NOTES

## PARCEL AREA

| Parcel No. | Description | Parcel Area |
|---|---|---|
| [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] |

VICINITY MAP
NOT TO SCALE

Schoell Madson

LOCATION
HASSAN TOWNSHIP
MINNESOTA

CLIENT
THE BEARD GROUP
750 2ND STREET NE
HOPKINS, MN 55343

SHEET
ALTA / ACSM
LAND TITLE SURVEY

S.M.I. PROJECT NO. 80258-001

1981

1982

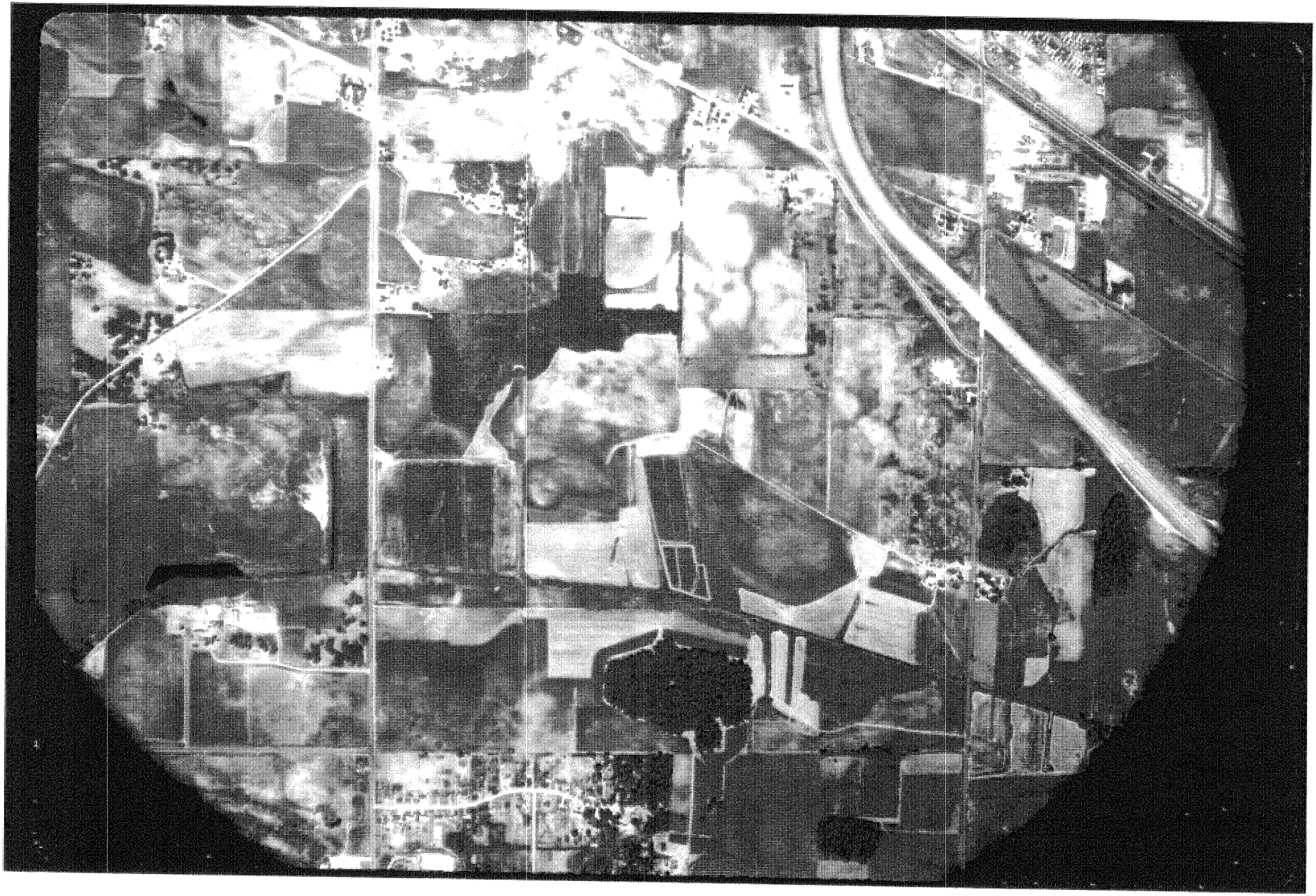
**1983**

1984

1985

1986

1987



1988

1989

1990

1991

1994

1995

**July 10, 2001**

# Appendix A

RODM Datasheets

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

4/5 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stonesthrow - Hassan Twp | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal | Permanent | Tiled |
| Investigation Date: | 6/6/06 | Problem area? | ☐ | ☐ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland A | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Green bulrush (Scirpus atrovirens) | herb | 50 | OBL |
| 2. Sedge (Carex vulpinoidea) | herb | 20 | |
| 3. Prairie Dropseed (Sporobolus heterolepis) | herb | 20 | UPL |
| 4. Slender Rush (Juncus tenuis) | herb | <10 | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. OTHER SPECIES | | | |
| 10. Cattail (Hybrid) (Typha sp.) | herb | <10 | N/A |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = >50 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☑ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

low topographic position

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18" - Soil is moist

## SOILS

Map Unit Name: Minnetonka silty clay loam
Soil Suborder:

Natural Drainage Class: Poorly drained
Whole unit hydric soil? Y ☑ N ☐

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10YR 2/1 | — | — | Clay loam |
| | | | | | |
| — | | ? same | | | |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☑ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☑ | ☐ |
| Hydric soils present? | ☑ | ☐ |

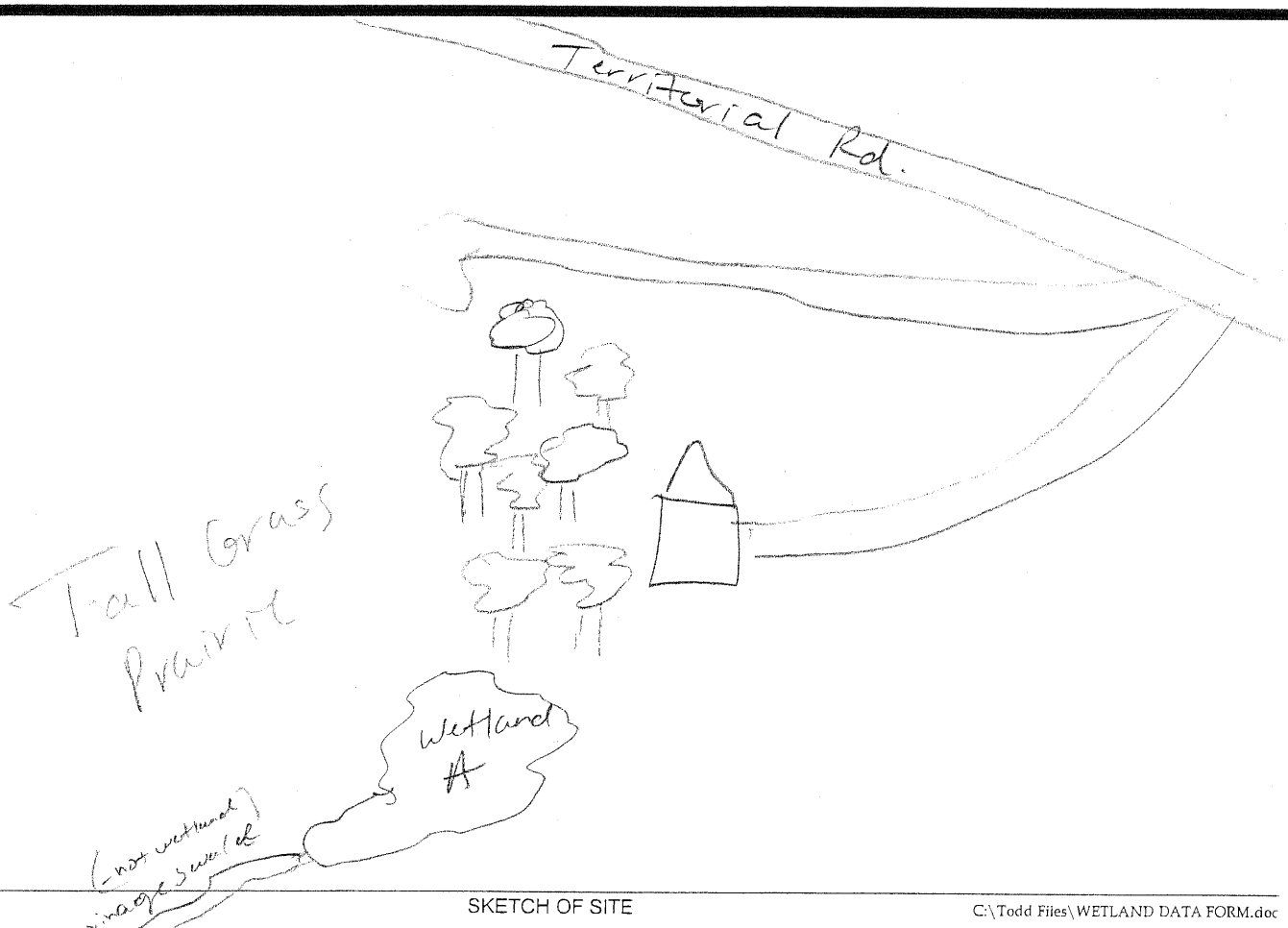
| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☑ | ☐ |

Wetland Circular 39 Basin Type Classification: Type 2

NWI or WWI Basin Type Classification: PEMB

**Remarks**

Wetland Hydrology was found by indicators listed above.




SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw - HASSAN TWP. | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 4/4/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland A | | | Transect No. | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Canada goldenrod (Solidago canadensis) | herb | 25 | N/A |
| 2. Ragweed (Ambrosia artemisiifolia) - common | herb | 20 | N/A |
| 3. Indian grass (Sorghastrum nutans) | herb | 10 | UPL |
| 4. Canada Wild Rye (Elymus canadensis) | herb | 20 | FACU |
| 5. Red Clover (Trifolium pratense) | herb | 25 | FACU- |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. OTHER SPECIES | | | |
| 11. Tall Grass prairie | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = <50 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: Angus - Kilkenny complex
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10YR 2/1 | — | — | Clay loam - 4" ribbon |
| | | | | | |
| | same | | | | |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [ ] | [x] |
| Wetland hydrology present? | [ ] | [ ] |
| Hydric soils present? | [x] | [ ] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [ ] | [x] |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

Drainage swale - South of wetland A - 10YR 3/2 without mottles - silty clay loam (non-wetland) did not meet criteria

N

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

311 Flags (Tota

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw - HASSAN TWP | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled (Floodplain) Ditched |
| Field Investigator: | AJP / T.U. | Site disturbed (Atypical)? | ☑ | ☐ | Seasonal Permanent Tiled |
| Investigation Date: | 5/31; 6/1; 6/5; 4/ | Problem area? | ☐ | ☐ | |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland B | Transect No. | | | |

## VEGETATION

Dominant Plant Species

| | Stratum | % | Indicator |
|---|---|---|---|
| 1. Reed canary grass (Phalaris arundinacea) | herb | 60 | FACW+ |
| 2. Sedge (Carex spp.) | herb | 10 | N/A |
| 3. Curly dock (Rumex crispis) | herb | 20 | FACW |
| 4. Cattails (Typha sp) | herb | <10 | N/A |
| 5. Green bulrush (Scirpus atrovirens) | herb | <10 | OBL |
| 6. Smartweed (Polygonum persylvanicum) | herb | 20 | FACW- |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. OTHER SPECIES | | | |
| 11. Water plantain (Alisma subcordatum) | herb | <10 | OBL |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = >50%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☑ Aerial Photographs
- ☑ Other (Explain in remarks) creek dectan
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

Floodplain

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

Small wetland plants indicate flood conditions - drowned out

**Field Observations**

Depth of Surface Water: pockets - ¼ moist soil at surface
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18" (moist at surface)

## SOILS

Map Unit Name: Houghton muck
Soil Suborder:

Natural Drainage Class: Very poorly drained
Whole unit hydric soil? Y ☑ N ☐

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-16" | A | 10YR 2/1 | — | — | loam |
| 16-18" | A | 2.5YR 3/1 | — | — | sand |
| 0-18" | A | 10YR 2/1 | — | — | loam |
| 0-18" | A | 10YR 2/1 | — | — | peat |
| 0-18" | A | 10YR 2/1 | — | — | peat over silty clay loam |

3 - Not saturated - South side of creek, adjacent to 116)

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [x] | [ ] |

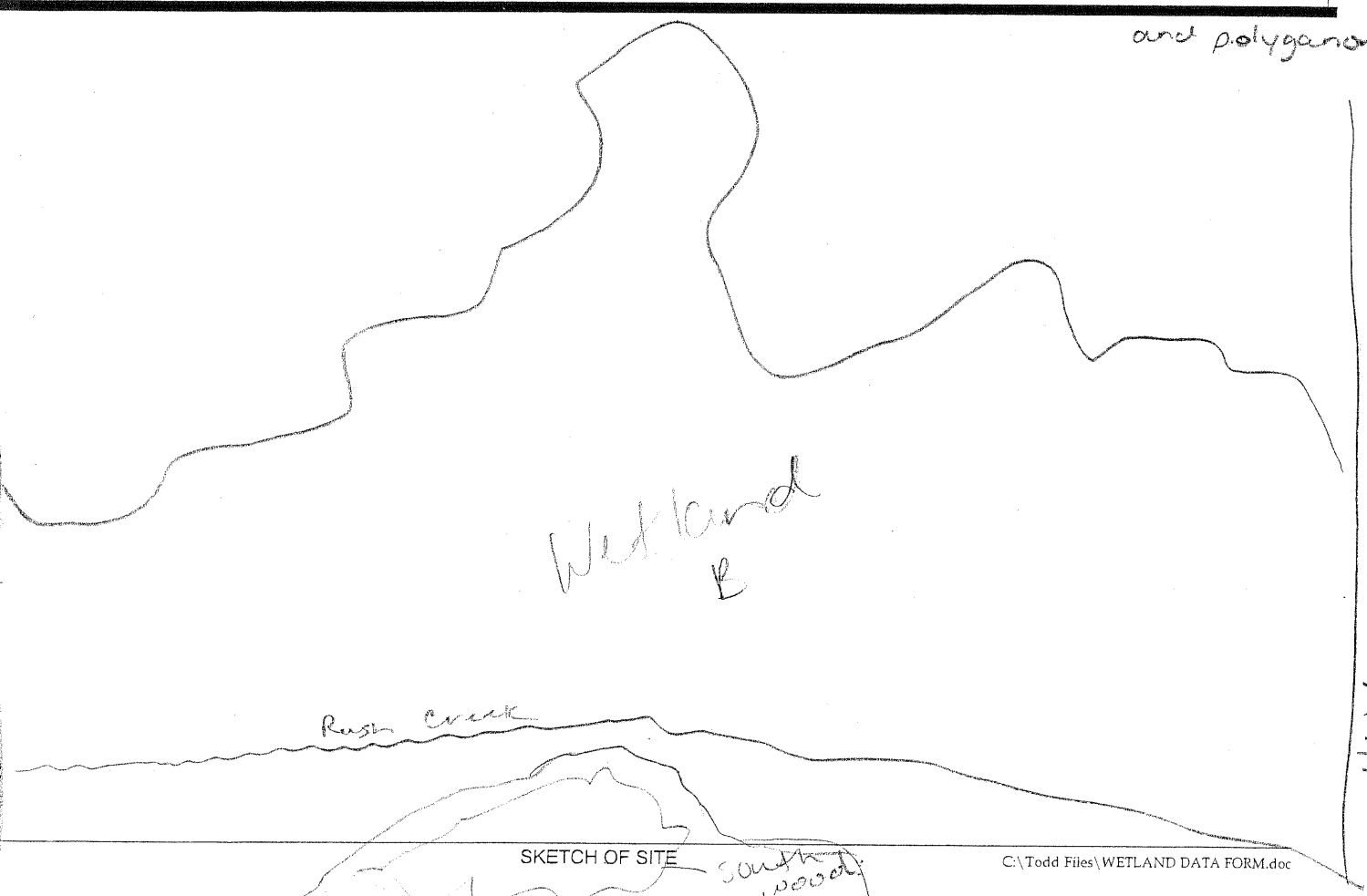
| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [x] | [ ] |

Wetland Circular 39 Basin Type Classification: Type 1, 2, 3 complex

NWI or WWI Basin Type Classification: R4EM

**Remarks**

Part of this site is atypical due to farmed areas. Green Ash was present in the north lobe of Wetland B. Soils were moist and wetland vegetation was noted as follows: species of carex, rumex and polygonum




SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw - HASSAN TWP | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled | Floodplain | Ditched |
| Field Investigator: | AJ.P. / T.U | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal | Permanent | Tiled |
| Investigation Date: | 5/31/06 | Problem area? | ☐ | ☐ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland B | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Red clover (Trifolium pratense) | herb | 10 | FACU- |
| 2. Dandelion (Taraxcum officinale) | herb | 20 | FACU- |
| 3. Reed canary grass (Phalaris arundinacea | herb | 10 | FACW+ |
| 4. Alfalfa (Medicago sativa) | herb | <5 | N/A |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. OTHER SPECIES | | | |
| 11. Remnant maple-basswood forest | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: Nessel loam (south) / Angus-Killkenny (north) → Well drained
Soil Suborder:
Natural Drainage Class: Moderately well drained
Whole unit hydric soil? Y ☐ N ☑
Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10YR 2/1 | — | — | loam |
| | | | | | |
| 0-16" | A | 10YR 2/1 | — | — | loam |
| 16-18 | A2 | 10YR 3/1 | | | silty clay loam |
| | | | | | |

same

same

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☒ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☒ |
| Wetland hydrology present? | ☐ | ☒ |
| Hydric soils present? | ☒ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☒ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

| | | | | | | |
|---|---|---|---|---|---|---|
| (wet) T5 | 0-16" | A | 10 YR 3/1 | — | — | loamy sand |
| | 16-18" | B | 2.5 YR 3/1 | 7.5YR 4/6 | 15% mottled | sandy loam |
| (up) | Same | | | | | |

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

17 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp. | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal | Permanent | Tiled |
| Investigation Date: | 6/2/06 | Problem area? | ☐ | ☐ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland C | Transect No. | | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Cattails (Typha sp.) | herb | 20 | OBL |
| 2. Reed canary grass (Phalaris arundinacea) | herb | <10 | FACW+ |
| 3. Bur reed (Sparganium sp.) | herb | 25 | OBL |
| 4. sedges (Carex spp) | herb | <10 | N/A |
| 5. Green bulrush (Scirpus atrovirens) | herb | 30 | OBL |
| 6. manna grass (Poaceae sp.) | herb | 10 | N/A |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. OTHER SPECIES | | | |
| 12. Sedge (Carex stipata) | herb | <10 | |
| 13. Water plantain | herb | | |
| 14. Soft-stem bulrush (Scirpus validus) | herb | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = >50%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Field Observations**

Depth of Surface Water: See notes
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18" @ soil transect

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

side slopes drain into this point

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☑ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

low topographic position

## SOILS

Map Unit Name: Cordova loam
Soil Suborder:

Natural Drainage Class: Poorly drained
Whole unit hydric soil? Y ☑ N ☐

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10 YR 2/1 | — | — | Clay loam |
| | | | | | |
| 0-8" | A | 10 YR 2/1 | | | |
| 9-18" | A | 10 YR 4/1 | 7.5 YR 3/4 | 30% | Clay loam |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [x] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

