

### Assessment • Remediation • Compliance Restoration • Incentives

10448 Citation Drive, Suite 100 Brighton, MI 48116

800 395-ASTI Fax: 810.225.3800

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**Sent Via Email Only** 

July 12, 2024

Mike Bylen **Bylen Golf, Inc.** 3600 Pine Trace Blvd. Rochester Hills, MI 48309

RE: Wetland Delineation and Jurisdictional Assessment and

Quality Assessment

Pine Trace Golf Club Project Area

(Sidwell Nos. 15-31-400-016 and -017, and a Portion of -015)

3600 Pine Trace Blvd, Rochester Hills, MI

ASTI File No. A24-0777.00

Dear Mr. Bylen:

On July 2, 2024, ASTI Environmental (ASTI) conducted a site investigation to delineate wetland boundaries on approximately 10 acres of land at the above-referenced project area in Rochester Hills, Oakland County, Michigan ("Project Area"). One wetland regulated by the City of Rochester Hills (City) and likely regulated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and one wetland not regulated by the City and not likely regulated by EGLE were found within the Project Area (Figure 1 – *GPS-Surveyed Wetland Boundaries*). Wetland boundaries, as depicted on Figure 1, were located using a professional grade, hand-held Global Positioning System unit (GPS).

### **SUPPORTING DATA AND MAPPING**

The USDA Web Soil Survey (WSS), the National Wetland Inventory Map (NWI), EGLE Wetlands Map Viewer web site, and digital aerial photographs were all used to support the wetland delineation and subsequent regulatory status determination. The NWI and EGLE maps indicated the presence of wetland in the central and southern portions of the Project Area, respectively.



The WSS indicates the Project Area is comprised of the soil complexes shown in Table 1 below:

Table 1 – Project Area Soils

Project Area Soil Complexes	Hydric Soil per the WSS ( <b>Yes</b> or No)
Spinks loamy sand (0-6% slopes)	No
Wasepi sandy loam (0-3% slopes)	No
Kibbe fine sandy loam (0-4% slopes)	No
Thetford loamy fine sand (0-3% slopes)	No
Granby loamy sand	Yes
Riddles sandy loam (1-6% slopes)	No

#### **FINDINGS**

ASTI investigated the Project Area for the presence of any lakes, ponds, wetlands, and watercourses. This work is based on MCL 324 Part 301 (Inland Lakes and Streams) and Part 303 (Wetland Protection) and Rochester Hills Ordinance Article IV-Wetland and Watercourse Protection.

The delineation protocol used by ASTI for this delineation is based on the US Army Corps of Engineers' *Wetland Delineation Manual*, 1987, the *Regional Supplement to the Corps of Engineer Wetland Delineation Manual: Midwest Region*, and related guidance/documents, as appropriate. Wetland vegetation, hydrology, and soils were used to locate the wetland boundaries.

Two wetlands were found within the Project Area, as discussed below.

### Wetland A

Wetland A is a forested and open water/emergent wetland located in the southwestern portion of the Project Area (Figure 1). Wetland A is 0.40 acres and is entirely contained within the Project Area. Vegetation within the forested portion of Wetland A was dominated by silver maple (*Acer saccharinum*), red maple (*Acer rubrum*), and swamp white oak (*Quercus bicolor*); the remainder of Wetland A was open water. Soils within Wetland A were comprised of sandy loams and are considered hydric because the criteria for a sandy redox matrix was met. Indicators of wetland hydrology observed within Wetland A included oxidized rhizospheres on living roots.

Dominant vegetation observed within the upland adjacent to Wetland A included Kentucky blue grass (*Poa pratensis*), glossy buckthorn (*Frangula alnus*), and Asian bittersweet (*Celastrus orbiculatus*). Upland soils were sandy, and no evidence of wetland hydrology was observed.

It is ASTI's opinion that Wetland A is not regulated by the City and not likely regulated by EGLE because it is less than two acres in size and is not within 500 feet of, or directly connected to, and inland lake or stream as defined under Part 301 and Article IV.

Wetland Delineation and Jurisdictional Assessment Pine Trace Golf Club Project Area City of Rochester Hills, Oakland Co., MI ASTI File No. A24-0777.00



### Wetland B

Wetland B is an emergent wetland located in the northcentral portion of the Project Area (Figure 1). Wetland B is 0.04 acres on-site and extends outside the Project Area to the north. Vegetation within Wetland B was dominated by narrow-leaved cattail (*Typha angustifolia*). Soils within Wetland B were comprised of sandy loams and are considered hydric because the criteria for a sandy redox matrix was met. Indicators of wetland hydrology observed within Wetland B included oxidized rhizospheres on living roots and saturated soils.

Dominant vegetation observed within the upland adjacent to Wetland B included Kentucky blue grass and juniper (*Juniperus communis*). Upland soils were comprised of sandy loams, and no evidence of wetland hydrology was observed.

It is ASTI's opinion that Wetland B is regulated by the City and likely EGLE because it is directly connected to an unnamed watercourse outside the Project Area to the north; this watercourse exhibited defined channel bed and banks and was flowing on the day of the site inspection and, thus, meets the definition of a regulated stream under Part 301 and Article IV.

### Wetland Quality Assessments

#### Wetland A

Wetland A is a forested and open water/emergent wetland. The forested portion's tree layer was dominated by the common native species of silver maple, red maple, and swamp white oak, generally 20-40 years in age. The shrub layer was sparse and was dominated by the invasive species of glossy buckthorn. The herbaceous layer was sparse to thick and was dominated by the common native species of path rush (Juncus tenuis), woodland sedge (Carex blanda), and fowl manna grass (Glyceria striata), all of which comprised approximately 75% of the total species within the herbaceous layer. Reed canary grass, a non-native species, comprised the remainder of the herbaceous layer. The primary wetland hydrology indicator of oxidized rhizospheres on living roots, was observed throughout Wetland A. The open water portion of Wetland A appears to be in direct contact with groundwater. The open water portion appears to be a manmade pond constructed in the early 1960s per ASTI's review of historical aerial photography. As such, the open water portion of Wetland A likely detains small amounts of seasonal localized surface water runoff; it also likely provides some water filtration benefits, but due to its small size, these benefits are likely minimal. Soils within Wetland A were comprised of sandy loams and generally appeared to be in a natural state.

Wetland A is situated within a residential yard, which is near South Boulevard and Pine Trace Boulevard. Residential developments and the Pine Trace Golf Course surround Wetland A; this urban setting could likely cause noise disruptions to wildlife. Consequently, Wetland A likely supports only small wildlife and birds common to suburban backyards. Based on these factors, it is ASTI's opinion that although Wetland A is dominated by common native species, it is very small and does not offer significant benefits to the City. Therefore, it is ASTI's opinion that Wetland A should be considered a low-quality natural resource to the City.

