TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway South, #7 • Twinsburg, Ohio 44087
www.TMSEngineers.com

Mr. Chris Brown
Prestige Builder Group
778 McCauley Road
Suite 140
Stow, Ohio 44224

Re: Proposed Residential Development
City of Hudson, Ohio
Trip Generation Analysis

Dear Mr. Brown,

TMS Engineers, Inc. has performed the following trip generation analysis for the proposed residential development which will be located northwest of the Stow Road & Ravenna Road intersection in the City of Hudson, Ohio (see **Location Map, Figure 1**). The purpose of this trip generation analysis is to estimate the traffic that will be generated by the proposed residences. The site plan can be seen in **Figure 2**. The following are the results of our trip generation analysis.

Trip Generation

The calculation of future traffic requires an estimate of traffic the development will generate after construction. The most widely accepted method of determining the amount of traffic that a proposed development will generate is to compare the proposed site with existing facilities of the same use. This estimate is typically expressed as a trip rate. In order to estimate traffic for the proposed residences, a trip rate was calculated using data and procedures found in the Institute of Transportation Engineers (ITE) **"Trip Generation" Manual, Eleventh Edition**.

All trip generation analyses utilized the Single Family Detached Housing land use (ITE Code 210) information. A copy of the trip generation worksheet for the homes can be seen in the attached **Figures 3 and 4**.

Proposed Trip Generation Calculations

Based on the trip generation analysis described above, the table on the next page shows the estimated generated traffic during the AM and PM peak hour for the proposed residential development based upon the national averages considering the number of dwelling units.

ITE TRIP GENERATION		Dwelling Units	TRIP ENDS			
			Weekday Peak Hour Between 7-9 AM		Weekday Peak Hour Between 4-6 PM	
ITE Code	Description		Enter	Exit	Enter	Exit
210	Single Family Detached Homes	34	7	21	23	13
New Generated Trips			28		36	

The previous table shows that the proposed residential development is expected to generate a total of 28 new trips in the AM peak hour and 36 new trips in the PM peak hour. It is our opinion that, when the anticipated changes in traffic volumes are at these levels, the traffic generated by the homes should not have an impact on the surrounding street network system.

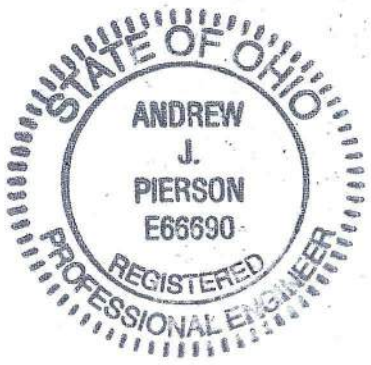
This opinion is based upon the fact that traffic impact studies are recommended to be performed by the **Institute of Transportation Engineers** whenever an increase in trips in any peak hour is greater than 100 trips per hour. This recommendation is made because this is the point where a change in roadway capacity may be found and mitigation may or may not be needed. The anticipated generated volumes from this development are less than daily variations in the current volumes on the local roadway network and should not be perceived by the traveling public.

The Ohio Department of Transportation concedes that traffic studies are only necessary when the resulting trip increase is more than 60 trips in either of the peak hours. This is stated in their **State Highway Access Management Manual**. Since the proposed homes is expected to generate less than 60 trips, it is our professional opinion that the change in the amount of generated traffic will **not** have an impact on the surrounding roadway network nor require traffic analyses.

If you have any questions or need additional information, please do not hesitate to contact me.

Very truly yours,

TMS Engineers, Inc.



Andrew Pierson P.E.
Senior Traffic Engineer

Attachments

FIGURES

TMS Engineers, Inc. Transportation Management Services 2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087 www.TMSEngineers.com	**Residential Development** **Hudson, Ohio** **Trip Generation Analysis**	**Location Map**	**Figure 1** **Attachment**

NOT TO SCALE

TMS Engineers, Inc.
Transportation Management Services
2112 Case Parkway S., Unit 7, Twinsburg, Ohio 44087
www.TMSEngineers.com

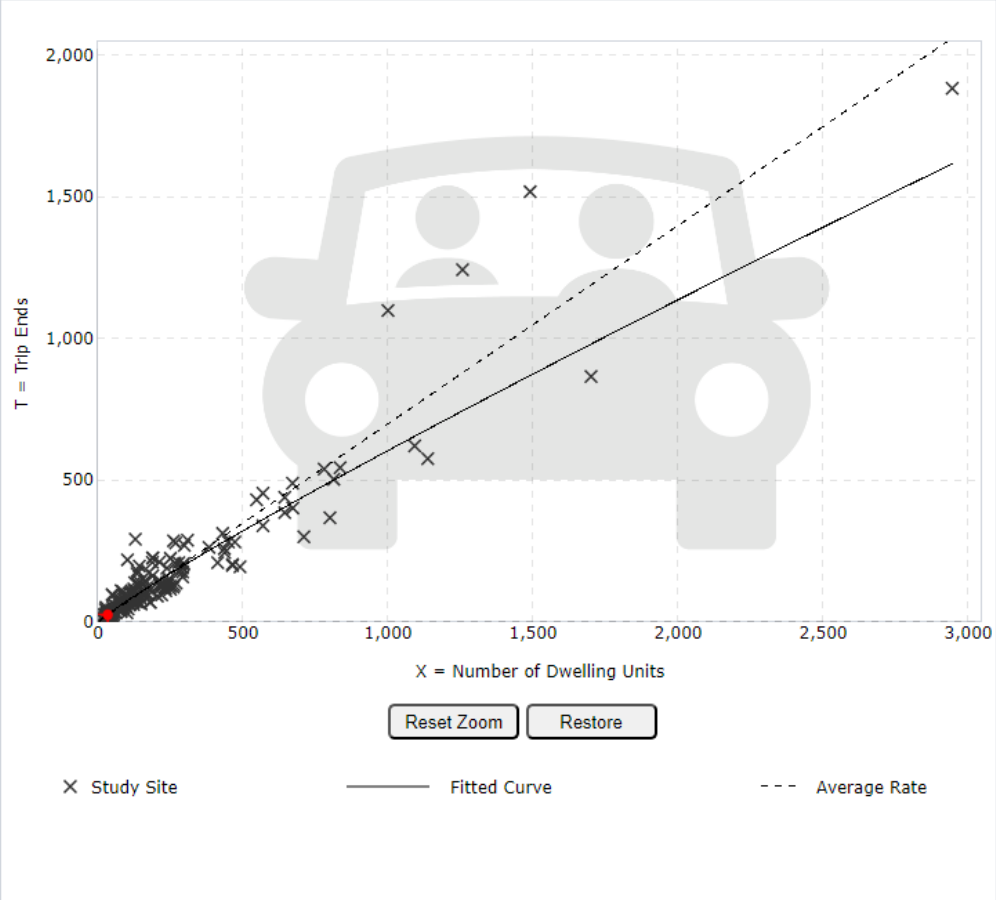
Residential Development
Hudson, Ohio
Trip Generation Analysis

Site Plan

Figure 2

Attachment

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
192

Avg. Num. of Dwelling Units:
226

Average Rate:
0.70

Range of Rates:
0.27 - 2.27

Standard Deviation:
0.24

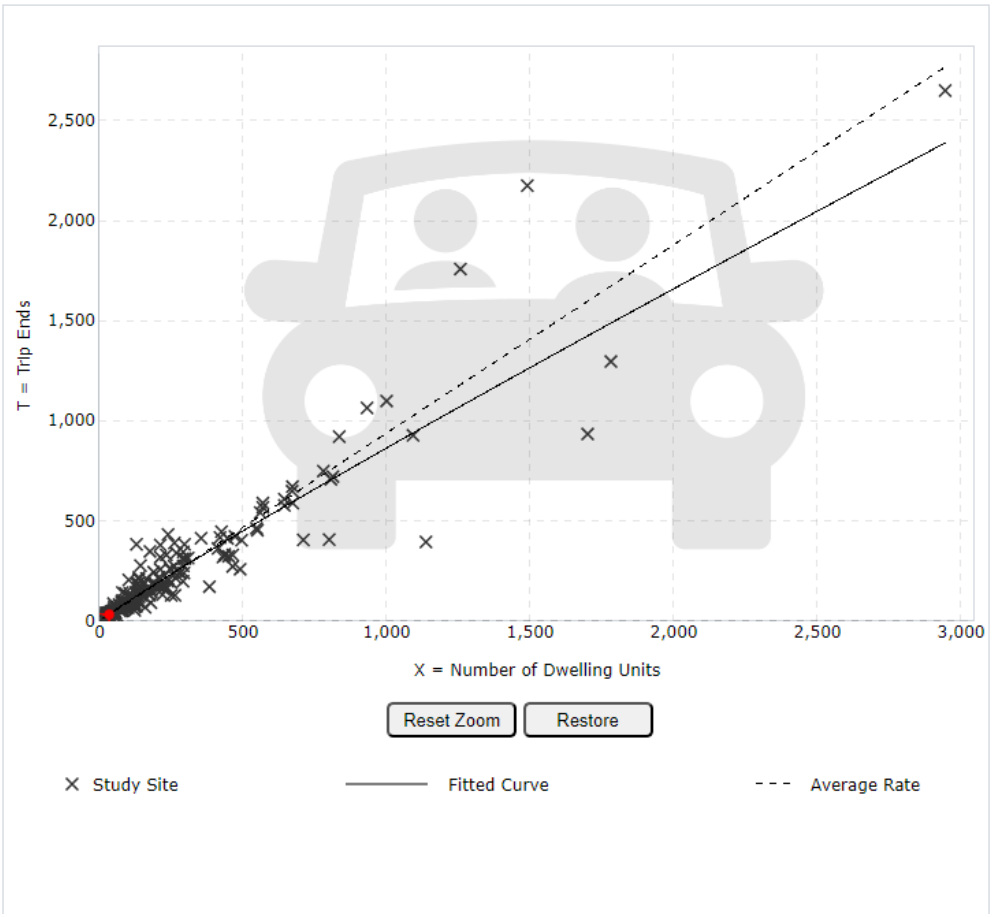
Fitted Curve Equation:
Ln(T) = 0.91 Ln(X) + 0.12

R^2:
0.90

Directional Distribution:
25% entering, 75% exiting

Calculated Trip Ends:
Average Rate: 24 (Total), 6 (Entry), 18 (Exit)
Fitted Curve: 28 (Total), 7 (Entry), 21 (Exit)

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
208

Avg. Num. of Dwelling Units:
248

Average Rate:
0.94

Range of Rates:
0.35 - 2.98

Standard Deviation:
0.31

Fitted Curve Equation:
Ln(T) = 0.94 Ln(X) + 0.27

R^2:
0.92

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 32 (Total), 20 (Entry), 12 (Exit)
Fitted Curve: 36 (Total), 23 (Entry), 13 (Exit)

January 2, 2024

Chris Brown
Prestige Builder Group, LLC
778 McCauley Rd, Ste 140
Stow, OH 44224

RE: Tree Survey – Canterbury Crossing

Dear Mr. Brown,

EnviroScience, Inc. performed a vegetation and tree survey on December 8, 2023, for the Prestige Builder Group, LLC at Canterbury Crossing project site in the City of Hudson, Summit County, Ohio. The approximate center coordinates are 41.228235°, -81.414967°. The maps provided in Appendix A depict the project area. Representative photographs of plant communities are included in Appendix B.

SITE DESCRIPTION

The study area is approximately 15.2 acres within the City of Hudson, Summit County, Ohio. The study area is located on portions of parcels 3002169, 3002375, 3003108, 3004552, 3006324, and 3010370. The survey area consists of maintained lawn, agricultural field, forest, and upland scrub-shrub communities. The surrounding land use consists of agricultural, rural residential, and undeveloped properties.

METHODS

EnviroScience biologists traversed the Study Area on foot to identify all trees with a diameter at breast height (DBH) greater than six inches. DBH was measured at 1.35m from the ground surface and was recorded to the nearest 0.1 inch. The species and location of each identified tree were recorded using a submeter-accurate GPS. No data was collected for trees with a DBH less than six inches.

Photographs were taken of each plant community, and canopy cover was visually estimated within each community for coniferous trees, deciduous trees, and woody shrubs. Representative photographs of plant communities can be found in Attachment B.

RESULTS

Tree Survey

A total of 190 trees with DBH > 6 in were identified within the project area, including 0 coniferous trees, 173 deciduous trees, and 17 standing dead trees (Figure 1). Detailed results of the tree survey are contained in Table 1.

Plant Community Survey

Vegetation density for both tree and shrub strata were recorded within each naturally vegetated area (Figure 2). Tree canopy was categorized as ‘dense’ if the wooded area was ≥40% cover, ‘moderate’ if the wooded area was 11-39% cover, and ‘minimal’ if the wooded area was 0-10% cover. The same categorization was utilized for shrub density. The results of the plant community survey are contained in Table 2 and summarized below:

- 1.18 acres of deciduous tree-dominated plant community, including:
  - 0.78 acres with dense to moderate shrub layer and
  - 0.4 acres with minimal to no shrub layer.
- 3.55 acres with moderate deciduous tree cover, including:
  - 0.23 acres with dense to moderate shrub layer and
  - 3.32 acres with no shrub layer.
- 10.47 acres with minimal to no tree cover, including:
  - 2.44 acres with dense to moderate shrub layer and
  - 8.03 acres with minimal or no shrub layer.

Deciduous Tree Community

The dominant deciduous tree species were red maple (*Acer rubrum*) and black cherry (*Prunus serotina*). Lesser amounts of apple (*Malus* sp.), American elm (*Ulmus americana*), dead ash (*Fraxinus* sp.), Callery pear (*Pyrus calleryanus*), white oak (*Quercus alba*), black walnut (*Juglans nigra*), pin oak (*Quercus palustris*), black gum (*Nyssa sylvatica*), dead cherry (*Prunus* sp.), silver maple (*Acer saccharinum*), shagbark hickory (*Carya ovata*), dead elm (*Ulmus* sp.), honeylocust (*Gleditsia triacanthos*), and tuliptree (*Liriodendron tulipifera*). Red maple trees were common throughout the study area. Black cherry, American elm and Callery pear trees were commonly found north of Ravenna Street. White oaks were commonly found in the agricultural field south of Ravenna Street.

Shrub/Sapling Community

South of Ravenna Street, the shrub/sapling layer consisted primarily of ash saplings, with lesser amounts of the common buckthorn (*Rhamnus cathartica*), rambler rose (*Rosa multiflora*), and Allegheny blackberry (*Rubus allegheniensis*).

North of Ravenna Street, the shrub/sapling layer consisted primarily of Callery pear saplings, with lesser amounts of common buckthorn, glossy buckthorn (*Frangula alnus*), (*Viburnum dentatum*), autumn olive (*Elaeagnus umbellata*), crab apple (*Malus pumila*), young Norway spruce (*Picea abies*), and Allegheny blackberry. The young Norway spruce trees were limited to the north end of the study area.

Herbaceous Plant Community

South of Ravenna Street, the herbaceous community included mowed turf grass, reed canarygrass (*Phalaris arundinacea*), Queen Anne's lace (*Daucus carota*), poison ivy (*Toxicodendron radicans*), hemp dogbane (*Apocynum cannabinum*), creeping thistle (*Cirsium arvense*), chives (*Allium* sp.), common reed (*Phragmites australis* ssp. *australis*), calico aster (*Symphyotrichum lateriflorum*), forked panicgrass (*Panicum dichotomum*), and Canada goldenrod (*Solidago canadensis*).

North of Ravenna Street, the herbaceous community included mowed turf grass, poison ivy, sheep sorrel (*Rumex acetosella*), Canadian horseweed (*Conyza canadensis*), forked panicgrass, path rush (*Juncus tenuis*), Canada goldenrod, harvestlice (*Agrimonia parviflora*), red deadnettle (*Lamium purpureum*), and American pokeweed (*Phytolacca americana*).

The remnants of a harvested soybean crop (*Glycine max*) were present within the agricultural fields on both sides of Ravenna Street, in addition to common agricultural weeds including sheep sorrel and red deadnettle.

Thank you for this opportunity to provide our services. Should you have any other questions or require additional information, please do not hesitate to contact me by phone at 330-688-0111 or by email at CKrause@EnviroScienceInc.com.

Sincerely,

Carolyn Krause
Biologist

Enclosures:

Attachment A: Figures

Figure 1: Map of Trees Over Six-Inch DBH

Figure 2: Map of Plant Communities

Attachment B: Photographs

Table 1. Trees with DBH > 6 Inches within the Survey Area

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-1	*Fraxinus americana*	White Ash	10.5	41.231410	-81.413418	4564529.0	465352.8
T-2	*Pyrus calleryana*	Callery Pear	6.5	41.230827	-81.413407	4564464.2	465353.4
T-3	*Prunus serotina*	Black Cherry	8.0	41.230675	-81.413403	4564447.4	465353.6
T-4	*Malus* sp.	Apple	10.0	41.230428	-81.413410	4564419.9	465352.9
T-5	*Prunus serotina*	Black Cherry	19.0	41.230210	-81.414688	4564396.2	465245.6
T-6	*Dead Prunus* sp.	Dead Cherry	8.0	41.230177	-81.413413	4564392.1	465352.5
T-7	*Quercus palustris*	Pin Oak	14.0	41.230168	-81.413430	4564391.1	465351.1
T-8	*Malus* sp.	Apple	6.5	41.230129	-81.413408	4564386.7	465352.9
T-9	*Malus* sp.	Apple	10.0	41.230120	-81.413419	4564385.7	465351.9
T-10	*Malus* sp.	Apple	8.0	41.230096	-81.413423	4564383.1	465351.6
T-11	*Malus* sp.	Apple	9.0	41.230091	-81.413423	4564382.5	465351.6
T-12	*Prunus serotina*	Black Cherry	7.0	41.230076	-81.413414	4564380.8	465352.4
T-13	*Prunus serotina*	Black Cherry	7.0	41.230069	-81.413426	4564380.1	465351.4
T-14	*Prunus serotina*	Black Cherry	11.0	41.230037	-81.413424	4564376.5	465351.5
T-15	*Prunus serotina*	Black Cherry	9.0	41.230030	-81.413415	4564375.7	465352.3
T-16	*Malus* sp.	Apple	7.5	41.230014	-81.413435	4564374.0	465350.6
T-17	*Prunus serotina*	Black Cherry	10.5	41.229995	-81.413417	4564371.9	465352.1
T-18	*Malus* sp.	Apple	6.5	41.229955	-81.413435	4564367.5	465350.5
T-19	*Prunus serotina*	Black Cherry	13.5	41.229939	-81.413423	4564365.7	465351.6
T-20	*Malus* sp.	Apple	8.0	41.229886	-81.413430	4564359.8	465351.0
T-21	*Malus* sp.	Apple	10.0	41.229881	-81.413441	4564359.2	465350.1
T-22	*Malus* sp.	Apple	7.0	41.229880	-81.413439	4564359.1	465350.2
T-23	*Prunus serotina*	Black Cherry	7.5	41.229863	-81.413424	4564357.2	465351.4
T-24	*Prunus serotina*	Black Cherry	7.0	41.229853	-81.413426	4564356.1	465351.3
T-25	*Prunus serotina*	Black Cherry	7.0	41.229825	-81.413400	4564353.0	465353.4
T-26	*Prunus serotina*	Black Cherry	10.0	41.229762	-81.413432	4564346.0	465350.7
T-27	*Pyrus calleryana*	Callery Pear	19.0	41.229763	-81.418062	4564348.0	464962.6
T-28	*Malus* sp.	Apple	10.0	41.229707	-81.413432	4564339.9	465350.7
T-29	*Pyrus calleryana*	Callery Pear	16.0	41.229748	-81.417983	4564346.3	464969.3
T-30	*Quercus palustris*	Pin Oak	8.0	41.229683	-81.413426	4564337.2	465351.2
T-31	*Pyrus calleryana*	Callery Pear	14.0	41.229710	-81.417903	4564342.0	464975.9
T-32	*Prunus serotina*	Black Cherry	8.0	41.229653	-81.413420	4564333.9	465351.6
T-33	*Malus* sp.	Apple	11.0	41.229637	-81.413416	4564332.1	465352.0
T-34	*Prunus serotina*	Black Cherry	17.0	41.229609	-81.414720	4564329.6	465242.7
T-35	*Prunus serotina*	Black Cherry	29.0	41.229587	-81.414701	4564327.1	465244.2
T-36	*Prunus serotina*	Black Cherry	23.0	41.229579	-81.414732	4564326.2	465241.6
T-37	Dead *Fraxinus* sp.	Dead Ash	13.5	41.229489	-81.413302	4564315.7	465361.5
T-38	*Prunus serotina*	Black Cherry	17.0	41.229493	-81.414723	4564316.6	465242.3
T-39	Dead *Prunus* sp.	Dead Cherry	8.5	41.229478	-81.413327	4564314.5	465359.3

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-40	*Prunus serotina*	Black Cherry	24.0	41.229413	-81.414729	4564307.8	465241.8
T-41	*Ulmus americana*	American Elm	10.0	41.229400	-81.413391	4564305.8	465353.9
T-42	Dead *Ulmus* sp.	Dead Elm	11.0	41.229386	-81.413416	4564304.2	465351.9
T-43	*Malus* sp.	Apple	7.0	41.229179	-81.413407	4564281.3	465352.5
T-44	*Prunus serotina*	Black Cherry	10.0	41.229157	-81.413404	4564278.8	465352.8
T-45	*Prunus serotina*	Black Cherry	9.0	41.229138	-81.413415	4564276.8	465351.8
T-46	*Prunus serotina*	Black Cherry	10.0	41.229136	-81.413410	4564276.5	465352.2
T-47	*Prunus serotina*	Black Cherry	9.0	41.229044	-81.413414	4564266.3	465351.9
T-48	*Prunus serotina*	Black Cherry	9.0	41.229043	-81.413421	4564266.2	465351.3
T-49	*Prunus serotina*	Black Cherry	10.0	41.229032	-81.413425	4564264.9	465350.9
T-50	*Pyrus calleryana*	Callery Pear	17.0	41.228993	-81.413120	4564260.5	465376.4
T-51	*Prunus serotina*	Black Cherry	11.0	41.228940	-81.413240	4564254.6	465366.4
T-52	*Prunus serotina*	Black Cherry	15.5	41.228920	-81.413421	4564252.6	465351.2
T-53	*Prunus serotina*	Black Cherry	19.0	41.228892	-81.413404	4564249.4	465352.5
T-54	*Prunus serotina*	Black Cherry	11.0	41.228860	-81.413205	4564245.7	465369.3
T-55	*Prunus serotina*	Black Cherry	16.0	41.228858	-81.413418	4564245.6	465351.4
T-56	*Juglans nigra*	Black Walnut	10.0	41.228771	-81.413219	4564235.9	465368.1
T-57	*Juglans nigra*	Black Walnut	9.5	41.228770	-81.413223	4564235.8	465367.7
T-58	*Prunus serotina*	Black Cherry	9.0	41.228712	-81.413294	4564229.3	465361.7
T-59	*Gleditsia triacanthos*	Honeylocust	6.5	41.228681	-81.413412	4564226.0	465351.8
T-60	*Prunus serotina*	Black Cherry	10.6	41.228610	-81.413289	4564218.0	465362.1
T-61	*Prunus serotina*	Black Cherry	24.4	41.228610	-81.413399	4564218.1	465352.9
T-62	*Juglans nigra*	Black Walnut	10.0	41.228563	-81.413248	4564212.9	465365.5
T-63	*Prunus serotina*	Black Cherry	11.9	41.228538	-81.413407	4564210.1	465352.2
T-64	*Prunus serotina*	Black Cherry	30.1	41.228470	-81.413433	4564202.6	465349.9
T-65	*Prunus serotina*	Black Cherry	17.5	41.228428	-81.413423	4564197.9	465350.7
T-66	*Acer rubrum*	Red Maple	10.0	41.228421	-81.417149	4564198.6	465038.5
T-67	Dead *Fraxinus* sp.	Dead Ash	11.5	41.228412	-81.416976	4564197.5	465052.9
T-68	*Acer rubrum*	Red Maple	29.5	41.228413	-81.417133	4564197.7	465039.8
T-69	*Acer rubrum*	Red Maple	24.0	41.228412	-81.417175	4564197.7	465036.3
T-70	*Acer rubrum*	Red Maple	9.5	41.228394	-81.417121	4564195.6	465040.8
T-71	*Acer rubrum*	Red Maple	12.5	41.228357	-81.417114	4564191.5	465041.4
T-72	*Acer rubrum*	Red Maple	17.0	41.228351	-81.417139	4564190.8	465039.3
T-73	*Acer rubrum*	Red Maple	10.0	41.228348	-81.417125	4564190.5	465040.5
T-74	*Acer rubrum*	Red Maple	19.5	41.228326	-81.416991	4564188.0	465051.7
T-75	*Acer rubrum*	Red Maple	19.0	41.228265	-81.416884	4564181.2	465060.6
T-76	*Pyrus calleryana*	Callery Pear	6.9	41.228181	-81.413146	4564170.4	465373.9
T-77	Dead *Fraxinus* sp.	Dead Ash	17.0	41.228176	-81.416581	4564171.2	465085.9
T-78	*Malus* sp.	Apple	6.3	41.228129	-81.413457	4564164.7	465347.7
T-79	*Juglans nigra*	Black Walnut	6.6	41.228106	-81.413408	4564162.2	465351.9