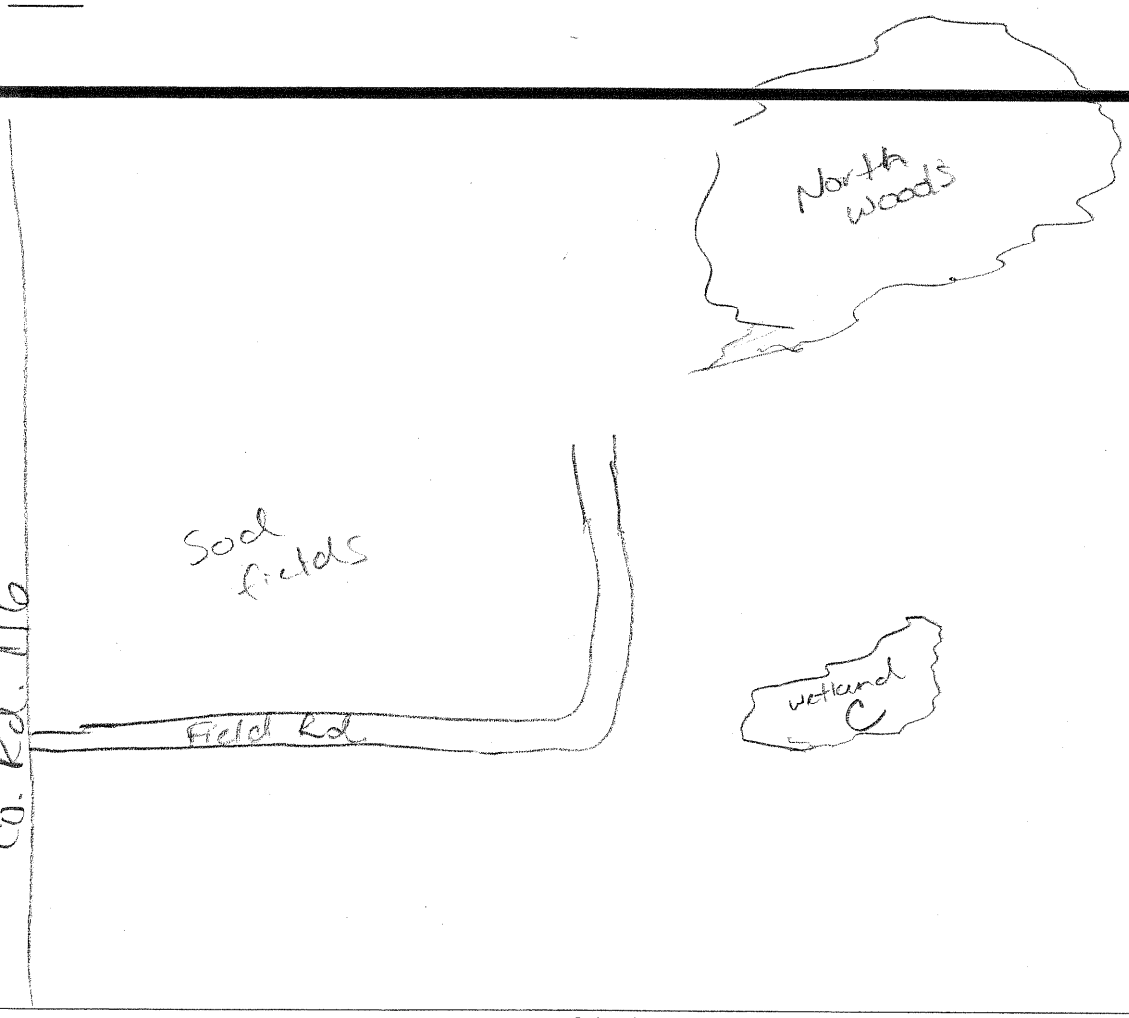
| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [x] | [ ] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [x] | [ ] |

Wetland Circular 39 Basin Type Classification: Type 3

NWI or WWI Basin Type Classification: PEM C

**Remarks** · East half of Wetland is more wet than the West half.




SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp. | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal Permanent Tiled |
| Investigation Date: | 6/2/06 | Problem area? | ☐ | ☑ | cropped |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland C | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Plowed corn field (zea mays) | herb | 100 | N/A |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 0 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: > 18"
Depth to Saturated Soil: > 18"

## SOILS

Map Unit Name: Nissel loam
Soil Suborder:

Natural Drainage Class: Moderately well drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-12" | A | 10YR 2/1 | — | — | clay loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [ ] | [x] |
| Wetland hydrology present? | [ ] | [x] |
| Hydric soils present? | [x] | [ ] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [ ] | [x] |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain (Ditched) |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal Permanent Tiled |
| Investigation Date: | 6/2/06 | Problem area? | ☐ | ☑ | |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland D | | | | Transect No. |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Reed canary grass (Phalaris arundinacea) | herb | 60 | FACW+ |
| 2. Common ragweed (Ambrosia artemisiifolia) | herb | 40 | N/A |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. OTHER SPECIES | | | |
| 10. Curly dock (Rumex crispus) | herb | } | |
| 11. Sedge (Carex sp.) | herb | } 20 | |
| 12. Cattails (Typha latifolia) | herb | } | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 250%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Field Observations**

Depth of Surface Water: 1-2"
Depth to Water in Pit: surface
Depth to Saturated Soil: surface

**Primary Wetland Hydrology Indicators**

- ☑ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

Drainage ditch

## SOILS

Map Unit Name: Cordova loam
Soil Suborder:

Natural Drainage Class: Poorly drained
Whole unit hydric soil? Y ☑ N ☐

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-16" | A | 10YR 2/1 | — | — | Silty loam |
| 16-20" | B | 10YR 4/2 | — | — | Sandy loam |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

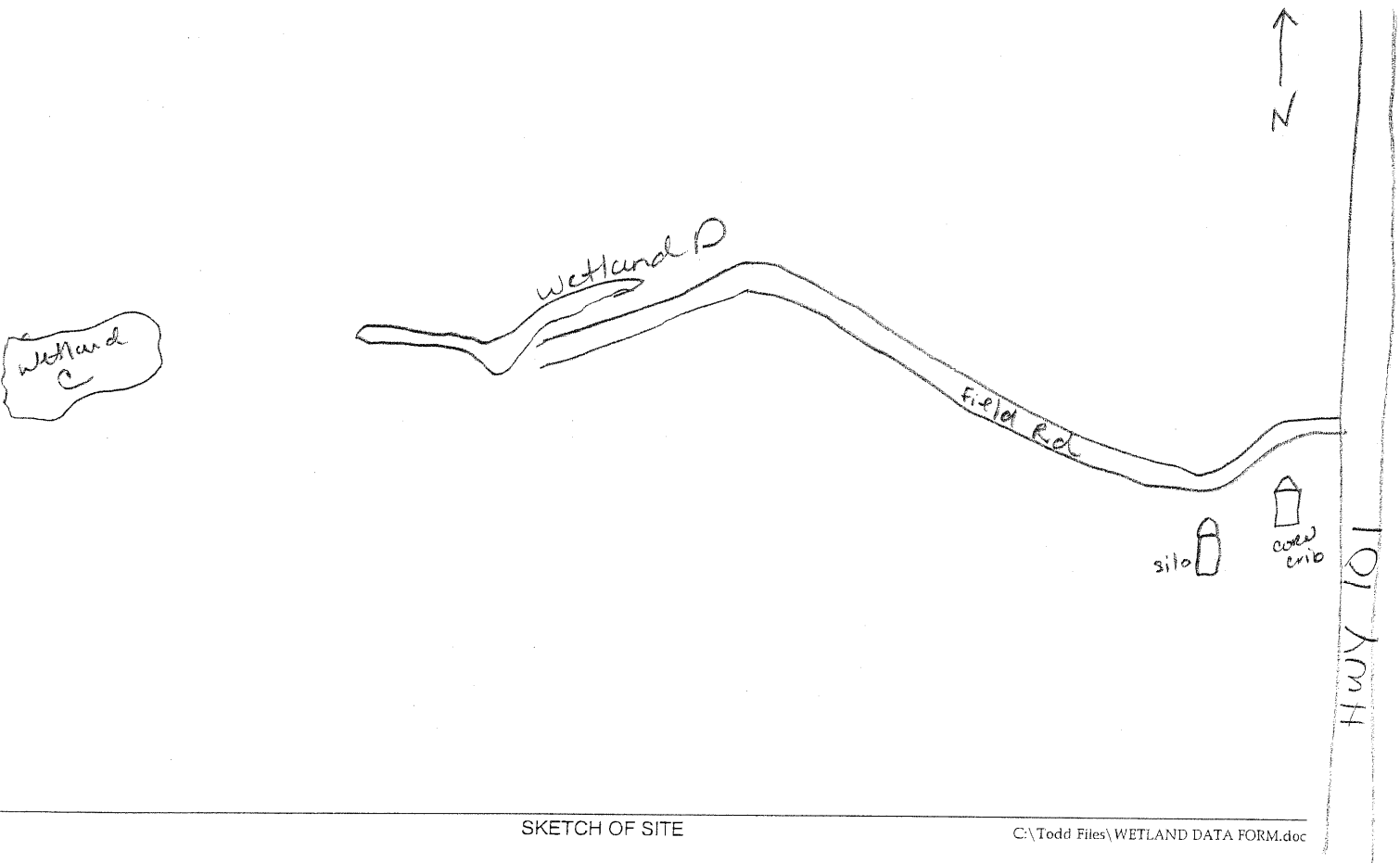
| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [x] | [ ] |

Is this sampling site within a wetland? Yes [x] No [ ]

Wetland Circular 39 Basin Type Classification: Type 3

NWI or WWI Basin Type Classification PEMC

**Remarks**




SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp. | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P./T.C. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 6/2/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland D | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Common ragweed (Ambrosia artemisiifolia) | herb | 60 | N/A |
| 2. Daisy Fleabane (Erigeron strigosus) | herb | 20 | |
| 3. Giant ragweed (Ambrosia trifida) | herb | 20 | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. OTHER SPECIES | | | |
| 10. Plowed corn field adjacent to the above | | | |
| 11. listed species (100%) (Zea mays) | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC ≤50%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: 7/8"
Depth to Saturated Soil: 7/8"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10YR 2/2 | — | — | Silt loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

upland vegetation adjacent to plowed corn fields

SKETCH OF SITE

# DATA FORM
## ROUTINE ONSITE DETERMINATION METHOD

30 Flags

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp. | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | T.U. / A.J.P. | Site disturbed (Atypical)? | ☑ | ☐ | Seasonal Permanent Tiled |
| Investigation Date: | 6/14/06 | Problem area? | ☐ | ☑ | plowed field |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland E | Transect No. | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Rush (Eleocharis sp.) | herb | 40 | N/A |
| 2. Reed canary grass (Phalaris arundinacea) | herb | 50 | FACW |
| 3. Cottonwood (Populus deltoides) | tree | 20 | FAC+ |
| 4. Box Elder (Acer negundo) | tree | 20 | FACW- |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. OTHER SPECIES | | | |
| 10. Curly dock (Rumex crispus) | | | |
| 11. Sedge (Carex sp.) | | 40 | |
| 12. Broad leaved cattail (Typha latifolia) | | | |
| 13. Bulrush (Scirpus sp.) | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = >50%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☑ Inundated
- ☑ Saturated in upper 12" - not in all locations
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: ~3" - (south side of wetland)
Depth to Water in Pit: >18"
Depth to Saturated Soil: moist but not saturated