Wetland Delineation and Jurisdictional Assessment Pine Trace Golf Club Project Area City of Rochester Hills, Oakland Co., MI ASTI File No. A24-0777.00



#### Wetland B

Wetland B is an emergent wetland almost exclusively comprised of the non-native species of narrow-leaved cattail (90%). The common native species of jewelweed (*Impatiens capensis*) comprised the remaining approximate 10% of vegetative coverage; trees and shrubs were absent. Primary wetland hydrology indicators, such as saturated soils and oxidized rhizospheres on living roots, were observed throughout Wetland B. Wetland B is directly connected to an unnamed stream to the north of the Project Area. ASTI observed storm water flows from the developed portion of the Pine Trace Golf Club draining directly into Wetland B, which indicates Wetland B provides direct water detainment and filtration to water entering the unnamed watercourse. However, due to the small size of Wetland B (approximately 0.5 acres including its extent outside the Project Area), these benefits are likely minimal. Soils within Wetland B were comprised of sandy loams and appeared to be in a natural state.

Wetland B is a portion of a larger riparian wetland system associated with the unnamed watercourse within the Rouge River watershed and, therefore, is in contact with other wetlands and watercourses along its route that are a part of the City's natural drainage system. However, Wetland B is small and surrounded by the Pine Trace site and appears to be the result of stormwater drainage from the golf course and, thus, does not hold the potential for significant wildlife habitat. Wetland B is also dominated by low-quality non-native species. Based on these factors, Wetland B should be considered a low-quality natural resource to the City.

## Wetland Flagging

Wetland boundaries of Wetland A were marked in the field with day-glow pink and black striped flagging with the following flagging numbers:

Wetland A = A-1 through A-18

Wetland B was not flagging in the field per project guidelines as it was present on the functioning golf course. However, all Wetland B flags were located with GPS as follows:

Wetland B = B-1 through B-4

#### SUMMARY

Based upon the data, criteria, and evidence noted above, it is ASTI's professional opinion that the Project Area includes one wetland (Wetland B) regulated by the City of Rochester Hills under Article IV of the City's Wetland and Watercourse Protection Ordinance and by EGLE under the Natural Resources and Environmental Protection Act (1994 P.A. 451), Part 303 Wetland Protection, and one wetland (Wetland A) not regulated by the City or EGLE. However, please note that EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the State of

Wetland Delineation and Jurisdictional Assessment Pine Trace Golf Club Project Area City of Rochester Hills, Oakland Co., MI ASTI File No. A24-0777.00



Michigan. Any proposed impact to the areas that ASTI has identified as regulated will require a permit from the City and EGLE, and ASTI recommends EGLE verification of wetland regulatory status of any wetlands that ASTI deems non-EGLE regulated, prior to any wetland impacts.

The City of Rochester Hills also requires a 25-foot Natural Features Setback be shown on site plans around City-regulated wetlands. Additionally, all trees six inches in diameter at breast height (dbh) be shown on site plans submitted to the City, which will be applicable to portions of the Project Area.

Attached are Figure 1, which shows the GPS-surveyed locations of wetland flagging on the Project Area and completed US Army Corps of Engineers (ACOE) Wetland Data Forms. Please note that the data sheet numbers match the data collection sampling points shown on Figure 1.

Thank you for the opportunity to assist you with this project. Please let us know if we can be of any further assistance in moving your project forward.

Respectfully submitted,

**ASTI ENVIRONMENTAL** 

Kyle Hottinger Wetland Ecologist

Professional Wetland Scientist #2927

Dianne Martin

Director of Ecological Services Professional Wetland Scientist #1313

Attachments: Figure 1 – GPS-Surveyed Wetland Boundaries

Completed ACOE Wetland Data Forms



Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any ans SUMMARY OF FINDINGS – Attach site map showing sampling point locations, traditional transfer of the western point locations and the western portion of Wetland A.  Wetland Hydrology Present? Yes No X Is the Sampled Area within a Wetland?  Wetland Hydrology Present? Yes No X Wetland Hydrology Present? Yes No X Wetland Hydrology Present? Yes No X Wetland A.  WEGETATION – Use scientific names of plants.  Tree Stratum (Plot size: 30') Absolute Dominant Indicator Species? Status Dominant Are OBL, F.  1. Quercus macrocarpa 20 Yes FAC Number of Are OBL, F.  3. Total Number of Are OBL, F.  3. Total Number of Are OBL, F.  Sapling/Shrub Stratum (Plot size: 15') Percent of Are OBL, F.  Sapling/Shrub Stratum (Plot size: 15') OBL species PAC	pet, none): flat  Datum: NAD83  NWI classification: none  (If no, explain in Remarks.)  The present of Pominant Species Strata:  Dominant Species That  FACW, or FAC:  Dominant Species That  Dominant Species That  Dominant Species That  Dominant Species Strata:  Dominant Species That  Dominant Species That
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Soil Map Unit Name: Kibbe fine sandy loam (0-4% slopes)  Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No	NWI classification: none  (If no, explain in Remarks.) s" present? Yes x No wers in Remarks.)  ansects, important features, etc.  Yes No X  The Test worksheet: Dominant Species That FACW, or FAC: 3 (A) ber of Dominant Species Strata: 6 (B) Dominant Species That
Soil Map Unit Name: Kibbe fine sandy loam (0-4% slopes)  Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No	(If no, explain in Remarks.) s" present? Yes x No wers in Remarks.) ansects, important features, etc.  Yes No X  The Test worksheet: Dominant Species That FACW, or FAC: 3 (A) ber of Dominant Species Strata: 6 (B) Dominant Species That
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1. Parthenocissus inserta 15 Yes FACU Column To	
<del>-</del>	nce Index = B/A = 2.97
3. Lonicera tatarica 10 Yes FACU	
4. Hydrophy	tic Vegetation Indicators:
5 1 - Ra	oid Test for Hydrophytic Vegetation
6 2 - Dor	minance Test is >50%
7 3 - Pre	valence Index is ≤3.0 <sup>1</sup>
	rphological Adaptations <sup>1</sup> (Provide supporting
9 data	in Remarks or on a separate sheet)
	matic Hydrophytic Vegetation <sup>1</sup> (Explain)
	of hydric soil and wetland hydrology must , unless disturbed or problematic.
1. Coloctrus orbigulatus	problemation
2. Leasting orbitalities 25 Tes OFL Hydrophy 2. Leasting orbitalities 25 Tes OFL Hydrophy Vegetation	Via.
25 =Total Cover Present?	
Remarks: (Include photo numbers here or on a separate sheet.)	