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-80	*Malus* sp.	Apple	10.6	41.228094	-81.413464	4564160.8	465347.2
T-81	Dead *Fraxinus* sp.	Dead Ash	10.0	41.228118	-81.416518	4564164.7	465091.2
T-82	*Malus* sp.	Apple	8.1	41.228082	-81.413361	4564159.5	465355.7
T-83	*Acer rubrum*	Red Maple	18.0	41.228102	-81.416940	4564163.1	465055.8
T-84	*Pyrus calleryana*	Callery Pear	7.6	41.228049	-81.413450	4564155.9	465348.3
T-85	*Acer rubrum*	Red Maple	18.5	41.228033	-81.416796	4564155.4	465067.9
T-86	*Pyrus calleryana*	Callery Pear	9.2	41.227984	-81.413130	4564148.5	465375.1
T-87	*Acer rubrum*	Red Maple	13.5	41.228002	-81.416810	4564151.9	465066.6
T-88	*Ulmus americana*	American Elm	25.4	41.227962	-81.413398	4564146.2	465352.6
T-89	*Ulmus americana*	American Elm	29.2	41.227955	-81.413310	4564145.3	465359.9
T-90	*Acer rubrum*	Red Maple	22.0	41.227961	-81.416780	4564147.3	465069.2
T-91	*Nyssa sylvatica*	Black Gum	15.8	41.227903	-81.413159	4564139.5	465372.6
T-92	Dead *Fraxinus* sp.	Dead Ash	10.5	41.227888	-81.416554	4564139.2	465088.0
T-93	*Juglans nigra*	Black Walnut	6.3	41.227820	-81.413173	4564130.3	465371.4
T-94	Dead *Fraxinus* sp.	Dead Ash	11.0	41.227779	-81.416609	4564127.2	465083.4
T-95	*Acer rubrum*	Red Maple	15.0	41.227761	-81.416923	4564125.3	465057.1
T-96	*Quercus palustris*	Pin Oak	8.5	41.227753	-81.417053	4564124.4	465046.1
T-97	*Prunus serotina*	Black Cherry	10.0	41.227668	-81.413157	4564113.4	465372.7
T-98	*Acer rubrum*	Red Maple	15.0	41.227696	-81.417001	4564118.1	465050.5
T-99	*Acer rubrum*	Red Maple	15.0	41.227678	-81.416977	4564116.1	465052.5
T-100	*Acer rubrum*	Red Maple	21.5	41.227667	-81.416417	4564114.6	465099.4
T-101	Unknown	Unknown	25.7	41.227603	-81.413337	4564106.2	465357.5
T-102	*Acer rubrum*	Red Maple	16.0	41.227634	-81.416736	4564111.1	465072.6
T-103	*Acer rubrum*	Red Maple	26.7	41.227521	-81.413432	4564097.3	465349.5
T-104	*Prunus serotina*	Black Cherry	7.8	41.227518	-81.413391	4564096.8	465353.0
T-105	*Acer rubrum*	Red Maple	21.0	41.227542	-81.416428	4564100.8	465098.4
T-106	*Acer rubrum*	Red Maple	13.0	41.227539	-81.416985	4564100.6	465051.7
T-107	*Fraxinus americana*	White Ash	22.0	41.227504	-81.413411	4564095.3	465351.3
T-108	*Acer rubrum*	Red Maple	21.5	41.227531	-81.416517	4564099.6	465091.0
T-109	*Acer rubrum*	Red Maple	11.0	41.227497	-81.416534	4564095.8	465089.5
T-110	*Acer rubrum*	Red Maple	25.0	41.227487	-81.416582	4564094.7	465085.5
T-111	*Acer rubrum*	Red Maple	29.4	41.227376	-81.412012	4564080.5	465468.4
T-112	*Acer rubrum*	Red Maple	13.4	41.227361	-81.412048	4564078.9	465465.4
T-113	*Acer rubrum*	Red Maple	22.0	41.227402	-81.416601	4564085.3	465083.9
T-114	*Ulmus americana*	American Elm	15.7	41.227328	-81.412305	4564075.3	465443.9
T-115	*Ulmus americana*	American Elm	19.6	41.227322	-81.413358	4564075.1	465355.6
T-116	*Acer rubrum*	Red Maple	18.7	41.227305	-81.412098	4564072.7	465461.2
T-117	*Acer rubrum*	Red Maple	26.8	41.227299	-81.412197	4564072.1	465452.9
T-118	*Acer rubrum*	Red Maple	12.7	41.227262	-81.412016	4564067.9	465468.0
T-119	*Prunus serotina*	Black Cherry	14.4	41.227254	-81.411943	4564067.0	465474.1

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-120	*Acer rubrum*	Red Maple	25.0	41.227275	-81.416500	4564071.1	465092.2
T-121	*Ulmus americana*	American Elm	16.4	41.227223	-81.412028	4564063.5	465467.1
T-122	Dead	Dead	9.1	41.227224	-81.413164	4564064.1	465371.8
T-123	*Nyssa sylvatica*	Black Gum	15.8	41.227189	-81.412207	4564059.9	465452.0
T-124	*Ulmus americana*	American Elm	12.1	41.227183	-81.412092	4564059.1	465461.7
T-125	*Acer rubrum*	Red Maple	11.1	41.227162	-81.411557	4564056.6	465506.5
T-126	*Acer rubrum*	Red Maple	12.4	41.227127	-81.411581	4564052.8	465504.4
T-127	*Acer rubrum*	Red Maple	11.7	41.227122	-81.411569	4564052.1	465505.5
T-128	*Acer rubrum*	Red Maple	16.8	41.227118	-81.412213	4564052.0	465451.5
T-129	*Acer rubrum*	Red Maple	13.7	41.227116	-81.411988	4564051.6	465470.4
T-130	*Acer rubrum*	Red Maple	8.7	41.227111	-81.411582	4564051.0	465504.4
T-131	*Acer rubrum*	Red Maple	12.6	41.227109	-81.411590	4564050.8	465503.7
T-132	*Acer rubrum*	Red Maple	12.0	41.227114	-81.412193	4564051.6	465453.1
T-133	*Carya ovata*	Shagbark Hickory	7.0	41.227144	-81.417024	4564056.8	465048.3
T-134	*Ulmus americana*	American Elm	20.6	41.227081	-81.411786	4564047.7	465487.3
T-135	*Acer rubrum*	Red Maple	14.4	41.227046	-81.411522	4564043.8	465509.3
T-136	*Acer rubrum*	Red Maple	10.5	41.227031	-81.411936	4564042.2	465474.7
T-137	*Ulmus americana*	American Elm	19.2	41.227006	-81.411509	4564039.2	465510.4
T-138	*Acer rubrum*	Red Maple	15.8	41.227001	-81.411622	4564038.8	465501.0
T-139	*Acer rubrum*	Red Maple	23.3	41.226969	-81.411662	4564035.2	465497.6
T-140	Dead *Fraxinus* sp.	Dead Ash	15.0	41.227005	-81.416828	4564041.3	465064.6
T-141	*Acer rubrum*	Red Maple	28.3	41.226966	-81.413308	4564035.6	465359.6
T-142	*Acer rubrum*	Red Maple	14.0	41.226987	-81.417064	4564039.3	465044.8
T-143	*Acer rubrum*	Red Maple	10.4	41.226863	-81.411535	4564023.4	465508.1
T-144	*Acer rubrum*	Red Maple	8.7	41.226854	-81.413300	4564023.1	465360.3
T-145	*Ulmus americana*	American Elm	13.5	41.226844	-81.412409	4564021.6	465434.9
T-146	*Acer rubrum*	Red Maple	39.2	41.226818	-81.411594	4564018.4	465503.2
T-147	*Ulmus americana*	American Elm	30.2	41.226770	-81.411720	4564013.1	465492.6
T-148	*Acer rubrum*	Red Maple	16.0	41.226770	-81.417040	4564015.3	465046.7
T-149	*Acer rubrum*	Red Maple	37.3	41.226713	-81.411915	4564006.9	465476.2
T-150	*Acer rubrum*	Red Maple	6.9	41.226699	-81.411868	4564005.3	465480.2
T-151	*Acer rubrum*	Red Maple	13.7	41.226671	-81.411592	4564002.1	465503.3
T-152	*Acer rubrum*	Red Maple	29.9	41.226669	-81.411851	4564002.0	465481.6
T-153	*Liriodendron tulipifera*	Tuliptree	12.0	41.226707	-81.417127	4564008.3	465039.4
T-154	*Acer rubrum*	Red Maple	22.2	41.226636	-81.411777	4563998.3	465487.8
T-155	*Acer rubrum*	Red Maple	16.0	41.226627	-81.411773	4563997.3	465488.1
T-156	*Ulmus americana*	American Elm	21.3	41.226582	-81.412636	4563992.6	465415.8
T-157	*Fraxinus americana*	White Ash	9.7	41.226548	-81.412143	4563988.7	465457.1

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-158	*Acer rubrum*	Red Maple	13.3	41.226501	-81.411860	4563983.3	465480.8
T-159	*Acer rubrum*	Red Maple	16.6	41.226498	-81.411897	4563983.1	465477.6
T-160	*Acer rubrum*	Red Maple	9.1	41.226480	-81.412255	4563981.1	465447.6
T-161	*Acer saccharinum*	Silver Maple	14.3	41.226471	-81.411657	4563980.0	465497.7
T-162	*Ulmus americana*	American Elm	20.7	41.226421	-81.411811	4563974.4	465484.8
T-163	*Acer rubrum*	Red Maple	25.6	41.226410	-81.411607	4563973.1	465501.9
T-164	*Ulmus americana*	American Elm	20.9	41.226417	-81.412441	4563974.2	465432.0
T-165	*Acer rubrum*	Red Maple	20.8	41.226406	-81.412149	4563973.0	465456.5
T-166	*Acer rubrum*	Red Maple	18.1	41.226387	-81.411701	4563970.6	465494.0
T-167	*Acer rubrum*	Red Maple	25.6	41.226382	-81.411687	4563970.1	465495.2
T-168	*Acer rubrum*	Red Maple	19.6	41.226370	-81.411797	4563968.8	465485.9
T-169	*Malus* sp.	Apple	7.4	41.226337	-81.411941	4563965.2	465473.8
T-170	Dead *Fraxinus* sp.	Dead Ash	16.0	41.226366	-81.415947	4563970.0	465138.1
T-171	*Acer rubrum*	Red Maple	25.6	41.226327	-81.412140	4563964.1	465457.2
T-172	*Acer rubrum*	Red Maple	30.8	41.226250	-81.412021	4563955.5	465467.1
T-173	Dead *Fraxinus* sp.	Dead Ash	17.0	41.226257	-81.415884	4563957.9	465143.3
T-174	*Ulmus americana*	American Elm	23.2	41.226196	-81.411440	4563949.3	465515.8
T-175	Dead *Fraxinus* sp.	Dead Ash	17.0	41.226231	-81.415847	4563955.0	465146.4
T-176	*Acer rubrum*	Red Maple	26.4	41.226190	-81.411631	4563948.8	465499.8
T-177	*Acer rubrum*	Red Maple	10.7	41.226169	-81.411603	4563946.4	465502.1
T-178	*Quercus alba*	White Oak	50.0	41.226116	-81.416780	4563942.6	465068.2
T-179	*Quercus alba*	White Oak	17.5	41.226084	-81.415680	4563938.5	465160.4
T-180	*Acer rubrum*	Red Maple	33.0	41.225968	-81.416529	4563926.0	465089.1
T-181	*Quercus alba*	White Oak	13.0	41.225861	-81.415681	4563913.8	465160.1
T-182	Dead *Fraxinus* sp.	Dead Ash	15.0	41.225848	-81.415670	4563912.3	465161.0
T-183	Dead *Fraxinus* sp.	Dead Ash	12.0	41.225840	-81.415509	4563911.4	465174.5
T-184	Dead	Dead	14.0	41.225764	-81.415109	4563902.8	465208.1
T-185	*Quercus alba*	White Oak	50.0	41.225654	-81.415329	4563890.7	465189.5
T-186	*Acer rubrum*	Red Maple	13.0	41.225647	-81.416261	4563890.3	465111.4
T-187	*Acer rubrum*	Red Maple	25.5	41.225588	-81.415773	4563883.6	465152.3
T-188	*Quercus alba*	White Oak	19.5	41.225547	-81.415979	4563879.0	465135.0
T-189	*Quercus alba*	White Oak	15.0	41.225524	-81.415990	4563876.5	465134.0
T-190	*Quercus alba*	White Oak	13.5	41.225505	-81.415972	4563874.5	465135.6

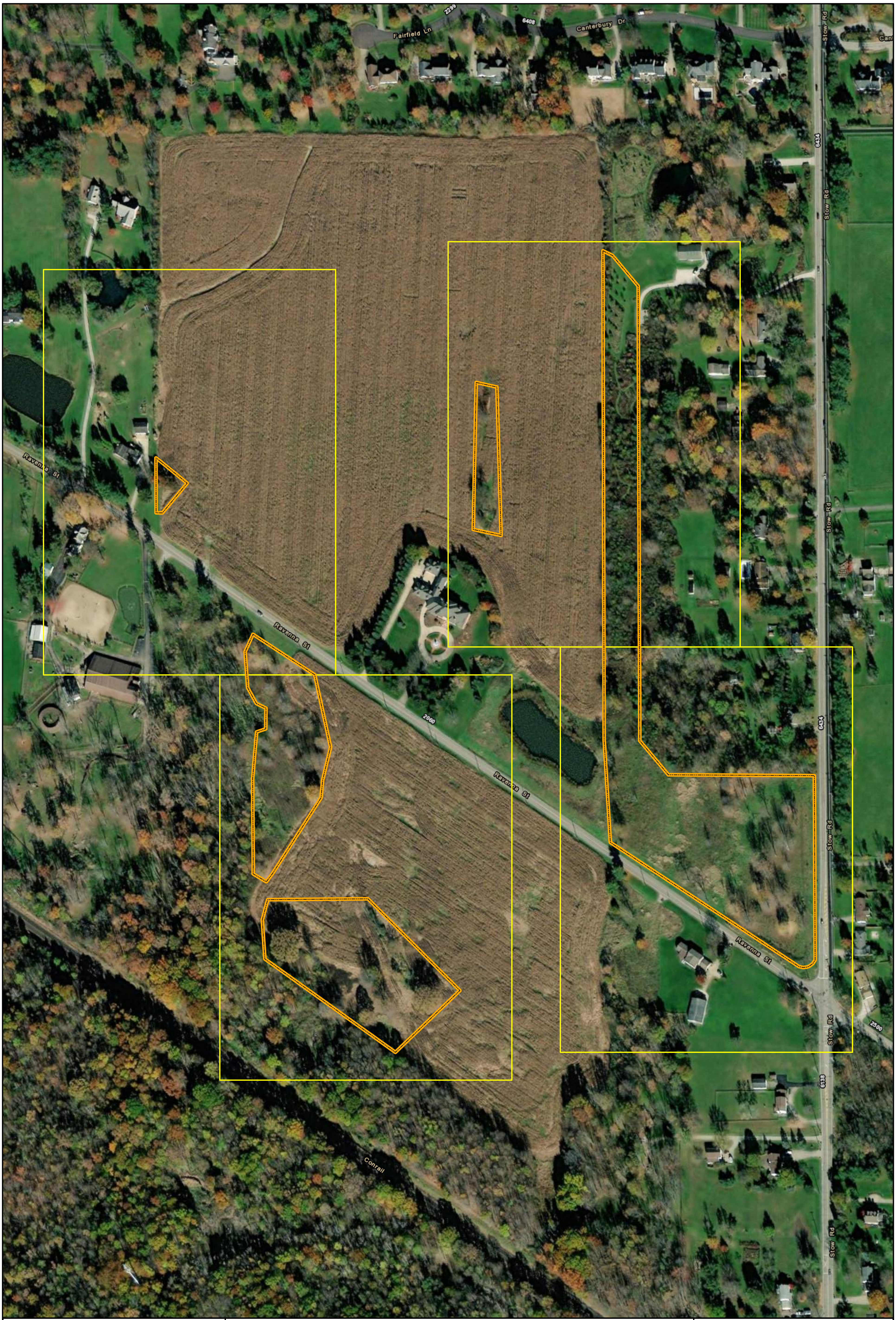
*Northing/Easting: UTM 17N, NAD83 (meters).

Table 2. Plant Communities within the Project Area

Community Type	Coniferous Tree Cover	Deciduous Tree Cover	Shrub/ Sapling Cover	Acres in Study Area	Percent of Study Area
Deciduous tree dominated with dense shrub layer	0	90	90	0.10	0.6
	0	70	90	0.31	2.0
	0	60	90	0.03	0.2
	0	60	90	0.06	0.4
	0	40	90	0.10	0.6
	0	40	70	0.16	1.0
Deciduous tree dominated with moderate shrub layer	0	70	20	0.04	0.2
Deciduous tree dominated	0	60	1	0.15	1.0
	0	90	0	0.04	0.3
	0	50	0	0.02	0.1
	0	50	0	0.12	0.8
	0	40	0	0.06	0.4
Moderate deciduous tree cover with dense shrub layer	0	25	70	0.20	1.3
Moderate deciduous tree cover with moderate shrub layer	0	20	30	0.04	0.3
Moderate deciduous tree cover	0	20	0	0.17	1.1
	0	20	0	2.32	15.3
	0	15	0	0.83	5.4
Minimal deciduous tree cover with dense shrub layer	0	10	95	0.02	0.1
	0	10	95	0.11	0.7
	0	10	80	0.08	0.5
	0	5	90	0.09	0.6
	0	5	90	0.50	3.3
	0	5	70	0.03	0.2
	0	1	50	0.47	3.1
	0	0	90	0.08	0.5
	0	0	90	1.05	6.9
Moderate shrub layer	0	0	25	0.02	0.2
Open area with minimal deciduous tree cover and shrub layer	0	1	5	0.51	3.3
Open area with minimal deciduous tree cover	0	5	0	0.28	1.8
	0	5	0	2.11	13.8
	0	1	0	0.63	4.2
Open area	0	0	0	0.09	0.6
	0	0	0	0.14	0.9
	0	0	0	0.46	3.0
	0	0	0	1.02	6.7
	0	0	0	2.80	18.4
Total Deciduous Tree Dominated (≥40% Cover) Area				**1.18 Ac.**	**7.8%**
Total Moderate Deciduous Tree Cover (11-39% Cover) Area				**3.55 Ac.**	**23.4%**
Total Minimal Deciduous Tree Cover (0-10% Cover) Area				**5.95 Ac.**	**39.1%**
Total Dense Shrub Layer (≥40% Cover) Area				**3.37 Ac.**	**22.1%**
Total Moderate Shrub Layer (11-39% Cover) Area				**0.10 Ac.**	**0.7%**
Total Minimal Shrub Layer (1-10% Cover) Area				**3.68 Ac.**	**24.2%**
Total Open Area				**8.03**	**52.8%**

*Photos are located in Appendix B.

Attachment A: Figures



)LJXUH
2YHUYLHZ RI &DQWHUEXU\
&URVVLQJ 7UHH 6XUYH\
6XPPLW &RXQW\ 2KLR

6XUYH\ $UHD
+XGVRQ

)HHW
0HWHUV

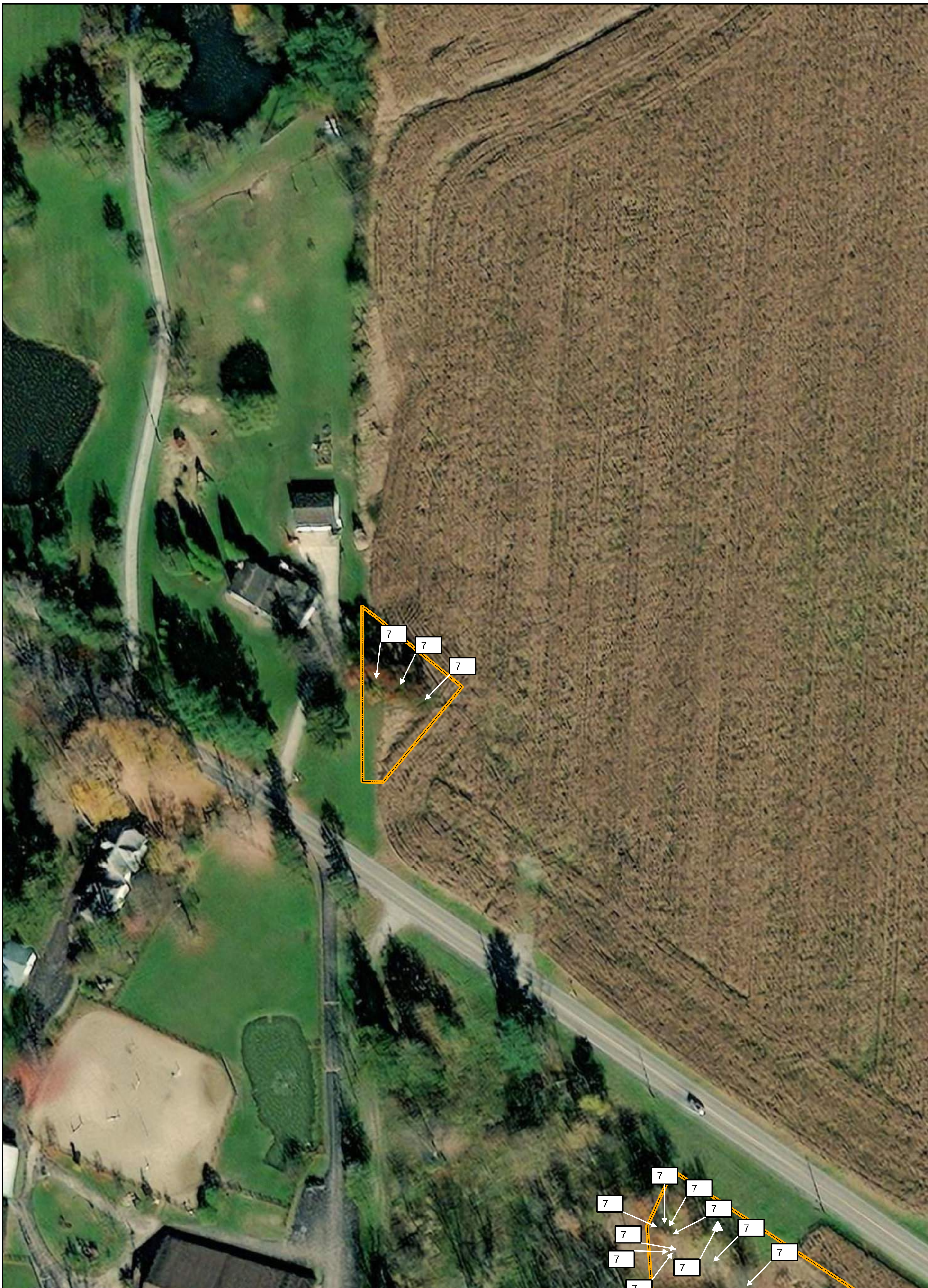
EnviroScience™
Excellence In Any Environment

'DWH 3DWK 3? B3URMHFWV?3?3UHVHQWDWLRQB%XLOGHUB*URXS? 15? B+XGVRQB7UHH6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHH6XUYH\ DSU[