## SOILS

Map Unit Name: Houghton muck
Soil Suborder:

Natural Drainage Class: Very poorly drained
Whole unit hydric soil? Y ☑ N ☐

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10YR 2/1 | — | — | Loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☑ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☑ | ☐ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☑ | ☐ |

Wetland Circular 39 Basin Type Classification: Type 2

NWI or WWI Basin Type Classification: PEM B

**Remarks**

SKETCH OF SITE

# DATA FORM
## ROUTINE ONSITE DETERMINATION METHOD

30 Flags

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | T.U. / A.J.P | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal Permanent Tiled |
| Investigation Date: | 6/6/06 | Problem area? | ☐ | ☑ | plowed field |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland E | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Plowed corn crops (Zea mays) | herb | 100 | N/A |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 0 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >40"
Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: Lester-Kilkenny Complex
Soil Suborder:
Natural Drainage Class: Well drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-16" | A | 10 YR 2/1 | — | — | plow layer & plowpan |
| 16-40" | B | 10 YR 5/2 | — | — | Sand |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

11 Flags

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw Hassan Twp. | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | T.U. / A.J.P | Site disturbed (Atypical)? | ☑ | ☐ | Seasonal Permanent Tiled |
| Investigation Date: | 6/7/06 | Problem area? | ☐ | ☑ | plowed field |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland F | Transect No. | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Smartweed (Polygonum pensylvanicum) | herb | 80 | FACW- |
| 2. Sedge (Carex sp.) | herb | 20 | N/A |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = >50%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☑ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18"

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

Low topographic position

## SOILS

Map Unit Name: Dundas-Cordova Complex
Soil Suborder:

Natural Drainage Class: Somewhat poorly drained
Whole unit hydric soil? Y ☑ N ☐

Field Observations Confirmed Mapped Type? Y ☐ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10YR 2/1 | — | — | loam |
| | | | | | |
| 0-12" | | → | | | plow layer |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☑ | ☐ |
| Hydric soils present? | ☑ | ☐ |

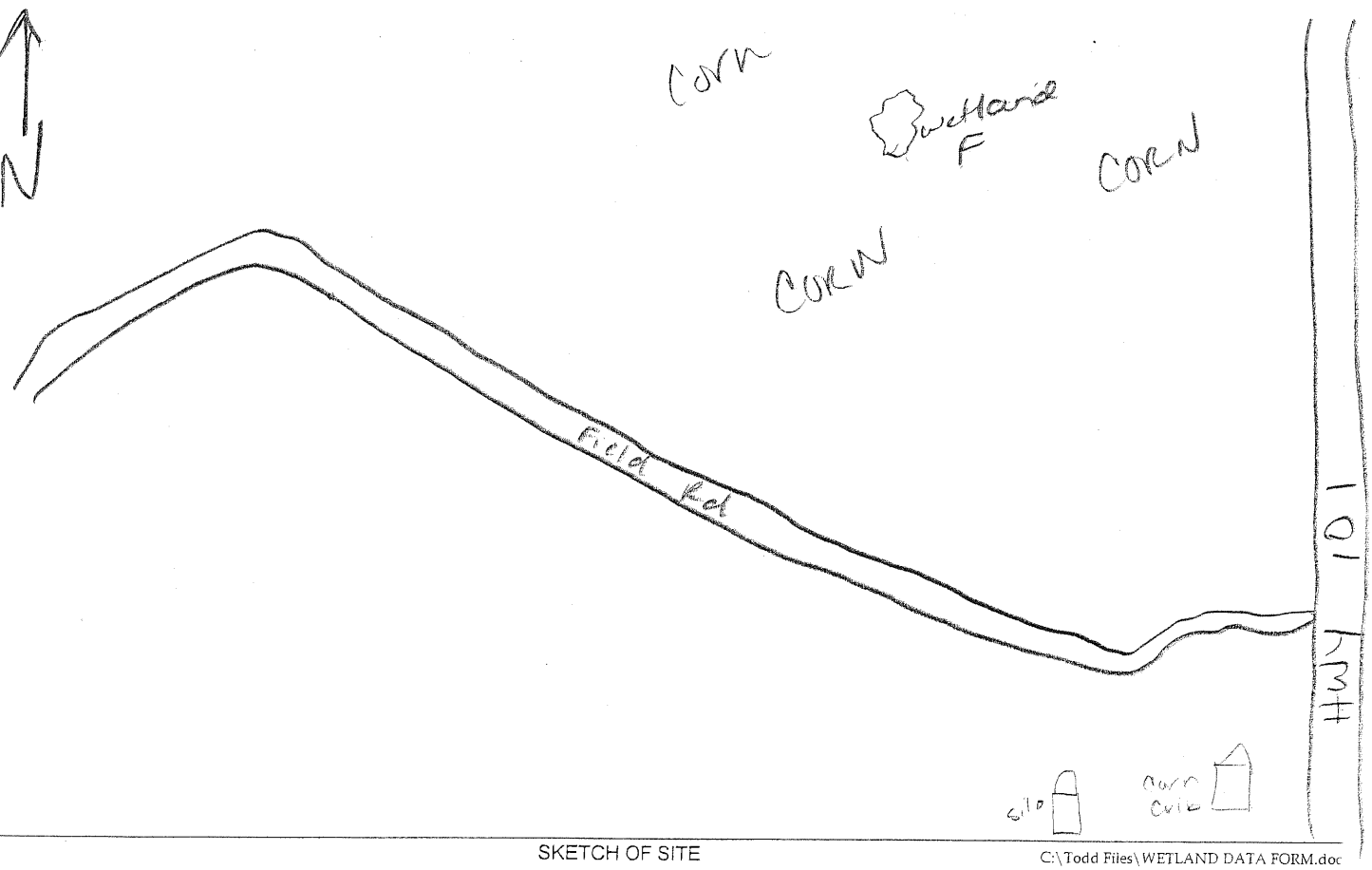
| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☑ | ☐ |

Wetland Circular 39 Basin Type Classification: Type 1

NWI or WWI Basin Type Classification: FEMA

**Remarks**

Wetland hydrology indicated based on factors listed previously and shown in aerial photographs.




SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☑ | ☐ | Seasonal Permanent Tiled |
| Investigation Date: | 6/7/06 | Problem area? | ☐ | ☑ | plowed field |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland F | | | | Transect No. |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Corn - cropped (Zea mays) | herb | 100 | N/A |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 0 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: > 18"
Depth to Saturated Soil: > 18"

## SOILS

Map Unit Name: _____ Natural Drainage Class _____
Soil Suborder: _____ Whole unit hydric soil? Y ☐ N ☐
Field Observations Confirmed Mapped Type? Y ☐ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-12" | A | 10YR 2/2 | — | — | silty clay loam (Plow layer) |
| 12-18 | A | 10YR 2/2 | — | — | silty clay loam |
| | | | | | |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☒ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

10 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / J.U | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal | Permanent | Tiled |
| Investigation Date: | 6/7/06 | Problem area? | ☐ | ☐ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland H | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Narrow-leaved cattail (Typha angustifolia) | herb | 50 | OBL |
| 2. Water plantain (Alisma subcordatum) | herb | 50 | OBL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 100 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☑ Inundated
- ☑ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

Floating algal mats

**Field Observations**

Depth of Surface Water: 1 ft
Depth to Water in Pit: Surface
Depth to Saturated Soil: Surface

## SOILS

Map Unit Name: Pits, gravel - Udipsamments complex
Soil Suborder:

Natural Drainage Class: N/A
Whole unit hydric soil? Y ☐ N ☐ N/A
Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-12" | Fill | 10YR 3/2 ; 10YR 3/4 | | | sand, silt, and clay |
| 13-18" | Fill | 10 YR 4/1 | | | sand, silt, and clay |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [x] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [ ] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

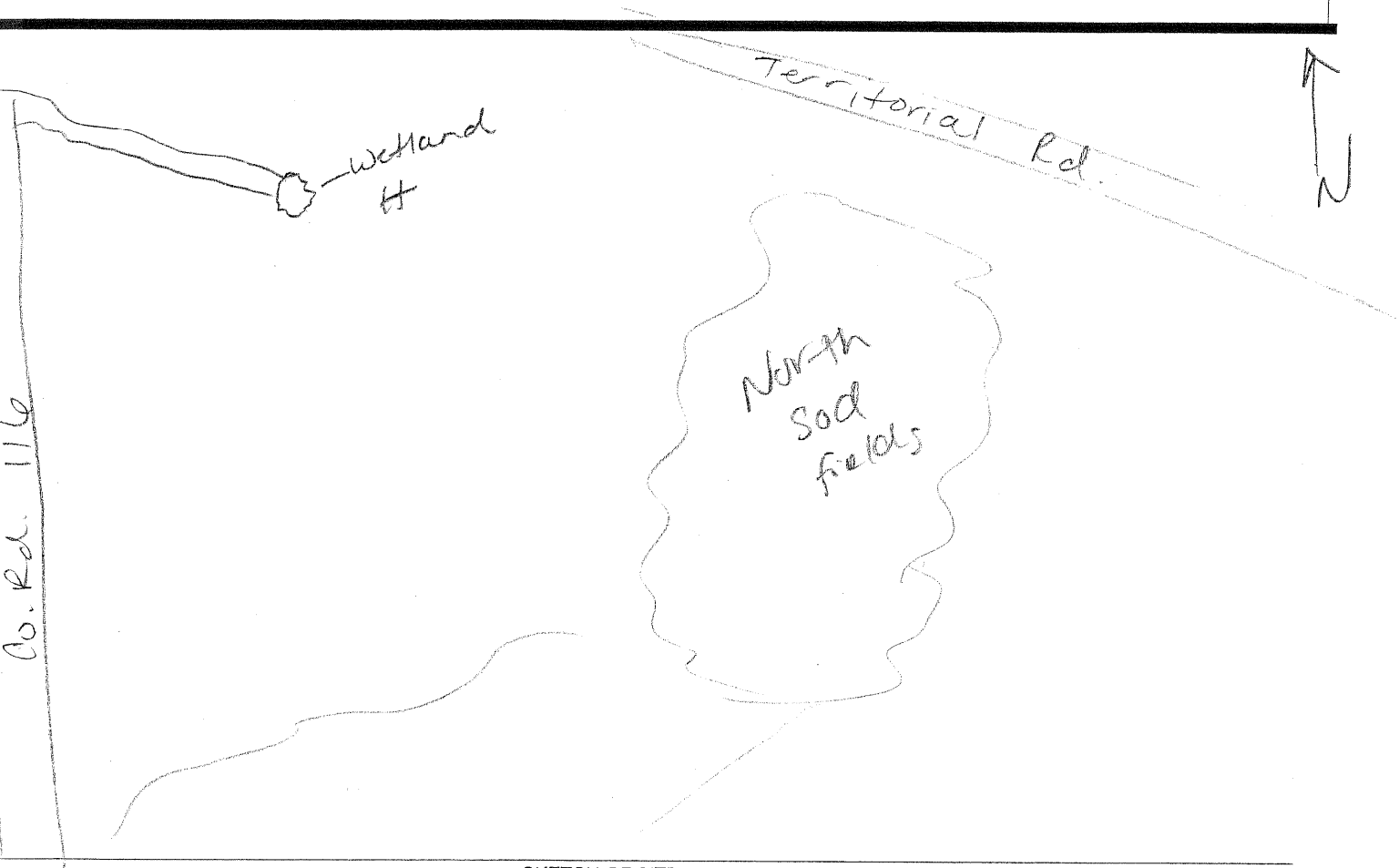
| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [ ] | [x] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [x] | [ ] |