		to the dept				ator or o	confirm the absence	of indicators.)
Depth	Matrix			x Featur		. 2		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	10YR 3/1	100					Sandy	
6-18	10YR 3/1	70	10YR 4/6	15	C	M	Sandy	Prominent redox concentrations
			10YR 4/2	15	С	М		Faint redox concentrations
					<u> </u>			
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM=	Reduced Matrix,	MS=Mas	ked San	d Grains	s. <sup>2</sup> Locatio	n: PL=Pore Lining, M=Matrix.
Hydric Soil		•	•					ors for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Gle	eyed Mat	rix (S4)		Coa	ast Prairie Redox (A16)
Histic Ep	oipedon (A2)		X Sandy Re	dox (S5)			Iron	-Manganese Masses (F12)
Black Hi	stic (A3)		Stripped N	/latrix (S6	3)		Red	l Parent Material (F21)
Hydroge	n Sulfide (A4)		Dark Surfa	ace (S7)				y Shallow Dark Surface (F22)
Stratified	d Layers (A5)		Loamy Μι	-			Oth	er (Explain in Remarks)
2 cm Mu	ıck (A10)		Loamy Gl	eyed Mat	trix (F2)			
	d Below Dark Surface	e (A11)	Depleted					
	ark Surface (A12)		Redox Da		, ,			ors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted			)		and hydrology must be present,
5 cm Mu	icky Peat or Peat (S3	8)	Redox De	pression	s (F8)		unle	ess disturbed or problematic.
	Layer (if observed):							
Type:	none							
Depth (ir	nches):		_				Hydric Soil Preser	nt? Yes <u>X</u> No
Remarks:								
HYDROLO	OGY							
	drology Indicators:							
_	cators (minimum of o	ne is requir	ed: check all that	annly)			Seconda	ary Indicators (minimum of two required)
	Water (A1)	no lo roquir	Water-Sta		ves (B9)			face Soil Cracks (B6)
	iter Table (A2)		Aquatic Fa					inage Patterns (B10)
Saturation	, ,		True Aqua	,	,			-Season Water Table (C2)
	arks (B1)		Hydrogen	Sulfide (	Odor (C1	)		yfish Burrows (C8)
	nt Deposits (B2)		Oxidized I	Rhizosph	eres on	Living R	oots (C3) Sati	uration Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		Presence	of Reduc	ed Iron	(C4)	Stur	nted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduc	tion in Ti	lled Soil	s (C6) Geo	omorphic Position (D2)
Iron Dep	oosits (B5)		Thin Muck	Surface	(C7)		FAC	C-Neutral Test (D5)
	on Visible on Aerial Ir	0 , .		Well Dat	a (D9)			
Sparsely	Vegetated Concave	Surface (B	8) Other (Ex	plain in R	(emarks			
Field Obser	vations:							
Surface Wat	er Present? Ye	s	No <u>x</u>	Depth (i	nches):			
Water Table			No <u>x</u>	Depth (i	_			
Saturation P		s	No <u>x</u>	Depth (i	nches):		Wetland Hydrolo	ogy Present? Yes No X
(includes ca	* * /			.1				
Describe Re	corded Data (stream	gauge, mo	nitoring well, aeria	ai photos	, previou	s inspec	ctions), if available:	
Remarks:								
Remarks:								
Remarks:								

Project/Site: Pine Trace Golf Course Project Area		City/Cou	nty: Rochest	er Hills-Oakland	<u> </u>	ampling D	ate: <u>7-2-</u>	-24
Applicant/Owner: Bylen Golf, Inc.				State:	MI Sa	ampling Po	oint:	UP2
Investigator(s): ASTI-KAH		Section, T	ownship, Rar	nge: Sec 31 T3	N R11E			
Landform (hillside, terrace, etc.): plain			Local relief (c	oncave, convex,	none): flat			
Slope (%): 1-3 Lat: 42.622522		_	83.198455			ım: NAD8	3	
Soil Map Unit Name: Kibbe fine sandy loam (0-4% s	slopes)			NWI	classificati			
Are climatic / hydrologic conditions on the site typica		f voor?	Voc v		no, explain		(c )	
Are Vegetation , Soil , or Hydrology		-	Yes <u>x</u> Vro."Normal C	ircumstances" pr			•	
							NO	_
Are Vegetation, Soil, or Hydrology	<del></del>			olain any answers		•		
SUMMARY OF FINDINGS – Attach site	map showir	ng samplin	g point lo	cations, trans	ects, im	portant	features	s, etc.
Hydrophytic Vegetation Present? Yes	No X	le the	Sampled Ar	03				
	No X		n a Wetland?			No X		
	No X			100		<u> </u>		
Remarks:								
Upland adjacent to the eastern portion of Wetland A	۹.							
VEGETATION – Use scientific names of p	lants.							
·	Absolute	Dominant	Indicator					
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Dominance Te	est worksh	eet:		
1. Pinus strobus	15	Yes	FACU	Number of Dor	•	cies That		
2. Acer saccharinum	15	Yes	FACW	Are OBL, FAC			3	(A)
3. Acer platanoides 4.	30	Yes	UPL_	Total Number of Across All Stra		t Species	9	(B)
5.						.: Th	3	(B)
·	60	=Total Cover		Percent of Don Are OBL, FAC			33.3%	(A/B)
Sapling/Shrub Stratum (Plot size: 15'	)	10101 00101		7110 000, 1710	., 01 1710.	•	00.070	_(,,,,,)
1. Frangula alnus	<b>-</b> ′ 10	Yes	FACW	Prevalence In	dex works	heet:		
2.				Total % C	over of:	Mι	ıltiply by:	
3.				OBL species	0	x 1 =	0	
4				FACW species	25	x 2 =	50	_
5				FAC species	35	_ x 3 =	105	_
	10	=Total Cover		FACU species		_ ×4=	320	_
Herb Stratum (Plot size: 5' )	40	NI-	E40	UPL species	55	$ \times 5 = $	275	(D)
Prunella vulgaris     Ovolia stricta		No Yes	FAC	Column Totals Prevalence		_ (A)	750 3.85	(B)
Oxalis stricta    Poa pratensis	25	Yes	FACU FAC	Frevalence	iliuex – b/.	~ - <u></u>	3.00	_
Dactylis glomerata	20	Yes	FACU	Hydrophytic \	/egetation	Indicator	s:	
5. Glechoma hederacea	25	Yes	FACU		Test for Hyd			
6.					ance Test is		-9	
7.				3 - Prevale	nce Index i	s ≤3.0 <sup>1</sup>		
8.				4 - Morpho	logical Ada	ptations¹ (	Provide su	upporting
9.					Remarks or			,
10				Problemati	ic Hydrophy	tic Vegeta	ation <sup>1</sup> (Exp	lain)
	100	=Total Cover		<sup>1</sup> Indicators of h				y must
Woody Vine Stratum (Plot size: 15'	_)		LIE:	be present, unl	ess disturb	ed or prob	lematic.	
7 Colooteus orbioulotus	25	Yes	UPL	Hydrophytic				
1. Celastrus orbiculatus								
2.	25	=Total Cover		Vegetation Present?	Yes	No	Χ	