%DVHPDS FRXUWHV\ RI (VUL
1$'
6WDWH3ODQH 2KLR 1RUWK),3

3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

'DWH



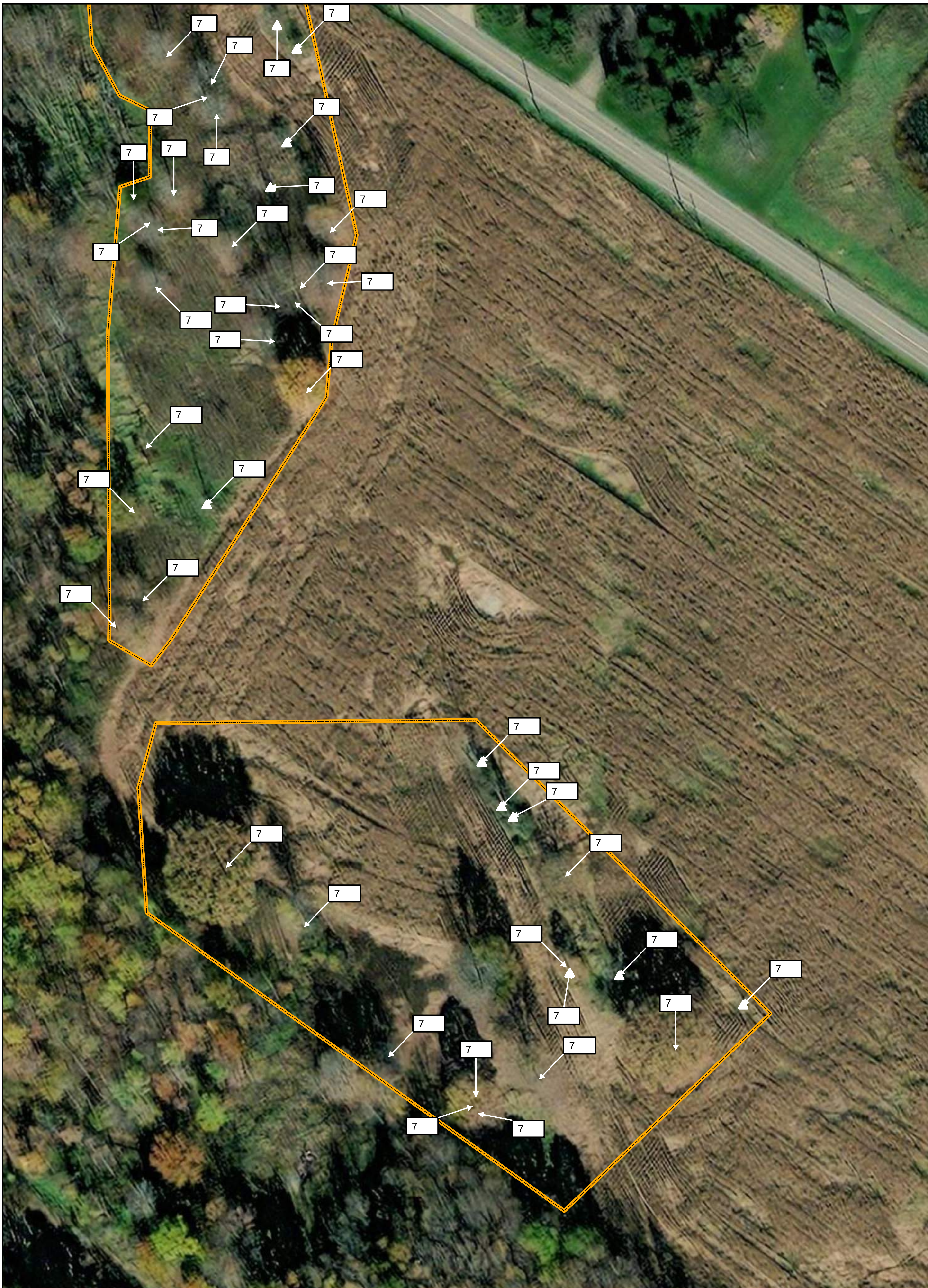
)LJXUH 0DS RI 7UHHV ZLWK '%+ RI 6L[,QFK[redacted]HV RU 0RUH
&DQWHUEXU\ &URVVLQJ 7UHH 6XUYH\ +XGVRQ 6[redacted]PPLW &RXQW

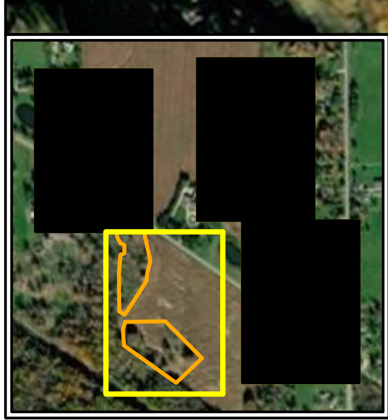
'HDG 'HFLGXRXV 6XUYH\ $UHD

)HHW 0HWHUV

EnviroScience™
Excellence In Any Environment

%DVHPDS FRXUWHV\ RI (VUL 1$' 6WDWH3ODQH 2KLR 1RUWK),3





)LJXUH 0DS RI 7UHHV ZLWK '%+ RI 6L[,QFKHV RU 0RUH
&DQWHUEXU\ &URVVLQJ 7UHH 6XUYH\ +XGVRQ 6XPPLW &RXQW

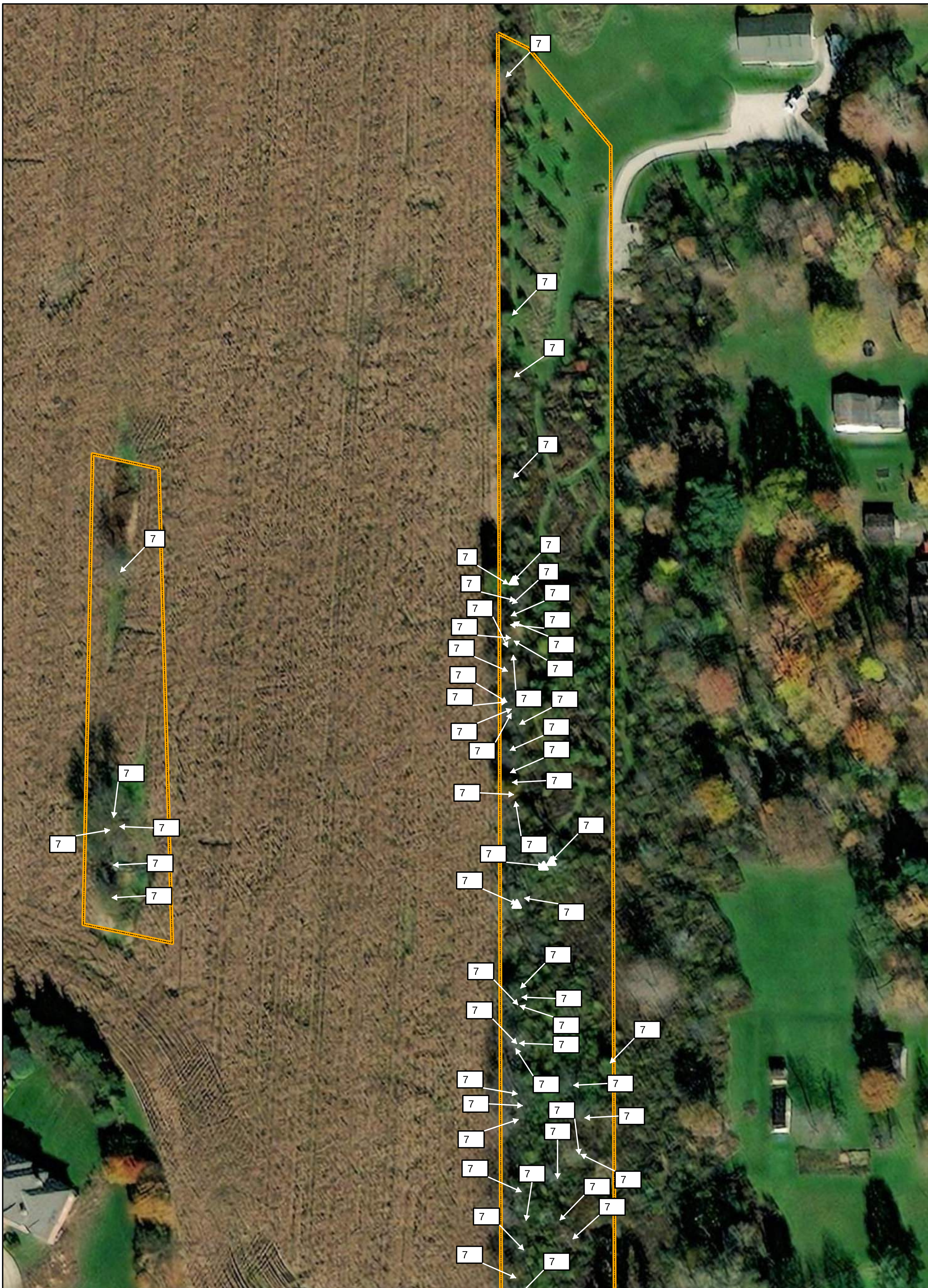
'HDG 'HFLGXRXV 6XUYH\ $UHD

)HHW 0HWHUV

3DWK 3? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

'DWH

3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[



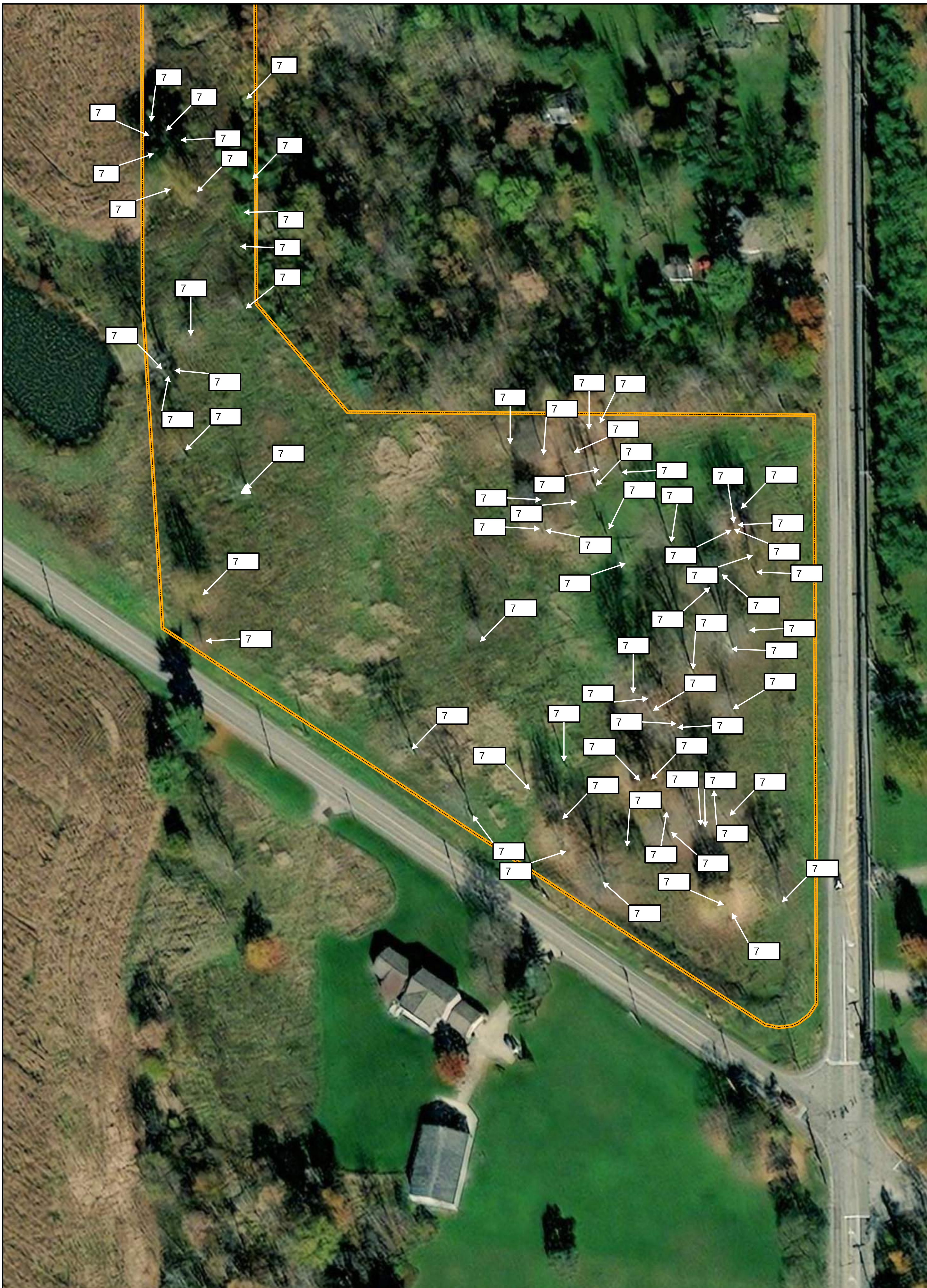
)LJXUH 0DS RI 7UHHV ZLWK '%+ RI 6L[,QFK[redacted]V RU 0RUH
&DQWHUEXU\ &URVVLQJ 7UHH 6XUYH\ +XGVRQ 6[redacted]PPLW &RXQW

'HDG 'HFLGXRXV 6XUYH\ $UHD

)HHW 0HWHUV

EnviroScience™ Excellence In Any Environment

'DWH

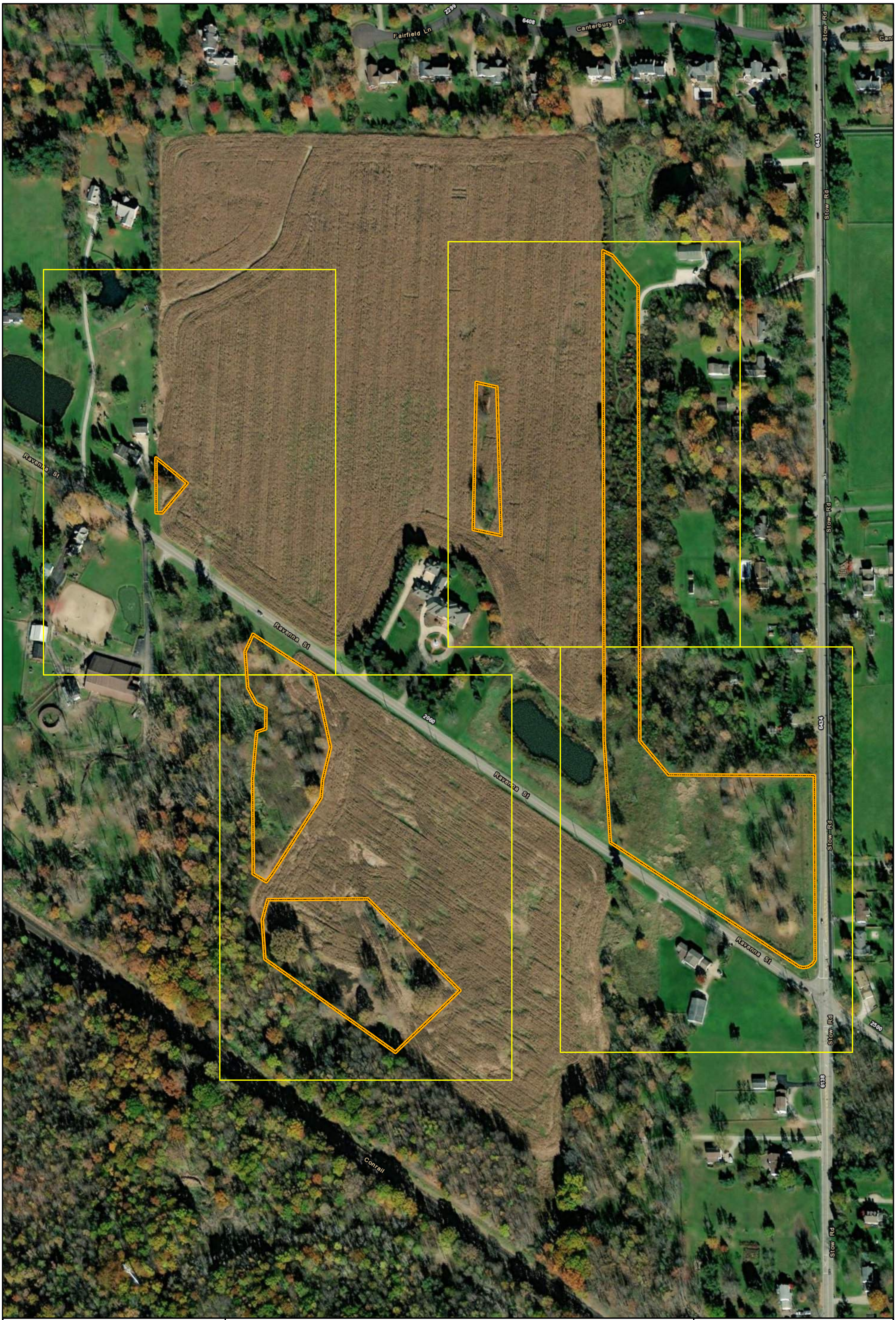


)LJXUH 0DS RI 7UHHV ZLWK '%+ RI 6L[,QFKHV RU 0RUH
&DQWHUEXU\ &URVVLQJ 7UHH 6XUYH\ +XGVRQ 6XPPLW &RXQW

'HDG 'HFLGXRXV 6XUYH\ $UHD

)HHW 0HWHUV

%DVHPDS FRXUWHV\ RI (VUL 1$' 6WDWH3ODQH 2KLR 1RUWK),3



)LJXUH
2YHUYLHZ RI &DQWHUEXU\
&URVVLQJ 7UHH 6XUYH\
6XPPLW &RXQW\ 2KLR

6XUYH\ $UHD
+XGVRQ

)HHW

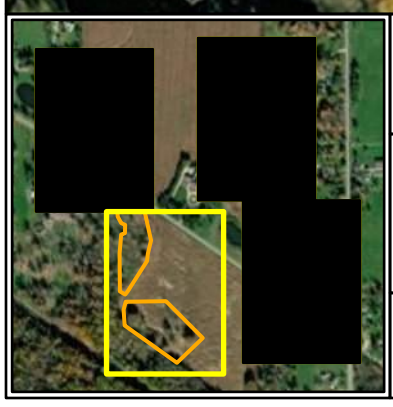
0HWHUV

EnviroScience™
Excellence In Any Environment

'DWH 3DWK 3? B3URMHFWV?3?3UHVHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHH6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHH6XUYH\ DSU[

'DWH 3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUS*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSul

'DWH 3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[



)LJXUH 0DS RI 3ODQW &RPPXQLWLHV &DQWHUEXU\ &URVV 6XUYH\ +XGVRQ 6XPPLW &RXQW\ 2KLR

'HG 3HUFHQW 6KUXE &RYHU
'HFLGXRXV
6XUYH\ $UHD

)HHW 0HWUHV

EnviroScience™ Excellence In Any Environment

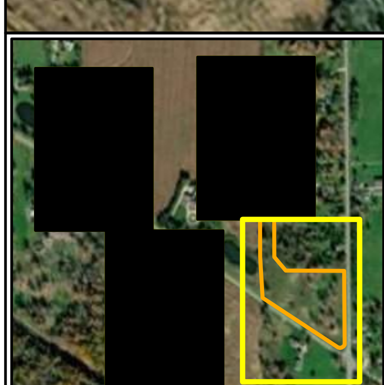
)LJXUH 0DS RI 3ODQW &RPPXQLWLHV &DQWHUEXU\ &URVVLQJ 6XUYH\ +XGVRQ 6XPPLW &RXQW\ 2KLR

'HDG	3HUFHQW 6KUXE &RYHU	
'HFLGXRXV		
6XUYH\ $UHD		

)HHW 0HWHUV

EnviroScience™
Excellence In Any Environment

'DWH 3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[



)LJXUH 0DS RI 3ODQW &RPPXQLWLHV &DQWH[redacted]EXU\ &URVVLQJ
6XUYH\ +XGVRQ 6XPPLW &RXQW\ 2KLR

'HDG 3HUFHQW 6KUXE &RYHU
'HFLGXRXV
6XUYH\ $UHD

)HHW 0HWHUV

'DWH 3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

%DVHPDS FRXUWHV\ RI (VUL

1$' 6WDWH3ODQH 2KLR 1RUWK),3

Attachment B: Photographs

Photo 1. Typical mowed turf (foreground), agricultural field (middle), and area with moderate tree cover and dense shrub layer (distance) within the study area, south of Ravenna Street.

Photo 2. Callery pear trees over maintained lawn, on edge of agricultural field. At west end of study area, north of Ravenna Street.

Photo 3. Typical dense shrub/sapling layer (ash saplings) south of Ravenna Street.

Photo 4. Typical dense shrub/sapling layer (buckthorns and Callery pear) within the project area, north of Ravenna Street.

Photo 5. Area of young Norway spruce surrounded by mowed turf, at north end of study area.

Photo 6. Typical open area with minimal tree cover (primarily red maple) over mowed turf, northwest of the intersection of Ravenna Street and Stow Road.

GEOTECHNICAL EXPLORATION REPORT

FOR THE

CANTERBURY CROSSING
RAVENNA STREET
CITY OF HUDSON, OHIO
WGE #20231265

PREPARED FOR

PRESTIGE BUILDERS GROUP
778 MCCAULEY ROAD, SUITE 140
STOW, OH 44224

BY

WERTZ GEOTECHNICAL ENGINEERING, INC.
400 COLLIER DRIVE
DOYLESTOWN, OHIO 44230

DRILLING | MATERIAL TESTING | ENGINEERING

January 4, 2023

Prestige Builder Group
778 McCauley Road, Suite 140
Stow, OH 44224

ATTN: **Chris Brown**

RE: **Canterbury Crossing, Ravenna Street, City of Hudson, Ohio; WGE #20231265**

Mr. Brown:

Wertz Geotechnical Engineering (WGE) has completed the requested subsurface investigation for the proposed Canterbury Crossing project in City of Hudson, Ohio. The purpose of this investigation is to define the subsurface conditions at the project site and to make general recommendations relative to site preparation, earthwork, pavement, construction, and other pertinent geotechnical aspects of the project. These professional services have been performed, the findings obtained, and the recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices.

If you have any questions or concerns regarding the information presented in this submittal, or have need of additional services, please contact our office at (330) 991-0041.

Sincerely,

Leroy Wertz, P.E.
Senior Geotechnical Engineer

TABLE OF CONTENTS

PROJECT DESCRIPTION **1**
SITE DESCRIPTION 1
DESCRIPTION OF REGIONAL GEOLOGICAL SETTING 1
FIELD INVESTIGATION & LABORATORY TESTING **2**
SUBSURFACE CONDITIONS **3**
GEOTECHNICAL RECOMMENDATIONS **4**
GENERAL CONSIDERATIONS 4
GROUNDWATER AND EXCAVATIONS 4
EARTHWORK GUIDELINES 5
BUILDING BEARING CAPACITY AND FOUNDATIONS 5
FLOOR SLAB AND PAVEMENT SUPPORT 6
BASEMENT WALLS 7
UTILITY INSTALLATION 7
STANDARD OF CARE AND LIMITATIONS **8**

LIST OF FIGURES:

FIGURE 1 – Geotechnical Boring Location Map
FIGURE 2 – USDA Web Soil Survey Map
FIGURE 3 – ODNR Bedrock Geology Map

LIST OF ATTACHMENTS:

ATTACHMENT A – Geotechnical Boring Logs
ATTACHMENT B – Test Pit Logs
ATTACHMENT C – Test Pit Photos

PROJECT DESCRIPTION

SITE DESCRIPTION

The project site is located northwest of the intersection of Stow Road and Ravenna Street in the City of Hudson, Ohio. The site is currently farmland with areas of brush and trees. An existing pond is present in the southeast region of the northern section of the site. Historic imagery indicates a structure was razed in the southwestern region of the northern section of the site, prior to 2014. Historical imagery also indicated that a pond may have previously existed in the southern section of the site.

A site plan dated July 14, 2023 was provided. The project includes the development of the site with 34 sublots with single-family homes, three stormwater management basins, roadways, and supporting utilities. Six sublots with direct access to Ravenna Street, and one stormwater management will be located south of Ravenna Street. The remaining 28 sublots, two stormwater management basins, and a new roadway with two access points to Ravenna Road will be located north of Ravenna Street. The homes are assumed to be two-story with full basements and attached slab-on-grade garages.

For the geotechnical analysis, the maximum foundation loadings are assumed to not exceed 15 kips for columns and 3 kips per foot for walls. The planned foundation systems will be shallow spread footings set below the frost penetration depth and built according to the Ohio Building Code.

The terrain within the northern area is mild and generally slopes towards the southwest. Grades range from approximately 1106 feet to 1128 feet MSL. The terrain within the southern section is a relatively flat, low-lying area with grades of approximately 1104 feet to 1106 feet MSL. Finished floor elevations were provided on the site plan.

If our project understanding or any of our project assumptions are incorrect, we should be contacted in order to determine if our recommendations remain valid.

DESCRIPTION OF REGIONAL GEOLOGICAL SETTING

The project site in Hudson, Summit County, Ohio is situated in the Killbuck-Glaciated Pittsburgh Plateau Physiographic Region of Ohio, which is defined by ridges and flat uplands covered with thin drift and dissected by steep valleys, where valley segments alternate between broad drift-filled and narrow rock-walled reaches. The site area is on end moraines (Ohio Department of Natural Resources Division of Geological Survey, 1998).

According to the USDA Web Soil Survey, the site area is mapped by the local soil and water conservation district as the Bogart loam, a material consisting of outwash, deposited on outwash terraces. Also present in the site area is the Mahoning silt loam, a material consisting of till, deposited on till plains on uplands. The Trumbull silt loam, a material consisting of till, deposited on till plains on depressions (USDA, 2020). A USDA Web Soil Survey site map is presented in Figure 2.

According to publicly available mine data from ODNR, no active or inactive surface or underground sand and gravel, limestone, or coal mining activities are present within the site footprint or surrounding areas.

According to 24k Ohio Division of Geological Survey (ODNR-DGS) Bedrock Geology Maps, bedrock in the area primarily consists of the Allegheny and Pottsville Groups, undivided, of which major lithologies consist of shale and siltstone. The minor lithologies consist of limestone and sandstone (Ohio Department of Natural Resources Division of Geological Survey, 1991). Bedrock is reported by ODNR-DGS at approximately 1000 feet to 1040 feet MSL in elevation. Bedrock is estimated to be encountered approximately 75 to 125 feet below existing site grades. A Geologic Map is presented in Figure 3.