Wetland Circular 39 Basin Type Classification: Type 3

NWI or WWI Basin Type Classification: PEM C

**Remarks**




SKETCH OF SITE

# DATA FORM
## ROUTINE ONSITE DETERMINATION METHOD

10 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw-Hassan Twp. | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled | Floodplain | Ditched |
| Field Investigator: | T.U. / A.J.P | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal | Permanent | Tiled |
| Investigation Date: | 6/7/06 | Problem area? | ☐ | ☐ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland H | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Red Clover (Trifolium pratense) | herb | 33 | FACU- |
| 2. Reed canary grass (Phalaris arundinacea) | herb | 33 | FACW+ |
| 3. Smooth brome (Bromus inermis) | herb | 33 | N/A |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: N/A
Depth to Saturated Soil: N/A

See remarks section

## SOILS

Map Unit Name: Pits, gravel-Udipsamments complex
Soil Suborder:

Natural Drainage Class N/A
Whole unit hydric soil? Y ☐ N ☐ N/A

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-8" | fill | — | — | — | mixed sand, silt, and clay |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

> 8" → unable to dig further - hard pan - (buried debris)

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

10 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw - Hassan Twp | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 6/7/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland I | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Cattails, hybrid (Typha sp.) | herb | 20 | OBL |
| 2. Narrow leaved cattail (Typha angustifolia) | herb | 40 | OBL |
| 3. Reed canary grass (Phalaris arundinacea) | herb | 40 | FACW+ |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 750 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☑ Inundated
- ☑ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

sidehill seep

**Field Observations**

Depth of Surface Water: 3-6"
Depth to Water in Pit: surface
Depth to Saturated Soil: surface

## SOILS

Map Unit Name: Pits, gravel - Udipsamments complex
Soil Suborder:
Natural Drainage Class: N/A
Whole unit hydric soil? Y ☐ N ☐ N/A
Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-4" | Fill | 10YR 3/1 | — | — | Sandy loam |
| 5-12" | Fill | 10YR 5/4 | | | loamy sand |
| 13-18" | Fill | 10YR 4/2 | | | loamy sand |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

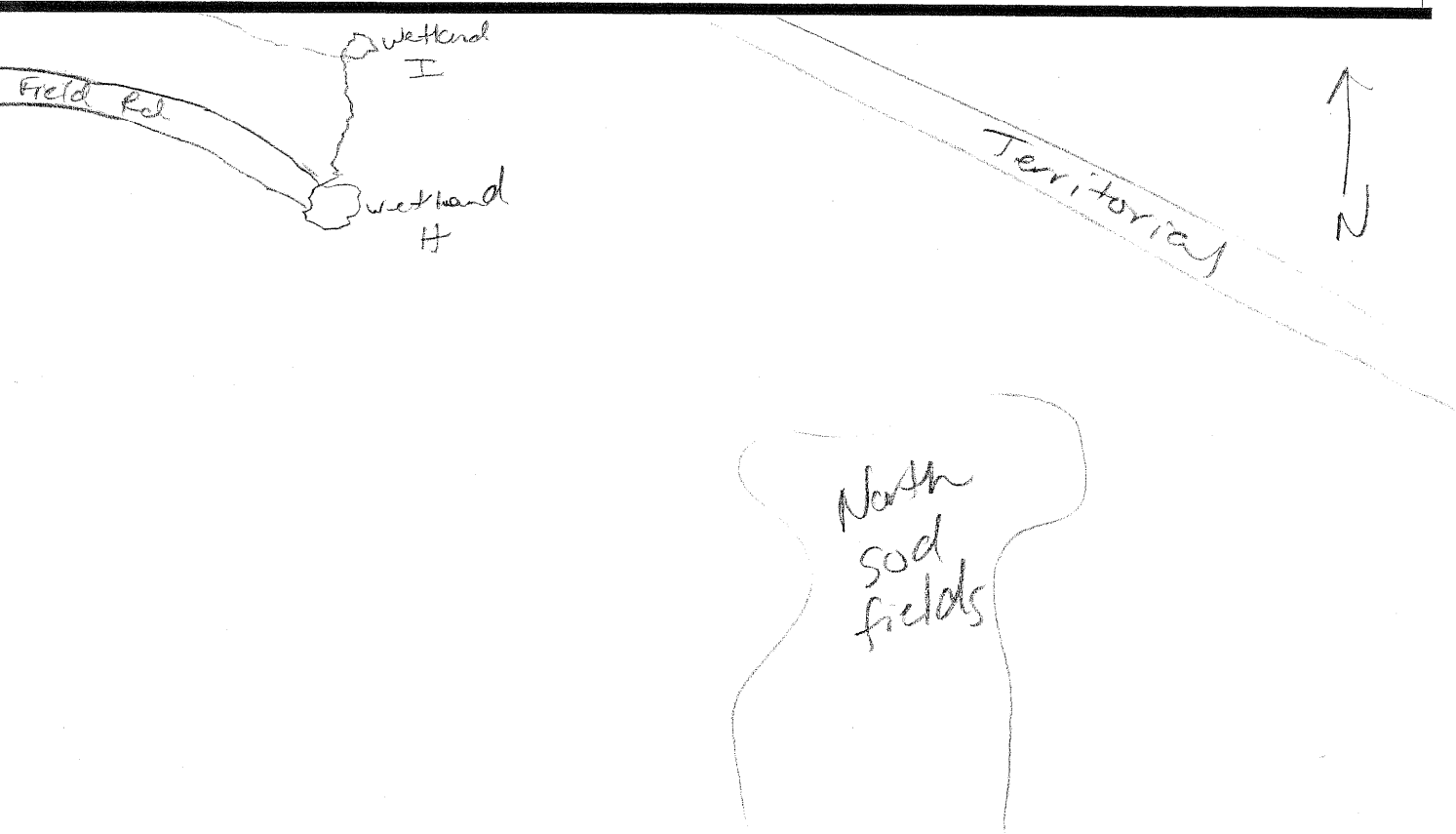
| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☑ | ☐ |

Wetland Circular 39 Basin Type Classification: Type 3

NWI or WWI Basin Type Classification

**Remarks**




SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

Project/Site: STONESTHROW - Hassan Twp.
Applicant/Owner: Beard Group
Field Investigator: AJP / T.U.
Investigation Date: 6/7/06
County: Hennepin
State: MN
Wetland or Upland Sample Point (Circle) and ID No.: Upland I
Transect No.:

| | Yes | No |
|---|---|---|
| Abnormal conditions? | ☐ | ☑ |
| Site disturbed (Atypical)? | ☐ | ☑ |
| Problem area? | ☐ | ☑ |

Is the Area (Circle): Filled Floodplain Ditched Seasonal Permanent Tiled

Hillside seep

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Red Clover (Trifolium pratense) | herb | 33 | FACU- |
| 2. Smooth brome grass (Bromus inermis) | herb | 33 | N/A |
| 3. Kentucky blue grass (Poa pratensis) | herb | 33 | N/A |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: N/A
Depth to Saturated Soil: N/A

## SOILS

Map Unit Name: Pits, gravel - Udipsamments complex
Soil Suborder:
Natural Drainage Class: N/A
Whole unit hydric soil? Y ☐ N ☐ N/A
Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-4" | Fill | 2.5YR 3/2 | — | — | Sand |
| 5-8" | Fill | 7.5YR 5/1 | 2.5YR 3/4 | | mixed sand, silt, clay |
| 9-18" | Fill | 10YR 5/4 | 2.5YR 3/4 | | Sandy loam |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

10 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | STONESTHROW-HASTAN TWP | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 6/7/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland J | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Reed Canary grass (Phalaris arundinacea) | herb | 80 | FACW+ |
| 2. Virginia creeper (Parthenocissus quinquefolia) | herb | 20 | FAC U |
| 3. Black willow (Salix nigra) | tree | 20 | OBL |
| 4. Box elder (Acer negundo) | tree | 20 | FACW- |
| 5. Common buckthorn (Rhamnus cathartica) | tree | 40 | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 100 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☑ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

exposed roots

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: Surface
Depth to Saturated Soil: surface

## SOILS

Map Unit Name: Hamel, overwash-Hamel complex
Soil Suborder:

Natural Drainage Class: Somewhat poorly drained
Whole unit hydric soil? Y ☑ N ☐

Field Observations Confirmed Mapped Type? Y ☐ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10 YR 2/1 | — | — | sandy loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