Profile Desc Depth	cription: (Describ Matrix	_		<b>ument tl</b> x Featur		ator or c	onfirm the absence of	of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Re	marks	
0-14	10YR 3/1	100	`		7.		Sandy			
14-18	10YR 3/1	70	10YR 4/6	5	C	M	Sandy	Prominent red	ox concen	trations
14-10	10111 3/1						Gariay			
			10YR 4/2	20	<u>C</u>	<u>M</u>		Faint redox	concentra	lions
	-									
<del> </del>			_							
	oncentration, D=D	epletion, RM=	Reduced Matrix, N	/IS=Mas	ked San	d Grains		: PL=Pore Lining,		•
Hydric Soil			0 1 0		. (0.1)			s for Problematic	-	oils":
Histosol			Sandy Gle					t Prairie Redox (A1	-	
	oipedon (A2)		Sandy Red					Manganese Masse		
Black Hi	n Sulfide (A4)		Stripped M Dark Surfa	,	)			Parent Material (F2 Shallow Dark Surfa		
	l Layers (A5)		Loamy Mu	, ,	aral (E1)			· (Explain in Rema		
	ick (A10)		Loamy Gle					(Explain in Remai	113)	
	d Below Dark Surfa	ice (A11)	Depleted N	-						
	ark Surface (A12)	,	Redox Dar	,	•		<sup>3</sup> Indicator	s of hydrophytic ve	getation a	nd
	lucky Mineral (S1)		Depleted D		` '	)		nd hydrology must	-	
5 cm Mu	icky Peat or Peat (	S3)	Redox Dep		•	,		s disturbed or prob		
Restrictive	Layer (if observe	d):	<u> </u>							
Type:	nor									
Depth (ir	nches):						Hydric Soil Present	? Ye	s	No X
Remarks:										
LIV/DDGL 6	.0.									
HYDROLC										
-	drology Indicator									
	cators (minimum o	f one is require			(50)			y Indicators (minim		<u>required)</u>
	Water (A1)		Water-Stai		, ,	)		ce Soil Cracks (B6	•	
	iter Table (A2)		Aquatic Fa True Aqua					age Patterns (B10)		
Saturation	arks (B1)		Hydrogen			`		Season Water Table ish Burrows (C8)	e (C2)	
	nt Deposits (B2)		Oxidized F		-			ation Visible on Ae	rial Image	rv (C9)
	posits (B3)		Presence	•		•	` ′	ed or Stressed Pla	_	., (00)
	at or Crust (B4)		Recent Iro			` '		norphic Position (D		
	osits (B5)		Thin Muck					Neutral Test (D5)	,	
Inundation	on Visible on Aeria	I Imagery (B7	) Gauge or \	Nell Dat	a (D9)			, ,		
Sparsely	Vegetated Conca	ve Surface (B	8) Other (Exp	lain in R	Remarks)	)				
Field Obser	vations:									
Surface Wat	er Present?	Yes	No <u>x</u>	Depth (i	nches):					
Water Table		Yes			nches):					
Saturation P	resent?	Yes	No <u>x</u>	Depth (i	nches):		Wetland Hydrolog	gy Present? Ye	s	No X
(includes ca										
Describe Re	corded Data (strea	ım gauge, mo	nitoring well, aeria	I photos	, previou	s inspec	tions), if available:			
Remarks:										
. tomanto.										

Project/Site: Pine Trace Golf Course Project Area		City/Cou	nty: Roches	ter Hills-OaklandC	)၀. Sa	ampling Da	ate: <u>7-2-</u> 2	24
Applicant/Owner: Bylen Golf, Inc.				State: N	MI Sa	mpling Po	int:	UP3
Investigator(s): ASTI-KAH		Section, T	ownship, Ra	nge: Sec 31 T3	N R11E			
Landform (hillside, terrace, etc.): slope			Local relief (c	oncave, convex, r	none): slope	<b>3</b>		
Slope (%): 5-7 Lat: 42.624629		Long: -	83.196357		Datu	ım: NAD83	3	
Soil Map Unit Name: Riddles sandy loam (1-6% slop	es)			NWI	classification	on: none		
Are climatic / hydrologic conditions on the site typical	for this time o	f vear?	Yes x	No (If	no. explain	in Remark	(s.)	
Are Vegetation, Soil, or Hydrology_		-		Circumstances" pre			•	
Are Vegetation , Soil , or Hydrology	<del>-</del> '			plain any answers				_
SUMMARY OF FINDINGS – Attach site n	_			·		•	features	, etc.
Hydrophytic Vegetation Present? Yes I	No X	Is the	Sampled Ar	ea				
Hydric Soil Present? Yes	No X	withi	n a Wetland?	Yes		No <u>X</u>		
Wetland Hydrology Present? Yes	No X							
Remarks: Upland conditions in a wooded area in the NE portion  VEGETATION – Use scientific names of plants		ct Area.						
	Absolute	Dominant	Indicator					
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Dominance Te	st workshe	et:		
1. Tilia americana	60	Yes	FACU	Number of Don		ies That	0	(4)
2. Quercus rubra 3.	10	No	FACU	Are OBL, FAC		_	2	_(A)
4.				Total Number of Across All Strate		Species	6	(B)
5.				Percent of Dom		es That		_(5)
-	70	=Total Cover		Are OBL, FAC		ies mai	33.3%	(A/B)
Sapling/Shrub Stratum (Plot size: 15'	_)					_		_` `
1. Frangula alnus	50	Yes	FACW	Prevalence Inc	dex workst	neet:		
2. Elaeagnus umbellata	10	No	UPL	Total % Co	over of:	Mu	Itiply by:	_
3				OBL species	0	_ x1=_	0	_
4				FACW species		_ x2=_	140	_
5		<del></del>		FAC species	5	_ x3=_	15	_
Herb Stratum (Plot size: 5' )	60	=Total Cover		FACU species UPL species	115 40	_ x4=_ x5=	460 200	_
Herb Stratum (Plot size: 5' )  1. Impatiens capensis	20	Yes	FACW	Column Totals:		_	815	(B)
Podophyllum peltatum	20	Yes	FACU	Prevalence I		_	3.54	_('')
Rubus allegheniensis	10	No	FACU			`		_
4. Symphyotrichum lanceolatum	5	No	FAC	Hydrophytic V	egetation	ndicators	<del></del>	
5.				1 - Rapid T	est for Hyd	rophytic V	egetation	
6.				2 - Domina	nce Test is	>50%		
7					nce Index is			
8					logical Ada			
9.					Remarks or	•	<i>'</i>	,
10		T-4-1 0			c Hydrophy	•		,
Woody Vine Stratum (Plot size: 15'	55	=Total Cover		<sup>1</sup> Indicators of higher be present, unle				/ must
Woody Vine Stratum (Plot size: 15' 1. Celastrus orbiculatus	_) 30	Yes	UPL		505 UISIUI DE	u or probl	emade.	
Vitis labrusca	15	Yes	FACU	Hydrophytic Vegetation				
		=Total Cover		Present?	Yes	No	X	
Remarks: (Include photo numbers here or on a sep		•						
	onoot.)							

