## Minnesota Wetland Conservation Act | Item 7E. | BCWMC 6-16-16 **Notice of Application**

City of Plymouth	Address 3400 Plymouth Blvd. Plymouth, MN 55447				
Applicant Name Gary and Rita Brummer	PROJECT INFOR Project Name Plymouth Common		Date of Application 5/24/16	Application Number NA	
Type of Application (check all that a	pply):				
	No-Loss	☐ Exe	mption		
Replacemen	nt Plan	Bank	ing Plan		
acre PEM1B, Type 2, Fresh (wet) m is a 0.16 acre PEM1C, Type 3, Shal constructed stormwater mangement	low Marsh dominated	by narrow lea	of cattail. Wetla	nd 3 may be a	
2. APPLIC	CATION REVIEW	AND DEC	ISION		
Signing and mailing of this complete Subp. 3 provides notice that an applicate pecified above. A copy of the applications is a subplication of the	cation was made to the	LGU under	the Wetland Con	with 8420.025 nservation Act	
Name and Title of LGU Contact Per Derek Asche Water Resources Manager	bu		at be received b comment period):	•	
Address (if different than LGU) City of Plymouth 3400 Plymouth Blvd. Plymouth, MN 55447	Ju 9a	ate, time, and une 21, 2016 um ymouth City	location of deci	sion:	
Phone Number and E-mail Address 763-509-5526 dasche@plymouthmn.gov	De	ecision-make Staff	r for this applica Board or Counci		
Signature: Dul and	_		Date:5/2	s/16	

BWSR Forms 7-1-10

#### 3. LIST OF ADDRESSEES

	SWCD TEP member: Ms. Stacey Lijewski, HCD, 701 Fourth Avenue South, Suite 700, Minneapolis, MN, 55415-
	00 (sent electronically)
	BWSR TEP member: Ben Meyer, BWSR, 520 Lafayette Road North, St. Paul, MN, 55401-1397 (sent electronically)
	LGU TEP member (if different than LGU Contact):
	DNR Regional Office (if different than DNR TEP member)
	Kate Drewry, Area Hydrologist, MN DNR, 1200 Warner Road, St. Paul, MN, 55106 (sent electronically)
$  \times  $	WD or WMO (if applicable):
	BCWMC, c/o Laura Jester, Keystone Waters LLC, 16145 Hillcrest Lane, Eden Prairie, MN, 553467 (sent
	etronically)
$\bowtie$	Applicant (notice only) and Landowner (if different):
_	Gary and Rita Brummer, 99 36th Street SW, Montrose, MN, 55363
$\bowtie$	Members of the public who requested notice (notice only):
	Matthew Summers, Wenck Associates (sent electronically)
	Corps of Engineers Project Manager (notice only): Melissa Jenny, Army Corps of Engineers, 180 5th Street East,
Sui	te 700, St. Paul, MN, 55101-1678 (sent electronically)
Ш	BWSR Wetland Bank Coordinator (wetland bank plan applications only)
_	

#### 4. MAILING INFORMATION

For a list of BWSR TEP representatives: www.bwsr.state.mn.us/contact/WCA areas.pdf

For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR TEP contacts.pdf

Department of Natural Resources Regional Offices:

NW Region:	NE Region:	Central Region:	Southern Region:
Reg. Env. Assess. Ecol.	Reg. Env. Assess. Ecol.	Reg. Env. Assess.	Reg. Env. Assess. Ecol.
Div. Ecol. Resources	Div. Ecol. Resources	Ecol.	Div. Ecol. Resources
2115 Birchmont Beach Rd. NE	1201 E. Hwy. 2	Div. Ecol. Resources	261 Hwy. 15 South
Bemidji, MN 56601	Grand Rapids, MN	1200 Warner Road	New Ulm, MN 56073
	55744	St. Paul, MN 55106	

For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr regions.pdf

For a list of Corps of Project Managers: <a href="www.mvp.usace.army.mil/regulatory/default.asp?pageid=687">www.mvp.usace.army.mil/regulatory/default.asp?pageid=687</a> or send to:

> US Army Corps of Engineers St. Paul District, ATTN: OP-R 180 Fifth St. East, Suite 700 St. Paul, MN 55101-1678

For Wetland Bank Plan applications, also send a copy of the application to:

Minnesota Board of Water and Soil Resources Wetland Bank Coordinator 520 Lafayette Road North

St. Paul, MN 55155

#### **5. ATTACHMENTS**

In addition to the application, list any other attachments:	
Wetland Delineation Report for Plymouth Commons dated May 2016 by Wenck Assoc.	

BWSR Forms 7-1-10 Page 2 of 2

Project Name and/or Number: TCO Design

## **PART ONE: Applicant Information**

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Gary and Rita Brummer

Mailing Address: 3301 Highway 169

Plymouth, MN 55441

Phone: 612-669-1800

E-mail Address: plymouthcommons@hotmail.com

Authorized Contact (do not complete if same as above):

Mailing Address:

Phone:

E-mail Address:

Agent Name: Matthew Summers, Wenck Associates, Inc.

Mailing Address: 1802 Wooddale Drive

Woodbury, MN 55125

Phone: 651-395-5206

E-mail Address: msummers@wenck.com

#### **PART TWO: Site Location Information**

County: Hennepin

City/Township: Plymouth

Parcel ID and/or Address: 3301 US 169, PID: 2411822140003

Legal Description (Section, Township, Range):

Lat/Long (decimal degrees):

Attach a map showing the location of the site in relation to local streets, roads, highways. SEE DELINEATION REPORT Approximate size of site (acres) or if a linear project, length (feet): 16 acres

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform 4345 2012oct.pdf

## **PART THREE: General Project/Site Information**

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted *prior to* this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

Project Name and/or Number: TCO Design

## PART FOUR: Aquatic Resource Impact<sup>1</sup> Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	Aquatic Resource Type (wetland, lake, tributary etc.)	drain, or remove	Impact	Size of Impact <sup>2</sup>	Overall Size of Aquatic Resource <sup>3</sup>	Existing Plant Community Type(s) in Impact Area	County, Major Watershed #, and Bank Service Area # of Impact Area <sup>5</sup>

If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

## **PART FIVE: Applicant Signature**

		ation consultation with the Corps and LGU bormal application review if this box is checke	·
	below, I attest that the information i undertake the work described herein	in this application is complete and accurate n.	. I further attest that I possess the
Signature:	-U-	5-17-16 Date:	

I hereby authorize **WENCK ASSOCIATES, INC** to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

<sup>&</sup>lt;sup>2</sup>Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).

<sup>&</sup>lt;sup>3</sup>This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".

<sup>&</sup>lt;sup>4</sup>Use Wetland Plants and Plant Community Types of Minnesota and Wisconsin 3<sup>rd</sup> Ed. as modified in MN Rules 8420.0405 Subp. 2.

<sup>&</sup>lt;sup>5</sup>Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

<sup>&</sup>lt;sup>1</sup> The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.

Project Name and/or Number:

## **Attachment A** Request for Delineation Review, Wetland Type Determination, or **Jurisdictional Determination**

(Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):
Wetland Type Confirmation
Delineation Concurrence. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).
Preliminary Jurisdictional Determination. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.
Approved Jurisdictional Determination. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.
In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the <i>Guidelines for Submitting Wetland Delineations in Minnesota</i> (2013). <a href="http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx">http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx</a>

Technical Evaluation Panel Concurrence:	Project Name and/or Number:
TEP member:	Representing:
Concur with road authority's determination of qualification for	or the local road wetland replacement program?  Yes No
Signature:	Date:
TEP member:	Representing:
Concur with road authority's determination of qualification for	or the local road wetland replacement program? Tyes No
Signature:	Date:
	36)
TEP member:	Representing:
Concur with road authority's determination of qualification fo	or the local road wetland replacement program?  Yes  No
Signature:	Date:
TEP member:	Representing:
Concur with road authority's determination of qualification fo	r the local road wetland replacement program? Yes No
Signature:	Date:
Upon approval and signature by the TEP, application must be	sent to: Wetland Bank Administration Minnesota Board of Water & Soil Resources 520 Lafayette Road North Saint Paul, MN 55155

# Wetland Delineation Report Plymouth Commons



Prepared for: TCO Design on Behalf of Gary and Rita Brummer

TCO Design: 9330 Thomas Avenue N Brooklyn Park, MN 55444



Responsive partner. Exceptional outcomes.

Prepared by:

WENCK Associates, Inc.

1802 Wooddale Drive Woodbury, MN 55125-2937 Phone: 651-294-4580

Fax: 651-228-1969

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## 1.0 Introduction

Wenck Associates, Inc. (Wenck) staff conducted a wetland delineation within the subject property on April 19, 2016.

Wetlands are defined in the Federal Register (1982) as "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."

An area must have 3 elements present in order to be delineated as a wetland:

- 1) Greater than 50% dominance of hydrophytic plant species.
- 2) A hydric soil substrate.
- 3) Wetland hydrology during the growing season.



## 2.0 Site Description

The project area is a 16 acre multifamily housing development located at 3301 U.S. Highway 169, in Plymouth, Minnesota (Figures 1-5). The site has a significant of impervious cover from residential units, internal roads and paved parking lots. Delineated wetlands extend west and south of the site boundaries.



This wetland investigation was conducted by using the on-site methodology set forth in the 1987 U.S. Army Corps of Engineers (COE) Wetlands Delineation Manual (1987 Manual) and the 2010 U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Regional Supplement). Potential wetland areas were examined according to guidelines set forth in these documents and wetland boundaries were determined through analysis of the vegetation, soils, and hydrology.

Plant species at both wetland and upland transect points were identified and assigned a wetland indicator status according to the 2014 National Wetland Plant List, U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory (Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. *The National Wetland Plant List*: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.). In the text of this report and on the enclosed data forms, the plant indicator status follows the plant's scientific or common name unless a status has not been assigned. According to the 1987 Manual and Regional Supplement, the hydrophytic plant criteria are met when more than 50% of the dominant species within the vegetative strata were assigned an obligate (OBL), facultative wet (FACW), or facultative (FAC) wetland status.

The presence of current wetland hydrology was determined through direct observation of the primary or secondary wetland hydrology indicators as defined in the 1987 Manual and Regional Supplement. The presence of a single primary indicator is sufficient to conclude that wetland hydrology is present. The direct observation of two or more secondary wetland hydrology indicators is required to conclude that wetland hydrology is present.

Hydric soils were determined through use of the *Field Indicators of Hydric Soils in the United States* (Untied States Department of Agriculture, Natural Resources Conservation Service. 2010. *Field Indicators of Hydric Soils in the United States*, Version 7.0 G.W. Hurt and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils). Soils were examined and classified by digging soil pits at sample point transects using a bucket auger. If the soils exhibited indicators of hydric soils as defined by USDA Soil Conservation Service (1994)-a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part-they were determined to be hydric.

Data sheets were completed for each transect sample point and are included as Appendix A. Photographs were taken at several locations, and are included in the body of Section 4. Photo locations are shown on Figure 5. Delineated wetland boundaries were flagged in the field and recorded using a hand-held GPS unit with sub-meter accuracy. The GPS data were then post-processed using the CORS network to further enhance accuracy. The post-processed data were then used to create the wetland boundary geodatabase files in ArcMap as presented in the report figures.

Wetlands are classified in the Results section by their Eggers and Reed, Circular 39, and Cowardin classification systems based on observed field conditions.



#### 4.1 OFF SITE ANALYSIS

The Minnesota Public Waters Inventory does not list any protected waters within the project area (Figure 2).