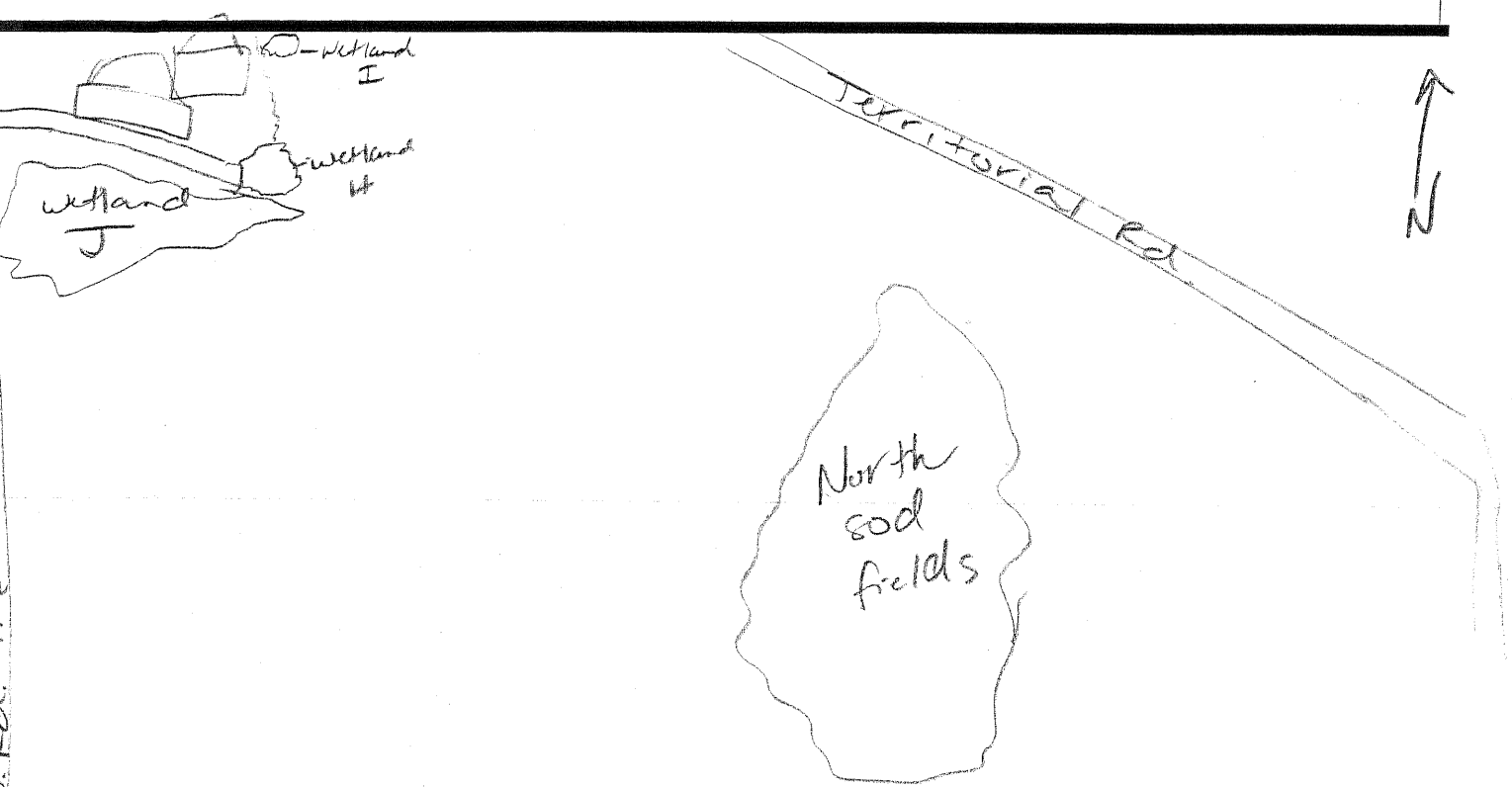
| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [x] | [ ] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [x] | [ ] |

Wetland Circular 39 Basin Type Classification: Type 3/Type 7

NWI or WWI Basin Type Classification: PEM C/PFO

**Remarks**




SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | STONES THROW-HASSAN TWP. | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Applicant/Owner: | Beard Group | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal Permanent Tiled |
| Field Investigator: | A.J.P./T.U. | Problem area? | ☐ | ☑ | |
| Investigation Date: | 6/7/06 | | | | |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland J | | | | Transect No. |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Northern bedstraw (Galium boreale) | herb | 20 | FACU |
| 2. Smooth brome grass (Bromus inermis) | herb | 50 | N/A |
| 3. Bramble sp. | herb | 20 | UPL |
| 4. Virginia creeper | herb | 20 | |
| 5. Reed canary grass (Phalaris arundinacea) | herb | <10 | FACW+ |
| 6. Box elder (Acer negundo) | tree | 70 | FACW |
| 7. Common buckthorn (Rhamnus cathartica) | tree | 30 | FAC |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: Lester-Malardi complex
Soil Suborder:
Natural Drainage Class: Well drained
Whole unit hydric soil? Y ☐ N ☑
Field Observations Confirmed Mapped Type? Y ☑ N ☐ Malardi

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | 10YR 3/2 | — | — | Sandy loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

(01 flags

Project/Site: STONESTHROW - HASSAN TWP

Applicant/Owner: Beard Group

Field Investigator: A.J.P. / T.U

Investigation Date: 6/8/06

County: Hennepin

State: MN

Wetland or Upland Sample Point (Circle) and ID No.: Wetland K

Transect No.:

| | Yes | No |
|---|---|---|
| Abnormal conditions? | ☐ | ☑ |
| Site disturbed (Atypical)? (pumping) | ☑ | ☐ |
| Problem area? | ☐ | ☑ sod fields (south) |

Is the Area (Circle): Filled / Floodplain / Ditched / Seasonal / Permanent / Tiled

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Reed canary grass (Phalaris arundinacea) | herb | 20 | FACW+ |
| 2. Sod farms - kentucky blue grass (Poa pratensis) | herb | 60 | FACU |
| 3. Wood Nettle (Laportea canadensis) | herb | 20 | FAC |
| 4. Box Elder (Acer negundo) | tree | 20 | FACW- |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = >50 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☑ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☑ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

Floodplain

**Field Observations**

Depth of Surface Water: N/A

Depth to Water in Pit: >18"

Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: Houghton muck

Soil Suborder:

Natural Drainage Class: Very poorly drained

Whole unit hydric soil? Y ☑ N ☐

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-18" | A | N 2/0 | — | — | peat - organic |
| | | | | | |
| Same | | | | | |
| 0-18" | A | N 2/0 | | | peat - organic |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [x] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [ ] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [ ] | [x] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [x] | [ ] |

Is this sampling site within a wetland? Yes [x] No [ ]

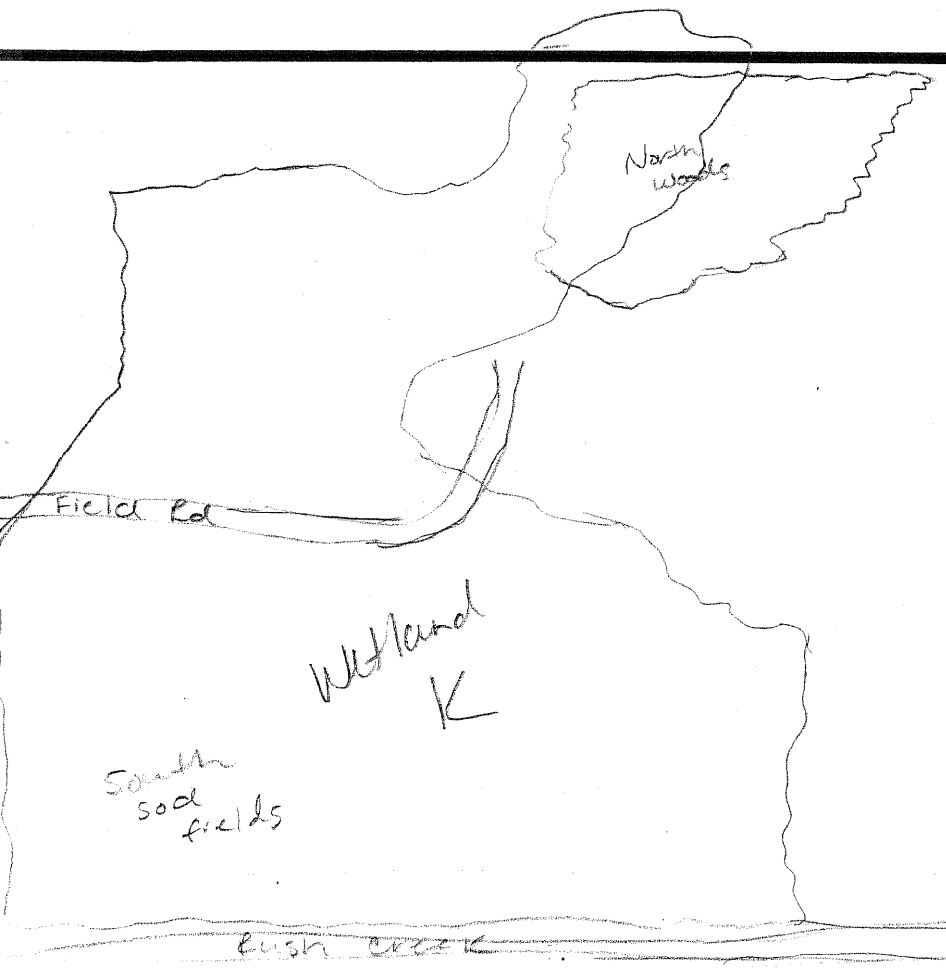
Wetland Circular 39 Basin Type Classification: Type 2 / Type 7

NWI or WWI Basin Type Classification: PEM8 / PFO1A

**Remarks**

Tie in K-23 - to B-165

Location => 116' Field Rd to South sod fields




SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | STONES THROW - HASSAN TWP. | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal | Permanent | Tiled |
| Investigation Date: | 6/8/06 | Problem area? | ☐ | ☐ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland K | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Plowed corn field (Zea mays) | herb | 30 | N/A |
| 2. Mixed deciduous woods | tree | 50 | N/A |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: Angus moon complex
Soil Suborder:

Natural Drainage Class: Well drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☑ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| 0-12" | A | 10 YR 4/2 | — | — | sandy loam |
| 13-18" | A | 10 YR 3/3 | — | — | sandy loam - moisture |

K-34 (Flag #)

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [ ] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [ ] | [x] |
| Wetland hydrology present? | [ ] | [x] |
| Hydric soils present? | [ ] | [x] |

Is this sampling site within a wetland? Yes [ ] No [x]

Wetland Circular 39 Basin Type Classification:

NWI or WWI Basin Type Classification

**Remarks**

Unable to conduct 1st of two transects in upland - no upland in sod fields.