FIELD INVESTIGATION & LABORATORY TESTING

Six (6) soil borings were advanced at the project site on December 20th, 2023, utilizing the CME-550 all-terrain, rotary drilling rig, with 3.25" hollow stem augers, operated by WGE drilling staff. The boring locations were field marked by WGE personnel at the approximate locations shown on the attached Figure 1 Boring Location Plan.

In addition, eight (8) test pits were excavated on December 22nd, 2023, utilizing a mini-hydraulic excavator with a two-foot bucket with earth teeth. A WGE Engineer observed the excavations and recorded the encountered subsurface conditions to depths up to 11 feet. Test pit locations are shown on the Geotechnical Test Location Map.

Standard penetration testing and sampling was performed at the depth intervals shown on the attached Soil Boring Logs utilizing a 140-lb automatic hammer falling 30 inches to drive a 2-inch outer-diameter split spoon sampler over three, six-inch intervals. Collected samples were examined and visually identified by our personnel in the field based on the visual-manual procedure (ASTM D-2488). Representative samples were retained and transported to our office, for further examination and the assignment of laboratory testing.

Moisture content testing was performed per ASTM D-2216. Thirty (30) moisture content tests were conducted on the retained samples. The moisture content test results are included on the Boring Logs in Attachment A.

Static groundwater level observations and hole depth soundings were made upon completion of each boring. This was followed by backfilling the holes. Groundwater level observations, made during the drilling of each boring, are indicated on the attached Soil Boring Logs. It should be noted that groundwater levels and zones of saturation should be expected to fluctuate seasonally based on variation in amounts of rainfall, evapotranspiration, runoff from impervious areas, and several other factors.

SUBSURFACE CONDITIONS

Soil boring data collected at the site generally indicates the presence of native clay, silt, and sandy soils. These findings can be described for engineering purposes as the following:

- Topsoil was encountered in every test pit and soil boring with thicknesses of 6 to 18 inches.

- Natural (non-fill) clay, clayey silt, silty clay, silt, sand, and gravel soils were encountered. The clayey soils were damp to moist with a soft to very stiff consistency. The silt soils were moist and loose to medium dense. The sandy soils were in a damp to wet and very loose to medium dense condition. The gravel soils were moist to wet and loose to medium dense.

- Soft and very loose soils are notable for having low bearing capacity. These occurrences are summarized below:

Boring	Depth	Encountered Soil	Note
B-4	3 – 8 feet	Very loose SAND	Groundwater below ±6 feet.
B-5	0 – 3 feet 3 – 5.5 feet	Soft CLAY Very loose SAND	-
B-6	3 – 5.5 feet	Soft CLAY	Groundwater below ±10 feet
TP-6	4.5 – 7+ feet	Very loose SAND	Groundwater below ±4.5 feet. Heaving sands present.

- Groundwater was encountered in Borings B-4 and B-6 at depths of approximately 6 feet and 10 feet below existing grades, respectively. Upon completion of drilling water was observed in the bore holes at depths of 3 feet and 4 feet in Borings B-4 and B-6, respectively. Groundwater was encountered in Test Pit TP-6 at a depth of approximately 4.5 feet below the surface, within heaving sands. Major groundwater seepage was encountered in Test Pit TP-1 at a depth of approximately 8 feet below the surface, within the gravel layer. Minor groundwater seepage was present in Test Pits TP-2, TP-3, TP-4, TP-5, TP-7, and TP-8 at depths of 3 to 8 feet below the surface.

- A significant cave-in was present in Test Pit TP-6. Moderate cave-ins were present in TP-1 and TP-5 from depths of 8 to 11 feet and 0 to 5 feet below the surface, respectfully.

GEOTECHNICAL RECOMMENDATIONS

We offer the following for your consideration based on our analysis of the soil conditions encountered at the locations indicated; and the assumption that conditions between and away from the soil borings are similar to those that are known:

GENERAL CONSIDERATIONS

Special care must be taken in developing the site due to various subsurface conditions. In most areas, the subsoils are suitable to support standard foundations. Layers of soft clays and very loose sands were encountered during our evaluation which are unsuitable to support structural loads and utilities. Soft or very loose soils that are present at footing subgrade will need to be undercut to the underlying natural, stable soils and backfilled with compacted stone.

Unsuitable soils should be expected throughout the development and careful evaluation of the subgrades for the individual structures should be performed during sitework and foundation excavations. The bearing pressure of the foundation subgrades should be field verified by a geotechnical engineer prior to concrete placement.

Excavations into the wet sand/gravel soils will be difficult. If basements are to be constructed, basement floor elevations should be set at least 1 foot above the known groundwater table. Groundwater was present approximately 3 to 10 feet below the surface. If groundwater is present in basement excavations, the geotechnical engineer should be contacted for a site-specific recommendation.

Where unstable trench or basement slab subgrades occur due to uncontrolled groundwater during excavation, the subgrade should be undercut to suitable bearing soils and backfilled with stone, as detailed below. Dewatering for the sewers should be anticipated.

Recommendations are provided in the Earthwork General Guidelines section below for the quality, compaction, testing and inspection of engineered fill. Care should be taken to evaluate foundation, slab, and pavement subgrades prior to stone or concrete placement. All subgrades should be observed by a qualified soils technician under the supervision of a geotechnical engineer, and field density tests should be made to ensure compaction to specification. It is recommended that site work be performed during the drier summer and fall months.

GROUNDWATER AND EXCAVATIONS

Groundwater was encountered in two of the six soil borings and all of the test pits during our subsurface investigation. Excavations within the wet sands will be difficult. Well points may be required for excavations within the sands. The need for dewatering measures depends on the size and depth of the excavation.

Excavations should either be sloped back or shored in accordance with Occupational Safety & Health Administration (OSHA) regulations and any other applicable local codes. Parameters for design of temporary shoring are included in those regulations. Due to the presence of loose

sands on the site, with respect to temporary excavation side slopes, the site soils should be classified as Type "C" per OSHA. Therefore, temporary excavations should be cut back to a temporary slope no steeper than a 1.5:1 (horizontal: vertical).

The soils encountered during this exploration can likely be excavated with a medium-sized hydraulic excavator with a standard bucket with earth teeth.

EARTHWORK GUIDELINES

- Prior to construction, all topsoil, vegetation, or other deleterious material should be completely stripped and grubbed from within the footprint of the proposed building and pavement areas and areas to be cut or to receive engineered fill, prior to construction.

- All surfaces cut to subgrade elevation, or subgrades to receive fill, should be proof rolled under the direction of an on-site geotechnical engineer or their direct assigns. Any areas of soft or yielding (pumping/rutting) soils, or obviously contaminated zones, should be undercut to underlying, stable soils and replaced with stable, compacted engineered fill, or stabilized in place as directed by the engineer.

- The engineered fill should be clean, inert soil which should be approved by the geotechnical engineer. The engineered fill should have a dry density greater than 100 pcf, liquid limit less than 50% and an organic content less than 1%.

- Engineered fill material should be placed on the approved subgrade in controlled lifts. Each lift should be compacted to a stable condition at a minimum of 98% maximum dry density per ASTM D-698, with a moisture content between 2.0% below to 2.0% over optimum moisture. All filling operations should be observed by a qualified soils technician under the supervision of a geotechnical engineer. Field density tests should be made to ensure compaction to specification.

- All surfaces should be sealed and sloped after each day or prior to inclement weather to promote positive drainage of water offsite.

- Construction traffic should be kept off any wet subgrades. If site work is performed during times of drier weather, the need for additional repairs and stabilization to the subgrade may be substantially reduced. Therefore, it is recommended that sitework be performed during these times.

BUILDING BEARING CAPACITY AND FOUNDATIONS

Various conditions are present throughout the development. It is WGE's opinion that the encountered loose and better sands and silts, and medium stiff clay soils are capable of supporting the light-weight structures (less than 3 kips/foot for walls, 15 kips for columns) with a conventional spread and strip footing shallow foundation system.

It is also WGE's opinion that the encountered very loose sand soils and soft clay soils are not capable of supporting the proposed structures with a conventional spread and strip footing shallow foundation system. Pockets of very loose and soft soils were present in two of the eight test pits and three of the 6 soil borings. The very loose and soft soils will need to be undercut and backfilled with compacted stone as directed by our engineer.

Standard shallow foundations for the homes should be designed for an allowable bearing capacity of 2,000 psf. Estimated total and differential settlements for footings designed in accordance with the recommendations provided in this report are approximately 1 inch and ½ inches, respectively, provided that the recommendations under *Earthwork Guidelines* and those provided below are followed:

- The foundation subgrades, for an allowable design bearing pressure of 2,000 psf, should consist of natural medium stiff or better clay soil, loose or better sand and silt soils, or approved engineered fill. The foundation subgrade should be evaluated and approved by a geotechnical engineer, or their representative, prior to concrete placement. Any deleterious foundation subgrade soils be undercut and backfilled with lean concrete or compacted stone as directed by our field engineer.

- The foundation subgrade should be evaluated and approved by a geotechnical engineer, or his representative, prior to concrete placement.

- Foundation subgrades should be concreted in a dry and frost-free condition as soon after exposure as possible.

- The ground surface surrounding the building should be graded to direct surface drainage of water away from all exterior foundation walls and members.

- All exterior footings should be located below the depth of potential frost penetration (42 inches).

FLOOR SLAB AND PAVEMENT SUPPORT

Concrete floor slabs would be adequately supported on stable, approved site soils prepared according to *Earthwork Guidelines* and on stable engineered fill placed and compacted to the above-provided specifications. Any areas of soft or yielding (pumping/rutting) soils, or obviously contaminated zones, should be undercut to underlying, stable soils and replaced with stable, compacted engineered fill, or stabilized in place as directed by the engineer. The appropriate type and depth of stabilization should be determined in the field during earthwork operations by the Geotechnical Engineer or their designated representative. Soft and very loose soils are present and additional cost for stabilization should be anticipated.

Floor slab subgrades should be evaluated prior to stone placement by our personnel. All interior floor slabs should have a minimum of 4 inches of free draining granular base (ODOT #57 limestone or an approved equivalent) with a suitable vapor barrier. All exterior concrete slabs should have a minimum of 4 inches of #304 crushed limestone base.

Asphalt and/or concrete pavement would be suitable for the pavement areas. The pavement subgrade should be proof rolled to identify areas which may be unsuitable for bearing pavement loadings. Any soft or yielding (pumping/rutting) areas should be undercut to a stable subgrade and backfilled with approved compacted engineered fill or stone in accordance with the *Earthwork Guidelines* or stabilized in place as directed by the geotechnical engineer. Pockets of very loose and soft soils at pavement subgrade should be anticipated.

The pavement base for roadways should consist of a minimum of 6 inches of #304 crushed limestone for non-cement stabilized subgrade. The pavement section should be designed for a CBR value of 5 (MR=6,000 psi) for untreated (quick lime/cement) subgrades. A pavement design specific to the anticipated traffic loads and subgrade stabilization conditions can be completed upon request.

BASEMENT WALLS

Basement walls should be designed to resist the lateral earth pressure from grade differences. The basement walls should be designed according to Ohio Residential Building Code Section R 404.1.2 for clay (CL) soils.

Pockets of wet sand and gravel were encountered throughout the development. The basement floor elevation should be set above the known groundwater elevation. Stormwater should be directed away from the homes and standard waterproofing measures should be anticipated. Our project engineer should be notified for further recommendations if groundwater seepage is present during basement excavations.

UTILITY INSTALLATION

Utilities will likely be installed with open trench construction. In general, soils at and immediately below the sewer elevation, are suitable for support of the proposed sewers and manhole structures with typical bedding.

Heavy groundwater should be expected for deep excavations in areas of the site. Additional costs for dewatering the excavations should be expected.

Groundwater, not controlled during excavation, may cause the bearing subgrade to lose strength due to the upward movement of groundwater (heave). Any unstable soils created or encountered during excavation would need to be undercut to suitable bearing soils. The undercuts should be backfilled with compacted crushed stone to planned invert elevation to provide a stable bearing subgrade for the sewer. The undercut crushed stone should be wrapped with a silt fabric to prevent the piping of silt into the stone backfill. The lower portion of the undercut backfill stone should consist of ODOT #1/#2 crushed limestone with the remaining stone being ODOT #57.

The excavated soil from the sewer is not suitable to be used as structural backfill within roadways. Backfill within roadways should consist of ODOT Structural Backfill Types 1 and 2. The backfill should be compacted to 98 percent of the maximum dry density per ODOT Supplement 1015. Sewer trenches outside of the roadway can be backfilled with properly

compacted onsite soils. The onsite soils should be free of fat clays, organics, and other debris and be compacted to a minimum of 95 percent.

STANDARD OF CARE AND LIMITATIONS

Our recommendations for this project were developed utilizing the project information provided to WGE and the soil information obtained from the test borings that were made at the project site. The test borings only depict the soil and rock conditions at the specified locations and time at which they were made. The soil conditions at other locations on the site may differ from those occurring at the boring locations. Additionally, the conclusions and recommendations have been based upon the available soil information and the design details furnished to us. We should be immediately notified if, during construction, any conditions different from those found in this investigation are evident or our project assumptions or understanding are incorrect. We will advise you of any modifications to our conclusions and recommendations deemed necessary, after observing the exposed conditions and/or changes to the project scope. The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site studied.

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. Wertz Geotechnical Engineering, Inc. is not responsible for the conclusions, opinions, or recommendation made by others based upon the data included herein.

We hope you will find this report satisfactory. Please contact our office if we can be of further service or you have questions regarding this submittal.

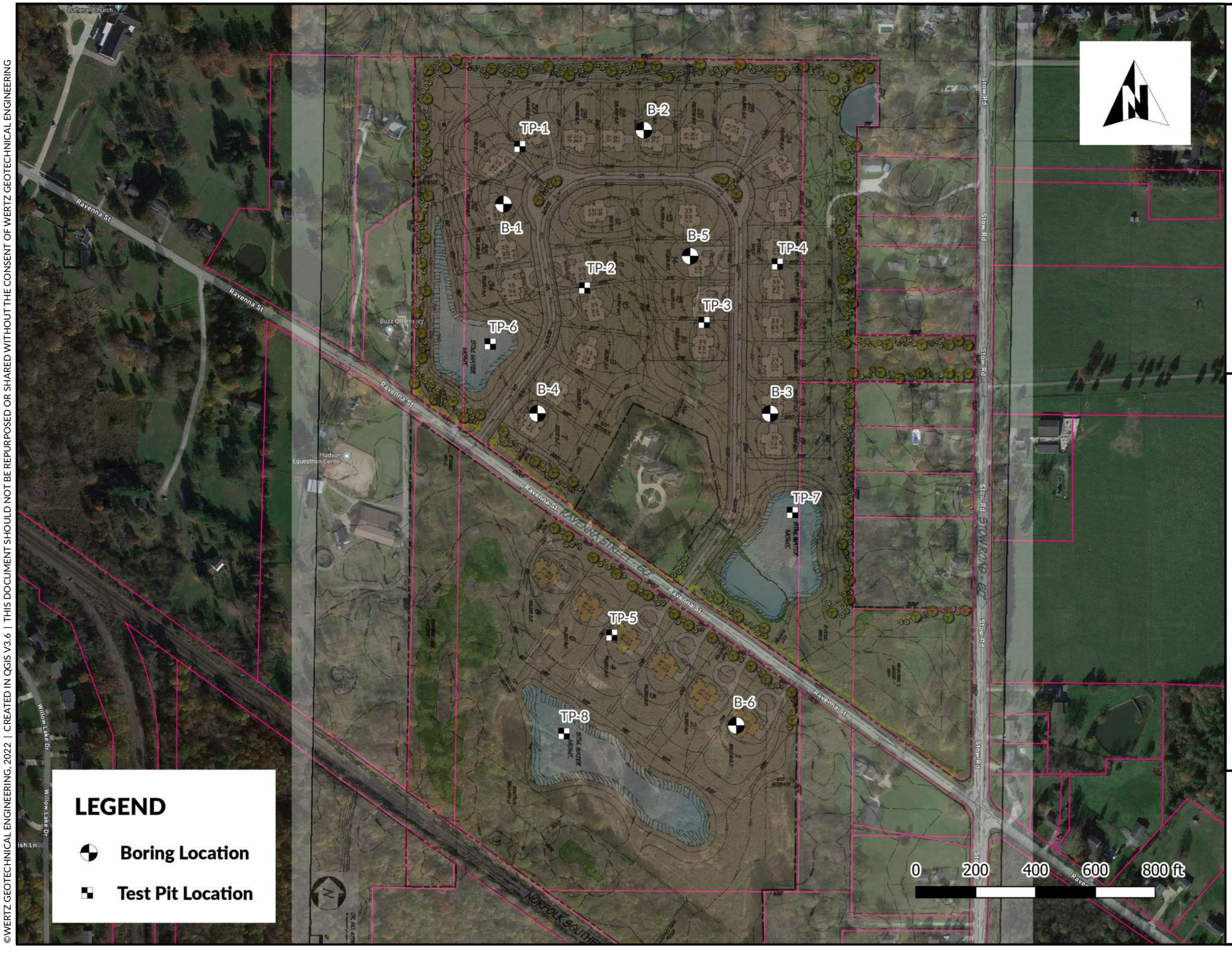
Respectfully submitted,

Rebecca Thieret
Project Engineer

Leroy Wertz, P.E.
Senior Geotechnical Engineer

FIGURE 1

Geotechnical Boring Location Map



WERTZ
GEOTECHNICAL ENGINEERING

400 Collier Drive, Doylestown, Ohio 44230

330-991-0041

OFFICE@WERTZGEO.COM

GEOTECHNICAL TEST LOCATION MAP

CLIENT
PRESTIGE BUILDER GROUP
778 MCCAULEY ROAD, SUITE 140, STOW, OH 44224

SITE
RAVENNA STREET, CITY OF HUDSON, OHIO

PROJECT NAME
CANTERBURY CROSSING

LAYOUT BY **RT**	DATE: 12/19/2023
DRAWN BY **RT**	FIGURE NO. **1**
CHECKED BY **LW**	

Wertz Geotechnical Engineering (WGE) shall not be held liable for improper or incorrect use of the data presented and/or contained herein. These data and related graphics are not legal documents and are not intended to be used as such. WGE does not guarantee the positional or thematic accuracy of the GIS data presented in this figure. WGE gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data.

©WERTZ GEOTECHNICAL ENGINEERING, 2022 | CREATED IN QGIS V3.6 | THIS DOCUMENT SHOULD NOT BE REPURPOSED OR SHARED WITHOUT THE CONSENT OF WERTZ GEOTECHNICAL ENGINEERING

FIGURE 2

USDA Web Soil Survey Map

Map Scale: 1:5,120 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Summit County, Ohio
Survey Area Data: Version 20, Sep 11, 2023

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

Date(s) aerial images were photographed: Sep 12, 2020—Sep 21, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BgB	Bogart loam, 2 to 6 percent slopes	19.6	31.5%
MgA	Mahoning silt loam, 0 to 2 percent slopes	12.5	20.2%
MgB	Mahoning silt loam, 2 to 6 percent slopes	18.4	29.6%
Tr	Trumbull silt loam, 0 to 2 percent slopes	11.6	18.6%
Totals for Area of Interest		**62.1**	**100.0%**

FIGURE 3

ODNR Bedrock Geology Map

CANTUBURY CROSSING PROJECT GEOLOGIC MAP

Bedrock Topography of Ohio 24K (ODNR-DGS) -Bedrock Topography 24K - Contours

Bedrock Topography Contour (50-ft Interval), data from ODNR-DGS)

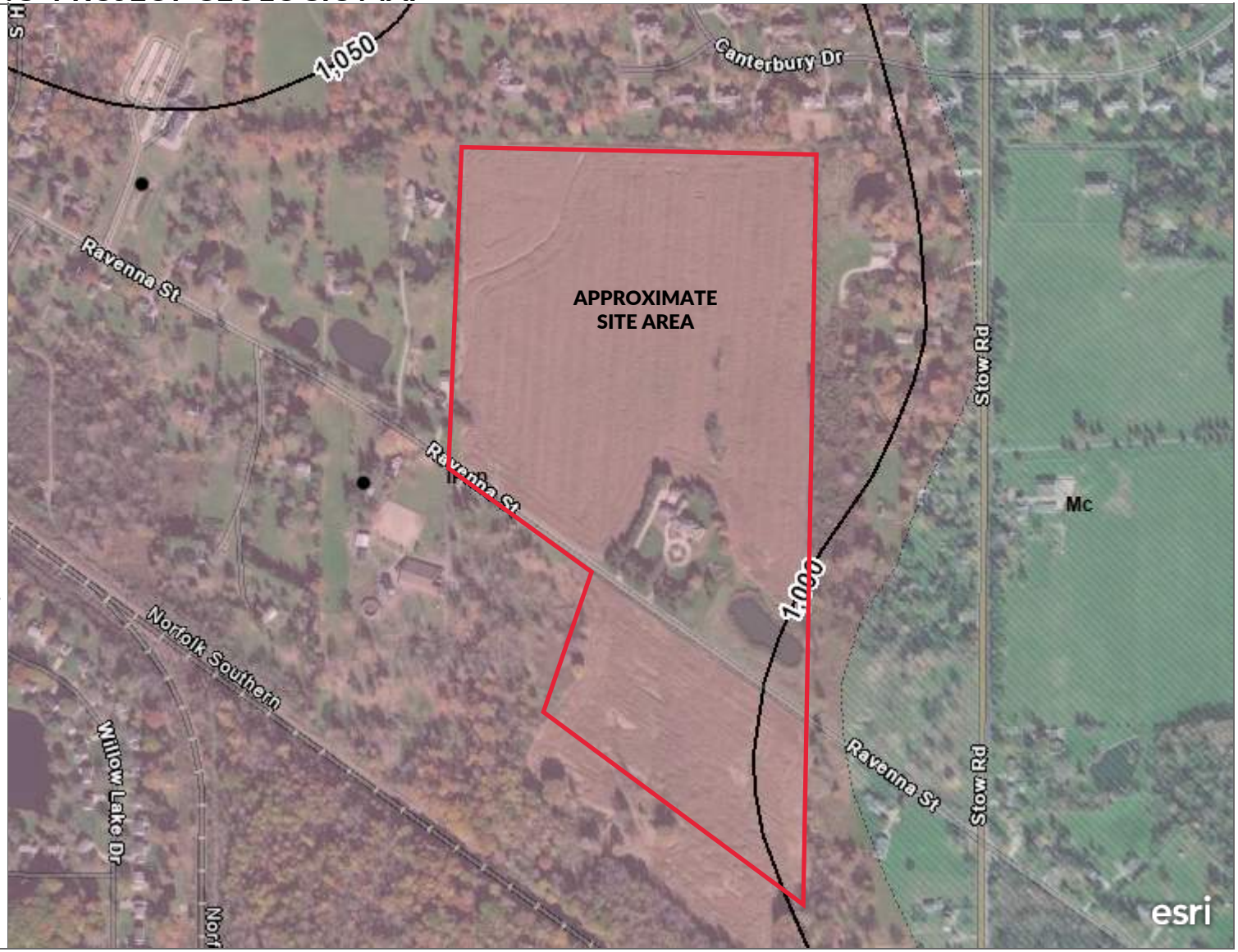
Oil-and-gas well

Water well, data from Ohio Division of Water

-Bedrock Geology 24K
-Data Bedrock Geology of Ohio 24K (ODNR-DGS)

IPap -Allegheny and Pottsville Groups, Undivided Major: Shale, Siltstone Minor: Limestone, Sandstone

Bedrock Contours are interpolated by ODNR-DGS based on data from local water wells and oil and gas wells.



Bedrock is estimated to be encountered approximately 75 to 125 feet below surface grades.