The 2013 Revised National Wetlands Inventory maps were used to identify areas classified as wetlands that would require further on-site investigation (Figure 3). Two NWI wetlands are mapped in the western edge of the project area, a Type 3 (Circular 39), Shallow Marsh (Eggers and Reed), PEMC (Cowardin) wetland, and a Type 6 (Circular 39), Shrub-Carr (Eggers and Reed), PSS1C (Cowardin) wetland.

The USDA NRCS Soil Survey was used to determine the location and prevalence of hydric soil (Figure 4). Approximately 1.7 acres of the project area are mapped as Houghton and Muskego soils, classified as 91-100% hydric. An additional 4 acres are mapped as Hamel, overwash-Hamel complex, classified as containing between 11-50% hydric soil.

LIDAR data maps (2' contours) were used to identify areas with low elevation or depressional topography likely to retain and/or pond water (Figure 5).

#### 4.2 ON SITE INVESTIGATION

The boundaries of three wetlands were identified within the project area (Figure 5). See Appendix A for field data forms.

#### 4.2.1 Wetland 1

Wetland 1 is an approximately 0.51 acre depressional marsh and drainageway that has been partially filled by historic human activity. It is classified for this report as:

- ▲ PEM1C (Cowardin)
- ▲ Type 3 (Circular 39)
- ▲ Shallow Marsh (Eggers and Reed)

Soils at the wetland transect point featured dark grey (10YR 3/1) mucky loam over dark grey (10YR 3/1) loam. Common redoximorphic concentrations began at eight inches. Organic soils would be expected within the wetland interior. Disturbed upland soils featured approximately three feet of fill over an original organic surface horizon.

The wetland vegetation community at the sample point was dominated by reed canary grass (*Phalaris arundinacea*, FACW) and duck weed (*Lemna minor*, OBL). Narrow-leaf cattail (*Typha angustifolia*, OBL) and sedges (*Carex sp.*) dominated the basin in general. Herbaceous vegetation at the upland point was minimal. The forest canopy throughout the wetland and upland locations was dominated by green ash (*Fraxinus pennsylvanica*, FACW) and box elder (*Acer negundo*, FAC).

Indicators of wetland hydrology observed included saturated soils and a high water table.



The wetland boundary was delineated based on changes in topography (fill areas) and probing the soil to evaluate hydrology. In some areas near the sidewalk, the wetland boundary was based on the edge of pavement.



Wetland 1: Looking SW from Photo Point 1 along boundary (see Figure 5 for photo point locations)

#### 4.2.2 Wetland 2

Wetland 2 is an approximately 0.30 acre basin that extends west from the project area. The wetland is classified for this report as:

- ▲ PEM1B (Cowardin)
- ▲ Type 2 (Circular 39)
- ▲ Fresh (wet) Meadow (degraded subtype) (Eggers and Reed)

Soils at the wetland and upland transect points were similar, featuring black (10YR 2/1) to dark grey (10YR 3/1) clay loam over depleted (2.5Y 5/1) clay. Both the wetland and upland soils met hydric indicators. Free water was present at 15 inches in the wetland soil boring, whereas the upland boring was dry to at least 40" (depth of auger).

The wetland vegetation community was dominated by reed canary grass (*Phalaris arundinacea*, FACW) and lake sedge (*Carex lacustris*, OBL). No tree or shrubs were present. Upland vegetation was dominated by reed canary grass and common burdock (*Arctium minus*, FACU).

Observed wetland hydrology included saturation, dry-season water table, and geomorphic position.

The wetland boundary was delineated based on elevation, a subtle break in sub-dominant vegetation (sedge to burdock), and probing the soil to evaluate hydrology.



May 2016 4-2

Wetland 2: Looking W/SW from Photo Point 2 (see Figure 5 for photo point locations)



#### 4.2.3 Wetland 3

Wetland 2 is an approximately 0.16 acre stormwater basin. The wetland is classified for this report as:

- ▲ PEM1C (Cowardin)
- ▲ Type 3 (Circular 39)
- ▲ Shallow Marsh (Eggers and Reed)

Soils at the wetland and upland transect points were have been disturbed by human activity. Soils at the wetland transect point featured 19 inches of clay loam and clay fill over muck. Compacted clay near the bottom of the fill (15") has created a perched water table; the buried organic soils were very dry while the fill above were saturated and supported standing water. The fill has experienced sufficient prolonged saturation that a hydric soil profile has developed above the buried original soils. Upland soils featured 20+ inches of fill.

The wetland vegetation community was dominated by narrow leaf cattail. Upland vegetation consisted of closely mowed lawn, individual species were not identifiable.

Observed wetland hydrology included saturation and standing water.

The wetland boundary was delineated based on elevation, edge of pavement, and probing the soil to evaluate hydrology.



Wetland 3: Looking W along boundary from Photo Point 1 (see Figure 5 for photo point locations)

#### 5.0 Conclusion

The on-site boundaries of three wetlands were identified and delineated per the scope of this report. Activities which impact or potentially impact wetlands may be regulated by the USACE (under Section 404 of the Clean Water Act), Minnesota DNR and by the Local Government Unit administering the Wetland Conservation Act. No grading or filling in wetland basins or other jurisdictional waters should commence until all necessary permits have been obtained or a finding of no jurisdiction has been obtained from applicable regulatory agencies. This wetland delineation meets the standards and criteria described in the 1987 Manual and Regional Supplement and the results represent the conditions present at the time of the field investigation.

Sincerely,

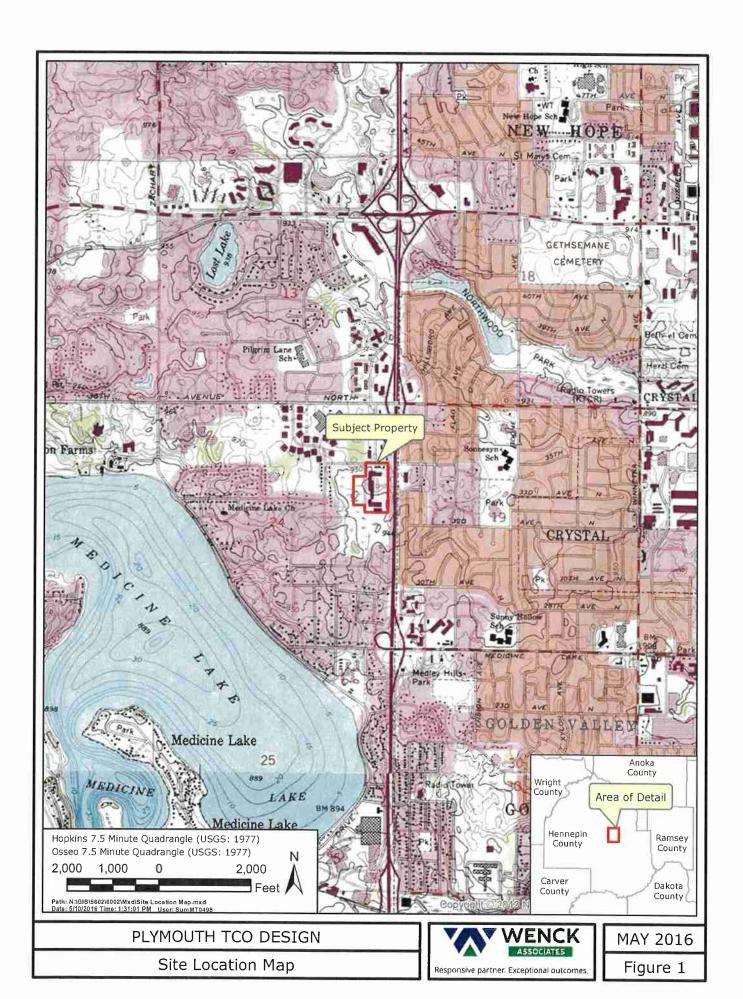
Matt Summers

Wenck Associates, Inc.

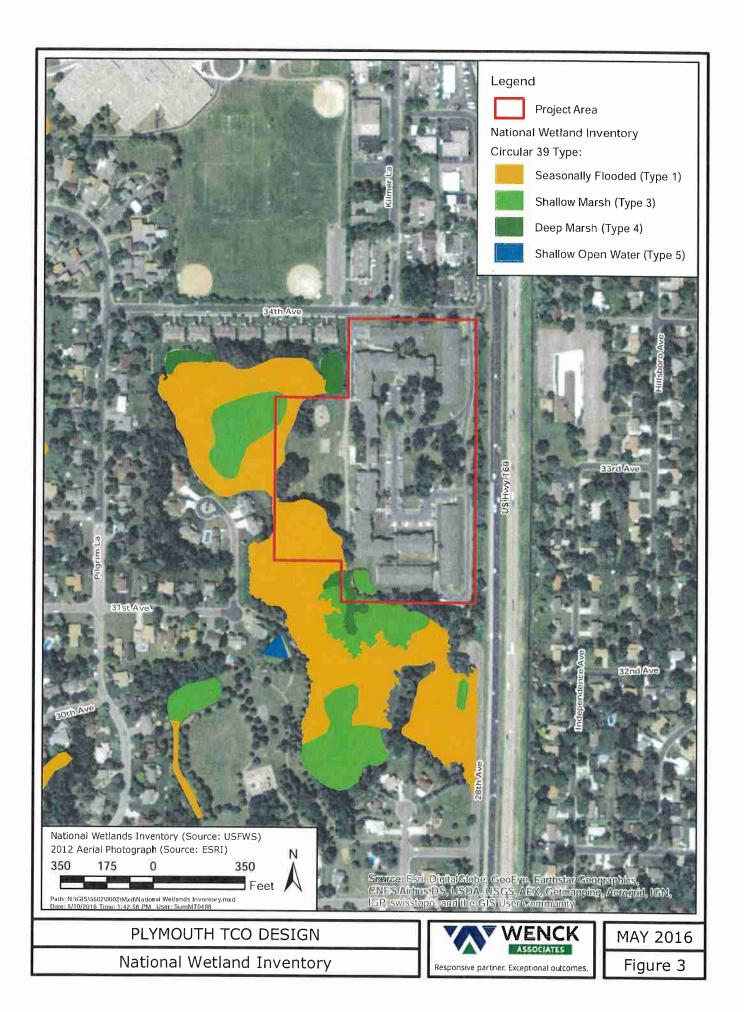
May 18 2016

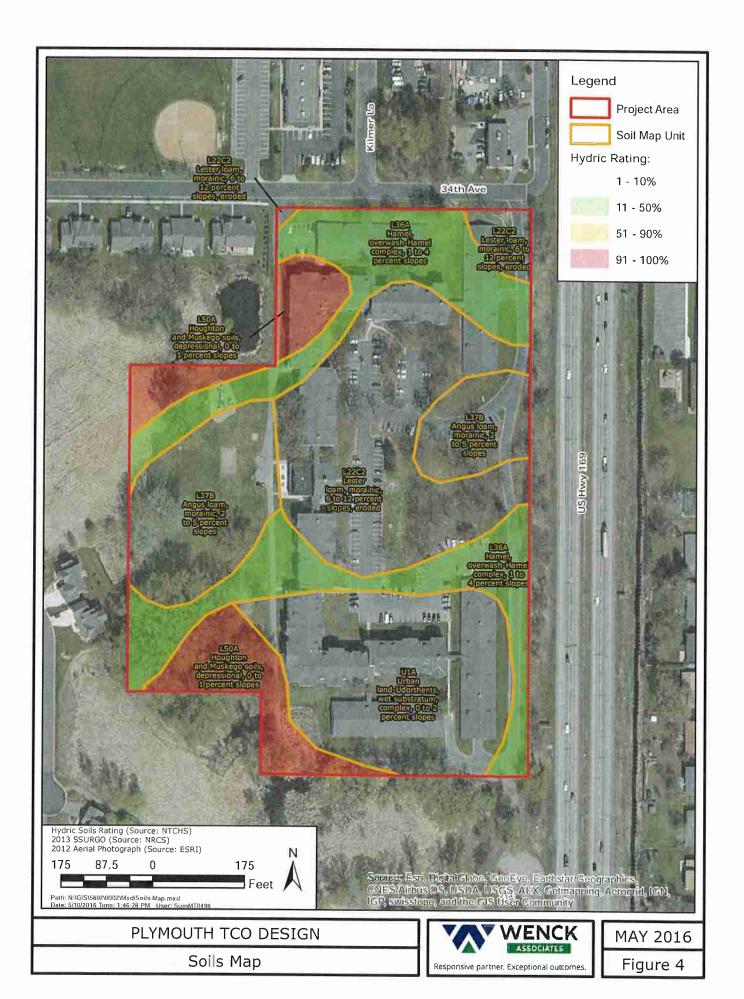
Date

- 1. Site Location Map
- 2. Minnesota Public Waters Inventory Map
- 3. National Wetland Inventory Map
- 4. Soil Survey Map
- 5. Delineated Wetland Map











