

## Appendix G: Aquatic Resource Report

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# **SMART**

## **SERVICES, INC.**

**Surveying ▪ Environmental ▪ Traffic ▪ CA/CM**

*An Ohio EDGE Certified Firm*



November 26, 2018

Lynn Gresock  
Tetra Tech, Inc.  
2 Lan Drive  
Suite. 210  
Westford, MA 01886

**Re: Waters of US Determination for Nestlewood Solar, Clermont/Brown Counties, Ohio**

Ms. Gresock:

Smart Services, Inc. is pleased to submit the following report regarding the waters of the US, including wetlands, delineation for Tetra Tech, Inc. at the 610-acre Nestlewood Solar project located adjacent to Vandament Road in Tate Township Clermont and Brown counties, Ohio. Enclosed are two copies of the report and an electronic copy.

We appreciate this opportunity to work with Tetra Tech, Inc. and look forward to our continued relationship.

Sincerely,

Mitchel R. Strain  
Director of Environmental Services

---

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Newark, Ohio 43055  
740.345.4700

1900 Crown Park Court  
Columbus, Ohio 43235  
614.914.5543



# **SMART SERVICES, INC.**

**Surveying ▪ Environmental ▪ Traffic ▪ CA/CM**

*An Ohio EDGE Certified Firm*



## **WATERS OF THE US DELINEATION AND ASSESSMENT FOR NESTLEWOOD SOLAR PROJECT BROWN AND CLERMONT COUNTIES, OHIO**

PREPARED FOR:  
**TETRA TECH, INC.**  
**2 LAN DRIVE, SUITE 210**  
**WESTFORD, MA 01886**

PREPARED BY:

**SMART SERVICES, INC.**

88 W. CHURCH STREET, NEWARK, OHIO 43055

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## EXECUTIVE SUMMARY

Smart Services Inc. (Smart) has completed a Waters of the United States (WOUS), including wetlands, delineation for the proposed Nestlewood Solar project (the Project). The Project is proposed to be located on approximately 610 acres along Vandament Road in Tate Township, Clermont and Brown counties, Ohio (the Project Area). This executive summary is intended to be taken in context with the complete report and is not designed to be used as a separate document. A summary of the findings of the report follows.

This document is a determination of the regulatory status of any wetland, significant bodies of water, watercourse, and/or floodplain located on the Project Area, based on Section 404 of the federal Clean Water Act (CWA) and by Section 401 of the CWA, Ohio Revised Code (ORC) Section 6111.03(P). Protection is provided for all wetlands under ORC 6111.04, the Wetland Anti-Degradation Rule under Ohio Administrative Code (OAC) 3745-1-54, the Section 401 Water Quality Certification Rules under OAC 3745-32, and for isolated wetlands under ORC 6111.02 3111.029. The WOUS Delineation performed provides the accurate size, shape, location, and function of each feature identified on the Project Area, thereby aiding in the determination of the regulatory status of all jurisdictional areas present on the Project Area.

The WOUS Delineation was performed in accordance with the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (1987)* (1987 Manual) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region 2.0 (2010)*. The determination of any wetlands depends on three basic parameters. These parameters include: 1) the presence of hydrophytic vegetation; 2) the presence of hydric soils; and 3) the presence of wetland hydrology on a consistent basis.

In Ohio, the United States Army Corps of Engineers (USACE) has jurisdiction over wetlands that are considered "adjacent" (hydrologically connected) to a WOUS, while the Ohio Environmental Protection Agency (Ohio EPA) has the authority to regulate and permit impacts to "isolated", or non-adjacent wetlands. Therefore, in an attempt to establish the level of jurisdictional authority, the hydrology of each wetland within the Project Area was evaluated to determine whether or not they should be considered adjacent.

The majority of the non-agricultural portion of the Project Area is wooded, with 61.3 acres considered jurisdictional forested or scrub/shrub wetland habitat and classified as Category 2 wetland according to the Ohio Rapid Assessment Method (ORAM) scoring methodology. Emergent wetland was limited to 0.7 acre and was considered a Category 1 wetland. A total of 1,979 linear feet of intermittent and perennial streams were identified and had Primary Headwater Habitat Evaluation Index (HHEI) scores that considered them Class II headwater streams. Lastly a small, 0.3-acre, open water system (pond), was identified. The wetlands and pond were considered WOUS and jurisdictional because of their connection to the on-site Poplar Creek, which drains to the off-site Big Indian Creek, that eventually drains into the Little Miami River.

## 1.0 INTRODUCTION

Mr. Kyle Dixon, Environmental Scientist and Project Lead; Mr. Brian Mitch, Environmental Scientist; and Mr. Mitchel Strain providing Quality Assurance/Quality Control, completed a WOUS, including wetlands, delineation on the proposed 610-acre Project Area located along Vandament Road in Tate Township, Clermont and Brown counties, Ohio. A Location Map is included in Appendix A.