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

11 flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | AJP. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 8/8/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland L | Transect No. | | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. box elder (Acer negundo) | tree | 50 | FACW+ |
| 2. green ash (Fraxinus pennsylvanica) | tree | 30 | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 80 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☒ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑
Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-1 | duff | 10YR 3/1 | — | — | duff layer + loamy |
| 1-7 | A | 10YR 3/1 | — | — | loam |
| 7-18 | A | 10YR 3/1 | 10YR 4/6 | 20% | silty clay loam |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [x] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [x] | [ ] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [x] | [ ] |

Wetland Circular 39 Basin Type Classification: Type 1A

NWI or WWI Basin Type Classification PFO1A

**Remarks**

Exposed roots evident on most trees

Wetland L is located in a low topographic position.

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 8/8/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland L | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. wood nettle (Laportea canadensis) | herb | 100 | FACW |
| 2. box elder (Acer negundo) | shrub | 25 | FACW- |
| 3. green ash (Fraxinus pennsylvanica) | tree | 25 | FACW |
| 4. quaking aspen (Populus tremuloides) | tree | 25 | FAC |
| 5. sugar maple (Acer saccharum) | tree | 25 | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: > 20"
Depth to Saturated Soil: > 20"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-1 | duff | | — | — | duff layer |
| 1-15 | A | 10 YR 3/2 | — | — | silty clay loam |
| 15-20 | B | 10 YR 5/1 | — | — | clay loam |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

8 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 8/8/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland M | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. green ash (Fraxinus pennsylvanica) | tree | 50 | FACW |
| 2. box elder (Acer negundo) | shrub | 30 | FACW- |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = >50%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☒ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >24"
Depth to Saturated Soil: >24"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-12 | A | 10YR 3/1 | — | — | silty clay loam |
| 12-18 | A | 10YR 4/1 | 10YR 4/3 | 15% | silty clay loam |
| | | | | | |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☑ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☑ | ☐ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☑ | ☐ |

Wetland Circular 39 Basin Type Classification: Type 1A

NWI or WWI Basin Type Classification: PEM1A

**Remarks**

Wetland m is located in a low topographic position.

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal Permanent Tiled |
| Investigation Date: | 8/8/06 | Problem area? | ☐ | ☑ | |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland m | | Transect No. | | |

## VEGETATION

Dominant Plant Species

| | Stratum | % | Indicator |
|---|---|---|---|
| 1. Wood nettle (Laportea canadensis) | Herb | 100 | FACW |
| 2. prickly ash (Zanthoxylum americanum) | Shrub | 50 | UPL |
| 3. basswood (Quercus americana) | Sapling | 40 | FACU |
| 4. green ash (Fraxinus pennsylvanica) | Tree | 40 | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >24"
Depth to Saturated Soil: >24"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-4 | A | 10YR 3/2 | — | — | silty clay loam |
| 4-15 | A | 10YR 4/2 | — | — | silty clay loam |
| 5-18 | B | 10YR 6/1 | — | — | silty clay loam |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

7 flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 8/9/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland N | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Green ash (Fraxinus pennsylvanica) | tree | 25 | FACW |
| 2. box elder (Acer negundo) | tree | 25 | FACW- |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 50 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☒ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >24"
Depth to Saturated Soil: >24"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-4 | A | 10YR 3/2 | — | — | silty clay loam |
| 4-12 | B1 | 10YR 4/1 | | | clay loam |
| 12-24 | B2 | 10YR 3/2 | — | — | silty clay loam |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [x] | [ ] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [x] | [ ] |

Wetland Circular 39 Basin Type Classification: Type 1A

NWI or WWI Basin Type Classification: PFO1A

**Remarks**

· Exposed roots & swooping trunks indicative of significant hydrology.

In addition, Wetland N is located in a low topographic position

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal Permanent Tiled |
| Investigation Date: | 8/9/06 | Problem area? | ☐ | ☑ | |
| County | Hennepin | State: ____ | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland N | Transect No. | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. wood nettle (Laportea canadensis) | herb | 100 | FACW |
| 2. basswood (Tilia americana) | tree | 40 | FACU |
| 3. sugar maple (Acer saccharum) | tree | 20 | FACU |
| 4. hackberry (Celtis occidentalis) | tree | 20 | FAC- |
| 5. quaking aspen (Populus tremuloides) | tree | 20 | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >24"
Depth to Saturated Soil: >24"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-4 | A | 10YR 3/2 | — | — | silty clay loam |
| 4-12 | $B_1$ | 10YR 4/1 | — | — | clay loam |
| 12-24 | $B_2$ | 10YR 3/2 | — | — | silty clay loam |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

23 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.A. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 8/9/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland O | | | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. reed canary grass (Phalaris arundinacea) | herb | 90 | FACW+ |
| 2. Green ash (Fraxinus pennsylvanica) | tree | 50 | FACW |
| 3. box elder (Acer negundo) | tree | 40 | FACW- |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 90 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☑ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >24"
Depth to Saturated Soil: >24"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-5 | A | 10YR 3/1 | 5YR 3/3 | 50% | silty loam (buttery) |
| 5-18 | B | 10YR 3/2 | 10YR 2/1 | 30% | clay |
| | | | | | |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☑ Mottled with Chroma ≤ 2
- ☑ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☑ | ☐ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☑ | ☐ |

Wetland Circular 39 Basin Type Classification: Type 2

NWI or WWI Basin Type Classification: PEMB

**Remarks**

- Exposed roots & swooping trunks indicative of significant hydrology.

Wetland D is located in a low topographic position.

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal | Permanent | Tiled |
| Investigation Date: | 8/9/06 | Problem area? | ☐ | ☐ | | | |
| County | Hennepin | State: ____ | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland 0 | Transect No. | | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. wood nettle (Laportea canadensis) | herb | 90 | FACW |
| 2. red oak (Quercus rubra) | tree | 15 | FACU |
| 3. sugar maple (Acer saccharum) | tree | 15 | FACU |
| 4. quaking aspen (Populus tremuloides) | tree | 15 | FAC |
| 5. ironwood (Ostrya virginiana) | tree | 15 | FACU- |
| 6. bitternut hickory (Carya cordiformis) | tree | 10 | FAC |
| 7. basswood (Tilia americana) | tree | 10 | FACU |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >24"
Depth to Saturated Soil: >24"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑
Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-4 | A | 10YR 3/2 | — | — | silty loam |
| 4-12 | B | 10YR 5/2 | — | — | Clay (dried out. no structure) |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

7 Flags

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | A.J.P. / T.M. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal Permanent Tiled |
| Investigation Date: | 8/9/06 | Problem area? | ☐ | ☑ | |
| County | Hennepin | State: ____ | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland P | Transect No. | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. reed canary grass (Phalaris arundinacea) | herb | 20 | FACW+ |
| 2. lakebank sedge (Carex lacustris) | herb | 15 | OBL |
| 3. jewelweed (Impatiens capensis) | herb | 30 | FACW |
| 4. box elder (Acer negundo) | tree | 30 | FACW- |
| 5. green ash (Fraxinus pennsylvanica) | tree | 30 | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 100 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☒ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >19"
Depth to Saturated Soil: >19"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-12 | A | 10YR 4/1 | 10YR 3/3 | 10 | silty clay loam |
| 12-18 | B | 10YR 3/1 | 10YR 4/2 | 10 | silty clay loam |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [x] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [x] | [ ] |
| Hydric soils present? | [x] | [ ] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [x] | [ ] |

Wetland Circular 39 Basin Type Classification: Type 1A

NWI or WWI Basin Type Classification: PFO1A

**Remarks**

Wetland P is located in a low topographic position

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled Floodplain Ditched |
| Field Investigator: | AJP / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal Permanent Tiled |
| Investigation Date: | 8/9/06 | Problem area? | ☐ | ☑ | |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland P | | Transect No. | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Wood nettle (Laportea canadensis) | herb | 90 | FACW |
| 2. red oak (Quercus rubra) | tree | 20 | FACU |
| 3. green ash (Fraxinus pennsylvanica) | tree | 20 | FACW |
| 4. quaking aspen (Populus tremula) | tree | 20 | FAC |
| 5. basswood (Tilia americana) | tree | 20 | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >10"
Depth to Saturated Soil: >10"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-8 | A | 10YR 3/2 | — | — | silty clay loam |
| 8-12 | B | 10YR 5/2 | 10YR 3/1 | 20% | silty clay loam |
| 12-15 | B | 10YR 5/2 | 10YR 4/6 | 10% | clay loam |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

**Remarks**

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

14 Figs

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | AJP | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 8/8/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | wetland C | Transect No. | | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Phalaris arundinacea | Herb | 70 | FACW+ |
| 2. Clearweed (Pilea pumila) | Herb | 20 | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. Lake sedge (Carex lacustris) | Herb | 10 | OBL |
| 10. Stinging nettle (Urtica dioica) | Herb | 15 | FAC+ |
| 11. Fraxinus pensylvanica | Tree | 15 | FACW |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 250 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☒ Multiple Trunks
- ☐ Buttressing
- ☒ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-12 | A | 10YR 2/1 | | | Silty Clay loam |
| 12-15 | B1 | 10YR 3/2 | | | Silty Clay loam |
| 15-18 | B2 | 10YR 4/2 | 7.5YR 3/4 | 15% | Clay loam |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [ ] Mottled with Chroma ≤ 2
- [x] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☑ | ☐ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☑ | ☐ |

Wetland Circular 39 Basin Type Classification: Type 2/1A Fringe

NWI or WWI Basin Type Classification

**Remarks**

wetland Q is located in a low topographic position and is an ephemeral basin. Exposed roots and swooping trees indicate hydrologic occurance.