Delineated Wetlands Map



Figure 5

Field Data Forms

Applicant/Owner: TCO Design				4/19/2016
	State:	MN	Sampling Point:	W1-wet1
nvestigator(s): Matthew Summers, Wenck Asspociates, in	sect	ion, Township,	Range: S24 T	118 R22
Landform (hillslope, terrace, etc.): toeslope				oncave
Slope (%): <2 Lat: -93.40328	Long:	45.01595	Datum:	NAD83
Soil Map Unit Name L50A Houghton and Muskego,		NWI Cla	assification: PFO	1A, Type 1
			site typical for this time of	
	cantly disturbed?		al circumstances" present?	
	ally problematic?		explain any answers in re	
SUMMARY OF FINDINGS	any problematio.	(ii needed	explain any answers in re-	marks.)
Hydrophytic vegetation present?	Is the	sampled area v	vithin a wetland? Y	
Hydric soil present?		regulated?:	- I	
Indicators of wetland hydrology present?	4.4	-	Type III, Shallow Marsh (fr	ingo)
Remarks: (Explain alternative procedures here or in a separ		и туре.	Type III, Strailow Marsh (II	inge)
ternants. (Explain alternative procedures here of in a separ	ate report.)			
VEGETATION Use scientific names of plants.				
	olute Dominant		Dominance Test Worksho	eet
	over Species		Number of Dominant Species	_
	0 Y		hat are OBL, FACW, or FAC	
3		_FACW_	Total Number of Dominan Species Across all Strata	
4	<del>- , - ,</del>			(2)
5			Percent of Dominant Species hat are OBL, FACW, or FAC	
9	0 = Total Cove			- 100.0070 (FVB)
Sapling/Shrub stratum (Plot size: 15 ft )			Prevalence Index Worksh	ieet
1			Total % Cover of:	
2			OBL species 20 x 1	= 20
3			FACW species 90 x 2	180
4			FAC species 70 x 3	
5			FACU species0 x 4	
	= Total Cove		JPL species 0 x 5	
Herb stratum (Plot size: 5 ft )  1 Phalaris arundinacea 5	n v		Column totals 180 (A)	1 - 1
2 Lemna minor		OBL	Prevalence Index = B/A =	2.28
3 Fraxinus pennsylvanica 2			Hydrophytic Vegetation In	adioatoro
4		-17000	Rapid Test for Hydroph	
5			X Dominance test is >509	
6			X Prevalence index is ≤3.	
7		-	Morphogical adaptation	
8			supporting data in Rem	
9			separate sheet)	₹.
10			Problematic hydrophyti	c vegetation*
99	0 = Total Cove	r	(explain)	
Woody vine stratum (Plot size: 30 ft )			*Indicators of hydric soil and we	tland hydrology must be
1			present, unless disturbe	
			Hydrophytic	
0	= Total Cove	r	vegetation present? Y	
			hieselli.	



SOIL										Sar	mpling Point:	W1-wet1
Soil Ser	ies:							Series [	Drainage	Class:		
	ny (Subgrou											
Profile I	Description:	(Descr	ibe to th	e depth	needed	to docu	ment th	e indicat	or or co	nfirm the abs	ence of indica	tors.)
Depth			Matrix				Mottles					
(Inches)	Horizon	Color	(moist)	%	Color	(moist)	%	Type*	Loc**	Texture		Remarks
0-8		10YR	3/1			Ì		1.7/2-		mucky loan	1	Temans
8-21		10YR	3/1	85	7.5YR	5/6	10	C	PL/M	loam		
					10YR	5/2	5	D	PL/M			
	C = Concent		= Deple	tion, RM	= Reduc	ced Matr	ix, MS =	Masked	Sand Gra	ains. **Lo	cation: PL = Po	re Lining, M = Mat
Histi Blac Hydi Stra 2 cm Depi Thic Sand		(A4) A5) Park Surface (A12) eral (S1) or Peat (	S3)	Check he	San Strij Loa Loa Dep Red Red	dy Redoo oped Mat my Muck my Gleye eleted Ma lox Dark deted Da lox Depre	trix (S6)  xy Minera ed Matrix ttrix (F3) Surface ( rk Surface essions (F	I (F1) (F2) F6) e (F7)		Coast Prairie F Dark Surface ( Iron-Manganes Other (explain dicators of hydroph present	se Masses (F12 in remarks)	RR K, L, R) ) (LRR K,L,R) weltand hydrology must
	OLOGY Hydrology	Indicato	re.									
Primary Surfi High Satu Wate Sedi Drift Alga Iron Ispar	Indicators (mace Water (A) Water Table ration (A3) er Marks (B1) ment Deposits (B3) I Mat or Crust Deposits (B5) dation Visible sely Vegetate er-Stained Lea	s (B2) (B4) on Aeria	of one is I Imagery ve Surfac	, (B7)		Aquatic True Aquatic Hydroge Oxidized Roots (n Presenc Recent I Thin Mud	Fauna (Buatic Plaisen Sulfided Rhizospiot tilled) re of Reduren Reduck Surfacer Well Da	nts (B14) Odor (C1 heres on (C3) uced Iron action in T e (C7)	Living (C4) îlled Soils	Surfa Drain. Dry S Crayfi Satur I Stunte	ce Soil Cracks ( age Patterns (B eason Water Ta ish Burrows (C8	10) able (C2) b) Aerial Imagery (C9) Plants (D1) (D2)
1 10000	or oranioa Eor	2100 (20)		heck he	re if indi	cators a	re not n	resent:	7 -			
ield Ob	servations:											
Vater ta Saturatio	water presen ble present? n present? capillary frin	ige)	Yes Yes Yes	7	No No No		Depth (i Depth (i Depth (i	nches): nches):	2		Indicators of v	esent? Y
	Des	scribe re	corded d	ata (stre	am gaug	e, monit	oring we	II, aerial p	ohotos, p	revious inspec	ctions), if availa	ble:
										_		
emarks	,	_										
	water within	6 feet of	f samnle	point								
anding	TOTAL SALULING	J 1000 0	Jampie	Ponit								

Project/Site Plymouth Commons	City/County:	Plymout	hSampling Date:	4/19/2016
Applicant/Owner: TCO Design	State:	MN	Sampling Point:	W1-up1
Investigator(s): Matthew Summers, Wenck Asspociates,	inc Secti	on, Townshi	p, Range: S24 T	118 R22
Landform (hillslope, terrace, etc.):	Local r	elief (concav	/e, convex, none):	convex
Slope (%): 5 Lat: -93.40341	Long:	45.0160		NAD83
Soil Map Unit Name L50A Houghton and Muskego	o, depressional	NWI	Classification: PFO	1A, Type 1
Subregion (MLRA or LRR): M Are of	climatic/hydrologic c	onditions of	the site typical for this time of	
the state of the s	ficantly disturbed?		mal circumstances" present?	
	rally problematic?		ed, explain any answers in re	
SUMMARY OF FINDINGS	, ,	`	,,	
Hydrophytic vegetation present?	Is the s	ampled are	a within a wetland?	
Hydric soil present? N		egulated?:		<del></del>
Indicators of wetland hydrology present?	Wetland	-		
Remarks: (Explain alternative procedures here or in a sep.				<del></del>
Fill material present	arato roporti,			
VEGETATION Use scientific names of plants.				
	solute Dominant	Indicator	Dominance Test Worksho	eet
	Cover Species	Staus	Number of Dominant Specie	S
1 Acer negundo	40 Y	FAC	that are OBL, FACW, or FAC	
2 Fraxinus pennsylvanica	10 Y	FACW	Total Number of Dominar	ıt
3			Species Across all Strata	:4 (B)
5			Percent of Dominant Specie	
	50 = Total Cover	<del>                                     </del>	that are OBL, FACW, or FAC	100.00% (A/B)
Sapling/Shrub stratum (Plot size: 15 ft )	1010100101	•	Prevalence Index Worksh	neet
	20 Y	FAC	Total % Cover of:	
2			OBL species 0 x	I = 0
3			FACW species 10 x 2	2 = 20
4			FAC species 80 x 3	
5			FACU species 0 x 4	
Herb stratum (Plot size: 5 ft )	20 = Total Cover	r	UPL species 0 x 5	The same of the sa
· · · · · · · · · · · · · · · · · · ·	20 Y	FAC	Column totals 90 (A Prevalence Index = B/A =	- Warner
2		FAC	Prevalence index - b/A =	2.89
3			Hydrophytic Vegetation I	ndicators:
4			Rapid Test for Hydroph	
5			X Dominance test is >50°	
6			X Prevalence index is ≤3	.0*
7			Morphogical adaptation	ns* (provide
8			supporting data in Rem	arks or on a
9			separate sheet)	
10	20 = Total Cover		Problematic hydrophyti (explain)	c vegetation*
Woody vine stratum (Plot size: 30 ft )			*Indicators of hydric soil and we	Handle T. I.
1			present, unless disturbe	7 37
2			Hydrophytic	
	0 = Total Cover		vegetation	
Domorko: (Includo aboto pumbos bosos	L 4\		present? Y	
Remarks: (Include photo numbers here or on a separate sl	· ·	ınd		
	Mostly bare grou	iriu		