Depth	Matrix			x Featur	es			e of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-16	10YR 3/1	100					Sandy		
16-18	10YR 3/1	80	10YR 6/4	20	С	M	Sandy	Distinct redox concentration	ns
		·							
								-	
		· <del></del> -							
1 <sub>T. max</sub> C=C.	tustian D-Dan	Latina DM	-Dadwaad Matrix N	10-14			21 4:-	DI - Dana Linina M-Matrix	
Hydric Soil I	oncentration, D=Dep	letion, Rivi	=Reduced Matrix, i	vi5=ivias	ked San	d Grains		on: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Soils	3.
Histosol			Sandy Gle	ved Mat	rix (S4)			ast Prairie Redox (A16)	٠.
	ipedon (A2)		Sandy Red	-				-Manganese Masses (F12)	
Black His			Stripped M					d Parent Material (F21)	
	n Sulfide (A4)		Dark Surfa		- /			y Shallow Dark Surface (F22)	
	Layers (A5)		Loamy Mu	, ,	eral (F1)			er (Explain in Remarks)	
2 cm Mu			Loamy Gle	•	, ,			,	
	l Below Dark Surface	e (A11)	Depleted N	-					
Thick Da	rk Surface (A12)	` '	Redox Dar				<sup>3</sup> Indicat	ors of hydrophytic vegetation and	
Sandy M	ucky Mineral (S1)		Depleted [	Dark Sur	face (F7)	)	wet	land hydrology must be present,	
5 cm Mu	cky Peat or Peat (S3	3)	Redox De	pression	s (F8)		unle	ess disturbed or problematic.	
Restrictive I	_ayer (if observed):								
Туре:	none								
Depth (in	nches):		<u> </u>				Hydric Soil Prese	nt? Yes No	<u> </u>
Remarks:									
i telliaiks.									
Remarks.									
itemarks.									
Nemarks.									
HYDROLO	GY								
HYDROLO	GY drology Indicators:								
HYDROLO Wetland Hyd	drology Indicators: cators (minimum of o							ary Indicators (minimum of two rec	quired)
HYDROLO Wetland Hyd Primary Indic	drology Indicators: cators (minimum of o Water (A1)		Water-Stai	ined Lea	` ,		Sur	face Soil Cracks (B6)	quired)
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat	drology Indicators: cators (minimum of o Water (A1) ter Table (A2)		Water-Stai	ined Lea una (B1	3) ` ´		Sur Dra	face Soil Cracks (B6) inage Patterns (B10)	quired)
HYDROLO  Wetland Hyd  Primary Indic  Surface N  High War  Saturatio	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3)		Water-Stai Aquatic Fa True Aqua	ined Lea una (B1 tic Plant	3) s (B14)		Sur Dra Dry	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2)	quired)
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat  Saturatio  Water Ma	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1)		Water-Stai Aquatic Fa True Aqua Hydrogen	ined Lea una (B1 tic Plant Sulfide (	3) s (B14) Odor (C1	)	Sur Dra Dry Cra	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8)	
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat  Saturatio  Water Mater Mat	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2)		Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ined Lea una (B1 tic Plant Sulfide ( Rhizosph	3) s (B14) Odor (C1 eres on	) Living Ro	Sur Dra Cra Cra Sat	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery (	
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat  Saturatio  Water Mater Mat	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3)		Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc	3) s (B14) Odor (C1 eres on lead	) Living Ro (C4)	Sur Dra Dry Cra pots (C3)Sat Stu	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1)	
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat  Saturatio  Water Ma  Sedimen  Drift Dep  Algal Ma	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4)		Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc	3) s (B14) Odor (C1 eres on led Iron ( tion in Ti	) Living Ro (C4)	Sur Dry Cra Stu Stu St (C6)Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) omorphic Position (D2)	
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat  Saturatio  Water Ma  Sedimen  Drift Dep  Algal Ma  Iron Depo	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5)	one is requi	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface	3) s (B14) Odor (C1 eres on lead Iron (ction in Ti	) Living Ro (C4)	Sur Dry Cra Stu Stu St (C6)Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1)	
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat  Saturatio  Water Ma  Sedimen  Drift Dep  Algal Ma  Iron Depi Inundatio	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial II	one is requi	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence G Recent Iro Thin Muck Gauge or V	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat	3) s (B14) Odor (C1 eres on led Iron (tion in Ti (C7) a (D9)	) Living Ro (C4) illed Soils	Sur Dry Cra Stu Stu St (C6)Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) omorphic Position (D2)	
HYDROLO  Wetland Hyd Primary Indic Surface N High Wat Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial In Vegetated Concave	one is requi	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence G Recent Iro Thin Muck Gauge or V	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat	3) s (B14) Odor (C1 eres on led Iron (tion in Ti (C7) a (D9)	) Living Ro (C4) illed Soils	Sur Dry Cra Stu Stu St (C6)Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) omorphic Position (D2)	
HYDROLO  Wetland Hyde  Primary Indice  Surface Note of the control	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) cosits (B3) t or Crust (B4) cosits (B5) on Visible on Aerial In Vegetated Concave	magery (Bī	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or V 38) Other (Exp	ined Lea duna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat	3) s (B14) Ddor (C1 eres on led Iron (tion in Ti (C7) a (D9)	) Living Ro (C4) illed Soils	Sur Dry Cra Stu Stu St (C6)Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) omorphic Position (D2)	
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat  Saturatio  Water Ma  Sedimen  Drift Dep  Algal Ma  Iron Depo Inundatic  Sparsely  Field Observ  Surface Water	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) cosits (B3) t or Crust (B4) cosits (B5) on Visible on Aerial In Vegetated Concave vations: er Present? Ye	magery (Bī e Surface (B	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence of Recent Iro Thin Muck Gauge or N Other (Exp	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R	3) s (B14) Odor (C1 eres on led Iron (C7) a (D9) Lemarks)	) Living Ro (C4) illed Soils	Sur Dry Cra Stu Stu St (C6)Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) omorphic Position (D2)	
HYDROLO  Wetland Hyd  Primary Indic  Surface V  High Wat  Saturatio  Water Ma  Sedimen  Drift Dep  Algal Ma  Iron Depo Inundatic  Sparsely  Field Observ  Surface Water Water Table	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial II Vegetated Concave vations: er Present? Yee	magery (Bi	Water-Stai	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (ii	3) s (B14) Odor (C1 eres on led Iron (C7) a (D9) Lemarks) nches): _ nches): _	) Living Ro (C4) illed Soils	Sur	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)	C9)
HYDROLO  Wetland Hyde  Primary Indice Surface Note of the second of the	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial II Vegetated Concave vations: er Present? Present? Ye resent? Ye	magery (Bi	Water-Stai	ined Lea auna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R	3) s (B14) Odor (C1 eres on led Iron (C7) a (D9) Lemarks) nches): _ nches): _	) Living Ro (C4) illed Soils	Sur Dry Cra Stu Stu St (C6)Geo	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)	C9)
HYDROLO  Wetland Hyde  Primary Indice Surface Note of the primary Indice High Water Mater	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) arks (B1) t Deposits (B2) oosits (B3) t or Crust (B4) oosits (B5) on Visible on Aerial II Vegetated Concave vations: er Present? Present? Ye resent? Ye	magery (B) e Surface (I	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp No x No x No x	ined Lea duna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (ii Depth (ii	3) s (B14) Ddor (C1 eres on led Iron of tion in Ti (C7) a (D9) demarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	Sur Dra Dry Cra Doots (C3) Sat Stu S (C6) FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)	C9)
HYDROLO  Wetland Hyde  Primary Indice Surface Note of the primary Indice High Water Mater	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) carks (B1) tt Deposits (B2) cosits (B3) tt or Crust (B4) cosits (B5) on Visible on Aerial In Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe)	magery (B) e Surface (I	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp No x No x No x	ined Lea duna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (ii Depth (ii	3) s (B14) Ddor (C1 eres on led Iron of tion in Ti (C7) a (D9) demarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	Sur Dra Dry Cra Doots (C3) Sat Stu S (C6) FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)	C9)
HYDROLO  Wetland Hyde  Primary Indice Surface Note of the second of the	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) carks (B1) tt Deposits (B2) cosits (B3) tt or Crust (B4) cosits (B5) on Visible on Aerial In Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe)	magery (B) e Surface (I	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp No x No x No x	ined Lea duna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (ii Depth (ii	3) s (B14) Ddor (C1 eres on led Iron of tion in Ti (C7) a (D9) demarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	Sur Dra Dry Cra Doots (C3) Sat Stu S (C6) FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)	
HYDROLO  Wetland Hyde Primary Indic Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely  Field Observ Surface Water Water Table Saturation Pr (includes cap Describe Rec	drology Indicators: cators (minimum of o Water (A1) ter Table (A2) on (A3) carks (B1) tt Deposits (B2) cosits (B3) tt or Crust (B4) cosits (B5) on Visible on Aerial In Vegetated Concave vations: er Present? Present? Ye resent? Ye pillary fringe)	magery (B) e Surface (I	Water-Stai Aquatic Fa True Aqua Hydrogen Oxidized F Presence Recent Iro Thin Muck Gauge or V Other (Exp No x No x No x	ined Lea duna (B1 tic Plant Sulfide ( Rhizosph of Reduc n Reduc Surface Well Dat blain in R Depth (ii Depth (ii	3) s (B14) Ddor (C1 eres on led Iron of tion in Ti (C7) a (D9) demarks) nches): _ nches): _ nches): _	) Living Ro (C4) illed Soils	Sur Dra Dry Cra Doots (C3) Sat Stu S (C6) FAC	face Soil Cracks (B6) inage Patterns (B10) -Season Water Table (C2) yfish Burrows (C8) uration Visible on Aerial Imagery ( nted or Stressed Plants (D1) comorphic Position (D2) C-Neutral Test (D5)	C9)