600ft

Maxar | Esri Community Maps Contributors, Summit County GIS, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA | Ohio Department of Natural Resources-Division of Geological Survey

ATTACHMENT A

Geotechnical Boring Logs

WERTZ GEOTECHNICAL ENGINEERING, INC.
DRILLING | MATERIAL TESTING | ENGINEERING

400 COLLIER DRIVE
DOYLESTOWN, OHIO, 44230
(330) 991-0041
office@wertzgeo.com

PROJECT:	Canterbury Crossing	**PROJECT NO.:** 20231265	**DRILL RIG:**	CME 550	**BORING ID:**	B-1	**Page 1 of 1**
LOCATION:	Hudson, Ohio		**METHOD:**	Hollow Stem	**DATE STARTED:**	12/20/2023	
LOGGED BY:	DM		**AUGER SIZE:**	3.25 inches	**DATE COMPLETED:**	12/20/2023	
DRILL CREW:	BK & CG		**HAMMER:**	Auto SPT	**ELEVATION:**	1116 feet MSL	
GROUNDWATER ENCOUNTER DEPTH	None	**GROUNDWATER AT COMPLETION:** None	**TOTAL DEPTH:**	15'	**CAVE DEPTH:**	10'	

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTH	BLOW COUNTS (BLOWS/0.5FOOT)	RECOVERY (INCHES)	POCKET PEN (TSF)	GRAPHIC LOG	LITHOLOGY
1		AS	--	--	--		12" TOPSOIL.
2	1	1.0-2.5	1-1-4	18	2		Moist, medium stiff, brown, fine to coarse sandy CLAY, minor silt and gravel. Wn%: 15.1
3							
4	2	3.5-5.0	3-7-10	18	5+		Damp, very stiff, brown, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 16.0
5							
6							
7	3	6.0-7.5	5-9-11	18	5+		Damp, very stiff, brown, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 16.0
8							
9	4	8.5-10.0	5-4-5	15			Moist, loose, brown, SILT, minor clay and fine to coarse sand and gravel. Wn%: 17.9
10							
11							
12							
13							
14	5	13.5-15.0	2-9-15	9	1.5		Moist, very stiff, brown, CLAY, some silt, minor fine to coarse sand and gravel. Wn%: 16.6
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							

Note: *Ground surface elevations at boring locations estimated using data provided by Google Earth Pro.*

WERTZ GEOTECHNICAL ENGINEERING, INC.
DRILLING | MATERIAL TESTING | ENGINEERING

400 COLLIER DRIVE
DOYLESTOWN, OHIO, 44230
(330) 991-0041
office@wertzgeo.com

PROJECT:	Canterbury Crossing	**PROJECT NO.:** 20231265	**DRILL RIG:**	CME 550	**BORING ID:**	B-2	
LOCATION:	Hudson, Ohio		**METHOD:**	Hollow Stem	**DATE STARTED:**	12/20/2023	
LOGGED BY:	DM		**AUGER SIZE:**	3.25 inches	**DATE COMPLETED:**	12/20/2023	
DRILL CREW:	BK & CG		**HAMMER:**	Auto SPT	**ELEVATION:**	1126 feet MSL	
GROUNDWATER ENCOUNTER DEPTH	None	**GROUNDWATER AT COMPLETION:** None	**TOTAL DEPTH:**	15'	**CAVE DEPTH:**	9'	

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTH	BLOW COUNTS (BLOWS/0.5FOOT)	RECOVERY (INCHES)	POCKET PEN (TSF)	GRAPHIC LOG	LITHOLOGY
1		AS	--	--	--		12" TOPSOIL.
2	1	1.0-2.5	2-4-5	18	2.25		Moist, stiff, brown, CLAY, some fine to coarse sand, minor silt and gravel. Wn%: 20.0
3							
4	2	3.5-5.0	3-5-6	16	2.75		Moist, stiff, brown, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 21.0
5							
6							
7	3	6.0-7.5	5-6-9	18	5+		Damp, stiff, brown, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 16.6
8							
9	4	8.5-10.0	5-8-10	18	5+		Damp, very stiff, brown, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 17.3
10							
11							
12							
13							
14	5	13.5-15.0	3-10-15	13	2.5		Moist, very stiff, brown, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 16.7
15							***Note:*** *Ground surface elevations at boring locations estimated using data provided by Google Earth Pro.*
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							

WERTZ GEOTECHNICAL ENGINEERING, INC.
DRILLING | MATERIAL TESTING | ENGINEERING

400 COLLIER DRIVE
DOYLESTOWN, OHIO, 44230
(330) 991-0041
office@wertzgeo.com

PROJECT:	Canterbury Crossing	**PROJECT NO.:** 20231265	**DRILL RIG:**	CME 550	**BORING ID:**	B-3	**Page 1 of 1**
LOCATION:	Hudson, Ohio		**METHOD:**	Hollow Stem	**DATE STARTED:**	12/20/2023	
LOGGED BY:	DM		**AUGER SIZE:**	3.25 inches	**DATE COMPLETED:**	12/20/2023	
DRILL CREW:	BK & CG		**HAMMER:**	Auto SPT	**ELEVATION:**	1118 feet MSL	
GROUNDWATER ENCOUNTER DEPTH	None	**GROUNDWATER AT COMPLETION:** None	**TOTAL DEPTH:**	15'	**CAVE DEPTH:**	2.5'	

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTH	BLOW COUNTS (BLOWS/0.5FOOT)	RECOVERY (INCHES)	POCKET PEN (TSF)	GRAPHIC LOG	LITHOLOGY
1		AS	--	--	--		7" TOPSOIL.
2	1	1.0-2.5	4-5-6	16			Damp, stiff, brown, clayey SILT, minor fine to coarse sand, trace gravel. Wn%: 16.7
3							
4	2	3.5-5.0	2-3-3	15	1		Moist, medium stiff, brown, fine to coarse sandy CLAY, minor silt and gravel. Wn%: 14.9
5							
6							
7	3	6.0-7.5	3-6-8	16	3.5		Moist, stiff, brown, CLAY, some silt, minor fine to coarse sand. NOTE: Silt seam. Wn%: 17.9
8							
9	4	8.5-10.0	2-6-10	17	5+		Damp to moist, stiff, gray, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 15.4
10							
11							
12							
13							
14	5	13.5-15.0	3-8-13	18			Damp, medium dense, brown, fine to medium SAND. Wn%: 4.5
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							

Note: *Ground surface elevations at boring locations estimated using data provided by Google Earth Pro.*

WERTZ GEOTECHNICAL ENGINEERING, INC.
DRILLING | MATERIAL TESTING | ENGINEERING

400 COLLIER DRIVE
DOYLESTOWN, OHIO, 44230
(330) 991-0041
office@wertzgeo.com

PROJECT:	Canterbury Crossing	**PROJECT NO.:** 20231265	**DRILL RIG:**	CME 550	**BORING ID:**	B-4	
LOCATION:	Hudson, Ohio		**METHOD:**	Hollow Stem	**DATE STARTED:**	12/20/2023	
LOGGED BY:	DM		**AUGER SIZE:**	3.25 inches	**DATE COMPLETED:**	12/20/2023	
DRILL CREW:	BK & CG		**HAMMER:**	Auto SPT	**ELEVATION:**	1110 feet MSL	
GROUNDWATER ENCOUNTER DEPTH	6'	**GROUNDWATER AT COMPLETION:** 3'	**TOTAL DEPTH:**	15'	**CAVE DEPTH:**	3.5'	

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTH	BLOW COUNTS (BLOWS/0.5FOOT)	RECOVERY (INCHES)	POCKET PEN (TSF)	GRAPHIC LOG	LITHOLOGY
1		AS	--	--	--		11" TOPSOIL.
2	1	1.0-2.5	2-3-4	18			Moist, loose, brown, clayey fine SAND, minor silt. Wn%: 16.0
4	2	3.5-5.0	1-1-1	5			Moist, very loose, brown, clayey fine SAND, minor silt. Wn%: 21.8
7	3	6.0-7.5	0-1-1	11			Wet, very loose, brown, silty fine SAND, trace clay. NOTE: Water in sample. Wn%: 24.5
9	4	8.5-10.0	3-2-3	12			Wet, loose, brown, fine SAND, trace silt. NOTE: Water in sample. Wn%: 17.1
14	5	13.5-15.0	4-11-14	7			Moist, very stiff, brown, CLAY, minor sandstone fragments. NOTE: Water in sample. Wn%: 19.0
15							***Note:*** *Ground surface elevations at boring locations estimated using data provided by Google Earth Pro.*

WERTZ GEOTECHNICAL ENGINEERING, INC.
DRILLING | MATERIAL TESTING | ENGINEERING

400 COLLIER DRIVE
DOYLESTOWN, OHIO, 44230
(330) 991-0041
office@wertzgeo.com

PROJECT:	Canterbury Crossing	**PROJECT NO.:** 20231265	**DRILL RIG:**	CME 550	**BORING ID:**	B-5	
LOCATION:	Hudson, Ohio		**METHOD:**	Hollow Stem	**DATE STARTED:**	12/20/2023	
LOGGED BY:	DM		**AUGER SIZE:**	3.25 inches	**DATE COMPLETED:**	12/20/2023	
DRILL CREW:	BK & CG		**HAMMER:**	Auto SPT	**ELEVATION:**	1125 feet MSL	
GROUNDWATER ENCOUNTER DEPTH	None	**GROUNDWATER AT COMPLETION:** None	**TOTAL DEPTH:**	15'	**CAVE DEPTH:**	'	

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTH	BLOW COUNTS (BLOWS/0.5FOOT)	RECOVERY (INCHES)	POCKET PEN (TSF)	GRAPHIC LOG	LITHOLOGY
1		AS	--	--	--		7" TOPSOIL.
2	1	1.0-2.5	2-1-2	12	0.75		Moist, soft, brown, fine to coarse sandy CLAY, minor silt and gravel. Wn%: 16.1
3							
4	2	3.5-5.0	1-2-1	14			Moist, very loose, brown, clayey fine to coarse SAND, minor silt and gravel. Wn%: 14.5
5							
6							
7	3	6.0-7.5	3-10-9	18	4		Damp, very stiff, brown, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 15.5
8							
9	4	8.5-10.0	6-9-12	4	1.25		Moist, very stiff, brown, CLAY, some fine to coarse sand, minor silt and gravel. Wn%: 16.5
10							
11							
12							
13							
14	5	13.5-15.0	2-3-6	18	3.25		Moist, stiff, brown, CLAY, some silt and fine to coarse sand and gravel. Wn%: 15.5
15							***Note:*** *Ground surface elevations at boring locations estimated using data provided by Google Earth Pro.*
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							

WERTZ GEOTECHNICAL ENGINEERING, INC.
DRILLING | MATERIAL TESTING | ENGINEERING

400 COLLIER DRIVE
DOYLESTOWN, OHIO, 44230
(330) 991-0041
office@wertzgeo.com

PROJECT:	Canterbury Crossing	**PROJECT NO.:** 20231265	**DRILL RIG:**	CME 550	**BORING ID:**	B-6	
LOCATION:	Hudson, Ohio		**METHOD:**	Hollow Stem	**DATE STARTED:**	12/20/2023	
LOGGED BY:	DM		**AUGER SIZE:**	3.25 inches	**DATE COMPLETED:**	12/20/2023	
DRILL CREW:	BK & CG		**HAMMER:**	Auto SPT	**ELEVATION:**	1105 feet MSL	
GROUNDWATER ENCOUNTER DEPTH	10'	**GROUNDWATER AT COMPLETION:** 4'	**TOTAL DEPTH:**	15'	**CAVE DEPTH:**	5'	

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTH	BLOW COUNTS (BLOWS/0.5FOOT)	RECOVERY (INCHES)	POCKET PEN (TSF)	GRAPHIC LOG	LITHOLOGY
1		AS	--	--	--		6" TOPSOIL.
2	1	1.0-2.5	2-2-4	14	1.25		Moist, medium stiff, brown and gray, CLAY, minor silt, trace sand and organics. Wn%: 28.3
3							
4	2	3.5-5.0	1-1-3	18	0.25		Moist, soft, brown, fine to coarse sandy CLAY, minor silt. Wn%: 25.1
5							
6							
7	3	6.0-7.5	1-8-9	6			Moist, medium dense, gray, fine to coarse SAND, some clay, minor silt. NOTE: Poor recovery, possible plug. Wn%: 23.4
8							
9	4	8.5-10.0	2-9-8	15			Wet, medium dense, gray, fine to coarse SAND, minor clay and silt and gravel. Wn%: 12.7
10							
11							
12							
13							
14	5	13.5-15.0	4-5-10	17	2.75		Moist, stiff, gray, CLAY, minor silt and fine to coarse sand and gravel. Wn%: 15.1
15							***Note:*** *Ground surface elevations at boring locations estimated using data provided by Google Earth Pro.*
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							

ATTACHMENT B

Test Pit Logs

CANTERBURY CROSSING TEST PIT LOGS

Performed on December 22, 2023 with a Mini-Sized Hydraulic Excavator with Earth Teeth and monitored by WGE Geologist R.J.

TP-1

0”-15”	Silty TOPSOIL.
15”-3’	Damp, stiff, brown and gray, very silty CLAY, minor cobbles and gravel.
3’-8’	Damp, very stiff, brown, silty CLAY, minor cobbles and gravel.
8’-11’	Wet, loose, brown GRAVEL, some sand and cobbles.
Notes:	Major groundwater seepage at 8’; moderate cave-in at 8-11’; 3-8’ clay layer was very hard digging.

TP-2

0”-18”	Sandy TOPSOIL.
18”-4’	Damp, medium dense SAND, some gravel.
4’-10.5’	Damp, stiff, brown, very silty CLAY, some gravel, minor cobbles.
Notes:	Minor groundwater seepage at 4’; sturdy walls, no cave-ins.

TP-3

0”-12”	Very sandy TOPSOIL.
12”-8’	Damp, loose, brown SAND, some gravel.
8’-10.5’	Damp, medium stiff, gray, silty CLAY, minor cobbles.
Notes:	Groundwater seepage at 8’; sturdy walls, no cave-ins.

TP-4

0’-12”	Silty TOPSOIL.
12”-3’	Damp, medium stiff, brown and gray, very silty CLAY.
3’-4’	Wet, loose, brown GRAVEL, some sand.
4’-9’	Damp, stiff, brown, silty CLAY, some cobbles.
9’-10.5’	Damp, very stiff, gray, silty CLAY, minor cobbles.

Notes: Groundwater seepage at 3-4’; sturdy walls, no cave-ins; 9-10.5’ clay layer was very hard digging.

TP-5

0”-15”	TOPSOIL.
15”-3.5’	Moist, medium stiff, brown and gray, silty CLAY, trace gravel.
3.5’-5’	Wet, loose, brown GRAVEL, some sand.
5’-11’	Damp, very stiff, gray silty CLAY, minor cobbles.

Notes: Groundwater seepage at 3.5’; Moderate sidewall collapse from 0’-5’.

TP-6

0”-15”	Silty TOPSOIL.
15”-4.5’	Moist, medium dense, brown and gray SILT, trace sand and clay.
4.5’-7’	Wet, very loose, gray SAND, some gravel. Note: Heaving sands.

Notes: Groundwater encountered at 4.5’, significant cave-in; visibly heaving sands and groundwater.

TP-7

0”-12”	Sandy TOPSOIL.
12”-3.5’	Damp, brown and gray, very silty CLAY.
3.5’-4.5’	Wet, medium dense, brown SAND, some gravel.
4.5’-10.5’	Damp, very stiff, gray, very silty CLAY, some gravel, minor cobbles.

Notes: Groundwater seepage at 3.5’, sturdy walls; no cave-ins; very hard digging in clay layer 4.5-10.5’.

TP-8

0”-12”	Moist TOPSOIL.
12”-3’	Moist, soft, gray and brown CLAY.
3’-4.5’	Damp, soft, gray and brown, silty CLAY.
4.5’-6’	Moist to wet, medium dense, brown GRAVEL, some sand.
6’-11’	Damp, very stiff, gray silty CLAY, minor cobbles.

Notes: Minor groundwater seepage at 6’, sturdy walls; no cave-ins; very hard digging in clay layer 6-11’.

ATTACHMENT C

Test Pit Photos

Image 1: TP-1

Image 2: TP-1 Spoils

Image 3: TP-2

Image 4: TP-2 Spoils

Image 5: TP-3

Image 6: TP-3 Spoils

Image 7: TP-4

Image 8: TP-4 Spoils

Image 9: TP-5

Image 10: TP-5 Spoils

Image 11: TP-6

Image 12: TP-6 Spoils

Image 13: TP-7

Image 14: TP-7 Spoils

Image 15: TP-8

Image 16: TP-8 Spoils

N

POND 2
0.411 ACRES

DP11

STREAM 1
741.4 LINEAR FEET
0.009 ACRES
0.5' WIDE

WETLAND C
0.093 ACRES

DP12

WETLAND G
0.021 ACRES

DP10

RAVENNA STREET

WETLAND D
0.112 ACRES

DP13 DP14

POND 1
0.784 ACRES

DP15

WETLAND A
2.482 ACRES

WETLAND F
0.016 ACRES

WETLAND G
0.004 ACRES

WETLAND N
0.073 ACRES

WETLAND I
0.030 ACRES

WETLAND E
FORESTED: 0.049 ACRES
EMERGENT: 0.081 ACRES
TOTAL: 0.130 ACRES
[ON-SITE]

WETLAND Q
0.063 ACRES

WETLAND O
0.068 ACRES

STOW ROAD

WETLAND J
0.010 ACRES

WETLAND P
0.046 ACRES

WETLAND K
0.107 ACRES

WETLAND B
0.177 ACRES

WETLAND M
0.004 ACRES

WETLAND L
0.176 ACRES

WETLAND H
0.190 ACRES

LEGEND

STUDY AREA (98.4 ACRES)

FORESTED WETLAND

EMERGENT WETLAND

NON-JURISDICTIONAL POND

I:\2022\H22362\CAD\Newest Mapping\Post Corps Visit PRELIM.dwg

Scale: 1" = 250'

0 250 500

HZW Environmental Consultants

FIGURE 3B

AQUATIC RESOURCES MAP (AERIAL)
PARCEL NUMBERS 3001397, -2169, -2375, -3108, -4552, -4555, -6323, -6324, 3010370, -0371
CITY OF HUDSON, SUMMIT COUNTY, OHIO

January 2, 2024

Chris Brown
Prestige Builder Group, LLC
778 McCauley Rd, Ste 140
Stow, OH 44224

RE: Tree Survey – Canterbury Crossing

Dear Mr. Brown,

EnviroScience, Inc. performed a vegetation and tree survey on December 8, 2023, for the Prestige Builder Group, LLC at Canterbury Crossing project site in the City of Hudson, Summit County, Ohio. The approximate center coordinates are 41.228235°, -81.414967°. The maps provided in Appendix A depict the project area. Representative photographs of plant communities are included in Appendix B.

SITE DESCRIPTION

The study area is approximately 15.2 acres within the City of Hudson, Summit County, Ohio. The study area is located on portions of parcels 3002169, 3002375, 3003108, 3004552, 3006324, and 3010370. The survey area consists of maintained lawn, agricultural field, forest, and upland scrub-shrub communities. The surrounding land use consists of agricultural, rural residential, and undeveloped properties.

METHODS

EnviroScience biologists traversed the Study Area on foot to identify all trees with a diameter at breast height (DBH) greater than six inches. DBH was measured at 1.35m from the ground surface and was recorded to the nearest 0.1 inch. The species and location of each identified tree were recorded using a submeter-accurate GPS. No data was collected for trees with a DBH less than six inches.

Photographs were taken of each plant community, and canopy cover was visually estimated within each community for coniferous trees, deciduous trees, and woody shrubs. Representative photographs of plant communities can be found in Attachment B.

RESULTS

Tree Survey

A total of 190 trees with DBH > 6 in were identified within the project area, including 0 coniferous trees, 173 deciduous trees, and 17 standing dead trees (Figure 1). Detailed results of the tree survey are contained in Table 1.

Plant Community Survey

Vegetation density for both tree and shrub strata were recorded within each naturally vegetated area (Figure 2). Tree canopy was categorized as ‘dense’ if the wooded area was ≥40% cover, ‘moderate’ if the wooded area was 11-39% cover, and ‘minimal’ if the wooded area was 0-10% cover. The same categorization was utilized for shrub density. The results of the plant community survey are contained in Table 2 and summarized below:

- 1.18 acres of deciduous tree-dominated plant community, including:
  - 0.78 acres with dense to moderate shrub layer and
  - 0.4 acres with minimal to no shrub layer.
- 3.55 acres with moderate deciduous tree cover, including:
  - 0.23 acres with dense to moderate shrub layer and
  - 3.32 acres with no shrub layer.
- 10.47 acres with minimal to no tree cover, including:
  - 2.44 acres with dense to moderate shrub layer and
  - 8.03 acres with minimal or no shrub layer.

Deciduous Tree Community

The dominant deciduous tree species were red maple (*Acer rubrum*) and black cherry (*Prunus serotina*). Lesser amounts of apple (*Malus* sp.), American elm (*Ulmus americana*), dead ash (*Fraxinus* sp.), Callery pear (*Pyrus calleryanus*), white oak (*Quercus alba*), black walnut (*Juglans nigra*), pin oak (*Quercus palustris*), black gum (*Nyssa sylvatica*), dead cherry (*Prunus* sp.), silver maple (*Acer saccharinum*), shagbark hickory (*Carya ovata*), dead elm (*Ulmus* sp.), honeylocust (*Gleditsia triacanthos*), and tuliptree (*Liriodendron tulipifera*). Red maple trees were common throughout the study area. Black cherry, American elm and Callery pear trees were commonly found north of Ravenna Street. White oaks were commonly found in the agricultural field south of Ravenna Street.

Shrub/Sapling Community

South of Ravenna Street, the shrub/sapling layer consisted primarily of ash saplings, with lesser amounts of the common buckthorn (*Rhamnus cathartica*), rambler rose (*Rosa multiflora*), and Allegheny blackberry (*Rubus allegheniensis*).

North of Ravenna Street, the shrub/sapling layer consisted primarily of Callery pear saplings, with lesser amounts of common buckthorn, glossy buckthorn (*Frangula alnus*), (*Viburnum dentatum*), autumn olive (*Elaeagnus umbellata*), crab apple (*Malus pumila*), young Norway spruce (*Picea abies*), and Allegheny blackberry. The young Norway spruce trees were limited to the north end of the study area.

Herbaceous Plant Community

South of Ravenna Street, the herbaceous community included mowed turf grass, reed canarygrass (*Phalaris arundinacea*), Queen Anne's lace (*Daucus carota*), poison ivy (*Toxicodendron radicans*), hemp dogbane (*Apocynum cannabinum*), creeping thistle (*Cirsium arvense*), chives (*Allium* sp.), common reed (*Phragmites australis* ssp. *australis*), calico aster (*Symphyotrichum lateriflorum*), forked panicgrass (*Panicum dichotomum*), and Canada goldenrod (*Solidago canadensis*).

North of Ravenna Street, the herbaceous community included mowed turf grass, poison ivy, sheep sorrel (*Rumex acetosella*), Canadian horseweed (*Conyza canadensis*), forked panicgrass, path rush (*Juncus tenuis*), Canada goldenrod, harvestlice (*Agrimonia parviflora*), red deadnettle (*Lamium purpureum*), and American pokeweed (*Phytolacca americana*).

The remnants of a harvested soybean crop (*Glycine max*) were present within the agricultural fields on both sides of Ravenna Street, in addition to common agricultural weeds including sheep sorrel and red deadnettle.

Thank you for this opportunity to provide our services. Should you have any other questions or require additional information, please do not hesitate to contact me by phone at 330-688-0111 or by email at CKrause@EnviroScienceInc.com.