SOIL										Samp	ling Point:	W1-	-up1
Soil Ser	ies:							Series [	Drainage	Class:			
	ny (Subgrou								-				
Profile	Description	(Descr	ibe to th	e depth	needed	to docu	ıment th	e indicat	or or co	nfirm the absen	ce of indicator	rs.)	
Depth			Matrix				Mottles	3		,			
(Inches)	Horizon	Color	(moist)	%	Color	(moist)	%	Type*	Loc**	Texture	R	temarks	
0-26		10YR	2/2							loamy fill	inclusions of woody veget		
26-34		10YR	mixed							clayey fill	dense	, compac	ted
34-40		7.5YR	4/4							mucky peat	origjnal s	surface ho	orizon
			-			-	-						
*Type:	C = Concen	ration D	- Donlo	tion DM	- Dodu	and Make	iv MC -	N/a alva al	Candon	++1			
	ric Soil Indi		- Deple	tion, Rivi	- Redu	ced Matr	IX, IVIS =	iviasked		Indicators for F	tion: PL = Pore		
Hist Blac Hyd Stra 2 cn Dep Thic	isol (A1)  Ic Epipedon (A  Ick Histic (A3)  Irogen Sulfide  Itified Layers (A  In Muck (A10)  Ieted Below E  Ick Dark Surfac  Idy Mucky Min  In Mucky Peat	(A4) A5) Park Surface (A12) eral (S1)	S3)		Sar Stri Loa Loa Dep Red Red	ndy Gleyendy Redo pped Mat Imy Muck Imy Gleye Dieted Ma dox Dark Dieted Da dox Depre	x (S5) trix (S6) try Minera ed Matrix trix (F3) Surface ( rk Surfacessions (i	I (F1) (F2) (F6) se (F7) F8)	*Inc	Coast Prairie Red Dark Surface (S7 Iron-Manganese Other (explain in dicators of hydrophytic present, un	') (L <b>RR K, L)</b> Masses (F12) (L remarks)	_RR K,L,R)	
			(	heck he	ere if inc	dicators	are not	present:	TE				
Restrict Type	ive Layer (if ∋:	observe	ed):	Dep	oth (inche	es):			Ну	/dric soil preser	nt? N	1	
Wetland	OLOGY Hydrology Indicators (m			required	: check	all that a	(vlga			Secondary Indi	cators (minimu	m of two	reauired)
Surfa	ace Water (A Water Table ration (A3) er Marks (B1) ment Deposits Deposits (B3 I Mat or Crust Deposits (B5) dation Visible sely Vegetate	1) (A2) s (B2) ) (B4) on Aerial	l Imagery ve Surfac	(B7)		Aquatic True Aquatic Hydroge Oxidized Roots (n Presenc Recent I Thin Mu	Fauna (Euatic Planen Sulfider Rhizospot tilled) e of Reduron Reduck Surfacor Well Di	nts (B14) c Odor (C1 cheres on (C3) uced Iron uction in T ce (C7)	Living (C4) illed Soils	Surface Drainage Dry Sea Crayfish Saturatie Stunted	Soil Cracks (B6 e Patterns (B10) son Water Table Burrows (C8) on Visible on Ae of Stressed Pla phic Position (D utral Test (D5)	i) ) e (C2) erial Image nts (D1)	
1 1		(= 0)		heck he	re if indi	icators a	re not r	resent:	T				
	servations:						1100			<b>F</b>		III	
Water ta Saturatio	water presen ble present? n present? capillary frir	ige)	Yes Yes Yes	7	No No No		Depth (in Depth	inches): inches):	36 36	<u> </u>	dicators of we ydrology pres	ent? _	N
	Des	scribe re	corded d	ata (stre	am gaug	je, monit	oring we	II, aerial j	ohotos, p	revious inspectio	ons), if available	<b>)</b> :	
Domest													
Remarks	•												

Project/Site Plymouth Commons	City/	City/County: Plymou		th Sampling Date:	4/19/2016	
Applicant/Owner: TCO Design		State:	MN		W1-up2	
Investigator(s): Matthew Summers, Wenck Asspoo	iates, inc	Sect	ion, Townshi	ip, Range: S24 T1	118 R22	
Landform (hillslope, terrace, etc.):	rise				convex	
Slope (%): 5 Lat: -93.403	48	Long:	45.0159		NAD83	
Soil Map Unit Name L50A Houghton and M		• • • • • • • • • • • • • • • • • • • •		Classification: PFO1A, Type 1		
Subregion (MLRA or LRR): M				the site typical for this time of		
Are vegetation , soil , or hydrology	significantly			rmal circumstances" present?	Υ ——	
Are vegetation, soil, or hydrology	naturally pr			ed, explain any answers in ren		
SUMMARY OF FINDINGS			(	out explain any allowers in ren	iaino.)	
Hydrophytic vegetation present?	1	Is the s	sampled are	a within a wetland? N		
Hydric soil present?	<u> </u>		egulated?:			
1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 =	<u></u>	Wetlan				
Remarks: (Explain alternative procedures here or in			Jpo.			
Fill material present	a coparato re	50011.7				
VEGETATION Use scientific names of pla						
VEGETATION OSE SCIENTIFIC TRAITIES OF PIA	Absolute	Dente	Indiantas	Dominanas Teet Weeksha		
Tree Stratum (Plot size: 30 ft )	% Cover	Dominant Species	Indicator Staus	Dominance Test Workshe		
1 Acer negundo	70	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC:		
2 Fraxinus pennsylvanica	20	Y	FACW	Total Number of Dominant		
3			·	Species Across all Strata:		
4				Percent of Dominant Species		
5				that are OBL, FACW, or FAC:	100.00%(A/B)	
Continue/Charle stratum (District	90	= Total Cove	r			
Sapling/Shrub stratum (Plot size: 15 ft 1 Acer negundo	-)		E40	Prevalence Index Worksho	et	
2		Y	FAC	Total % Cover of:  OBL species  0 x 1		
3		*		OBL species 0 x 1 FACW species 40 x 2		
4	-	***************************************		FAC species 90 x 3		
5				FACU species 0 x 4		
	20	= Total Cove	r	UPL species 0 x 5	= 0	
Herb stratum (Plot size: 5 ft	_)			Column totals 130 (A)	350 (B)	
1 Fraxinus pennsylvanica	20	Y	FACW	Prevalence Index = B/A =	2.69	
2						
3	. ——		-	Hydrophytic Vegetation In		
5				Rapid Test for Hydrophy X Dominance test is >50%		
6	. ——			X Prevalence index is ≤3.0		
7				Morphogical adaptations		
8			-	supporting data in Rema		
9				separate sheet)		
10	•			Problematic hydrophytic	vegetation*	
	20	= Total Cover	,	(explain)	_	
Woody vine stratum (Plot size: 30 ft	_)			*Indicators of hydric soil and wetl	and hydrology must be	
1				present, unless disturbed	or problematic	
۷		- Tatal O-		Hydrophytic		
	0 =	= Total Cover		vegetation present? Y	11	
Remarks: (Include photo numbers here or on a sepa	rate sheet)				·	
		y bare grou	ınd			
	11	,				

SOIL										Sam	pling Point:	W1-up2
Soil Ser	ies:							Series I	Drainage	Class:		
Taxonor	ny (Subgrou	o):							J-	-		
Profile	Description:	(Descr	ibe to th	e depth	needed	to docu	ment th	e indicat	tor or cor	nfirm the abser	nce of indicator	rs.)
Depth			Matrix				Mottles					
(Inches)	Horizon	Color	(moist)	%	Color	(moist)	%	Type*	Loc**	Texture		temarks
0-14		10YR	2/2							loamy fill		clayey material a ation, mixed colo
14-28		10YR	3/1							loamy fill		e as above
28-32		7.5YR	4/4	98	7.5YR	5/6	2	С	M	clay		dense
32-40		10YR	2/1							muck	original s	surface horizon
*Type:	C = Concent	ration, D	= Deple	tion. RN	l = Reduc	l ced Matr	ix MS =	Masked	Sand Gra	ains **Loca	ation PL = Pore	Lining, M = Matr
Histi Histi Blace Hyde Stra 2 cm Dep Thice Sand	ric Soil Indiasol (A1) c Epipedon (A k Histic (A3) rogen Sulfide tified Layers ( n Muck (A10) eted Below D k Dark Surface dy Mucky Min n Mucky Peat	A2) (A4) A5) eark Surfa ee (A12) eral (S1) or Peat (	S3)	heck h	San Strip Loa Loa Dep Red Dep Red	dy Redo pped Mat my Muck my Gleye pleted Ma lox Dark eleted Da lox Depre	trix (S6)  ky Mineral ed Matrix atrix (F3) Surface ( rk Surfac essions (F	F6) (F7) F6) F6) F8)	*Ind	Coast Prairie Re Dark Surface (S Iron-Manganese Other (explain ir	Masses (F12) (La remarks)  ic vegetation and well in the second or property in the second or pro	K, L, R)  LRR K,L,R)  Itand hydrology must b
Тур	e:			Dep	oth (inche	es):			Ну	dric soil prese	nt? <u>N</u>	- 1
Remarks	5:						201 -	£:11				
							32" of	1111				
IVDD/	N 00V											
	OLOGY Hydrology	Indianta										
Surfa	Indicators (mace Water (A' Water Table ration (A3) or Marks (B1) ment Deposits (B3) I Mat or Crust Deposits (B5) dation Visible sely Vegetate	(A2) s (B2) (B4) on Aerial	l Imagery ve Surfac	(B7)		Aquatic True Aqi Hydroge Oxidized Roots (n Presenc Recent I Thin Mu Gauge o	Fauna (B uatic Plar en Sulfide d Rhizosp not tilled) ee of Redu	nts (B14) Odor (C2) heres on (C3) uced Iron uction in The (C7) ata (D9)	Living (C4) Tilled Soils	Surface Drainag Dry Sea Crayfis Saturat Stunted (C6 Geomo	e Soil Cracks (B6 ge Patterns (B10 ason Water Tabl h Burrows (C8)	e (C2) erial Imagery (C9) nts (D1)
I Ivvate	er-Stained Lea	aves (B9)		ack ho	re if indi	catore a	ro not n	rocont:	_			
ield Ob	servations:		- 01	ICON IIB	is it mul	valui 5 8	i e not p	resent.				
Vater ta Saturatio	water presen ble present? n present? capillary frin	ge)	Yes Yes Yes	\ \ \ \	No No No	✓ 	Depth (i Depth (i Depth (i	nches): nches):	32 32	_   '	ndicators of we	ent? N
	Des	scribe re	corded d	ata (stre	am gaug	e, monit	oring we	ll, aerial i	photos, pi	revious inspecti	ons), if available	<b>9</b> :
omarko												
emarks	*											