# U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region

See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

Applicant/Owner: Bylen Golf, Inc.				State: MI	Sampling P	oint:	UP4
Investigator(s): ASTI-KAH		Section, T	ownship, Ran	ge: Sec 31 T3N R1	1E		
Landform (hillside, terrace, etc.): slope			_ocal relief (co	oncave, convex, none)	slope		
Slope (%): 3-5 Lat: 42.624406		Long: -	83.19817		Datum: NAD8	3	
Soil Map Unit Name: Granby loamy sand				NWI class	ification: none		
Are climatic / hydrologic conditions on the site typical for t	his time o	f year?	Yes x	No (If no, ex	cplain in Remar	ks.)	
Are Vegetation, Soil, or Hydrologysign		-		ircumstances" present		•	
Are Vegetation, Soil, or Hydrologynat				olain any answers in Ro		· <u></u>	_
SUMMARY OF FINDINGS – Attach site map			·	•	•	features	s. etc.
<u> </u>				·	,		,
Hydrophytic Vegetation Present? Yes No No No			Sampled Ard a Wetland?	ea Yes	No. Y		
Wetland Hydrology Present? Yes No		Within	i a wellanu :	162	No X		
Remarks:							
Upland adjacent to Wetland B.							
•							
VEGETATION – Use scientific names of plants	S.						
<u> </u>	Absolute	Dominant	Indicator				
	% Cover	Species?	Status	Dominance Test wo	orksheet:		
1. Acer X freemanii	10	Yes	UPL	Number of Dominan	•		
2. Quercus rubra	10 5	Yes	FACU	Are OBL, FACW, or		1	_(A)
3. Picea pungens 4.	5	Yes	FACU	Total Number of Dor Across All Strata:	ninant Species	6	(B)
5.					Cassiss That	0	_(B)
·	25	=Total Cover		Percent of Dominant Are OBL, FACW, or	•	16.7%	(A/B)
Sapling/Shrub Stratum (Plot size: 15' )		rotal Covol		7 110 OBL, 17 1011, 01	. 7.0.	10.770	_(,,,,,
1. Juniperus communis	40	Yes	UPL	Prevalence Index w	orksheet:		
2.				Total % Cover of	of: Mi	ultiply by:	_
3.				OBL species	0 x 1 =	0	
4				FACW species	0 x 2 =	0	_
5				· -	20 x 3 =	60	_
	40	=Total Cover		· —	35 x 4 =	140	_
Herb Stratum (Plot size: 5' )	00	V	F40		50 x 5 =	250	
1. Poa pratensis	20	Yes	FACU FACU		05 (A)	450 4.29	_(B)
Plantago lanceolata 3.	20	Yes	FACU	Prevalence Index	- b/A	4.29	_
4.				Hydrophytic Vegeta	ation Indicator	s:	
5				1 - Rapid Test fo			
6.				2 - Dominance T		3	
7.				3 - Prevalence Ir	ndex is ≤3.0 <sup>1</sup>		
8.				4 - Morphologica			
9				data in Rema	ks or on a sepa	arate sheet	)
10				Problematic Hyd	rophytic Vegeta	ation <sup>1</sup> (Expl	lain)
	40	=Total Cover		<sup>1</sup> Indicators of hydric			/ must
Woody Vine Stratum (Plot size: 15' )	•		-	be present, unless d	sturbed or prob	lematic.	
1.	0			Hydrophytic			
				Vegetation			
2		Total Cover		Present? Yes	N <sub>0</sub>	Х	

Profile Des	cription: (Describe Matrix	to the dep		<b>ument t</b> l x Featur		ator or o	confirm the absence	of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-16	10YR 3/1	100	, , ,				Sandy		
-								_	
16-18	10YR 3/1	95	10YR 6/4	5	С		Sandy	Distinct redox concer	ntrations
10-10	10111 3/1		10111 0/4			101	Garidy	Distillet redox correct	iliations
-									
	·							-	
	oncentration, D=Dep	letion, RM=	Reduced Matrix, N	/IS=Mas	ked San	d Grains		n: PL=Pore Lining, M=Matri	
Hydric Soil			0 1 01		. (0.4)			ors for Problematic Hydric	Soils":
Histosol	` '		Sandy Gle					st Prairie Redox (A16)	
	pipedon (A2)		Sandy Red					-Manganese Masses (F12)	
	istic (A3)		Stripped M		0)			Parent Material (F21)	1)
	en Sulfide (A4) d Layers (A5)		Dark Surfa Loamy Mu		oral (E1)			/ Shallow Dark Surface (F22 er (Explain in Remarks)	.)
	uck (A10)		Loamy Gle	-				er (Explain in Nemarks)	
	d Below Dark Surface	e (A11)	Depleted N						
	ark Surface (A12)	. (* * 1 1 /	Redox Dar		-		<sup>3</sup> Indicato	ors of hydrophytic vegetation	and
	/lucky Mineral (S1)		Depleted D		` '	)		and hydrology must be pres	
	ucky Peat or Peat (S3	3)	Redox Dep		٠, ,	,		ess disturbed or problematic.	
Restrictive	Layer (if observed):	•	<u> </u>		. ,			•	
Type:	none								
Depth (i							Hydric Soil Preser	nt? Yes	No X
Remarks:									
HYDROLO	OGY								
_	drology Indicators: cators (minimum of o	ne is requi	red: check all that a	annly)			Seconda	ary Indicators (minimum of tw	wo required)
	Water (A1)	ne is requi	Water-Stai		ives (R9)	)		ace Soil Cracks (B6)	wo required
	ater Table (A2)		Aquatic Fa			<b>,</b>		nage Patterns (B10)	
Saturation			True Aqua					Season Water Table (C2)	
	larks (B1)		Hydrogen			)		yfish Burrows (C8)	
Sedimer	nt Deposits (B2)		Oxidized F	Rhizosph	eres on	Living R	oots (C3) Satu	uration Visible on Aerial Imag	gery (C9)
Drift Dep	posits (B3)		Presence	of Redu	ced Iron	(C4)	Stur	nted or Stressed Plants (D1)	
Algal Ma	at or Crust (B4)		Recent Iro	n Reduc	ction in Ti	illed Soil	` '	morphic Position (D2)	
	oosits (B5)		Thin Muck		` '		FAC	C-Neutral Test (D5)	
	on Visible on Aerial I	0 , (	<i>,</i>		, ,				
	y Vegetated Concave	Surface (E	38) Other (Exp	lain in F	Remarks)	)			
Field Obser									
	ter Present? Ye				nches):				
Water Table					nches):		Watland Hudnald	Dunnanta Van	Na V
Saturation F			No <u>x</u>	Depth (i	nches):		Wetland Hydrolo	ogy Present? Yes	No X
•	pillary fringe) ecorded Data (stream	nalide mo	nitoring well acris	I nhotos	nreviou	is inener	tions) if available:		
Describe Ke	oorueu Data (Stream	yauye, m	лікопіну well, аепа	i priotos	, previou	is irispec	nons), ii avaiiable.		
Remarks:									
1									