Sincerely,

Carolyn Krause
Biologist

Enclosures:

Attachment A: Figures

Figure 1: Map of Trees Over Six-Inch DBH

Figure 2: Map of Plant Communities

Attachment B: Photographs

Table 1. Trees with DBH > 6 Inches within the Survey Area

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-1	*Fraxinus americana*	White Ash	10.5	41.231410	-81.413418	4564529.0	465352.8
T-2	*Pyrus calleryana*	Callery Pear	6.5	41.230827	-81.413407	4564464.2	465353.4
T-3	*Prunus serotina*	Black Cherry	8.0	41.230675	-81.413403	4564447.4	465353.6
T-4	*Malus* sp.	Apple	10.0	41.230428	-81.413410	4564419.9	465352.9
T-5	*Prunus serotina*	Black Cherry	19.0	41.230210	-81.414688	4564396.2	465245.6
T-6	*Dead Prunus* sp.	Dead Cherry	8.0	41.230177	-81.413413	4564392.1	465352.5
T-7	*Quercus palustris*	Pin Oak	14.0	41.230168	-81.413430	4564391.1	465351.1
T-8	*Malus* sp.	Apple	6.5	41.230129	-81.413408	4564386.7	465352.9
T-9	*Malus* sp.	Apple	10.0	41.230120	-81.413419	4564385.7	465351.9
T-10	*Malus* sp.	Apple	8.0	41.230096	-81.413423	4564383.1	465351.6
T-11	*Malus* sp.	Apple	9.0	41.230091	-81.413423	4564382.5	465351.6
T-12	*Prunus serotina*	Black Cherry	7.0	41.230076	-81.413414	4564380.8	465352.4
T-13	*Prunus serotina*	Black Cherry	7.0	41.230069	-81.413426	4564380.1	465351.4
T-14	*Prunus serotina*	Black Cherry	11.0	41.230037	-81.413424	4564376.5	465351.5
T-15	*Prunus serotina*	Black Cherry	9.0	41.230030	-81.413415	4564375.7	465352.3
T-16	*Malus* sp.	Apple	7.5	41.230014	-81.413435	4564374.0	465350.6
T-17	*Prunus serotina*	Black Cherry	10.5	41.229995	-81.413417	4564371.9	465352.1
T-18	*Malus* sp.	Apple	6.5	41.229955	-81.413435	4564367.5	465350.5
T-19	*Prunus serotina*	Black Cherry	13.5	41.229939	-81.413423	4564365.7	465351.6
T-20	*Malus* sp.	Apple	8.0	41.229886	-81.413430	4564359.8	465351.0
T-21	*Malus* sp.	Apple	10.0	41.229881	-81.413441	4564359.2	465350.1
T-22	*Malus* sp.	Apple	7.0	41.229880	-81.413439	4564359.1	465350.2
T-23	*Prunus serotina*	Black Cherry	7.5	41.229863	-81.413424	4564357.2	465351.4
T-24	*Prunus serotina*	Black Cherry	7.0	41.229853	-81.413426	4564356.1	465351.3
T-25	*Prunus serotina*	Black Cherry	7.0	41.229825	-81.413400	4564353.0	465353.4
T-26	*Prunus serotina*	Black Cherry	10.0	41.229762	-81.413432	4564346.0	465350.7
T-27	*Pyrus calleryana*	Callery Pear	19.0	41.229763	-81.418062	4564348.0	464962.6
T-28	*Malus* sp.	Apple	10.0	41.229707	-81.413432	4564339.9	465350.7
T-29	*Pyrus calleryana*	Callery Pear	16.0	41.229748	-81.417983	4564346.3	464969.3
T-30	*Quercus palustris*	Pin Oak	8.0	41.229683	-81.413426	4564337.2	465351.2
T-31	*Pyrus calleryana*	Callery Pear	14.0	41.229710	-81.417903	4564342.0	464975.9
T-32	*Prunus serotina*	Black Cherry	8.0	41.229653	-81.413420	4564333.9	465351.6
T-33	*Malus* sp.	Apple	11.0	41.229637	-81.413416	4564332.1	465352.0
T-34	*Prunus serotina*	Black Cherry	17.0	41.229609	-81.414720	4564329.6	465242.7
T-35	*Prunus serotina*	Black Cherry	29.0	41.229587	-81.414701	4564327.1	465244.2
T-36	*Prunus serotina*	Black Cherry	23.0	41.229579	-81.414732	4564326.2	465241.6
T-37	Dead *Fraxinus* sp.	Dead Ash	13.5	41.229489	-81.413302	4564315.7	465361.5
T-38	*Prunus serotina*	Black Cherry	17.0	41.229493	-81.414723	4564316.6	465242.3
T-39	Dead *Prunus* sp.	Dead Cherry	8.5	41.229478	-81.413327	4564314.5	465359.3

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-40	*Prunus serotina*	Black Cherry	24.0	41.229413	-81.414729	4564307.8	465241.8
T-41	*Ulmus americana*	American Elm	10.0	41.229400	-81.413391	4564305.8	465353.9
T-42	Dead *Ulmus* sp.	Dead Elm	11.0	41.229386	-81.413416	4564304.2	465351.9
T-43	*Malus* sp.	Apple	7.0	41.229179	-81.413407	4564281.3	465352.5
T-44	*Prunus serotina*	Black Cherry	10.0	41.229157	-81.413404	4564278.8	465352.8
T-45	*Prunus serotina*	Black Cherry	9.0	41.229138	-81.413415	4564276.8	465351.8
T-46	*Prunus serotina*	Black Cherry	10.0	41.229136	-81.413410	4564276.5	465352.2
T-47	*Prunus serotina*	Black Cherry	9.0	41.229044	-81.413414	4564266.3	465351.9
T-48	*Prunus serotina*	Black Cherry	9.0	41.229043	-81.413421	4564266.2	465351.3
T-49	*Prunus serotina*	Black Cherry	10.0	41.229032	-81.413425	4564264.9	465350.9
T-50	*Pyrus calleryana*	Callery Pear	17.0	41.228993	-81.413120	4564260.5	465376.4
T-51	*Prunus serotina*	Black Cherry	11.0	41.228940	-81.413240	4564254.6	465366.4
T-52	*Prunus serotina*	Black Cherry	15.5	41.228920	-81.413421	4564252.6	465351.2
T-53	*Prunus serotina*	Black Cherry	19.0	41.228892	-81.413404	4564249.4	465352.5
T-54	*Prunus serotina*	Black Cherry	11.0	41.228860	-81.413205	4564245.7	465369.3
T-55	*Prunus serotina*	Black Cherry	16.0	41.228858	-81.413418	4564245.6	465351.4
T-56	*Juglans nigra*	Black Walnut	10.0	41.228771	-81.413219	4564235.9	465368.1
T-57	*Juglans nigra*	Black Walnut	9.5	41.228770	-81.413223	4564235.8	465367.7
T-58	*Prunus serotina*	Black Cherry	9.0	41.228712	-81.413294	4564229.3	465361.7
T-59	*Gleditsia triacanthos*	Honeylocust	6.5	41.228681	-81.413412	4564226.0	465351.8
T-60	*Prunus serotina*	Black Cherry	10.6	41.228610	-81.413289	4564218.0	465362.1
T-61	*Prunus serotina*	Black Cherry	24.4	41.228610	-81.413399	4564218.1	465352.9
T-62	*Juglans nigra*	Black Walnut	10.0	41.228563	-81.413248	4564212.9	465365.5
T-63	*Prunus serotina*	Black Cherry	11.9	41.228538	-81.413407	4564210.1	465352.2
T-64	*Prunus serotina*	Black Cherry	30.1	41.228470	-81.413433	4564202.6	465349.9
T-65	*Prunus serotina*	Black Cherry	17.5	41.228428	-81.413423	4564197.9	465350.7
T-66	*Acer rubrum*	Red Maple	10.0	41.228421	-81.417149	4564198.6	465038.5
T-67	Dead *Fraxinus* sp.	Dead Ash	11.5	41.228412	-81.416976	4564197.5	465052.9
T-68	*Acer rubrum*	Red Maple	29.5	41.228413	-81.417133	4564197.7	465039.8
T-69	*Acer rubrum*	Red Maple	24.0	41.228412	-81.417175	4564197.7	465036.3
T-70	*Acer rubrum*	Red Maple	9.5	41.228394	-81.417121	4564195.6	465040.8
T-71	*Acer rubrum*	Red Maple	12.5	41.228357	-81.417114	4564191.5	465041.4
T-72	*Acer rubrum*	Red Maple	17.0	41.228351	-81.417139	4564190.8	465039.3
T-73	*Acer rubrum*	Red Maple	10.0	41.228348	-81.417125	4564190.5	465040.5
T-74	*Acer rubrum*	Red Maple	19.5	41.228326	-81.416991	4564188.0	465051.7
T-75	*Acer rubrum*	Red Maple	19.0	41.228265	-81.416884	4564181.2	465060.6
T-76	*Pyrus calleryana*	Callery Pear	6.9	41.228181	-81.413146	4564170.4	465373.9
T-77	Dead *Fraxinus* sp.	Dead Ash	17.0	41.228176	-81.416581	4564171.2	465085.9
T-78	*Malus* sp.	Apple	6.3	41.228129	-81.413457	4564164.7	465347.7
T-79	*Juglans nigra*	Black Walnut	6.6	41.228106	-81.413408	4564162.2	465351.9

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-80	*Malus* sp.	Apple	10.6	41.228094	-81.413464	4564160.8	465347.2
T-81	Dead *Fraxinus* sp.	Dead Ash	10.0	41.228118	-81.416518	4564164.7	465091.2
T-82	*Malus* sp.	Apple	8.1	41.228082	-81.413361	4564159.5	465355.7
T-83	*Acer rubrum*	Red Maple	18.0	41.228102	-81.416940	4564163.1	465055.8
T-84	*Pyrus calleryana*	Callery Pear	7.6	41.228049	-81.413450	4564155.9	465348.3
T-85	*Acer rubrum*	Red Maple	18.5	41.228033	-81.416796	4564155.4	465067.9
T-86	*Pyrus calleryana*	Callery Pear	9.2	41.227984	-81.413130	4564148.5	465375.1
T-87	*Acer rubrum*	Red Maple	13.5	41.228002	-81.416810	4564151.9	465066.6
T-88	*Ulmus americana*	American Elm	25.4	41.227962	-81.413398	4564146.2	465352.6
T-89	*Ulmus americana*	American Elm	29.2	41.227955	-81.413310	4564145.3	465359.9
T-90	*Acer rubrum*	Red Maple	22.0	41.227961	-81.416780	4564147.3	465069.2
T-91	*Nyssa sylvatica*	Black Gum	15.8	41.227903	-81.413159	4564139.5	465372.6
T-92	Dead *Fraxinus* sp.	Dead Ash	10.5	41.227888	-81.416554	4564139.2	465088.0
T-93	*Juglans nigra*	Black Walnut	6.3	41.227820	-81.413173	4564130.3	465371.4
T-94	Dead *Fraxinus* sp.	Dead Ash	11.0	41.227779	-81.416609	4564127.2	465083.4
T-95	*Acer rubrum*	Red Maple	15.0	41.227761	-81.416923	4564125.3	465057.1
T-96	*Quercus palustris*	Pin Oak	8.5	41.227753	-81.417053	4564124.4	465046.1
T-97	*Prunus serotina*	Black Cherry	10.0	41.227668	-81.413157	4564113.4	465372.7
T-98	*Acer rubrum*	Red Maple	15.0	41.227696	-81.417001	4564118.1	465050.5
T-99	*Acer rubrum*	Red Maple	15.0	41.227678	-81.416977	4564116.1	465052.5
T-100	*Acer rubrum*	Red Maple	21.5	41.227667	-81.416417	4564114.6	465099.4
T-101	Unknown	Unknown	25.7	41.227603	-81.413337	4564106.2	465357.5
T-102	*Acer rubrum*	Red Maple	16.0	41.227634	-81.416736	4564111.1	465072.6
T-103	*Acer rubrum*	Red Maple	26.7	41.227521	-81.413432	4564097.3	465349.5
T-104	*Prunus serotina*	Black Cherry	7.8	41.227518	-81.413391	4564096.8	465353.0
T-105	*Acer rubrum*	Red Maple	21.0	41.227542	-81.416428	4564100.8	465098.4
T-106	*Acer rubrum*	Red Maple	13.0	41.227539	-81.416985	4564100.6	465051.7
T-107	*Fraxinus americana*	White Ash	22.0	41.227504	-81.413411	4564095.3	465351.3
T-108	*Acer rubrum*	Red Maple	21.5	41.227531	-81.416517	4564099.6	465091.0
T-109	*Acer rubrum*	Red Maple	11.0	41.227497	-81.416534	4564095.8	465089.5
T-110	*Acer rubrum*	Red Maple	25.0	41.227487	-81.416582	4564094.7	465085.5
T-111	*Acer rubrum*	Red Maple	29.4	41.227376	-81.412012	4564080.5	465468.4
T-112	*Acer rubrum*	Red Maple	13.4	41.227361	-81.412048	4564078.9	465465.4
T-113	*Acer rubrum*	Red Maple	22.0	41.227402	-81.416601	4564085.3	465083.9
T-114	*Ulmus americana*	American Elm	15.7	41.227328	-81.412305	4564075.3	465443.9
T-115	*Ulmus americana*	American Elm	19.6	41.227322	-81.413358	4564075.1	465355.6
T-116	*Acer rubrum*	Red Maple	18.7	41.227305	-81.412098	4564072.7	465461.2
T-117	*Acer rubrum*	Red Maple	26.8	41.227299	-81.412197	4564072.1	465452.9
T-118	*Acer rubrum*	Red Maple	12.7	41.227262	-81.412016	4564067.9	465468.0
T-119	*Prunus serotina*	Black Cherry	14.4	41.227254	-81.411943	4564067.0	465474.1

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-120	*Acer rubrum*	Red Maple	25.0	41.227275	-81.416500	4564071.1	465092.2
T-121	*Ulmus americana*	American Elm	16.4	41.227223	-81.412028	4564063.5	465467.1
T-122	Dead	Dead	9.1	41.227224	-81.413164	4564064.1	465371.8
T-123	*Nyssa sylvatica*	Black Gum	15.8	41.227189	-81.412207	4564059.9	465452.0
T-124	*Ulmus americana*	American Elm	12.1	41.227183	-81.412092	4564059.1	465461.7
T-125	*Acer rubrum*	Red Maple	11.1	41.227162	-81.411557	4564056.6	465506.5
T-126	*Acer rubrum*	Red Maple	12.4	41.227127	-81.411581	4564052.8	465504.4
T-127	*Acer rubrum*	Red Maple	11.7	41.227122	-81.411569	4564052.1	465505.5
T-128	*Acer rubrum*	Red Maple	16.8	41.227118	-81.412213	4564052.0	465451.5
T-129	*Acer rubrum*	Red Maple	13.7	41.227116	-81.411988	4564051.6	465470.4
T-130	*Acer rubrum*	Red Maple	8.7	41.227111	-81.411582	4564051.0	465504.4
T-131	*Acer rubrum*	Red Maple	12.6	41.227109	-81.411590	4564050.8	465503.7
T-132	*Acer rubrum*	Red Maple	12.0	41.227114	-81.412193	4564051.6	465453.1
T-133	*Carya ovata*	Shagbark Hickory	7.0	41.227144	-81.417024	4564056.8	465048.3
T-134	*Ulmus americana*	American Elm	20.6	41.227081	-81.411786	4564047.7	465487.3
T-135	*Acer rubrum*	Red Maple	14.4	41.227046	-81.411522	4564043.8	465509.3
T-136	*Acer rubrum*	Red Maple	10.5	41.227031	-81.411936	4564042.2	465474.7
T-137	*Ulmus americana*	American Elm	19.2	41.227006	-81.411509	4564039.2	465510.4
T-138	*Acer rubrum*	Red Maple	15.8	41.227001	-81.411622	4564038.8	465501.0
T-139	*Acer rubrum*	Red Maple	23.3	41.226969	-81.411662	4564035.2	465497.6
T-140	Dead *Fraxinus* sp.	Dead Ash	15.0	41.227005	-81.416828	4564041.3	465064.6
T-141	*Acer rubrum*	Red Maple	28.3	41.226966	-81.413308	4564035.6	465359.6
T-142	*Acer rubrum*	Red Maple	14.0	41.226987	-81.417064	4564039.3	465044.8
T-143	*Acer rubrum*	Red Maple	10.4	41.226863	-81.411535	4564023.4	465508.1
T-144	*Acer rubrum*	Red Maple	8.7	41.226854	-81.413300	4564023.1	465360.3
T-145	*Ulmus americana*	American Elm	13.5	41.226844	-81.412409	4564021.6	465434.9
T-146	*Acer rubrum*	Red Maple	39.2	41.226818	-81.411594	4564018.4	465503.2
T-147	*Ulmus americana*	American Elm	30.2	41.226770	-81.411720	4564013.1	465492.6
T-148	*Acer rubrum*	Red Maple	16.0	41.226770	-81.417040	4564015.3	465046.7
T-149	*Acer rubrum*	Red Maple	37.3	41.226713	-81.411915	4564006.9	465476.2
T-150	*Acer rubrum*	Red Maple	6.9	41.226699	-81.411868	4564005.3	465480.2
T-151	*Acer rubrum*	Red Maple	13.7	41.226671	-81.411592	4564002.1	465503.3
T-152	*Acer rubrum*	Red Maple	29.9	41.226669	-81.411851	4564002.0	465481.6
T-153	*Liriodendron tulipifera*	Tuliptree	12.0	41.226707	-81.417127	4564008.3	465039.4
T-154	*Acer rubrum*	Red Maple	22.2	41.226636	-81.411777	4563998.3	465487.8
T-155	*Acer rubrum*	Red Maple	16.0	41.226627	-81.411773	4563997.3	465488.1
T-156	*Ulmus americana*	American Elm	21.3	41.226582	-81.412636	4563992.6	465415.8
T-157	*Fraxinus americana*	White Ash	9.7	41.226548	-81.412143	4563988.7	465457.1

Tree No.	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing*	Easting*
T-158	*Acer rubrum*	Red Maple	13.3	41.226501	-81.411860	4563983.3	465480.8
T-159	*Acer rubrum*	Red Maple	16.6	41.226498	-81.411897	4563983.1	465477.6
T-160	*Acer rubrum*	Red Maple	9.1	41.226480	-81.412255	4563981.1	465447.6
T-161	*Acer saccharinum*	Silver Maple	14.3	41.226471	-81.411657	4563980.0	465497.7
T-162	*Ulmus americana*	American Elm	20.7	41.226421	-81.411811	4563974.4	465484.8
T-163	*Acer rubrum*	Red Maple	25.6	41.226410	-81.411607	4563973.1	465501.9
T-164	*Ulmus americana*	American Elm	20.9	41.226417	-81.412441	4563974.2	465432.0
T-165	*Acer rubrum*	Red Maple	20.8	41.226406	-81.412149	4563973.0	465456.5
T-166	*Acer rubrum*	Red Maple	18.1	41.226387	-81.411701	4563970.6	465494.0
T-167	*Acer rubrum*	Red Maple	25.6	41.226382	-81.411687	4563970.1	465495.2
T-168	*Acer rubrum*	Red Maple	19.6	41.226370	-81.411797	4563968.8	465485.9
T-169	*Malus* sp.	Apple	7.4	41.226337	-81.411941	4563965.2	465473.8
T-170	Dead *Fraxinus* sp.	Dead Ash	16.0	41.226366	-81.415947	4563970.0	465138.1
T-171	*Acer rubrum*	Red Maple	25.6	41.226327	-81.412140	4563964.1	465457.2
T-172	*Acer rubrum*	Red Maple	30.8	41.226250	-81.412021	4563955.5	465467.1
T-173	Dead *Fraxinus* sp.	Dead Ash	17.0	41.226257	-81.415884	4563957.9	465143.3
T-174	*Ulmus americana*	American Elm	23.2	41.226196	-81.411440	4563949.3	465515.8
T-175	Dead *Fraxinus* sp.	Dead Ash	17.0	41.226231	-81.415847	4563955.0	465146.4
T-176	*Acer rubrum*	Red Maple	26.4	41.226190	-81.411631	4563948.8	465499.8
T-177	*Acer rubrum*	Red Maple	10.7	41.226169	-81.411603	4563946.4	465502.1
T-178	*Quercus alba*	White Oak	50.0	41.226116	-81.416780	4563942.6	465068.2
T-179	*Quercus alba*	White Oak	17.5	41.226084	-81.415680	4563938.5	465160.4
T-180	*Acer rubrum*	Red Maple	33.0	41.225968	-81.416529	4563926.0	465089.1
T-181	*Quercus alba*	White Oak	13.0	41.225861	-81.415681	4563913.8	465160.1
T-182	Dead *Fraxinus* sp.	Dead Ash	15.0	41.225848	-81.415670	4563912.3	465161.0
T-183	Dead *Fraxinus* sp.	Dead Ash	12.0	41.225840	-81.415509	4563911.4	465174.5
T-184	Dead	Dead	14.0	41.225764	-81.415109	4563902.8	465208.1
T-185	*Quercus alba*	White Oak	50.0	41.225654	-81.415329	4563890.7	465189.5
T-186	*Acer rubrum*	Red Maple	13.0	41.225647	-81.416261	4563890.3	465111.4
T-187	*Acer rubrum*	Red Maple	25.5	41.225588	-81.415773	4563883.6	465152.3
T-188	*Quercus alba*	White Oak	19.5	41.225547	-81.415979	4563879.0	465135.0
T-189	*Quercus alba*	White Oak	15.0	41.225524	-81.415990	4563876.5	465134.0
T-190	*Quercus alba*	White Oak	13.5	41.225505	-81.415972	4563874.5	465135.6

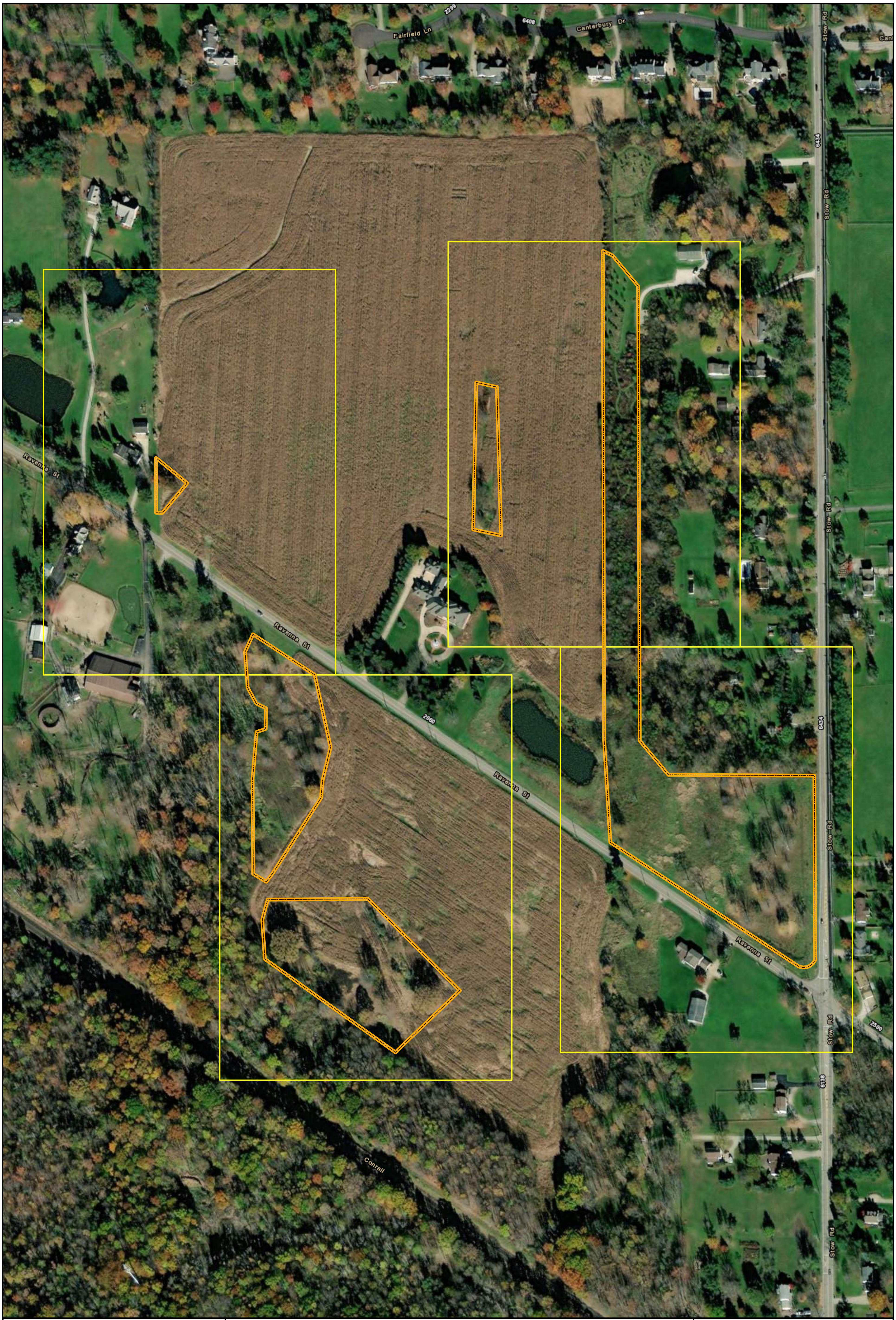
*Northing/Easting: UTM 17N, NAD83 (meters).

Table 2. Plant Communities within the Project Area

Community Type	Coniferous Tree Cover	Deciduous Tree Cover	Shrub/ Sapling Cover	Acres in Study Area	Percent of Study Area
Deciduous tree dominated with dense shrub layer	0	90	90	0.10	0.6
	0	70	90	0.31	2.0
	0	60	90	0.03	0.2
	0	60	90	0.06	0.4
	0	40	90	0.10	0.6
	0	40	70	0.16	1.0
Deciduous tree dominated with moderate shrub layer	0	70	20	0.04	0.2
Deciduous tree dominated	0	60	1	0.15	1.0
	0	90	0	0.04	0.3
	0	50	0	0.02	0.1
	0	50	0	0.12	0.8
	0	40	0	0.06	0.4
Moderate deciduous tree cover with dense shrub layer	0	25	70	0.20	1.3
Moderate deciduous tree cover with moderate shrub layer	0	20	30	0.04	0.3
Moderate deciduous tree cover	0	20	0	0.17	1.1
	0	20	0	2.32	15.3
	0	15	0	0.83	5.4
Minimal deciduous tree cover with dense shrub layer	0	10	95	0.02	0.1
	0	10	95	0.11	0.7
	0	10	80	0.08	0.5
	0	5	90	0.09	0.6
	0	5	90	0.50	3.3
	0	5	70	0.03	0.2
	0	1	50	0.47	3.1
	0	0	90	0.08	0.5
	0	0	90	1.05	6.9
Moderate shrub layer	0	0	25	0.02	0.2
Open area with minimal deciduous tree cover and shrub layer	0	1	5	0.51	3.3
Open area with minimal deciduous tree cover	0	5	0	0.28	1.8
	0	5	0	2.11	13.8
	0	1	0	0.63	4.2
Open area	0	0	0	0.09	0.6
	0	0	0	0.14	0.9
	0	0	0	0.46	3.0
	0	0	0	1.02	6.7
	0	0	0	2.80	18.4
Total Deciduous Tree Dominated (≥40% Cover) Area				**1.18 Ac.**	**7.8%**
Total Moderate Deciduous Tree Cover (11-39% Cover) Area				**3.55 Ac.**	**23.4%**
Total Minimal Deciduous Tree Cover (0-10% Cover) Area				**5.95 Ac.**	**39.1%**
Total Dense Shrub Layer (≥40% Cover) Area				**3.37 Ac.**	**22.1%**
Total Moderate Shrub Layer (11-39% Cover) Area				**0.10 Ac.**	**0.7%**
Total Minimal Shrub Layer (1-10% Cover) Area				**3.68 Ac.**	**24.2%**
Total Open Area				**8.03**	**52.8%**

*Photos are located in Appendix B.