Applicant/Owner   ToCD pesign   State:   MN   Sampling Point   W2-wet1	Project/Site Plymouth Commons	City/County:	Plymou	outh Sampling Date: 4/19/2016		
Local relief (concave, convex, none):   none	Applicant/Owner: TCO Design	State: MN		Sampling Point:	W2-wet1	
Landform (hillslope, terrace, etc.):   toeslope	Investigator(s): Matthew Summers, Wenck Asspociates, i	nc Sect	ion, Townshi	p, Range: S24 T	118 R22	
Slope (%): =2	Landform (hillslope, terrace, etc.): toeslope	Local	relief (conca			
Soil Map Unit Name	Slope (%): <2 Lat: -93.40408			· · · · · · · · · · · · · · · · · · ·		
Subregion (MLRA or LRR): M Are vegetation	Soil Map Unit Name L36A Hamel overwash, Ha		NWI		Ad Type 1	
Are vegetation soil or hydrology alignificantly disturbed? Are "normal circumstances" present? Y Are vegetation soil or hydrology anaturally problematic? (If needed, explain any answers in remarks.)  Wethorphytic vegetation present? Y Hydrophytic vegetation present? Hydrophytic vegetation pres		limatic/hydrologic				
Are vegetation soil or hydrology naturally problematic? (If needed, explain any answers in remarks,)  SUMMARY OF FINDINGS  Hydrophytic vegetation present? Y Y Corps-regulated?: Indicators of wetland hydrology present? Y Wetland Type: Fresh wet meadow, Type 2  Remarks: (Explain alternative procedures here or in a separate report.)  VEGETATION Use scientific names of plants.  VEGETATION Use scientific names of plants.  Tree Stratum (Plot size: 30 ft ) Absolute Species Staus Number of Dominant Species Number of Dominant Species Number of Dominant Species Number of Dominant Species Staus Number of Dominant Species Number of Dominant Number of Dom						
Summary OF Findings						
Hydric soil present? Indicators of wetland hydrology present? Y Wetland Type: Fresh wet meadow, Type 2  Remarks: (Explain alternative procedures here or in a separate report.)  VEGETATION Use scientific names of plants.  Tree Stratum (Plot size: 30 ft ) % Cover Species Staus Staus 1 Total Number of Dominant Species Number of Dominant Species Staus 1 Total Number of Dominant Species Number of Dominant Number of Do		, , , , , , , , , , , , , , , , , , , ,	(0.1.000	-u, oxpiam any anomorom for	nunco.)	
Hydric soil present?	Hydrophytic vegetation present?	Is the s	sampled are	a within a wetland? Y		
Indicators of wetland hydrology present? Y Wetland Type: Fresh wet meadow, Type 2  Remarks: (Explain alternative procedures here or in a separate report.)  VEGETATION Use scientific names of plants.    Tree Stratum	Hydric soil present?				<del></del> -	
VEGETATION - Use scientific names of plants.   Status   Tree Stratum   (Plot size: 30 ft )   Absolute   Species   Status   Stat			•	Fresh wet meadow. Type	2	
VEGETATION Use scientific names of plants.           Tree Stratum         (Plot size:			u 13po.	Tream weethleadow, Type		
Absolute   Dominant   Indicator   Status   Number of Dominant   Species   Status   Number of Dominant   Species   Status   Number of Dominant   Species   Status   Species   S	Tromaine. (Explain alternative procedures here of in a sepa	arate report.)				
Absolute   Dominant   Indicator   Status   Number of Dominant   Species   Status   Number of Dominant   Species   Status   Number of Dominant   Species   Status   Species   S						
Absolute   Dominant   Indicator   Status   Number of Dominant   Species   Species   Species   Species   Species   Species   Status   Species   S	WEGETATION III I I'M					
Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)		- N				
that are OBL, FACW, or FAC: 2 (A)  Total Number of Dominant Species Across all Strata: 2 (B)  Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)  Sapling/Shrub stratum (Plot size: 15 ft )  Sapling/Shrub stratum (Plot size: 15 ft )  Prevalence Index Worksheet  Total % Cover of:  OBL species 25 x 1 = 25  FACW species 70 x 2 = 140  FAC species 0 x 3 = 0  FACU species 0 x 4 = 0  UPL species 0 x 5 = 0  Column totals 95 (A) 165 (B)  Prevalence Index = B/A = 1.74  Prevalence Index = B/A = 1.74  Hydrophytic Vegetation Indicators:  Rapid Test for Hydrophytic Vegetation Indicators:  Rapid Test for Hydrophytic Vegetation Indicators:  A Prevalence index = S.3.0*  Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation '(explain)  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic						
Total Number of Dominant Species Across all Strata: 2 (B)	1 (Flot size) 76 (	Jover Species	Staus	•		
Species Across all Strata: 2 (B)   Percent of Dominant Species   that are OBL, FACW, or FAC: 100.00% (A/B)	2				`	
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)	3				•	
Sapling/Shrub stratum (Plot size: 15 ft )	4		<del></del> -			
Sapling/Shrub stratum (Plot size: 15 ft )	5		)			
Total % Cover of:   OBL species   25   x 1 =   25     OBL species   70   x 2 =   140     FAC species   0   x 3 =   0     FAC species   0   x 4 =   0     FAC species   0   x 5 =   0     FA		0 = Total Cove	r		` ′	
OBL species   25   x 1 =   25	Sapling/Shrub stratum (Plot size: 15 ft )			Prevalence Index Worksh	eet	
Sample	1					
FAC species   70	2					
FACU species   0 x 4 = 0   UPL species   0 x 5 = 0   Column totals   95   (A)   165   (B)   Prevalence Index = B/A =   1.74	4					
Herb stratum (Plot size: 5 ft )  1 Phalaris arundinacea 70 Y FACW 2 Carex lacustris 25 Y OBL  3 Hydrophytic Vegetation Indicators:    Rapid Test for Hydrophytic Vegetation    X Dominance test is >50%    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*   X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence index is ≤3.0*    X Prevalence i	5					
Herb stratum (Plot size: 5 ft )  1 Phalaris arundinacea 70 Y FACW 2 Carex lacustris 25 Y OBL  3 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation X Dominance test is >50% X Prevalence index is ≤3.0*  Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)  10 95 =Total Cover  Woody vine stratum (Plot size: 30 ft ) 1 = Total Cover  O = Total Cover  Hydrophytic vegetation Volume totals 95 (A) 165 (B) Prevalence Index = B/A = 1.74  Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation X Dominance test is >50% X Prevalence index is ≤3.0*  Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation present? Y		0 = Total Cove				
1 Phalaris arundinacea 2 Carex lacustris 2 Dominance test is >50% 3 Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation X Dominance test is >50% X Prevalence index is ≤3.0* Worphogical adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation    Provalence Index = B/A = 1.74   Prevalence Index = B/A = 1	Herb stratum (Plot size: 5 ft )	101410000	'		10-30-30-30-3	
Hydrophytic Vegetation Indicators:  Rapid Test for Hydrophytic Vegetation  Dominance test is >50%  X Prevalence index is ≤3.0*  Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  present?  Y	1 Phalaris arundinacea	70 Y	FACW		A	
Rapid Test for Hydrophytic Vegetation  X Dominance test is >50%  X Prevalence index is ≤3.0*  Norphogical adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  *Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  *Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  *Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  *Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  *Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  *Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  *Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  *Hydrophytic vegetation  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydric soil and wetland hydrology must be present.  *Indicators of hydrology must be	2 Carex lacustris	25 Y	OBL		- Marcie	
X Dominance test is >50%     X Prevalence index is ≤3.0*     Y Prevalence index is ≤3.0*     Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)     Problematic hydrophytic vegetation* (explain)     Y Problematic hydrophytic vegetation* (explain)     I Problematic hydrophytic vegetation     Y Prevalence index is ≤3.0*     X Prevalence index is ≤3.0*     Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)     Problematic hydrophytic vegetation	3			Hydrophytic Vegetation In	idicators:	
X   Dominance test is >50%	4			Rapid Test for Hydrophy	ytic Vegetation	
Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation* (explain)  Woody vine stratum (Plot size: 30 ft )    Woody vine stratum (Plot size: 30 ft )   I						
supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation* (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation  present?  Y	5			X Prevalence index is ≤3.	0*	
9 supporting data in Remarks or on a separate sheet) 10 Problematic hydrophytic vegetation* (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic vegetation present?  Y						
Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic  Hydrophytic  vegetation  present?  Y	`—————————————————————————————————————				arks or on a	
Solution						
Woody vine stratum (Plot size: 30 ft )  1		95 = Total Cove			vegetation*	
present, unless disturbed or problematic  Hydrophytic vegetation present?  Y						
2						
0 = Total Cover vegetation present? Y	2				- President	
	**************************************	0 = Total Cove	<del></del>			
Remarks: (Include photo numbers here or on a separate sheet)				present? Y		
	Remarks: (Include photo numbers here or on a separate sh	leet)		<u> </u>		



Soil Series:												
·								Series E	rainage	Class:		
axonomy (Si												
rofile Descr	ription:	(Descri	be to th	e depth	needed	to docu	ment the	e indicat	or or co	nfirm the abse	nce of indicate	ors.)
Depth	[		Matrix				Mottles					
nches) Ho	orizon	Color	(moist)	%	Color	(moist)	%	Type*	Loc**	Texture		Remarks
0-19		10YR	2/1							clay loam		
19-40		2.5Y	5/1							clay loam		dry
				1								
											-	
Type: C = C	Concentr	ation. D	= Deple	tion. RM	= Reduc	l ced Matr	ix MS =	Masked	Sand Gra	ains **Loca	ation: PL = Por	e Lining, M = Ma
Hydric Sc			20010	, , , , , , ,	rtoda	ou mun	ix, IVIO	Masikea		Indicators for		
Histic Epip Black Histi Hydrogen Stratified L 2 cm Mucl Depleted E Thick Dark Sandy Mucl 5 cm Mucl	tic (A3) Sulfide ( Layers (A k (A10) Below Da k Surface ucky Mine	(A4) A5) ark Surfa e (A12) eral (S1)			Strij Loa Loa Dep Red	my Gleye leted Ma ox Dark t leted Dar	rix (S6) y Mineral ed Matrix	(F2) F6) e (F7)			e Masses (F12) n remarks) ic vegetation and w	veltand hydrology mu
_p cm wuci	ky Peat t	or Peat (		book be	un lé line	Ta = 6 = u =		oresent:	7	present, u	intess disturbed or	problematic
Type: _	ayer (if	observe	ed):		oth (inche		are not p	Jiesent.	Ну	dric soil prese	ent? Y	***
Type: emarks:  YDROLOG  etland Hydre imary Indica  Surface W High Wate Saturation Water Mar	GY Irology I ators (mi Vater (A1 er Table ( n (A3) rrks (B1)	ndicato nimum ( ) (A2)	rs:	Dep	l: check a	all that and Aquatic True Aquel Hydroge Oxidized	oply) Fauna (B Jatic Plar n Sulfide Rhizospi	13) nts (B14) Odor (C1 heres on	)	Secondary Inc Surface Drainag J Dry Se Crayfis	dicators (minim e Soil Cracks (B ge Patterns (B1 ason Water Tat h Burrows (C8)	0) ole (C2)
Type:emarks:  YDROLOG Vetland Hydrimary Indica Surface W High Wate Saturation	GY Irology I ators (mi Vater (A1 er Table ( n (A3) rks (B1) Deposits osits (B3) or Crust sits (B5) n Visible Vegetated	ndicato nimum ( ) (A2) (B2) (B4) on Aerial	rs: of one is Imagery ve Surface	required (B7) (e (B8)	oth (inche	all that and Aquatic In True Aquatic In True Aquatic In Aquatic In Aquatic In	oply) Fauna (B Juatic Plar n Sulfide Rhizosp ot tilled) (e of Redu ron Redu ck Surfac r Well Da xplain in	13) odor (C1) heres on (C3) icced Iron ction in T e (C7) ata (D9) Remarks)	) Living (C4) illed Soils	Secondary Inc Surface Drainae V Dry Se Crayfis Saturat I Stunted	dicators (minim e Soil Cracks (B ge Patterns (B1 ason Water Tat h Burrows (C8)	86) 0) ole (C2) Aerial Imagery (C4) lants (D1) D2)
Type: emarks:  YDROLOG fetland Hydr imary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation   Sparsely V	GY Irology I ators (mi Vater (A1 er Table ( n (A3) rks (B1) Deposits osits (B3) or Crust sits (B5) n Visible of Vegetated	ndicato nimum ( ) (A2) (B2) (B4) on Aerial	rs: of one is Imagery ve Surface	required (B7) (e (B8)	oth (inche	all that and Aquatic In True Aquatic In True Aquatic In Aquatic In Aquatic In	oply) Fauna (Buatic Plar n Sulfide Rhizosp ot tilled) ( e of Redu ron Redu ck Surfac r Well Da	13) odor (C1) heres on (C3) icced Iron ction in T e (C7) ata (D9) Remarks)	) Living (C4) illed Soils	Secondary Inc Surface Drainae V Dry Se Crayfis Saturat I Stunted	dicators (minimes Soil Cracks (Buge Patterns (Buson Water Table Burrows (C8) ion Visible on Add of Stressed Plurphic Position (	86) 0) ole (C2) Aerial Imagery (C4) lants (D1) D2)
IYDROLOG Vetland Hydr rimary Indica Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation	GY Irology I ators (mi Vater (A1) er Table (A3) rks (B1) Deposits (B3) or Crust sits (B5) n Visible (Vegetaterained Lea ations: present? esent?	ndicato nimum o ) (A2) (B4) on Aerial d Concaves (B9) ?	rs: Imagery ve Surface  Yes Yes Yes	required  (B7)  (e (B8)  heck her	check a	all that and Aquatic In True Aquatic In True Aquatic In True Aquatic In True Aquatic In	poly) Fauna (Bustic Plar n Sulfide Rhizosp ot tilled) (e of Redu ron Redu ck Surfac r Well Da xplain in l re not p Depth (in Depth (in	13) Odor (C1 heres on (C3) icced Iron ction in T e (C7) sta (D9) Remarks) resent: nches): nches):	) Living (C4) illed Soils	Secondary Inc Surface Drainag  Dry Se Crayfis Saturat I Stunted GCE Geomo	dicators (minime a Soil Cracks (Buge Patterns (Buson Water Table Burrows (C8) ion Visible on Add of Stressed Plorphic Position (eutral Test (D5))	etland