Project/Site: Pine Trace Golf Course Project Area		City/Cou	nty: Roches	ter Hills-OaklandCo.	Sampling D	Date: <u>7-2-</u>	-24
Applicant/Owner: Bylen Golf, Inc.				State: MI	 Sampling P	oint:	WT1
Investigator(s): ASTI-KAH		Section, T	ownship, Ra	nge: Sec 31 T3N F	—— R11E		
Landform (hillside, terrace, etc.): slight depression			Local relief (d	concave, convex, nor	ie): concave		
Slope (%): 1-3 Lat: 42.622388			83.198614		Datum: NAD8	83	
Soil Map Unit Name: Kibbe fine sandy loam (0-4% slo	pes)			NWI cla	assification: none		
Are climatic / hydrologic conditions on the site typical for		f vear?	Yes x	No (If no,	explain in Remar	rks )	
Are Vegetation , Soil , or Hydrology		-		Circumstances" prese			
Are Vegetation, Soil, or Hydrology				plain any answers in			_
SUMMARY OF FINDINGS – Attach site m					·	features	s, etc.
Hydrophytic Vegetation Present? Yes X N			Sampled A		v No		
Hydric Soil Present?         Yesx	<u> </u>	Within	n a Wetland	? Yes	<u> </u>	=	
	<u> </u>						
Remarks: Wetland A - forested portion.							
7							
<b>VEGETATION</b> – Use scientific names of pla	nts.						
	Absolute	Dominant	Indicator				
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Dominance Test	worksheet:		
Acer saccharinum	30	Yes	FACW	Number of Domin	ant Species That		
2. Quercus bicolor	20	Yes	FACW	Are OBL, FACW,	or FAC:	5	(A)
3. Acer rubrum	5	No	FAC	Total Number of D	ominant Species	i	
4				Across All Strata:		6	(B)
5				Percent of Domina	•		
	55	=Total Cover		Are OBL, FACW,	or FAC:	83.3%	(A/B)
Sapling/Shrub Stratum (Plot size: 15'	)						
1. Frangula alnus	20	Yes	FACW	Prevalence Index		10.1	
2.				Total % Cove		ultiply by:	_
3.				OBL species	20 x 1 =		_
4				FACW species	80 x 2 =		_
5	20	=Total Cover		FAC species FACU species	35 x 3 = 10 x 4 =		_
<u>Herb Stratum</u> (Plot size: 5' )		- I Olai Covei		UPL species	25 x 5 =		_
1. Dactylis glomerata	10	No	FACU	Column Totals:	170 (A)	450	— (B)
Juncus tenuis	20	Yes	FAC	Prevalence Ind		2.65	_(5)
3. Carex blanda	5	No	FAC	i rovalonoo ma		2.00	_
4. Apocynum cannabinum	5	No	FAC	Hydrophytic Veg	etation Indicator	rs:	
5. Glyceria striata	20	Yes	OBL		t for Hydrophytic		
6. Phalaris arundinacea	10	No	FACW	X 2 - Dominance		Ü	
7.				X 3 - Prevalence	e Index is ≤3.0 <sup>1</sup>		
8.				4 - Morpholog	ical Adaptations <sup>1</sup>	(Provide su	upporting
9.				data in Ren	narks or on a sep	arate sheet	t <b>)</b>
10				Problematic H	lydrophytic Veget	ation <sup>1</sup> (Exp	lain)
	70	=Total Cover		<sup>1</sup> Indicators of hydr	ic soil and wetlan	d hydrolog	y must
Woody Vine Stratum (Plot size: 15'	)			be present, unless	disturbed or prol	olematic.	
1. Celastrus orbiculatus	25	Yes	UPL	Hydrophytic			
2				Vegetation			
	25	=Total Cover		Present? Y	'es <u>X</u> No		
Remarks: (Include photo numbers here or on a sepa	rate sheet.)						

Profile Desc Depth	cription: (Describe Matrix	to the depth		ument th		ator or o	confirm the absence	of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	R	emarks	
0-18	10YR 3/1	90	10YR 6/8	10	C	PL/M	Sandy	Prominent re		ntrations
		<u> </u>								
-								-		
	-									
<sup>1</sup> Type: C=Co	oncentration, D=De	pletion, RM=R	educed Matrix,	MS=Mas	ked San	d Grains		n: PL=Pore Lining		
Hydric Soil								rs for Problemati	-	oils³:
Histosol	` '		Sandy Gle		rix (S4)			st Prairie Redox ( <i>F</i>	-	
	pipedon (A2)		X Sandy Re					Manganese Mass		
Black His			Stripped N		5)			Parent Material (F		
	n Sulfide (A4)		Dark Surfa		· · · · · / [4]			Shallow Dark Sur		
2 cm Mu	Layers (A5)		Loamy Mu	-			Otne	er (Explain in Rema	arks)	
	ck (A10) I Below Dark Surfac	co (Λ11)	Loamy Gl	•	` '					
	irk Surface (A12)	ce (ATT)	Redox Da				<sup>3</sup> Indicato	rs of hydrophytic v	egetation a	and
	lucky Mineral (S1)		Depleted		` '	١		and hydrology mus	_	
	cky Peat or Peat (S	33)	Redox De			,		ss disturbed or pro		ιι,
_	Layer (if observed			p. 000.01	. 0)	1				
Type:	none									
Depth (ir		,	_				Hydric Soil Presen	t? Y	es X	No
Remarks:			<u> </u>				,	-		
l remarke.										
HYDROLO	GY									
Wetland Hy	drology Indicators	:								
Primary India	cators (minimum of	one is required					<u>Seconda</u>	ry Indicators (mini	mum of two	required)
Surface	Water (A1)		Water-Sta	ined Lea	ves (B9)			ace Soil Cracks (B	•	
	ter Table (A2)		Aquatic Fa					nage Patterns (B1		
Saturatio			True Aqua					Season Water Tab	le (C2)	
	arks (B1)		Hydrogen		-	-		fish Burrows (C8)		
	t Deposits (B2)		x Oxidized I	•		•	` '	ration Visible on A	_	ery (C9)
	osits (B3)		Presence					ted or Stressed Pl		
	t or Crust (B4)		Recent Iro			ilea Soil	` '	morphic Position (	-	
	osits (B5) on Visible on Aerial	Imagory (R7)	Thin Muck Gauge or				_X_FAC	-Neutral Test (D5)		
	Vegetated Concav									
Field Obser		c dunace (bo)	Other (EX	piaiii iii iv	.cmarks)					
Surface Wat		es	No x	Depth (ii	nches).					
Water Table		es	No x	Depth (ii	_					
Saturation P		es	No x	Depth (ii	· -		Wetland Hydrolo	av Present? Y	es X	No
(includes car				(II	_			g,	<u></u> -	
	corded Data (strear	n gauge, moni	toring well, aeria	al photos.	previou	s inspec	ctions), if available:			
						'				
Remarks:										