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): |
|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled Floodplain Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal Permanent Tiled |
| Investigation Date: | 8/8/06 | Problem area? | ☐ | ☐ | |
| County | Hennepin | State: MN | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland Q | Transect No. | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Virginia creeper (Parthenocissus quinquefolia) | herb | 65 | FAC- |
| 2. wild ginger (Asarum canadense) | herb | 15 | — |
| 3. wood nettle (Laportea canadensis) | herb | 15 | FACW |
| 4. prickly ash (Zanthoxylum americanum) | shrub | 30 | — |
| 5. common buckthorn (Rhamnus cathartica) | shrub | 30 | FACU |
| 6. green ash (Fraxinus pennsylvanica) | tree | 50 | FACW |
| 7. red oak (Quercus rubra) | tree | 30 | FACU |
| 8. American elm (Ulmus americana) | tree | 20 | FACW- |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = _____%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >18"
Depth to Saturated Soil: >18"

## SOILS

Map Unit Name: _____ Natural Drainage Class _____
Soil Suborder: _____ Whole unit hydric soil? Y ☐ N ☐

Field Observations Confirmed Mapped Type? Y ☐ N ☐

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-4 | A | 10YR 3/2 | — | — | silty clay loam |
| 4-12 | B1 | 10YR 4/1 | — | — | clay loam |
| 12-24 | B2 | 10YR 3/2 | — | — | silty clay loam |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

### Hydric Soil Indicators

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☐ | ☑ |
| Wetland hydrology present? | ☐ | ☑ |
| Hydric soils present? | ☐ | ☑ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☐ | ☑ |

Wetland Circular 39 Basin Type Classification: _____

NWI or WWI Basin Type Classification _____

### Remarks

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

8 Flags

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☑ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☑ | Seasonal | Permanent | Tiled |
| Investigation Date: | 9/21/06 | Problem area? | ☐ | ☑ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Wetland R | Transect No. | | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Canada Clearweed (Pilea pumila) | herb | 25 | FACW |
| 2. Green ash (Fraxinus pennsylvanica) | tree | 20 | FACW |
| 3. Box elder (Acer negundo) | tree | 20 | FACW- |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 65 %

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☒ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >16"
Depth to Saturated Soil: >16"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑

Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-6 | A | 10YR 3/2 | — | — | Silt loam |
| 6-14 | A | 10YR 3/1 | 7.5YR 4/6 | 30% | loam - very prominent mottles |
| 14-16 | B | 10YR 4/2 | 7.5YR 4/6 | 30% | Silt loam |
| | | | | | |
| | | | | | |

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic/Peraquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleying
- ☐ Chroma ≤ 3 in Entisol
- ☐ Mottled with Chroma ≤ 2
- ☐ Chroma of 1 without Mottles
- ☐ Iron/Manganese Concretions
- ☐ Dark Organic Vertical Streaking in Sandy Soils
- ☐ High Organic Content at Surface Layer in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Spodic Horizon at 12"
- ☐ Aquatic Invertebrate Remains
- ☐ Inclusionary Hydric Soil
- ☐ Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | ☑ | ☐ |
| Wetland hydrology present? | ☑ | ☐ |
| Hydric soils present? | ☑ | ☐ |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | ☑ | ☐ |

Wetland Circular 39 Basin Type Classification: Type 1A

NWI or WWI Basin Type Classification: PFO1A

**Remarks**

- Wetland R is located in a low topographic position.
- Wetland R is largely devoid of vegetation - indicative of standing hydrology.
- Exposed roots on trees and swooping trunks - indicator of wetland hydrology

SKETCH OF SITE

# DATA FORM
# ROUTINE ONSITE DETERMINATION METHOD

| | | | Yes | No | Is the Area (Circle): | | |
|---|---|---|---|---|---|---|---|
| Project/Site: | Stones Throw | | | | | | |
| Applicant/Owner: | Beard Group | Abnormal conditions? | ☐ | ☐ | Filled | Floodplain | Ditched |
| Field Investigator: | A.J.P. / T.U. | Site disturbed (Atypical)? | ☐ | ☐ | Seasonal | Permanent | Tiled |
| Investigation Date: | 9/21/06 | Problem area? | ☐ | ☐ | | | |
| County | Hennepin | State: MN | | | | | |
| Wetland or Upland Sample Point (Circle) and ID No. | Upland 2 | | Transect No. | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | % | Indicator |
|---|---|---|---|
| 1. Wood nettle (Laportea canadensis) | herb | 40 | FACW |
| 2. box elder (Acer negundo) | tree | 20 | FACW- |
| 3. red oak (Quercus rubra) | tree | 40 | FACU |
| 4. green ash (Fraxinus pennsylvanica) | tree | 50 | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

Percent of dominant species that are OBL, FACW and/or FAC = 250%

## HYDROLOGY

- ☐ Stream, Lake or Well Data
- ☐ Precipitation Data
- ☐ Aerial Photographs
- ☐ Other (Explain in remarks)
- ☐ No recorded data used

**Primary Wetland Hydrology Indicators**

- ☐ Inundated
- ☐ Saturated in upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

**Secondary Wetland Hydrology Indicators**
(If no primary indicator, 2 or more required)

- ☐ Oxidized Root Channels in upper 12"
- ☐ Water Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC Neutral Vegetation Test
- ☐ Multiple Trunks
- ☐ Buttressing
- ☐ Other (Explain in remarks)

**Field Observations**

Depth of Surface Water: N/A
Depth to Water in Pit: >14"
Depth to Saturated Soil: >14"

## SOILS

Map Unit Name: Angus loam
Soil Suborder:

Natural Drainage Class: Well-drained
Whole unit hydric soil? Y ☐ N ☑
Field Observations Confirmed Mapped Type? Y ☐ N ☑

**Soil Profile Description**

| Depth (In) | Horizon Name | Matrix Color (Munsell Moist) | Mottle Color (Munsell Moist) | Mottle % | Soil Texture and Comments |
|---|---|---|---|---|---|
| 0-10 | A | 10YR 2/2 | — | — | loam |
| 10-14 | B | 10YR 3/2 | 7.5YR 4/6 | 30 | loam |
| | | | | | |
| | | | | | |
| | | | | | |

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

**Hydric Soil Indicators**

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic/Peraquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleying
- [ ] Chroma ≤ 3 in Entisol
- [x] Mottled with Chroma ≤ 2
- [ ] Chroma of 1 without Mottles
- [ ] Iron/Manganese Concretions
- [ ] Dark Organic Vertical Streaking in Sandy Soils
- [ ] High Organic Content at Surface Layer in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Spodic Horizon at 12"
- [ ] Aquatic Invertebrate Remains
- [ ] Inclusionary Hydric Soil
- [ ] Other (Explain in remarks)

## WETLAND DETERMINATION

| | Yes | No |
|---|---|---|
| Hydrophytic vegetation present? | [x] | [ ] |
| Wetland hydrology present? | [ ] | [x] |
| Hydric soils present? | [x] | [ ] |

| | Yes | No |
|---|---|---|
| Is this sampling site within a wetland? | [ ] | [x] |

Wetland Circular 39 Basin Type Classification: _____

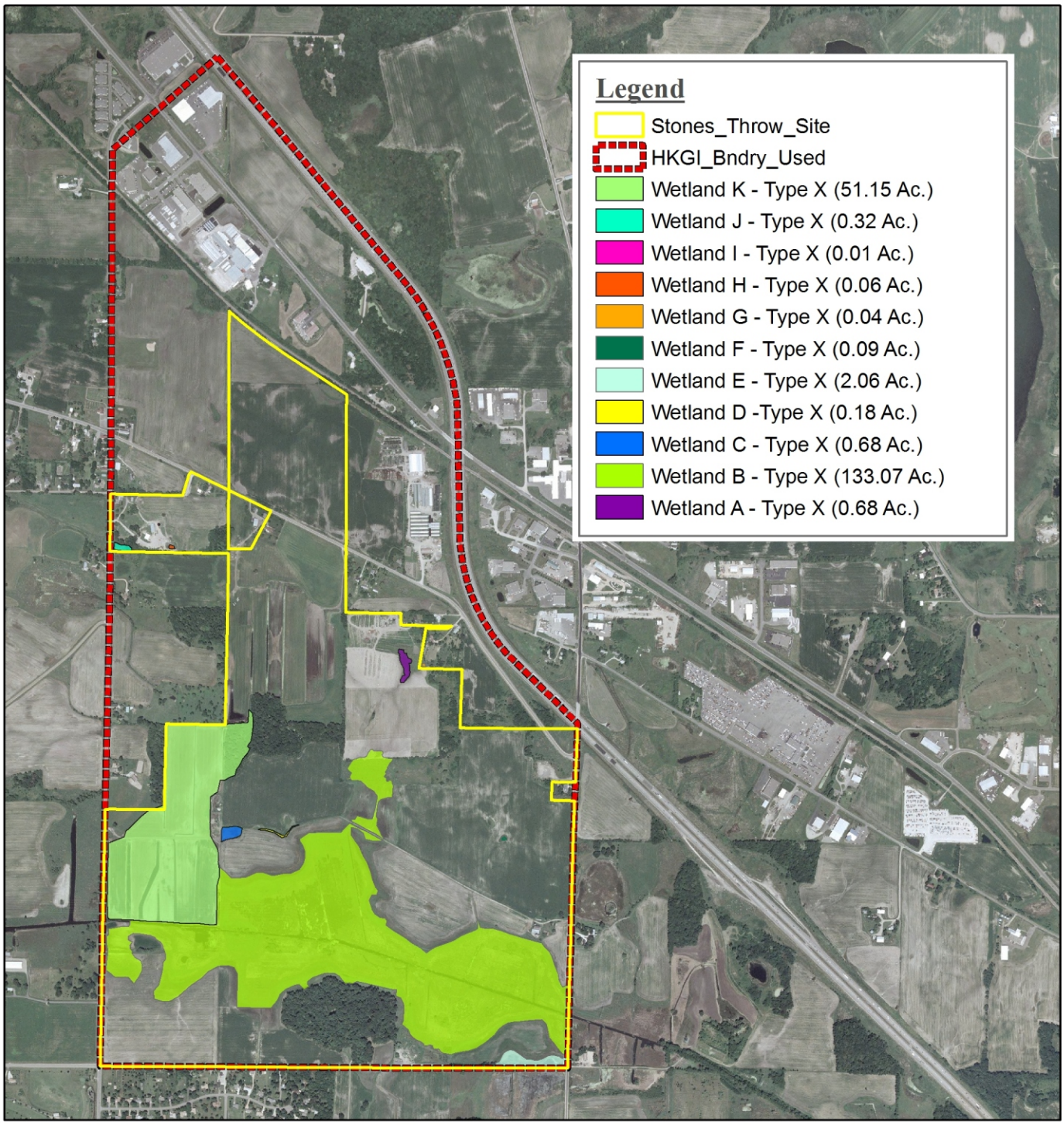
NWI or WWI Basin Type Classification _____

**Remarks**

SKETCH OF SITE

# Wetland Delineation Exhibit

(Appendix F)




*Approximately 188 acres within the Stones Throw site were identified as wetland. No delineation was completed for the 413 acres within the remainder of the study area.*

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