Project/Site Plymouth Commons	City/County:	Piymou	th Sampling Date:	4/19/2016
Applicant/Owner: TCO Design	State:	MN	Sampling Point:	W2-up1
Investigator(s): Matthew Summers, Wenck Asspociates, in	nc Sect	ion, Townshi	p, Range: \$24 T	118 R22
Landform (hillslope, terrace, etc.): backslope				convex
Slope (%): 2 to 5 Lat: -93.40401	Long:	45,0170		NAD83
Soil Map Unit Name L36A Hamel overwash, Har				1Ad, Type 1
			the site typical for this time of	
	icantly disturbed?		rmal circumstances" present?	
	ally problematic?		ed, explain any answers in re	
SUMMARY OF FINDINGS	any problemate:	(II Heed	ca, explain any answers in re-	marks.)
Hydrophytic vegetation present?	Is the	sampled are	a within a wetland?	
Hydric soil present?		regulated?:	a within a wedalla:	
Indicators of wetland hydrology present?		d Type:	<del></del>	
Remarks: (Explain alternative procedures here or in a sepa		и туре.		11
Themains. (Explain alternative procedures fiere of itt a sepa	rate report.)			
<b>VEGETATION</b> Use scientific names of plants.				
	olute Dominant	Indicator	Dominance Test Worksho	eet *
Tree Stratum (Plot size: 30 ft ) % C	Cover Species	Staus	Number of Dominant Species	
		9	that are OBL, FACW, or FAC	``
3			Total Number of Dominan Species Across all Strata	•
4			Percent of Dominant Species	
5			that are OBL, FACW, or FAC	
	0 = Total Cove	r		(748)
Sapling/Shrub stratum (Plot size: 15 ft )			Prevalence Index Worksh	eet
1			Total % Cover of:	
2			OBL species 0 x 1	=0
3		-	FACW species 80 x 2	
4			FAC species 0 x 3	
5	0 = Total Cove		FACU species 20 x 2	7
Herb stratum (Plot size: 5 ft )	0 = Total Cove	·r	UPL species 0 x 5 Column totals 100 (A	
	30 Y	FACW	Column totals 100 (A) Prevalence Index = B/A =	240 (B) 2.40
	20 Y	FACU	Trevalence index - B/A -	2.40
3	<del></del>		Hydrophytic Vegetation In	ndicators:
4			Rapid Test for Hydroph	
5			Dominance test is >50°	
6			X Prevalence index is ≤3.	0*
7			Morphogical adaptation	s* (provide
8			supporting data in Rem	arks or on a
9			separate sheet)	
10	00 - T-1-1 O		Problematic hydrophyti	c vegetation*
Woody vine stratum (Plot size: 30 ft )	00 = Total Cove	r	— (explain)	~
1			*Indicators of hydric soil and we	
2			present, unless disturbe  Hydrophytic	u or propiematic
5 E	0 = Total Cove	<del></del>	vegetation	
			present? Y	
Remarks: (Include photo numbers here or on a separate sh	eet)			



SOIL										Samp	ling Point:	W	2-up1
Soil Ser								Series E	Drainage	Class:			
	ny (Subgrou						-						
Profile	Description:	(Descr		e depth	needed	to docu	ment th	e indicat	or or co	nfirm the absen	ce of indicato	rs.)	
Depth			Matrix				Mottles			<u> </u>	l		
(Inches)	Horizon	Color	(moist)	%	Color	(moist)	%	Type*	Loc**	Texture	F	Remarks	
0-19		10YR	2/1							clay loam			
19-40		2.5Y	5/1							clay loam		dry	
							-						
*Type:	C = Concent	ration, D	= Deple	tion, RM	= Reduc	ced Matr	ix, MS =	Masked	Sand Gra	ains. **Loca	ion: PL = Pore	Lining	M = Matrix
Hist Blace Hyd Stra 2 cm Dep Thice Sand	_	(A4) A5) ark Surfa e (A12) eral (S1) or Peat (	S3)		San Strij Loa Loa Dep Red Dep	ndy Redo: pped Mat my Muck my Gleye pleted Ma lox Dark lox Dark lox Depre	trix (S6)  by Mineral ed Matrix trix (F3) Surface ( rk Surface essions (F	F6) (F7)	*Inc	Indicators for F Coast Prairie Rec Dark Surface (S7 Iron-Manganese Other (explain in dicators of hydrophytic present, ur	dox (A16) (LRR K, L) (LRR K, L) Masses (F12) (I remarks)  vegetation and we less disturbed or pr	K, L, R)  LRR K,L,	R)
<b>Wetland</b> Primary	OLOGY Hydrology Indicators (m	inimum (		required						Secondary Indi	cators (minimu	ım of tw	o required)
High Satu Sedi Drift Alga Iron Inun	ace Water (A1 Water Table ration (A3) er Marks (B1) ment Deposits (B3) I Mat or Crust Deposits (B5) dation Visible rely Vegetate er-Stained Lea	(A2) s (B2) (B4) on Aeria	ve Surfac	. ,		True Aqual Hydroge Oxidized Roots (n Presenc Recent I Thin Mud Gauge o	d Rhizosp not tilled) ( e of Redu ron Redu ck Surfac or Well Da	ots (B14) Odor (C1) heres on (C3) uced Iron uction in T	Living (C4) illed Soils	Drainag Dry Sea Crayfish Saturati Stunted (CE Geomor	Soil Cracks (B6e Patterns (B10 son Water Tabl Burrows (C8) on Visible on Ae of Stressed Plaphic Position (Dutral Test (D5)	erial Ima	
1 IVVal	or Ottalined Let	2VC3 (D3)		neck her	e if indi	cators a	re not p	resent:	_				
	servations:								_				
Water ta Saturatio	water presen ble present? in present? capillary frin	ge)	Yes Yes Yes		No No No	\ \ \	Depth (i Depth (i Depth (i	nches): nches):	N1 ====	_ h	dicators of we ydrology pres	ent?	<u>N</u>
	Des	cribe re	corded d	ata (stre	am gaug	e, monit	oring we	il, aerial p	photos, p	revious inspectio	ns), if available	e:	
Remarks													
	ole dry to 40"	wetland	l noint 15	feet wa	et had w	ator at 1	5"						
- J	2,5 di j 10 40	,	, pont le	, iccl we	or nau w	alci al I	J .						



Project/Site Plymouth Commons	City/County: Plymou		h Sampling Dat	te: 4/19/2016	
Applicant/Owner: TCO Design		State:	MN	Sampling Poir	nt: W3-wet1
Investigator(s): Matthew Summers, Wenck Asspociates	s, inc	Secti	on, Townshi	p, Range:	S24 T118 R22
Landform (hillslope, terrace, etc.): toeslop	e			/e, convex, none):	concave
Slope (%): <2 Lat: -93.40271		Long:	45.0156	1 N	NAD83
Soil Map Unit Name U1A Urban land-Udorthents	s, wet sub		NWI	Classification:	PEM1C, Type III
			onditions of t	the site typical for this tin	
		disturbed?		mal circumstances" pres	
	_	oblematic?		ed, explain any answers	
SUMMARY OF FINDINGS	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			and an including	remaine.,
Hydrophytic vegetation present? Y		Is the s	ampled are	a within a wetland?	Υ
Hydric soil present?	0.0		egulated?:	-	
Indicators of wetland hydrology present?	1	Wetland		Shallow march, T	vne III
Remarks: (Explain alternative procedures here or in a se	eparate re		- 1)   0	- Stallett Hardin, 1	) po
Disturbed soils from construction and grading. Stormwat		ροιτ.)			
3 3					
VECETATION Lies established names of plants					
VEGETATION Use scientific names of plants			1 11 1		
	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Wor	
1	70 00101	opedies	Otaus	Number of Dominant Sp that are OBL, FACW, or	
2				Total Number of Dor	` '
3	,			Species Across all s	
4				Percent of Dominant Sp	
5				that are OBL, FACW, or	FAC: 100.00% (A/B)
0 5 70 1 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0	= Total Cover	•		
Sapling/Shrub stratum (Plot size: 15 ft )				Prevalence Index Wo	orksheet
2				Total % Cover of:	400
3				OBL species 100 FACW species 0	$\frac{1}{x} = \frac{100}{0}$
4				FAC species 0	$-x^{2} = 0$
5				FACU species 0	$-x_4 = \frac{0}{0}$
	0 :	Total Cover		UPL species 0	x 5 = 0
Herb stratum (Plot size: 5 ft )				Column totals 100	(A) 100 (B)
1 Typha angustifolia	100	Y	OBL	Prevalence Index = B/	
2					
3				Hydrophytic Vegetat	
4					drophytic Vegetation
6				X Dominance test is X Prevalence index	
7 -				-	
8				Morphogical adap supporting data in	
9				separate sheet)	remarks of on a
10				Problematic hydro	phytic vegetation*
· ·	100 =	Total Cover		(explain)	, , ,
Woody vine stratum (Plot size: 30 ft )				*Indicators of hydric soil a	and wetland hydrology must be
1				present, unless di	sturbed or problematic
2				Hydrophytic	
	0 =	Total Cover		vegetation present?	Υ
Remarks: (Include photo numbers here or on a separate	sheet\			Present?	
(motado prioto hamboro horo or on a separate	oneer)				
2					