Project/Site: Pine Trace Golf Course Project Area		City/Cou	nty: Roches	ster Hills-OaklandCo.	_ Sampling Dat	te: <u>7-2-</u> 2	24
Applicant/Owner: Bylen Golf, Inc.				State: MI	Sampling Poi	nt: \	WT2
Investigator(s): ASTI-KAH		Section, T	ownship, Ra	nge: Sec 31 T3N R1	1E		
Landform (hillside, terrace, etc.): slight depression		I	_ocal relief (	concave, convex, none)	: concave		
Slope (%): <u>1-3</u> Lat: <u>42.624668</u>		Long:	33.198044		Datum: NAD83		
Soil Map Unit Name: Grandby loamy sand				NWI class	sification: none		
Are climatic / hydrologic conditions on the site typica	I for this time of	f year?	Yes x	No (If no, ex	xplain in Remarks	s.)	
Are Vegetation , Soil , or Hydrology	significantly of	listurbed? A	re "Normal (	Circumstances" present	? Yes x	No	
Are Vegetation, Soil, or Hydrology	<ul><li>naturally prob</li></ul>	olematic? (	f needed, ex	plain any answers in R	emarks.)		
SUMMARY OF FINDINGS – Attach site			g point lo	cations, transects	s, important f	eatures	, etc.
Hydrophytic Vegetation Present? Yes X	No	Is the	Sampled A	rea			
	No		n a Wetland'		No		
Wetland Hydrology Present? Yes X	No						
Remarks:							
Wetland B - emergent wetland.							
<b>VEGETATION</b> – Use scientific names of p		Damainant	la dia atau				
<u>Tree Stratum</u> (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test we	orksheet:		
1.	0			Number of Dominan	t Species That		
2.				Are OBL, FACW, or	FAC:	2	(A)
3. 4.				Total Number of Dor Across All Strata:	minant Species	2	(B)
5.				Percent of Dominant	t Species That		_(5)
	<del></del>	Total Cover		Are OBL, FACW, or	•	100.0%	(A/B)
Sapling/Shrub Stratum (Plot size: 15'	_)				_		
1	0			Prevalence Index v			
2.				Total % Cover		tiply by:	_
3.				· —	70 x 1 = _ 30 x 2 =	70 60	_
5.				FAC species	0 x3=	0	_
· .		Total Cover		FACU species	0 x 4 =	0	_
Herb Stratum (Plot size: 5' )				UPL species	0 x 5 =	0	_
1. Typha angustifolia	70	Yes	OBL	Column Totals: 1	100 (A)	130	(B)
2. Impatiens capensis	30	Yes	FACW	Prevalence Index	= B/A =	1.30	_
3.							
4				Hydrophytic Veget			
5. 6.				X 2 - Dominance	or Hydrophytic Ve	egetation	
7				X 3 - Prevalence I			
0					al Adaptations <sup>1</sup> (F	Provide su	nnorting
8. 9.					rks or on a separ		
10.					Irophytic Vegetat		•
	100	Total Cover		<sup>1</sup> Indicators of hydric	soil and wetland	hydrology	,
Woody Vine Stratum (Plot size: 15'	_)			be present, unless d	isturbed or proble	ematic.	
1				Hydrophytic			
<b>-</b> .				Vegetation			
	=	=Total Cover		Present? Yes	s X No		

Profile Description: (Describe to the depth  Depth Matrix			h needed to document the indicator or c Redox Features				ontirm the absence	of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-6	10YR 4/2	90	10YR 6/8	10	С	PL/M	Sandy	Prominent redox concentrations		
0.10	10)(D.0/0		40)/D 4/0							
6-18	10YR 6/2	70	10YR 4/2	5	<u>C</u>	M	Sandy	Faint redox concentrations		
			10YR 4/6	25		PL/M		Prominent redox concentrations		
¹Type: C=C	oncentration, D=Depl	 etion, RM=	Reduced Matrix, N	MS=Mas	ked San	d Grains		: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils <sup>3</sup> :				
Histosol	` '		Sandy Gleyed Matrix (S4)				Coast Prairie Redox (A16) Iron-Manganese Masses (F12) Red Parent Material (F21)			
	oipedon (A2)		X Sandy Redox (S5)							
	stic (A3)		Stripped Matrix (S6)							
	en Sulfide (A4)		Dark Surface (S7)				Very Shallow Dark Surface (F22)			
Stratified		Loamy Mucky Mineral (F1)			Othe	r (Explain in Remarks)				
2 cm Muck (A10)Loamy Gleyed Matrix (F2)										
Deplete		pleted Matrix (F3)			2					
	ark Surface (A12)		Redox Dark Surface (F6)				<sup>3</sup> Indicators of hydrophytic vegetation and			
	Mucky Mineral (S1)	Depleted Dark Surface (F7)  Redox Depressions (F8)				wetland hydrology must be present,				
	ucky Peat or Peat (S3	)	Redox De	pression	s (F8)	ı	unies	ss disturbed or problematic.		
	Layer (if observed):									
Type: Depth (i	none nches):	<u> </u>	-   Hv				t? Yes X No			
Depth (inches): Hydric Soil Present? Yes  Remarks:										
	201									
HYDROLO										
_	drology Indicators:	:					Casanda			
Primary Indicators (minimum of one is required; check all that apply)					,,,,,, (DO)			ry Indicators (minimum of two required)		
Surface Water (A1) High Water Table (A2)			Water-Stained Leaves (B9)				Surface Soil Cracks (B6)  Drainage Patterns (B10)			
x Saturation	, ,		Aquatic Fauna (B13) True Aquatic Plants (B14)				Season Water Table (C2)			
		Hydrogen Sulfide Odor (C1)					fish Burrows (C8)			
<del></del>					•	,		ration Visible on Aerial Imagery (C9)		
Sediment Deposits (B2)x Oxidized Rhizospheres on Living Ro Drift Deposits (B3) Presence of Reduced Iron (C4)						· · · —	ted or Stressed Plants (D1)			
Algal Mat or Crust (B4)  Recent Iron Reduction in Tilled Soils							morphic Position (D2)			
Iron Deposits (B5)  Thin Muck Surface (C7)						· · · —	-Neutral Test (D5)			
Inundation Visible on Aerial Imagery (B7)  Gauge or Well Data (D9)						<u></u>				
	Vegetated Concave	0 , (	<i></i>			)				
Field Obser		<u>`</u>	<u>,                                     </u>							
Surface Wat	ter Present? Yes	S	No x	Depth (i	nches):					
Water Table	Present? Yes	s	No x	Depth (i	nches):					
Saturation Present? Yes x No Depth (inches): 6						Wetland Hydrolog	gy Present? Yes X No			
(includes ca	pillary fringe)									
Describe Re	ecorded Data (stream	gauge, mo	nitoring well, aeria	l photos	, previou	s inspec	ctions), if available:			
Remarks:										
ı										
i										