The purpose of the WOUS delineation for the Project Area was to facilitate Project development by identifying WOUS, including wetlands, which might require permitting under the federal CWA. Early planning for CWA requirements will limit Project schedule delays and financial liabilities. In order to qualitatively evaluate the functions and values of wetlands, Ohio EPA requires the ORAM, version 5.0, be performed on each wetland identified. ORAM scores are typically used to categorize wetlands during initial project planning and to determine wetland mitigation ratios. The table below summarizes the scoring method. Category 1 wetlands typically indicate small or low-quality wetlands, while Category 3 wetlands are generally considered to be large, relatively undisturbed high-quality systems. An ORAM score falls into one of the "Transitional" zones between two categories should be placed in the higher of the two categories unless proven otherwise. Ultimately, the category assigned to any wetland is subject to verification by Ohio EPA.

**Table 1. Wetland ORAM Scores and Corresponding Categories**

<b>ORAM Score</b>	0-29.9	30-34.9	35-59.9	60-64.9	≥65
<b>Category</b>	Category 1	Transitional	Category 2	Transitional	Category 3

Source: Ohio EPA, Ohio Rapid Assessment Method Training Course, February 14, 2001.

Streams were identified as linear waterways with distinct bed, bank, and ordinary high-water mark (OHWM). In addition, because all on-site streams had pools less than 17.8- inches deep and watersheds less than a one square mile, streams were evaluated using Ohio EPA's HHEI. Scores for HHEI can range from 0 to 100.

Under Sections 404 and 401 of the CWA, the USACE and the Ohio EPA, respectively, maintain jurisdiction over the filling and dredging of WOUS, including wetlands. Ohio EPA separately regulates impacts to isolated wetlands. If the future development will impact wetlands or streams through filling or dredging, USACE and Ohio EPA will be the regulatory permitting agencies.

## 2.0 METHODOLOGY

Smart reviewed available background information including aerial photographs, soil surveys, topographic maps, and National Wetland Inventory (NWI) maps to gain an understanding of Project Area conditions and potential jurisdictional areas. Smart then visited the Project Area to document current conditions and identify potential wetlands, streams or other jurisdictional WOUS in accordance with the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 [(1987)(1987 Manual)]* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region 2.0 (2010)*.

The data on vegetation, soils, and hydrology collected at each of the sample plots was used to complete the data sheets at the time of field work. Global Positioning System (GPS) technology was used to document sample plot locations, along with all delineated wetland boundaries. Appendix B includes all background information, including the NWI Map; United States Geological Survey (USGS) Topographic Maps; and United States Department of Agricultural (USDA), Natural Resource Conservation Service (NRCS) Soil Map. Appendix C includes the features map showing the location of all sample plots, transects, and jurisdictional areas with photo documentation. Data sheets are included in Appendix D.

### **3.0 RESULTS**

The following section includes the results of the background information review, site reconnaissance, WOUS Delineation, ORAM, and HHEI.

#### **3.1 Background Information**

##### ***3.1.1 National Wetland Inventory***

A review of the NWI was conducted to determine the likely presence, location, size and type of wetlands that may be located on the subject property. NWI maps are compiled by the U.S. Department of the Interior, Fish & Wildlife Services (USFWS). These maps outline existing wetlands and deep-water habitats on individual (USGS) topographic maps. NWI maps are prepared by stereoscopic analysis of high-altitude aerial photographs obtained during the following years: 2002, 2005, 2010, and 2015. The aerial photographs typically reflect conditions during the specific year and season when they were taken.

Because small wetlands and those hidden by dense forest cover may not be represented on these maps, NWI maps cannot be used as the sole method of determining the presence or absence of jurisdictional wetlands on a property.

The review of the NWI map covering the Project Area indicates wetlands are present. Several areas are categorized as palustrine forested, broad-leaved deciduous, and temporarily flooded (PFO1A) wetlands, with an aerial extent of approximately 18 acres. Other areas were categorized as palustrine emergent, persistent, temporarily flooded (PEM1A) wetlands, with an aerial extent of approximately 0.75 acres.

##### ***3.1.2 FIRM Flood Plain Map***

A review of the Flood Insurance Rate Map (FIRM) floodplain map was used to determine the existence, location, and zone of the floodplain which may be located within the boundary of the subject property. FIRMs are maps that depict floodplain areas along rivers and tributaries. The maps record the following data: 100-year (1 percent [%] chance of annual flooding) and 500-year (0.2% annual chance of flooding) floodplains, the height of the base flood (Base Flood Elevations), and the level of risk premium zones developed from topographical information across a floodplain. The Federal Emergency Management Agency (FEMA) generates FIRM floodplain maps for flood insurance purposes.

According to the FIRM prepared by FEMA, the property is located in an area designated Zone X, indicating no concerns for flooding. The area is not in the 100- or 500-year floodplains.

##### ***3.1.3 USGS Topographic Map***

Smart reviewed the 2016 Bethel USGS 7.5 Map of the Project Area and surrounding area.