SOIL										Samp	ling Point:	W3-wet1
Soil Ser	ies:							Series [	Drainage	Class:		
	ny (Subgrou									-		
Profile	Description:	(Descr	ibe to th	e depth	needed	to docu	ment th	e indicat	or or co	nfirm the absen	ce of indicato	ors.)
Depth			Matrix				Mottles	;				
(Inches)	Horizon	Color	(moist)	%	Color	(moist)	%	Type*	Loc**	Texture	F	Remarks
0-10		10YR	2/1			ì –	<b>-</b>	1		clay loam		
10-15		10YR	5/1	95	7.5YR	5/6	5	С	М	clay loam		aturated aturated
15-19		10YR	5/1	95	7.5YR	5/6	5	<del>  c</del>	M	clay		t saturated
19-26		10YR	2/2		7.011	0,0	<u> </u>	<b>—</b>	191	muck		rface horizon, dry
		15111					_	1	-	muok	Original 30	nace nonzon, dry
*Type:	C = Concent	ration, D	= Deple	tion, RN	= Redu	ced Matr	ix, MS =	Masked	Sand Gra	ains. **Loca	tion: PL = Pore	Lining, M = Matrix
Hyd	iric Soil Indi	cators:								Indicators for F		
Hist	isol (A1)				Sar	dy Gleye	d Matrix	(S4)		Coast Prairie Re	dox (A16) (LRR	K, L, R)
	ic Epipedon (/	<del>1</del> 2)			Sar	dy Redo	x (S5)			Dark Surface (S7		
	k Histic (A3)					oped Mat	. ,			Iron-Manganese	Masses (F12) (	LRR K,L,R)
	rogen Sulfide					•	y Minera	` '		Other (explain in	remarks)	
	tified Layers ( n Muck (A10)	A5)				my Gleye lleted Ma	ed Matrix	(F2)				
	leted Below D	ark Surfa	ace (A11)	)			Surface (	(F6)				
	k Dark Surfac		, , , , ,	,	_		rk Surfac					
San	dy Mucky Min	eral (S1)					essions (I	. ,	*Inc	dicators of hydrophytic	vegetation and we	eltand hydrology must be
5 cn	n Mucky Peat	or Peat (									iless disturbed or p	
				Check h	ere if ind	icators	are not	present:				
	ive Layer (if			D-	- 41- /:1							
Тур	е.	claypa	arı		oth (inche	es):	15	1	H)	dric soil prese	nt? <u>Y</u>	
Remark		ill Basin	hac ovn	orionaco	Languah	prolonge	- d - a t					
st berone	eu over clay i	III. Dasiii	nas exp	enenced	renough	prolonge	au satura	ation to ci	reate red	ox reatures and i	nyaric soil prot	ile within the fill mate
HYDR	OLOGY											
Wetland	Hydrology	Indicato	rs:									
Primary	Indicators (m	inimum	of one is	required	d; check a	all that a	(ylag			Secondary Indi	cators (minimu	um of two required)
	ace Water (A	•					Fauna (E				Soil Cracks (B	,
	Water Table	(A2)			L			nts (B14)			e Patterns (B10	
	ration (A3)				<u> </u>			Odor (C	-	=	son Water Tab	le (C2)
<u></u>	er Marks (B1) iment Deposit	c (B2)				,		heres on	Living		Burrows (C8)	
	Deposits (B3						ot tilled)	uced Iron	(CA)		on visible on A of Stressed Pla	erial Imagery (C9)
	I Mat or Crust				<u> </u>	5			illed Soils	The same of the sa	phic Position (	
	Deposits (B5)	. ,			<u> </u>	i	ck Surfac		mod oone		utral Test (D5)	<i>,</i> , , , , , , , , , , , , , , , , , ,
Inun	dation Visible	on Aeria	I Imagery	/ (B7)			r Well D					
Spai	rsely Vegetate	ed Conca	ve Surfac	ce (B8)		Other (E	xplain in	Remarks	)			
Wat	er-Stained Lea	aves (B9)	)									
			С	heck he	re if indi	cators a	are not p	resent:				
	servations:	.0										
	water presen	t?	Yes		No		Depth (		2	_	dia atawa   af	-41
	ble present? on present?		Yes Yes	7	No No	$\vdash$	Depth (i		0 0-15'		dicators of we ydrology pres	
	s capillary frir	nge)	100		140		Debru (	mones).	0-15	— I "	yarology pres	sent? Y
			corded d	ata (stre	am gaug	e, monit	oring we	II, aerial i	photos, p	revious inspection	ons), if availabl	le:
				·								
Dam = 1												
Remarks												
-ercned	saturation											

Project/Site Plymouth Commons	City/County:	Plymouth	n Sampling Date:	4/19/2016
Applicant/Owner: TCO Design	State:	MN	Sampling Point:	W3-up1
Investigator(s): Matthew Summers, Wenck Asspociate	es, inc Sect	ion, Township	o, Range: S24 T	118 R22
Landform (hillslope, terrace, etc.): backs	ope Local	relief (concav	e, convex, none):	none
Slope (%): <2 Lat: -93.40264	Long:	45.01562		NAD83
Soil Map Unit Name U1A Urban land-Udorther			Classification:	none
			he site typical for this time of	
	ignificantly disturbed?		mal circumstances" present?	· ·
	naturally problematic?		ed, explain any answers in re	-
SUMMARY OF FINDINGS	ideal any problematic:	(ii nocac	a, explain any answers in re	marks.)
Hydrophytic vegetation present?	Is the s	sampled area	within a wetland?	
Hydric soil present?		egulated?:		
Indicators of wetland hydrology present?	Wetlan	-		
Remarks: (Explain alternative procedures here or in a		и туре.		
Disturbed soils from construction and grading. Closely				
Disturbed soils from constituction and grading. Closely	mowed lawn.			
VEGETATION Use scientific names of plant	S.			
	Absolute Dominant	Indicator	Dominance Test Worksh	eet
Tree Stratum (Plot size: 30 ft )	% Cover Species	Staus	Number of Dominant Specie	
			that are OBL, FACW, or FAC	``
2			Total Number of Dominar Species Across all Strata	
4				
5			Percent of Dominant Specie that are OBL, FACW, or FAC	
	0 = Total Cove	I	that are ODE, I AOVV, OF FAC	C:(A/B)
Sapling/Shrub stratum (Plot size: 15 ft )		"	Prevalence Index Worksh	neet
1			Total % Cover of:	1001
2			OBL species 0 x	1 = 0
3			FACW species 0 x 2	2 = 0
4			FAC species 0 x	3 = 0
5				4 = 0
(Blateday)	0 = Total Cove	r		5 = 0
Herb stratum (Plot size: 5 ft )	100 V	-1-1	Column totals 0 (A	0 (B)
1 Closely mowed lawn	100 Y	n/a	Prevalence Index = B/A =	4
3			Hydrophytic Vegetation I	malia a 4
4			Rapid Test for Hydropl	
5			Dominance test is >50	-
6			Prevalence index is ≤3	
7			Morphogical adaptation	ns* (provide
8			supporting data in Ren	
9			separate sheet)	
10			Problematic hydrophyt	ic vegetation*
,	100 = Total Cove	r	(explain)	
Woody vine stratum (Plot size: 30 ft )			*Indicators of hydric soil and we	etland hydrology must be
			present, unless disturbe	ed or problematic
<sup>2</sup>	O T. 10		Hydrophytic	
	0 = Total Cove		vegetation present?	
Remarks: (Include photo numbers here or on a separat	e sheet)		procent:	
	0 0,1000			



ches) Horizon Color (moist) % Color (moist) % Type* Loc** Texture Remarks  10YR mixed	SOIL										San	npling Point:	W3-up1
Matrix   Motities	Soil Ser	ies:							Series [	Drainage	Class:		
Matrix   Mottles   Mottl													
Texture   Remarks   Point	Profile	Description:	(Descr	ibe to th	e depth	needed	to docu	ıment th	e indicat	or or co	nfirm the abse	ence of indicat	ors.)
ches) Horizon Color (moist) % Color (moist) % Type* Loc** Texture Remarks  10YR mixed	Depth			Matrix				Mottles					
Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. "Location: PL = Pore Lining, M = Matrix Hydric Soil Indicators:	(Inches)	Horizon	Color	(moist)	%	Color	(moist)	1 %	Type*	Loc**	Texture	Remarks	Remarks
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Hydric Soil Indicators:	*Type:	C = Concen	tration, D	= Deple	tion, RM	= Redu	ced Matr	rix, MS =	Masked	Sand Gr	ains. **Loc	ation: PL = Por	e Lining, M = Matri
Islistic Epipedon (A2)				•									
listic Epipedon (A2)	Hist	isol (A1)				Sar	dy Gleye	ed Matrix	(S4)	Г			
Black Histic (A3)	Hist	ic Epipedon (	A2)						(/				, _ , ,
Loamy Mucky Mineral (F1)	Blac	k Histic (A3)								-			(LRR K,L,R)
Depleted Matrix (F3)		-				Loa	my Muck	ky Minera	l (F1)		Other (explain	in remarks)	
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Depleted Dark Surface (F6) Depleted Dark Surface (F7) Depleted Dark Surface (F8)  *Indicators of hydrophytic vegetation and weltand hydrology must in present, unless disturbed or problematic  Check here if indicators are not present:  Strictive Layer (if observed): Type: claypan			(A5)						(F2)		-		
Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3)  Check here if indicators are not present:  Type: claypan		` '	\=	(0.4.4)		_		, ,					
Sandy Mucky Mineral (S1)				ace (A11)					, ,				
Check here if indicators are not present;	-		, ,							*1	dia = 4 E b d t-	45	
Check here if indicators are not present:  Type:							iox Depic	03310113 (1	0)	"In			
Secondary Indicators (minimum of two required					heck he	ere if inc	licators	are not	present:	T			
### Disturbed soils    POROLOGY   Port   Por	estrict	ive Layer (if	observe										
POROLOGY  Stand Hydrology Indicators:  mary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  High Water Table (A2)  True Aquatic Plants (B14)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Prish Deposits (B3)  Arguatic Aguatic Aguatic Odor (C1)  Dry Season Water Table (C2)  Water Marks (B1)  Sediment Deposits (B2)  Roots (not tilled) (C3)  Algal Mat or Crust (B4)  Recent Iron Reduction in Tilled Soils (Ct  Geomorphic Position (D2)  Iron Deposits (B5)  Inin Muck Surface (C7)  Inundation Visible on Aerial Imagery (B7)  Spariely Vegetated Concave Surface (B8)  Other (Explain in Remarks)  Water-Stained Leaves (B9)  Check here if indicators are not present:  Indicators of wetland thydrology present?  Yes No Depth (inches):  Indicators of wetland hydrology present?  No Depth (inches):  Describe recorded data (stream gauge, monitoring well, aerial photos, previous Inspections), if available:	Тур	e:	claypa	an	Dep	oth (inche	es):	15		H	ydric soil pres	ent? N	
Secondary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)  Algal Mater Table (A2)  Water Marks (B1)  South Deposits (B2)  Algal Mat or Crust (B4)  Algal Mat or Crust (B4)  Intin Muck Surface (C7)  Intin Muck Surface (C7)  Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Check here if indicators are not present:  Indicators of wetland hydrology present?  Yes No Depth (inches):  Indicators (minimum of two required)  Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Surface Soil Cracks (B6)  Drainage Patterns (B10)  Dray Season Water Table (C2)  Dray Season Water Table (C2)  Dray Sauration Visible on Aerial Imagery (C9)  Saturation Visible on Aerial Imagery (C9)  Indicators (B10)  Number of the Matter Table (C2)  Dray Season Water	IVDD	OL OGV						Disturbed	d soils				
Secondary Indicators (minimum of one is required; check all that apply)   Secondary Indicators (minimum of two required; Surface Water (A1)			Indicato	re.									
Surface Water (A1)					required	l check	all that a	nnlv)			Secondary In	dicators (minim	num of two required
Saturation (A3)									313)				
Water Marks (B1)			(A2)								<u> </u>	-	,
Sediment Deposits (B2)    Sediment Deposits (B3)							Hydroge	en Sulfide	Odor (C	1)			
Drift Deposits (B3)		. ,					-			Living			
Algal Mat or Crust (B4)	=					_				(0.4)			
Iron Deposits (B5)			•			<u> </u>	-						
Inundation Visible on Aerial Imagery (B7)	<b>≕</b> ∵ ~					-	<b>i</b>			llied Soils			
Sparsely Vegetated Concave Surface (B8)	200			l Imagery	(B7)	<u> </u>						veditar Test (D5	)
Water-Stained Leaves (B9)    Check here if indicators are not present:						<u> </u>				)			
Check here if indicators are not present:  Indicators are not present:  Indicators of wetland the stream gauge, monitoring well, aerial photos, previous inspections), if available:					- (/	<u> </u>		1		,			
Indicators of wetland transfer of the standard					neck he	re if indi	cators a	are not p	resent:				
Atter table present?  Yes No Depth (inches): Indicators of wetland hydrology present? No Depth (inches): Indicators of wetland hydrology present? No Depth (inches):  Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:													
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							-	. ,	,				
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		•	nge)	res		INO	$\checkmark$	⊔eptn (	incnes):			nydrology pre	esent? N
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Soil Survey Data

Hennepin County, Minnesota

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

#### L22C2--Lester loam, morainic, 6 to 12 percent slopes, eroded

#### Lester, eroded

Extent: 60 to 80 percent of the unit Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