Attachment A: Figures



)LJXUH
2YHUYLHZ RI &DQWHUEXU\
&URVVLQJ 7UHH 6XUYH\
6XPPLW &RXQW\ 2KLR

6XUYH\ $UHD

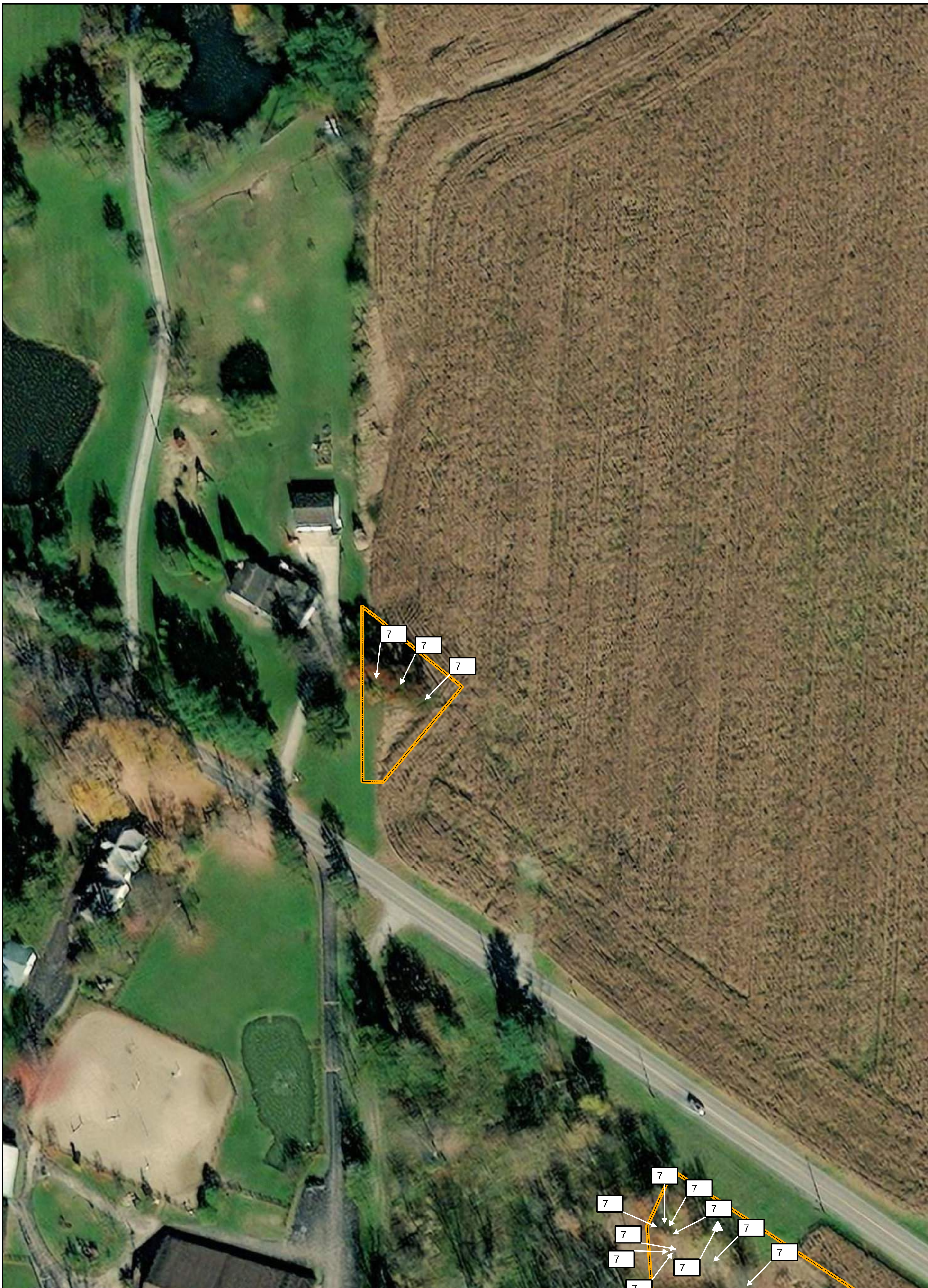
+XGVRQ

)HHW

0HWHUV

EnviroScience™
Excellence In Any Environment

'DWH 3DWK 3 ? B3URMHFWV?3?3UHVHWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[



)LJXUH 0DS RI 7UHHV ZLWK '%+ RI 6L[,QFKHV RU 0RUH
&DQWHUEXU\ &URVVLQJ 7UHH 6XUYH\ +XGVRQ 6XPPLW &RXQW

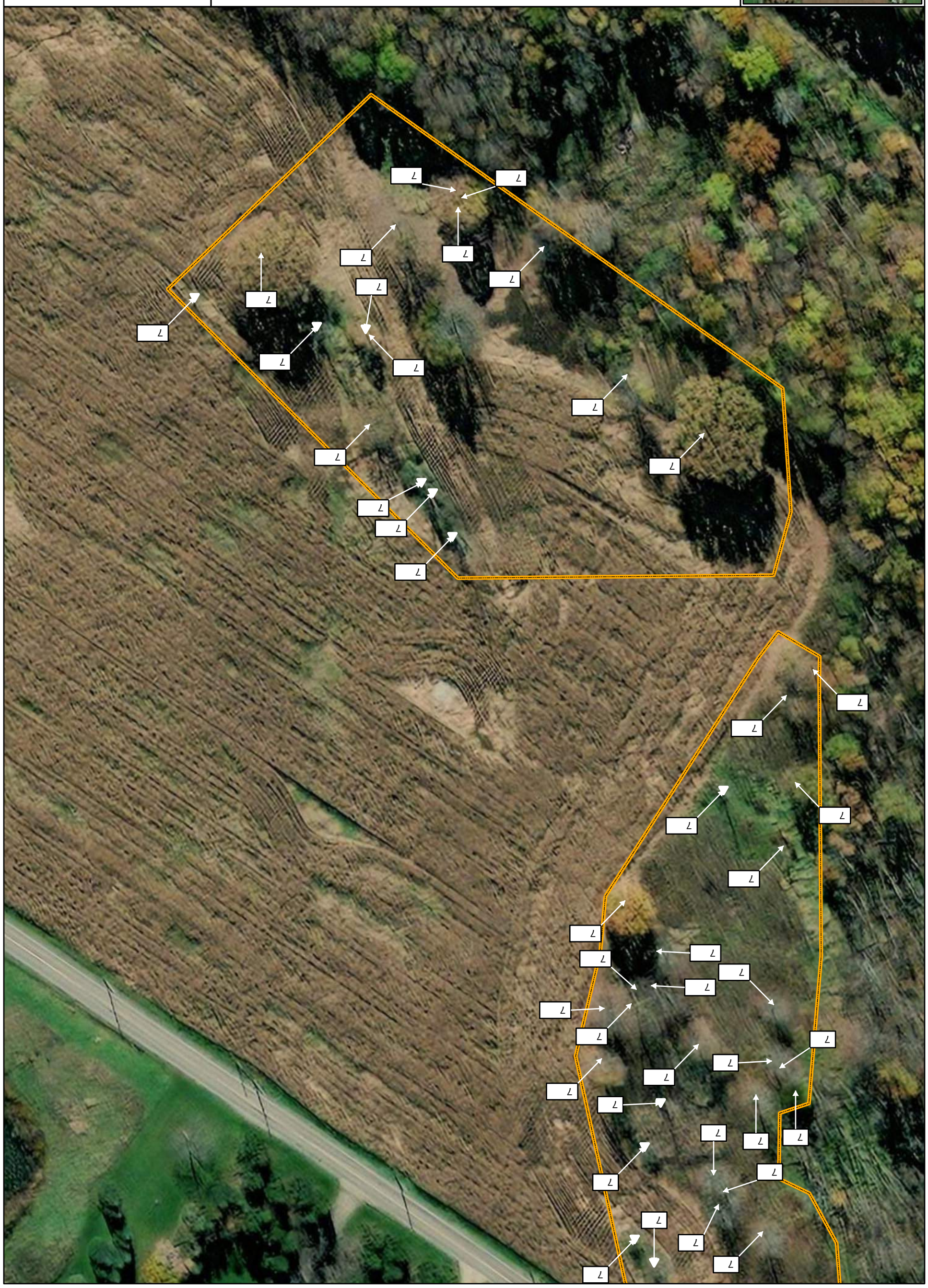
'HDG 'HFLGXRXV 6XUYH\ $UHD

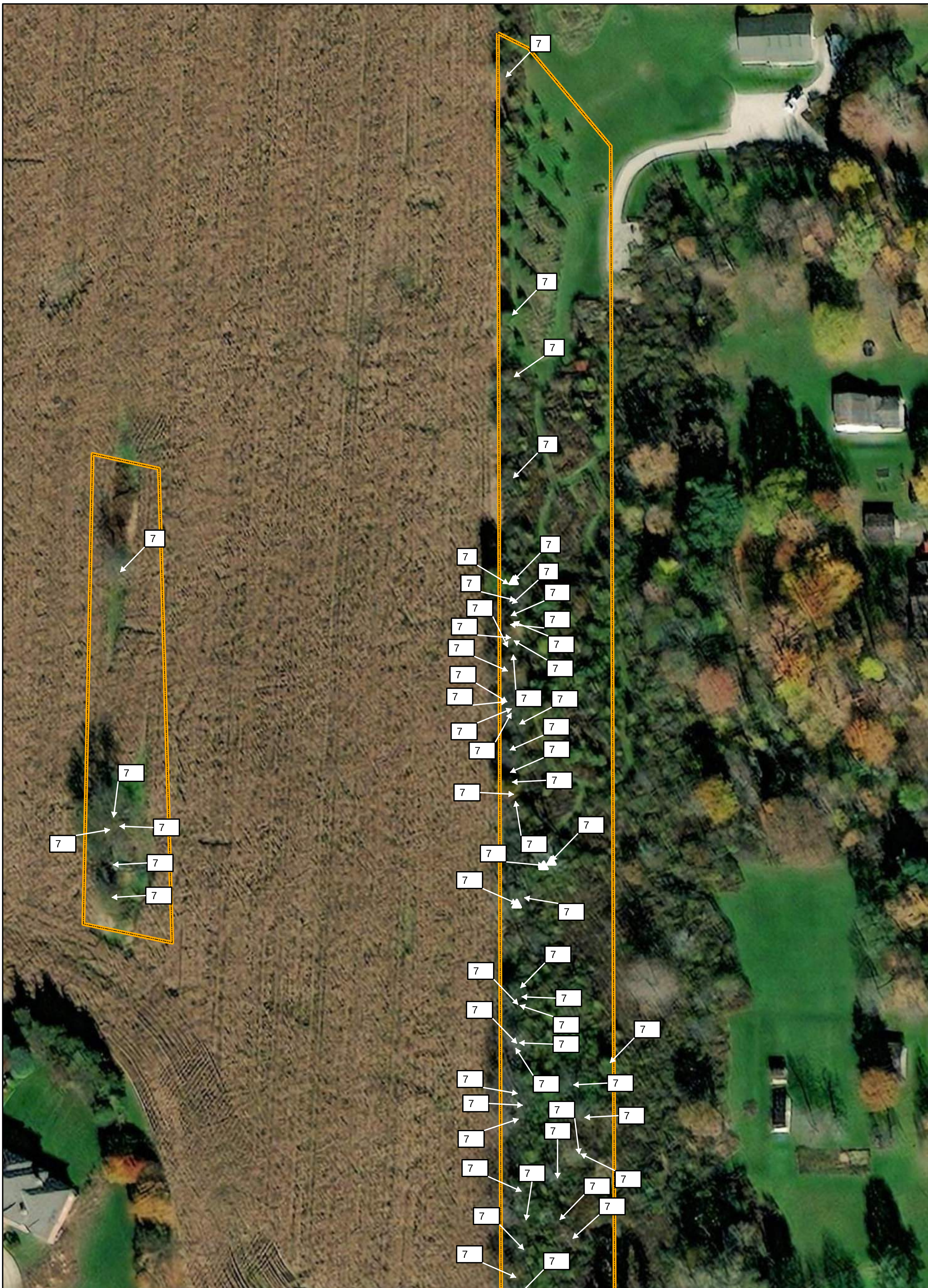
)HHW 0HWHUV

3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

'DWH

%DVHPDS FRXUWHV\ RI (VUL 1$' 6WDWH3ODQH 2KLR 1RUWK),


)LJXUH 0DS RI 7UHHV ZLWK '%+ RI 6L[,QFKHV RU 0RUH &DQWHUEXU\ &URVVLQJ 7UHH 6XUYH\ +XGVRQ 6XPPLW &RXQW
'HG 'HFLGXRXV 6XUYH\ $UHD
0HWUHV
)HHW
Excellence In Any Environment
%DVHPDS FRXUWHV\ RI (VUL 1$' 6WDWH3ODQH 2KLR 1RUWK),36 1RUWK
'DWH 3UHSDUHG%\ %LOO%XUVLQJ?*,6?+XGVRQ 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSUI



)LJXUH 0DS RI 7UHHV ZLWK '%+ RI 6L[,QFK[redacted]HV RU 0RUH
&DQWHUEXU\ &URVVLQJ 7UHH 6XUYH\ +XGVRQ 6[redacted]PPLW &RXQW

'HDG 'HFLGXRXV 6XUYH\ $UHD

)HHW

0HWHUV

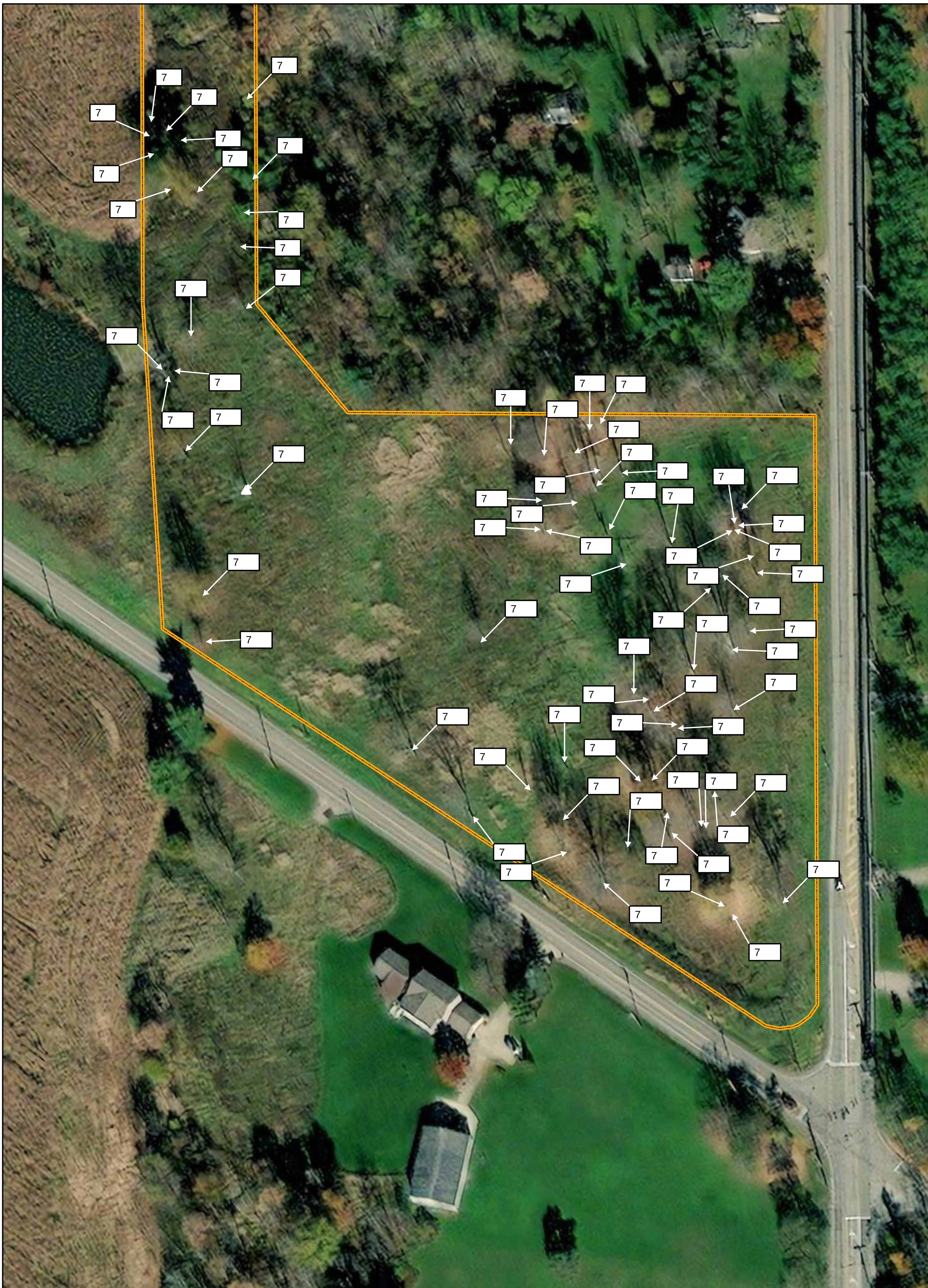
EnviroScience™ Excellence In Any Environment

3DWK 3 ? B3URMHFWV?3?3UHVVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?+XGVRQB7UHHB6XUYH\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

'DWH

3DWK ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

'DWH



)LJXUH 0DS RI 7UHHV ZLWK '%+ RI 6L[,QFKHV RU 0RUH
&DQWHUEXU\ &URVVLQJ 7UHH 6XUYH\ +XGVRQ 6XPPLW &RXQW

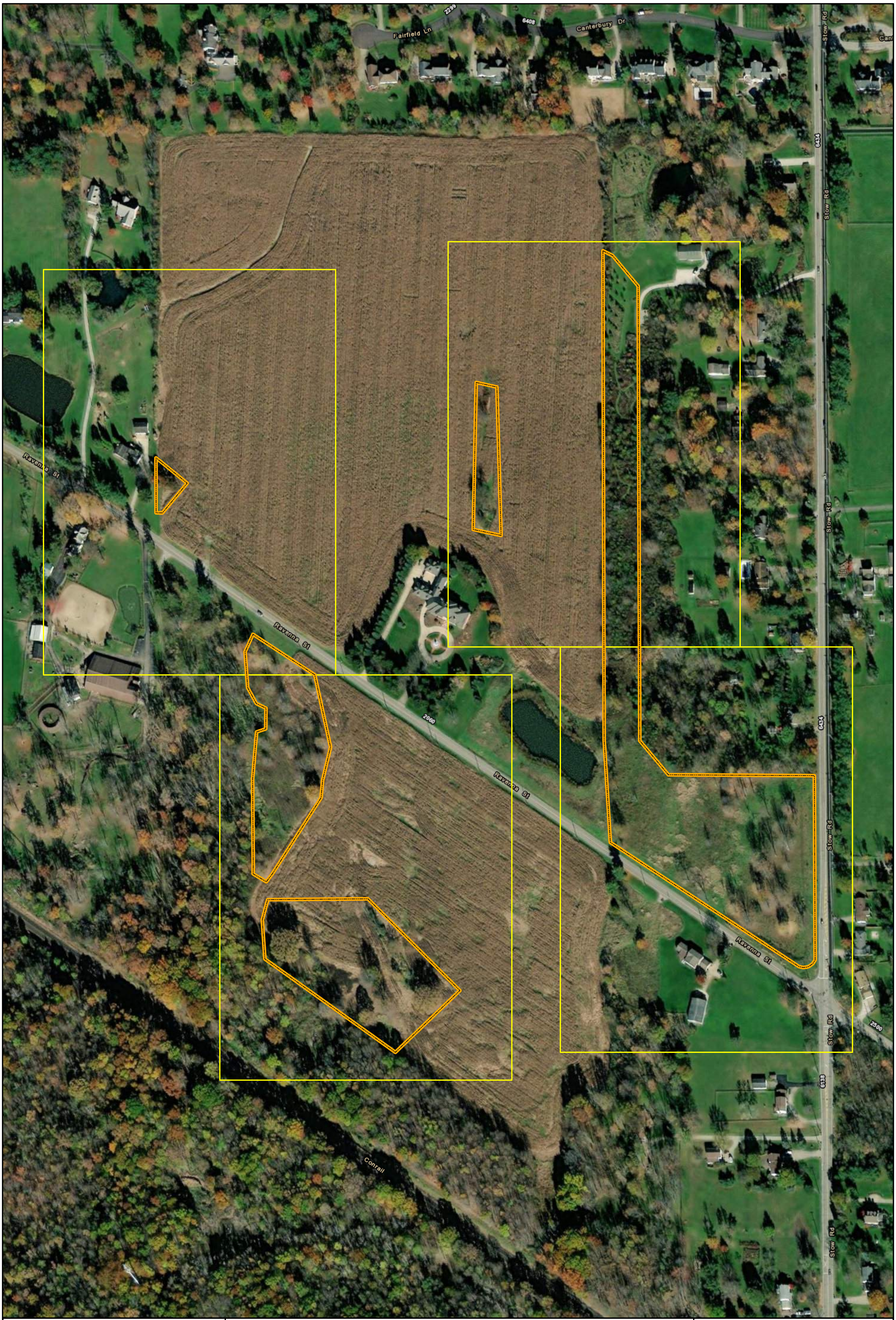
'HDG 'HFLGXRXV 6XUYH\ $UHD

)HHW 0HWHUV

EnviroScience™ Excellence In Any Environment

%DVHPDS FRXUWHV\ RI (VUL

1$' 6WDWH3ODQH 2KLR 1RUWK),3



)LJXUH
2YHUYLHZ RI &DQWHUEXU\
&URVVLQJ 7UHH 6XUYH\ +XGVRQ
6XPPLW &RXQW\ 2KLR

6XUYH\ $UHD

)HHW
0HWHUV

EnviroScience™
Excellence In Any Environment

'DWH 3DWK 3? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHH6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

%DVHPDS FRXUWHV\ RI (VUL 1$' 6WDWH3ODQH 2KLR 1RUWK),3

)LJXUH 0DS RI 3ODQW &RPPXQLWLHV &DQWH[redacted]EXU\ &URVVLQJ
6XUYH\ +XGVRQ 6XPPLW &RXQW\ 2KLR

'HDG 3HUFHQW 6KUXE &RYHU
'HFLGXRXV
6XUYH\ $UHD

)HHW 0HWHUV

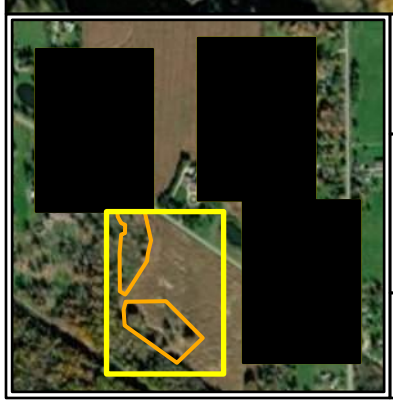
EnviroScience™
Excellence In Any Environment

3DWK ? 3 ? B3URMHFWV?3?3UHVHQWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

'DWH

%DVHPDS FRXUWHV\ RI (VUL 1$' 6WDWH3ODQH 2KLR 1RUWK),3

'DWH 3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[



)LJXUH 0DS RI 3ODQW &RPPXQLWLHV &DQWHUEXU\ &URVV 6XUYH\ +XGVRQ 6XPPLW &RXQW\ 2KLR

'HG 3HUFHQW 6KUXE &RYHU
'HFLGXRXV
6XUYH\ $UHD

)HHW 0HWUHV

EnviroScience™ Excellence In Any Environment

'DWH

3DWK 3 ? B3URMHFWV?3?3UHVVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

)LJXUH 0DS RI 3ODQW &RPPXQLWLHV &DQWH[redacted]EXU\ &URVV
6XUYH\ +XGVRQ 6XPPLW &RXQW\ 2KLR

'HDG 3HUFHQW 6KUXE &RYHU

'HFLGXRXV

6XUYH\ $UHD

)HHW

0HWHUV

%DVHPDS FRXUWHV\ RI (VUL

1$'

6WDWH3ODQH 2KLR 1RUWK),

)LJXUH 0DS RI 3ODQW &RPPXQLWLHV &DQWHUEXU\ &URVVLQJ
6XUYH\ +XGVRQ 6XPPLW &RXQW\ 2KLR

'HDG | 3HUFHQW 6KUXE &RYHU
'HFLGXRXV
6XUYH\ $UHD

)HHW

0HWHUV

EnviroScience™
Excellence In Any Environment

'DWH 3DWK 3 ? B3URMHFWV?3?3UHVWLJHB%XLOGHUB*URXS? 15? B+XGVRQB7UHHB6XUYH\B&DQWHUEXU\B&URVVLQJ?*,6?+XGVRQB7UHHB6XUYH\ DSU[

Attachment B: Photographs

Photo 1. Typical mowed turf (foreground), agricultural field (middle), and area with moderate tree cover and dense shrub layer (distance) within the study area, south of Ravenna Street.