Representative	soil profile	e:	exture	Permeability	Available water capacity	pН
Ap	0 to 7 in	Loam		moderate	1.42 to 1.56 in	5.6 to 7.3
Bt →	7 to 38 in	Clay loam		moderate	4.67 to 5.91 in	5.1 to 7.3
Bk 3	38 to 60 in	Loam		moderate	3.25 to 4.11 in	7.4 to 8.4
C 6	30 to 80 in	Loam		moderate	3.01 to 3.81 in	7.4 to 8.4

#### **Angus**

Extent: 10 to 20 percent of the unit Landform(s): hills on moraines

Slope gradient: 2 to 5 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48
Kw factor (surface layer) .24

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

Representative soil profile:	Te	exture	Permeability	Available water capacity	ρН
Ap - 0 to 8 in	Loam		moderate	1.57 to 1.73 in	5.6 to 7.3
Bt - 8 to 35 in	Clay loam		moderate	4.07 to 5.16 in	5.1 to 7.3
BC 35 to 40 in	Clay loam		moderate	0.72 to 0.97 in	6.1 to 7.8
C 40 to 80 in	Loam		moderate	5.96 to 7.56 in	7.4 to 8.4

Hennepin County, Minnesota

#### L22C2--Lester loam, morainic, 6 to 12 percent slopes, eroded

#### Terril

Extent: 5 to 20 percent of the unit

Landform(s): hills on moraines

Slope gradient: 0 to 4 percent

Parent material: colluvium over till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6 Wind erodibility index (WEI): 48

Kw factor (surface layer) .28 Land capability, nonirrigated 2e

Hydric soil: no Hydrologic group: B

Potential for frost action: moderate

Representative soil profile:	Texture	Permeability	Available water capacity	рН
Ap,A1 0 to 27 in	Loam	moderate	5.43 to 5.98 in	6.1 to 7.3
A2,BA 27 to 40 in	Loam	moderate	2.21 to 2.47 in	6.1 to 7.3
Bw 40 to 63 in	Loam	moderate	3.65 to 4.11 in	6.1 to 7.3
C 63 to 80 in	Loam	moderate	2.54 to 3.22 in	7.4 to 8.4

#### Hamel

Extent: 0 to 5 percent of the unit

Landform(s): drainageways on moraines Slope gradient: 1 to 3 percent

Parent material: colluvium over till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48
Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

Representative	soil profile:		Texture	Permeability	Available water capacity	рН
Ap,A,AB -	0 to 24 in	Loam		moderate	4.80 to 5.76 in	5.6 to 7.3
Btg 2	24 to 46 in	Clay loam		moderately slow	3.53 to 4.19 in	5.6 to 7.3
Cg 4	46 to 80 in	Loam		moderate	5.08 to 6.43 in	7.4 to 8.4

Hennepin County, Minnesota

#### L36A--Hamel, overwash-Hamel complex, 1 to 4 percent slopes

#### Hamel, overwash

Extent: 40 to 60 percent of the unit

Landform(s): drainageways on moraines

Slope gradient: 1 to 4 percent Parent material: colluvium over till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: high

Representative s	soil profile:		Texture	Permeability	Available water capacity	рН
Ap 0	) to 13 in	Loam		moderate	2.60 to 3.12 in	5.6 to 7.3
A 13	to 29 in	Clay loam		moderate	3.23 to 3.87 in	5.6 to 7.3
Btg 29	to 50 in	Clay loam		moderately slow	3.34 to 3.96 in	5.6 to 7.3
Cg 50	to 80 in	Loam		moderate	4.49 to 5.69 in	7.4 to 8.4

#### Hamel

Extent: 30 to 55 percent of the unit

Landform(s): drainageways on moraines

Slope gradient: 1 to 3 percent Parent material: colluvium over till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48
Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: CID

Potential for frost action: high

Representativ	e soil profile:	Texture	Permeability	Available water capacity	pН
Ap,A,AB -	0 to 24 in	Loam	moderate	4.80 to 5.76 in	5.6 to 7.3
Btg	24 to 46 in	Clay loam	moderately slow	3.53 to 4.19 in	5.6 to 7.3
Cg	46 to 80 in	Loam	moderate	5.08 to 6.43 in	7.4 to 8.4

Hennepin County, Minnesota

#### L36A--Hamel, overwash-Hamel complex, 1 to 4 percent slopes

#### Terril

Extent: 0 to 10 percent of the unit

Landform(s): hills on moraines

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Slope gradient: 2 to 5 percent

Wind erodibility index (WEI): 48

Parent material: colluvium over till

Kw factor (surface layer) .28

Restrictive feature(s): greater than 60 inches

Land capability, nonirrigated 2e

Flooding: none Hydric soil: no Ponding: none Hydrologic group: B

Drainage class: moderately well drained Potential for frost action: moderate

Representative soil prof	ile: Texture	Permeability	Available water capacity	pН
Ap,A1 - 0 to 27 in	Loam	moderate	5.43 to 5.98 in	6.1 to 7.3
A2,BA 27 to 40 in	Loam	moderate	2.21 to 2.47 in	6.1 to 7.3
Bw 40 to 63 in	Loam	moderate	3.65 to 4.11 in	6.1 to 7.3
C 63 to 80 in	ı Loam	moderate	2.54 to 3.22 in	7.4 to 8.4

#### Glencoe

Extent: 0 to 5 percent of the unit

Landform(s): depressions on moraines

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Slope gradient: 0 to 1 percent

Wind erodibility index (WEI): 48

Parent material: colluvium over till

Kw factor (surface layer) .24

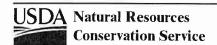
Restrictive feature(s): greater than 60 inches

Flooding: none

Hydric soil: yes

Ponding:frequentHydrologic group: B/DDrainage class:very poorly drainedPotential for frost action: high

Representative soil profile	: Texture	Permeability	Available water capacity	pН
Ap = 0 to 13 in	Loam	moderate	2.34 to 2.86 in	6.1 to 7.8
A2,Bg1 13 to 31 in	Clay loam	moderate	3.26 to 3.98 in	6.1 to 7.8
Bg2 - 31 to 45 in	Loam	moderate	2.07 to 2.62 in	6.6 to 7.8
Cg 45 to 80 in	Loam	moderate	5 26 to 6 66 in	74 to 84



Hennepin County, Minnesota

#### L37B--Angus loam, morainic, 2 to 5 percent slopes

#### Angus, morainic

Extent: 50 to 90 percent of the unit Landform(s): hills on moraines Slope gradient: 2 to 5 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48

Kw factor (surface layer) .24
Land capability, nonirrigated 2e

Hydric soil: no Hydrologic group: B

Potential for frost action: moderate

Representative soil profile:	Texture	Permeability	Available water capacity	рН
Ap 0 to 8 in	Loam	moderate	1.57 to 1.73 in	5.6 to 7.3
Bt 8 to 35 in	Clay loam	moderate	4.07 to 5.16 in	5.1 to 7.3
BC 35 to 40 in	Clay loam	moderate	0.72 to 0.97 in	6.1 to 7.8
C 40 to 80 in	Loam	moderate	5.96 to 7.56 in	7.4 to 8.4

#### Angus, eroded

Extent: 5 to 40 percent of the unit Landform(s): hills on moraines Slope gradient: 2 to 5 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5 Wind erodibility group (WEG): 6 Wind erodibility index (WEI): 48

Kw factor (surface layer) .24
Land capability, nonirrigated 2e

Hydric soil: no Hydrologic group: B

Potential for frost action: moderate

Representative soil profile:	Texture	Permeability	Available water capacity	рН
Ap - 0 to 8 in	Loam	moderate	1.57 to 1.73 in	5.6 to 7.3
Bt 8 to 35 in	Clay loam	moderate	4.07 to 5.16 in	5.1 to 7.3
Bk 35 to 58 in	Loam	moderate	3.43 to 4.34 in	7.4 to 8.4
C - 58 to 80 in	Loam	moderate	3.31 to 4,19 in	7.4 to 8.4

Hennepin County, Minnesota

#### L37B--Angus Ioam, morainic, 2 to 5 percent slopes

#### Le Sueur

Extent: 5 to 15 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 3 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

Representative	e soil p	rofile:	Texture	Per	meability	Available water capacity	ρH
A1,A2,AB	0 to 1	I7 in	Loam	n	noderate	3.39 to 4.06 in	5.6 to 7.3
Bt	17 to 3	36 in	Clay loam	n	noderate	2.83 to 3.59 in	5.1 to 7.3
Bk	36 to 4	16 in	Loam	n	noderate	1.54 to 1.94 in	7.4 to 8.4
C	46 to 8	30 in	Loam	n	noderate	5.08 to 6.43 in	7 4 to 8 4

#### Cordova

Extent: 0 to 10 percent of the unit

Landform(s): drainageways on moraines Wind erodibility group (WEG): 6

Slope gradient: 0 to 2 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

Representative soil profile:	Texture	Permeability	Available water capacity	ρН
Ap,AB 0 to 13 in	Loam	moderate	2.34 to 2.86 in	6.1 to 7.3
Btg 13 to 33 in	Clay loam	moderately slow	3.01 to 3.81 in	5.1 to 6.5
Cg 33 to 80 in	Loam	moderate	7.03 to 8.90 in	7.4 to 8.4

Hennepin County, Minnesota

#### L50A--Houghton and Muskego soils, depressional, 0 to 1 percent slopes

#### Houghton, surface drained

Extent: 20 to 60 percent of the unit Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent Parent material: organic material

Restrictive feature(s): greater than 60 inches

Flooding: none
Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 2 Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

Representative soil profile:	: Texture	
------------------------------	-----------	--

Permeability | Available water capacity

pH

Oa = 0 to 80 in Muck

moderately rapid 27.97 to 35.96 in

#### Muskego, surface drained

Extent: 20 to 60 percent of the unit Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: organic material over coprogenous earth

Restrictive feature(s): greater than 60 inches

Flooding: none
Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1 Wind erodibility group (WEG): 2 Wind erodibility index (WEI): 134

Kw factor (surface layer) .02
Land capability, nonirrigated 6w

Hydric soil: yes
Hydrologic group: C/D

Potential for frost action: high

#### Available water Representative soil profile: Texture Permeability pH capacity Oa1 - 0 to 9 in Muck moderately rapid 3.17 to 4.07 in Oa2 - 9 to 36 in Muck moderately rapid 9.37 to 12,05 in Lco -- 36 to 60 in Coprogenous earth slow 4.32 to 5.76 in

Hennepin County, Minnesota

#### L50A--Houghton and Muskego soils, depressional, 0 to 1 percent slopes

#### Klossner, drained

Extent: 0 to 20 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: organic material over till

Restrictive feature(s): greater than 60 inches

Flooding: none
Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

Representative soil profile:	Texture	Permeability	Available water capacity	pН
Op,Oa 0 to 26 in	Muck	moderately rapid	9.09 to 12.47 in	
2A1 26 to 36 in	Mucky silty clay loam	moderate	2.17 to 2.56 in	
2A2 36 to 48 in	Silty clay loam	moderate	2.20 to 2.69 in	
2Cg 48 to 80 in	Loam	moderate	4.78 to 6.06 in	

#### Mineral soil, drained

Extent: 0 to 20 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: loamy colluvium over loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48
Kw factor (surface layer) .24

1 --- 1 --- 1:11

Land capability, nonirrigated 3w

I Available water I

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

Representativ	e soil profile:	Texture	Permeability	capacity	pΗ
Ap -	0 to 13 in	Loam	moderate	2.34 to 2.86 in	6.1 to 7.8
A2,Bg1 -	13 to 31 in	Clay Ioam	moderate	3.26 to 3.98 in	6.1 to 7.8
Bg2	31 to 45 in	Clay loam	moderate	2.07 to 2.62 in	6.6 to 7.8
Cg	45 to 80 in	Loam	moderate	5.26 to 6.66 <b>in</b>	7.4 to 8.4



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