Photo 2. Callery pear trees over maintained lawn, on edge of agricultural field. At west end of study area, north of Ravenna Street.

Photo 3. Typical dense shrub/sapling layer (ash saplings) south of Ravenna Street.

Photo 4. Typical dense shrub/sapling layer (buckthorns and Callery pear) within the project area, north of Ravenna Street.

Photo 5. Area of young Norway spruce surrounded by mowed turf, at north end of study area.

Photo 6. Typical open area with minimal tree cover (primarily red maple) over mowed turf, northwest of the intersection of Ravenna Street and Stow Road.

Sort	Tree ID	Scientific Name	Common Name	DBH (in)	Latitude	Longitude	Northing (UTM 17N NAD83 Meters)	Easting (UTM 17N NAD83 Meters)	Notes	Type
1	T-1	Fraxinus americana	White Ash	10.5	41.231410	-81.413418	4564529.0	465352.8		Deciduous
2	T-2	Pyrus calleryana	Callery Pear	6.5	41.230827	-81.413407	4564464.2	465353.4		Deciduous
3	T-3	Prunus serotina	Black Cherry	8.0	41.230675	-81.413403	4564447.4	465353.6		Deciduous
4	T-4	Malus sp.	Apple	10.0	41.230428	-81.413410	4564419.9	465352.9		Deciduous
5	T-5	Prunus serotina	Black Cherry	19.0	41.230210	-81.414688	4564396.2	465245.6		Deciduous
6	T-6	Dead Prunus sp.	Dead Cherry	8.0	41.230177	-81.413413	4564392.1	465352.5		Dead
7	T-7	Quercus palustris	Pin Oak	14.0	41.230168	-81.413430	4564391.1	465351.1		Deciduous
8	T-8	Malus sp.	Apple	6.5	41.230129	-81.413408	4564386.7	465352.9		Deciduous
9	T-9	Malus sp.	Apple	10.0	41.230120	-81.413419	4564385.7	465351.9		Deciduous
10	T-10	Malus sp.	Apple	8.0	41.230096	-81.413423	4564383.1	465351.6		Deciduous
11	T-11	Malus sp.	Apple	9.0	41.230091	-81.413423	4564382.5	465351.6		Deciduous
12	T-12	Prunus serotina	Black Cherry	7.0	41.230076	-81.413414	4564380.8	465352.4		Deciduous
13	T-13	Prunus serotina	Black Cherry	7.0	41.230069	-81.413426	4564380.1	465351.4		Deciduous
14	T-14	Prunus serotina	Black Cherry	11.0	41.230037	-81.413424	4564376.5	465351.5		Deciduous
15	T-15	Prunus serotina	Black Cherry	9.0	41.230030	-81.413415	4564375.7	465352.3		Deciduous
16	T-16	Malus sp.	Apple	7.5	41.230014	-81.413435	4564374.0	465350.6		Deciduous
17	T-17	Prunus serotina	Black Cherry	10.5	41.229995	-81.413417	4564371.9	465352.1		Deciduous
18	T-18	Malus sp.	Apple	6.5	41.229955	-81.413435	4564367.5	465350.5		Deciduous
19	T-19	Prunus serotina	Black Cherry	13.5	41.229939	-81.413423	4564365.7	465351.6		Deciduous
20	T-20	Malus sp.	Apple	8.0	41.229886	-81.413430	4564359.8	465351.0		Deciduous
21	T-21	Malus sp.	Apple	10.0	41.229881	-81.413441	4564359.2	465350.1		Deciduous
22	T-22	Malus sp.	Apple	7.0	41.229880	-81.413439	4564359.1	465350.2		Deciduous
23	T-23	Prunus serotina	Black Cherry	7.5	41.229863	-81.413424	4564357.2	465351.4		Deciduous
24	T-24	Prunus serotina	Black Cherry	7.0	41.229853	-81.413426	4564356.1	465351.3		Deciduous
25	T-25	Prunus serotina	Black Cherry	7.0	41.229825	-81.413400	4564353.0	465353.4		Deciduous
26	T-26	Prunus serotina	Black Cherry	10.0	41.229762	-81.413432	4564346.0	465350.7		Deciduous
27	T-27	Pyrus calleryana	Callery Pear	19.0	41.229763	-81.418062	4564348.0	464962.6		Deciduous
28	T-28	Malus sp.	Apple	10.0	41.229707	-81.413432	4564339.9	465350.7		Deciduous
29	T-29	Pyrus calleryana	Callery Pear	16.0	41.229748	-81.417983	4564346.3	464969.3		Deciduous
30	T-30	Quercus palustris	Pin Oak	8.0	41.229683	-81.413426	4564337.2	465351.2		Deciduous
31	T-31	Pyrus calleryana	Callery Pear	14.0	41.229710	-81.417903	4564342.0	464975.9		Deciduous
32	T-32	Prunus serotina	Black Cherry	8.0	41.229653	-81.413420	4564333.9	465351.6		Deciduous
33	T-33	Malus sp.	Apple	11.0	41.229637	-81.413416	4564332.1	465352.0		Deciduous
34	T-34	Prunus serotina	Black Cherry	17.0	41.229609	-81.414720	4564329.6	465242.7		Deciduous
35	T-35	Prunus serotina	Black Cherry	29.0	41.229587	-81.414701	4564327.1	465244.2		Deciduous
36	T-36	Prunus serotina	Black Cherry	23.0	41.229579	-81.414732	4564326.2	465241.6		Deciduous
37	T-37	Dead Fraxinus sp.	Dead Ash	13.5	41.229489	-81.413302	4564315.7	465361.5		Dead
38	T-38	Prunus serotina	Black Cherry	17.0	41.229493	-81.414723	4564316.6	465242.3		Deciduous
39	T-39	Dead Prunus sp.	Dead Cherry	8.5	41.229478	-81.413327	4564314.5	465359.3		Dead
40	T-40	Prunus serotina	Black Cherry	24.0	41.229413	-81.414729	4564307.8	465241.8		Deciduous
41	T-41	Ulmus americana	American Elm	10.0	41.229400	-81.413391	4564305.8	465353.9		Deciduous
42	T-42	Dead Ulmus sp.	Dead Elm	11.0	41.229386	-81.413416	4564304.2	465351.9		Dead
43	T-43	Malus sp.	Apple	7.0	41.229179	-81.413407	4564281.3	465352.5		Deciduous
44	T-44	Prunus serotina	Black Cherry	10.0	41.229157	-81.413404	4564278.8	465352.8		Deciduous
45	T-45	Prunus serotina	Black Cherry	9.0	41.229138	-81.413415	4564276.8	465351.8		Deciduous
46	T-46	Prunus serotina	Black Cherry	10.0	41.229136	-81.413410	4564276.5	465352.2		Deciduous
47	T-47	Prunus serotina	Black Cherry	9.0	41.229044	-81.413414	4564266.3	465351.9		Deciduous
48	T-48	Prunus serotina	Black Cherry	9.0	41.229043	-81.413421	4564266.2	465351.3		Deciduous
49	T-49	Prunus serotina	Black Cherry	10.0	41.229032	-81.413425	4564264.9	465350.9		Deciduous
50	T-50	Pyrus calleryana	Callery Pear	17.0	41.228993	-81.413120	4564260.5	465376.4		Deciduous
51	T-51	Prunus serotina	Black Cherry	11.0	41.228940	-81.413240	4564254.6	465366.4		Deciduous
52	T-52	Prunus serotina	Black Cherry	15.5	41.228920	-81.413421	4564252.6	465351.2		Deciduous
53	T-53	Prunus serotina	Black Cherry	19.0	41.228892	-81.413404	4564249.4	465352.5		Deciduous
54	T-54	Prunus serotina	Black Cherry	11.0	41.228860	-81.413205	4564245.7	465369.3		Deciduous
55	T-55	Prunus serotina	Black Cherry	16.0	41.228858	-81.413418	4564245.6	465351.4		Deciduous
56	T-56	Juglans nigra	Black Walnut	10.0	41.228771	-81.413219	4564235.9	465368.1		Deciduous
57	T-57	Juglans nigra	Black Walnut	9.5	41.228770	-81.413223	4564235.8	465367.7		Deciduous
58	T-58	Prunus serotina	Black Cherry	9.0	41.228712	-81.413294	4564229.3	465361.7		Deciduous
59	T-59	Gleditsia triacanthos	Honeylocust	6.5	41.228681	-81.413412	4564226.0	465351.8		Deciduous
60	T-60	Prunus serotina	Black Cherry	10.6	41.228610	-81.413289	4564218.0	465362.1		Deciduous
61	T-61	Prunus serotina	Black Cherry	24.4	41.228610	-81.413399	4564218.1	465352.9		Deciduous
62	T-62	Juglans nigra	Black Walnut	10.0	41.228563	-81.413248	4564212.9	465365.5		Deciduous
63	T-63	Prunus serotina	Black Cherry	11.9	41.228538	-81.413407	4564210.1	465352.2		Deciduous
64	T-64	Prunus serotina	Black Cherry	30.1	41.228470	-81.413433	4564202.6	465349.9		Deciduous
65	T-65	Prunus serotina	Black Cherry	17.5	41.228428	-81.413423	4564197.9	465350.7		Deciduous
66	T-66	Acer rubrum	Red Maple	10.0	41.228421	-81.417149	4564198.6	465038.5		Deciduous
67	T-67	Dead Fraxinus sp.	Dead Ash	11.5	41.228412	-81.416976	4564197.5	465052.9		Dead
68	T-68	Acer rubrum	Red Maple	29.5	41.228413	-81.417133	4564197.7	465039.8	4 trunks, measured below split	Deciduous
69	T-69	Acer rubrum	Red Maple	24.0	41.228412	-81.417175	4564197.7	465036.3		Deciduous
70	T-70	Acer rubrum	Red Maple	9.5	41.228394	-81.417121	4564195.6	465040.8		Deciduous
71	T-71	Acer rubrum	Red Maple	12.5	41.228357	-81.417114	4564191.5	465041.4		Deciduous
72	T-72	Acer rubrum	Red Maple	17.0	41.228351	-81.417139	4564190.8	465039.3		Deciduous
73	T-73	Acer rubrum	Red Maple	10.0	41.228348	-81.417125	4564190.5	465040.5		Deciduous
74	T-74	Acer rubrum	Red Maple	19.5	41.228326	-81.416991	4564188.0	465051.7		Deciduous
75	T-75	Acer rubrum	Red Maple	19.0	41.228265	-81.416884	4564181.2	465060.6		Deciduous

76	T-76	Pyrus calleryana	Callery Pear	6.9	41.228181	-81.413146	4564170.4	465373.9		Deciduous
77	T-77	Dead Fraxinus sp.	Dead Ash	17.0	41.228176	-81.416581	4564171.2	465085.9		Dead
78	T-78	Malus sp.	Apple	6.3	41.228129	-81.413457	4564164.7	465347.7		Deciduous
79	T-79	Juglans nigra	Black Walnut	6.6	41.228106	-81.413408	4564162.2	465351.9		Deciduous
80	T-80	Malus sp.	Apple	10.6	41.228094	-81.413464	4564160.8	465347.2		Deciduous
81	T-81	Dead Fraxinus sp.	Dead Ash	10.0	41.228118	-81.416518	4564164.7	465091.2		Dead
82	T-82	Malus sp.	Apple	8.1	41.228082	-81.413361	4564159.5	465355.7		Deciduous
83	T-83	Acer rubrum	Red Maple	18.0	41.228102	-81.416940	4564163.1	465055.8		Deciduous
84	T-84	Pyrus calleryana	Callery Pear	7.6	41.228049	-81.413450	4564155.9	465348.3		Deciduous
85	T-85	Acer rubrum	Red Maple	18.5	41.228033	-81.416796	4564155.4	465067.9		Deciduous
86	T-86	Pyrus calleryana	Callery Pear	9.2	41.227984	-81.413130	4564148.5	465375.1		Deciduous
87	T-87	Acer rubrum	Red Maple	13.5	41.228002	-81.416810	4564151.9	465066.6		Deciduous
88	T-88	Ulmus americana	American Elm	25.4	41.227962	-81.413398	4564146.2	465352.6		Deciduous
89	T-89	Ulmus americana	American Elm	29.2	41.227955	-81.413310	4564145.3	465359.9		Deciduous
90	T-90	Acer rubrum	Red Maple	22.0	41.227961	-81.416780	4564147.3	465069.2		Deciduous
91	T-91	Nyssa sylvatica	Black Gum	15.8	41.227903	-81.413159	4564139.5	465372.6		Deciduous
92	T-92	Dead Fraxinus sp.	Dead Ash	10.5	41.227888	-81.416554	4564139.2	465088.0		Dead
93	T-93	Juglans nigra	Black Walnut	6.3	41.227820	-81.413173	4564130.3	465371.4		Deciduous
94	T-94	Dead Fraxinus sp.	Dead Ash	11.0	41.227779	-81.416609	4564127.2	465083.4		Dead
95	T-95	Acer rubrum	Red Maple	15.0	41.227761	-81.416923	4564125.3	465057.1		Deciduous
96	T-96	Quercus palustris	Pin Oak	8.5	41.227753	-81.417053	4564124.4	465046.1		Deciduous
97	T-97	Prunus serotina	Black Cherry	10.0	41.227668	-81.413157	4564113.4	465372.7		Deciduous
98	T-98	Acer rubrum	Red Maple	15.0	41.227696	-81.417001	4564118.1	465050.5		Deciduous
99	T-99	Acer rubrum	Red Maple	15.0	41.227678	-81.416977	4564116.1	465052.5		Deciduous
100	T-100	Acer rubrum	Red Maple	21.5	41.227667	-81.416417	4564114.6	465099.4		Deciduous
101	T-101	Unknown	Unknown	25.7	41.227603	-81.413337	4564106.2	465357.5		Deciduous
102	T-102	Acer rubrum	Red Maple	16.0	41.227634	-81.416736	4564111.1	465072.6		Deciduous
103	T-103	Acer rubrum	Red Maple	26.7	41.227521	-81.413432	4564097.3	465349.5		Deciduous
104	T-104	Prunus serotina	Black Cherry	7.8	41.227518	-81.413391	4564096.8	465353.0		Deciduous
105	T-105	Acer rubrum	Red Maple	21.0	41.227542	-81.416428	4564100.8	465098.4		Deciduous
106	T-106	Acer rubrum	Red Maple	13.0	41.227539	-81.416985	4564100.6	465051.7		Deciduous
107	T-107	Fraxinus americana	White Ash	22.0	41.227504	-81.413411	4564095.3	465351.3		Deciduous
108	T-108	Acer rubrum	Red Maple	21.5	41.227531	-81.416517	4564099.6	465091.0		Deciduous
109	T-109	Acer rubrum	Red Maple	11.0	41.227497	-81.416534	4564095.8	465089.5		Deciduous
110	T-110	Acer rubrum	Red Maple	25.0	41.227487	-81.416582	4564094.7	465085.5		Deciduous
111	T-111	Acer rubrum	Red Maple	29.4	41.227376	-81.412012	4564080.5	465468.4		Deciduous
112	T-112	Acer rubrum	Red Maple	13.4	41.227361	-81.412048	4564078.9	465465.4		Deciduous
113	T-113	Acer rubrum	Red Maple	22.0	41.227402	-81.416601	4564085.3	465083.9		Deciduous
114	T-114	Ulmus americana	American Elm	15.7	41.227328	-81.412305	4564075.3	465443.9		Deciduous
115	T-115	Ulmus americana	American Elm	19.6	41.227322	-81.413358	4564075.1	465355.6		Deciduous
116	T-116	Acer rubrum	Red Maple	18.7	41.227305	-81.412098	4564072.7	465461.2		Deciduous
117	T-117	Acer rubrum	Red Maple	26.8	41.227299	-81.412197	4564072.1	465452.9		Deciduous
118	T-118	Acer rubrum	Red Maple	12.7	41.227262	-81.412016	4564067.9	465468.0		Deciduous
119	T-119	Prunus serotina	Black Cherry	14.4	41.227254	-81.411943	4564067.0	465474.1		Deciduous
120	T-120	Acer rubrum	Red Maple	25.0	41.227275	-81.416500	4564071.1	465092.2		Deciduous
121	T-121	Ulmus americana	American Elm	16.4	41.227223	-81.412028	4564063.5	465467.1		Deciduous
122	T-122	Dead	Dead	9.1	41.227224	-81.413164	4564064.1	465371.8		Dead
123	T-123	Nyssa sylvatica	Black Gum	15.8	41.227189	-81.412207	4564059.9	465452.0		Deciduous
124	T-124	Ulmus americana	American Elm	12.1	41.227183	-81.412092	4564059.1	465461.7		Deciduous
125	T-125	Acer rubrum	Red Maple	11.1	41.227162	-81.411557	4564056.6	465506.5		Deciduous
126	T-126	Acer rubrum	Red Maple	12.4	41.227127	-81.411581	4564052.8	465504.4		Deciduous
127	T-127	Acer rubrum	Red Maple	11.7	41.227122	-81.411569	4564052.1	465505.5		Deciduous
128	T-128	Acer rubrum	Red Maple	16.8	41.227118	-81.412213	4564052.0	465451.5		Deciduous
129	T-129	Acer rubrum	Red Maple	13.7	41.227116	-81.411988	4564051.6	465470.4		Deciduous
130	T-130	Acer rubrum	Red Maple	8.7	41.227111	-81.411582	4564051.0	465504.4		Deciduous
131	T-131	Acer rubrum	Red Maple	12.6	41.227109	-81.411590	4564050.8	465503.7		Deciduous
132	T-132	Acer rubrum	Red Maple	12.0	41.227114	-81.412193	4564051.6	465453.1		Deciduous
133	T-133	Carya ovata	Shagbark Hickory	7.0	41.227144	-81.417024	4564056.8	465048.3		Deciduous
134	T-134	Ulmus americana	American Elm	20.6	41.227081	-81.411786	4564047.7	465487.3		Deciduous
135	T-135	Acer rubrum	Red Maple	14.4	41.227046	-81.411522	4564043.8	465509.3		Deciduous
136	T-136	Acer rubrum	Red Maple	10.5	41.227031	-81.411936	4564042.2	465474.7		Deciduous
137	T-137	Ulmus americana	American Elm	19.2	41.227006	-81.411509	4564039.2	465510.4		Deciduous
138	T-138	Acer rubrum	Red Maple	15.8	41.227001	-81.411622	4564038.8	465501.0		Deciduous
139	T-139	Acer rubrum	Red Maple	23.3	41.226969	-81.411662	4564035.2	465497.6		Deciduous
140	T-140	Dead Fraxinus sp.	Dead Ash	15.0	41.227005	-81.416828	4564041.3	465064.6		Dead
141	T-141	Acer rubrum	Red Maple	28.3	41.226966	-81.413308	4564035.6	465359.6		Deciduous
142	T-142	Acer rubrum	Red Maple	14.0	41.226987	-81.417064	4564039.3	465044.8		Deciduous
143	T-143	Acer rubrum	Red Maple	10.4	41.226863	-81.411535	4564023.4	465508.1		Deciduous
144	T-144	Acer rubrum	Red Maple	8.7	41.226854	-81.413300	4564023.1	465360.3		Deciduous
145	T-145	Ulmus americana	American Elm	13.5	41.226844	-81.412409	4564021.6	465434.9		Deciduous
146	T-146	Acer rubrum	Red Maple	39.2	41.226818	-81.411594	4564018.4	465503.2		Deciduous
147	T-147	Ulmus americana	American Elm	30.2	41.226770	-81.411720	4564013.1	465492.6		Deciduous
148	T-148	Acer rubrum	Red Maple	16.0	41.226770	-81.417040	4564015.3	465046.7		Deciduous
149	T-149	Acer rubrum	Red Maple	37.3	41.226713	-81.411915	4564006.9	465476.2		Deciduous
150	T-150	Acer rubrum	Red Maple	6.9	41.226699	-81.411868	4564005.3	465480.2		Deciduous
151	T-151	Acer rubrum	Red Maple	13.7	41.226671	-81.411592	4564002.1	465503.3		Deciduous
152	T-152	Acer rubrum	Red Maple	29.9	41.226669	-81.411851	4564002.0	465481.6		Deciduous
153	T-153	Liriodendron tulipifera	Tuliptree	12.0	41.226707	-81.417127	4564008.3	465039.4		Deciduous
154	T-154	Acer rubrum	Red Maple	22.2	41.226636	-81.411777	4563998.3	465487.8		Deciduous

155	T-155	Acer rubrum	Red Maple	16.0	41.226627	-81.411773	4563997.3	465488.1		Deciduous
156	T-156	Ulmus americana	American Elm	21.3	41.226582	-81.412636	4563992.6	465415.8		Deciduous
157	T-157	Fraxinus americana	White Ash	9.7	41.226548	-81.412143	4563988.7	465457.1		Deciduous
158	T-158	Acer rubrum	Red Maple	13.3	41.226501	-81.411860	4563983.3	465480.8		Deciduous
159	T-159	Acer rubrum	Red Maple	16.6	41.226498	-81.411897	4563983.1	465477.6		Deciduous
160	T-160	Acer rubrum	Red Maple	9.1	41.226480	-81.412255	4563981.1	465447.6		Deciduous
161	T-161	Acer saccharinum	Silver Maple	14.3	41.226471	-81.411657	4563980.0	465497.7		Deciduous
162	T-162	Ulmus americana	American Elm	20.7	41.226421	-81.411811	4563974.4	465484.8		Deciduous
163	T-163	Acer rubrum	Red Maple	25.6	41.226410	-81.411607	4563973.1	465501.9		Deciduous
164	T-164	Ulmus americana	American Elm	20.9	41.226417	-81.412441	4563974.2	465432.0		Deciduous
165	T-165	Acer rubrum	Red Maple	20.8	41.226406	-81.412149	4563973.0	465456.5		Deciduous
166	T-166	Acer rubrum	Red Maple	18.1	41.226387	-81.411701	4563970.6	465494.0		Deciduous
167	T-167	Acer rubrum	Red Maple	25.6	41.226382	-81.411687	4563970.1	465495.2		Deciduous
168	T-168	Acer rubrum	Red Maple	19.6	41.226370	-81.411797	4563968.8	465485.9		Deciduous
169	T-169	Malus sp.	Apple	7.4	41.226337	-81.411941	4563965.2	465473.8		Deciduous
170	T-170	Dead Fraxinus sp.	Dead Ash	16.0	41.226366	-81.415947	4563970.0	465138.1		Dead
171	T-171	Acer rubrum	Red Maple	25.6	41.226327	-81.412140	4563964.1	465457.2		Deciduous
172	T-172	Acer rubrum	Red Maple	30.8	41.226250	-81.412021	4563955.5	465467.1		Deciduous
173	T-173	Dead Fraxinus sp.	Dead Ash	17.0	41.226257	-81.415884	4563957.9	465143.3		Dead
174	T-174	Ulmus americana	American Elm	23.2	41.226196	-81.411440	4563949.3	465515.8		Deciduous
175	T-175	Dead Fraxinus sp.	Dead Ash	17.0	41.226231	-81.415847	4563955.0	465146.4		Dead
176	T-176	Acer rubrum	Red Maple	26.4	41.226190	-81.411631	4563948.8	465499.8		Deciduous
177	T-177	Acer rubrum	Red Maple	10.7	41.226169	-81.411603	4563946.4	465502.1		Deciduous
178	T-178	Quercus alba	White Oak	50.0	41.226116	-81.416780	4563942.6	465068.2		Deciduous
179	T-179	Quercus alba	White Oak	17.5	41.226084	-81.415680	4563938.5	465160.4		Deciduous
180	T-180	Acer rubrum	Red Maple	33.0	41.225968	-81.416529	4563926.0	465089.1		Deciduous
181	T-181	Quercus alba	White Oak	13.0	41.225861	-81.415681	4563913.8	465160.1		Deciduous
182	T-182	Dead Fraxinus sp.	Dead Ash	15.0	41.225848	-81.415670	4563912.3	465161.0		Dead
183	T-183	Dead Fraxinus sp.	Dead Ash	12.0	41.225840	-81.415509	4563911.4	465174.5	living side trunk under 6 dbh	Dead
184	T-184	Dead	Dead	14.0	41.225764	-81.415109	4563902.8	465208.1		Dead
185	T-185	Quercus alba	White Oak	50.0	41.225654	-81.415329	4563890.7	465189.5		Deciduous
186	T-186	Acer rubrum	Red Maple	13.0	41.225647	-81.416261	4563890.3	465111.4		Deciduous
187	T-187	Acer rubrum	Red Maple	25.5	41.225588	-81.415773	4563883.6	465152.3		Deciduous
188	T-188	Quercus alba	White Oak	19.5	41.225547	-81.415979	4563879.0	465135.0		Deciduous
189	T-189	Quercus alba	White Oak	15.0	41.225524	-81.415990	4563876.5	465134.0		Deciduous
190	T-190	Quercus alba	White Oak	13.5	41.225505	-81.415972	4563874.5	465135.6		Deciduous