The Project Area is situated east of Bethel Maple Rd, north of State Route 774, west of Township Highway 38 and south of Township Highway 152. The elevation on the Project Area is approximately 935-feet above mean sea level. Wetlands are shown between Bethel Maple Road and Oak Corner Road, north of Leonard Road, and north of Vandament Road. Three blue line water features (streams) are shown, with one of them identified as Poplar Creek. These streams eventually drain into the Little Miami River via Big Indian Creek.

#### **3.1.4 Soils**

The *Soil Survey of Clermont County, Ohio* depicts four soil series within the Project Area. Relevant information for the mapped soil types is included below:

- **Clermont Series (Cle)** – This map unit consists of fine-silty, mixed, superactive, mesic Typic Glossaqualfs. According to *Hydric Soils of the United States* the Clermont Series is hydric.
- **Jonesboro Series (Jo)** – This map unit consist of fine-silty, mixed, superactive, mesic Glossaquic Hapludalfs. According to *Hydric Soils of the United States* the Jonesboro Series is hydric.
- **Rossmoyne Series (R)** – This map unit consists of fine-silty, mixed, superactive, mesic Aquic Fragiudalfs. According to *Hydric Soils of the United States* the Rossmoyne Series is hydric.
- **Westboro Series (Ws)** – This map unit consists of fine-silty, mixed, active, mesic Fragiaquic Glossudalfs. According to *Hydric Soils of the United States* the Westboro Series is hydric.

### **3.2 Site Reconnaissance and Characteristics**

Smart conducted a field inspection and WOUS delineation of the Project Area on October 17, 18, 19, 23, 24, 26, and 30, and November 2, and 21, 2018. The Project Area consists of approximately 610 acres.

Site reconnaissance revealed the majority of the Project Area was in agricultural production with portions being forested. Specific features were identified and included the following: seven forested wetlands, one scrub-shrub wetland, two emergent wetlands, one pond, numerous erosional features, and five streams. The above referenced features identified on the *Features Map* is provided in Appendix C. A discussion of each feature situated on the Project Area follows. All the wetlands listed below had strong field indicators of wetland hydrology, including signs of surface water and inundation and saturation.

### **3.2.1 Forested Wetlands**

Most of these features were dominated by *Fraxinus pennsylvanica* (Green ash), *Quercus bicolor* (Swamp white oak), and *Liquidambar styraciflua* (Sweetgum). The wetlands are located throughout much of the Project Area, and total 38.3 acres in extent.

### **3.2.2 Emergent Wetlands**

The emergent vegetation was dominated with *Carex lurida* (Shallow sedge), *Scripus atrovirens* (Dark green bulrush), and *Carex vulpinoidea* (Brown fox sedge). The two wetlands totaled 0.7 acres in extent.

### **3.2.3 Scrub-Shrub Wetland**

The vegetation was dominated with *Liquidambar styraciflua* (Sweetgum). The wetland totaled 23 acres in aerial extent.

### **3.2.4 Streams**

Five streams were observed throughout the Project Area. Portions of Poplar Creek were identified as Streams 4 and 5 on the Project Area. All streams listed are also located as “blue-line” features on the 2016 Bethel 7.5-minute topo map. All streams exhibited similar characteristics and scored nearly the same HHEI score ranging from 55-65. The streams total approximately 1,979 linear feet.

### **3.2.5 Erosional Features**

Several erosional features were identified while documenting the site conditions. The erosional features identified lacked a well-defined bed and bank as well as an OHWM and totaled approximately 18,878 linear feet.

In addition, based on historical aerial photographs, years 1938 thru 2000; and lack of adjacent woody vegetation, none of the features are permanent. Smart speculates the erosional features occur during extremely wet springs and are enhanced by agricultural practices to facilitate crop production.

### **3.2.6 Pond**

The open water feature was observed east of Oak Corner Road, adjacent to Wetland 9, with an outlet to the northwest, leading into a jurisdictional wetland and is 0.3 acres in aerial extent. Based on historical aerial photographs evidence the pond was excavated on or before 1967.

*Feature Map* and photographs are in Appendix C with *Data Sheets* in Appendix D.

### **3.3 Ohio Rapid Assessment Method (ORAM)**

Many of the forested wetlands had similar vegetation, soils, and hydrology. Due to the size, surrounding land use, seasonal inundation, narrow upland buffer zone, and general lack of recovery from hydrology alteration, i.e., ditching and filing/grading, the ORAM score ranged from a Category 1 to a High Category 2, as shown in the following table. Completed data sheets are included in Appendix C.

### **3.4 Headwater Habitat Evaluation Index (HHEI)**

An HHEI was completed for each of the five streams located on the Project Area. Three of the streams (Streams A, B, and C) were believed to be intermittent and the portions of Poplar Creek (Streams D and E) were considered to be perennial. The HHEI scores ranged from 55 to 65, as shown in the following table. Completed data sheets are included in Appendix C.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

In 2001, the United States Supreme Court found USACE did not have jurisdiction over isolated wetlands (SWANCC v. U.S. Army Corps of Engineers, *et al.*, 2001). Therefore, USACE only has jurisdiction over wetlands considered adjacent, hydrologically connected, to a WOUS. In response to this ruling, the Ohio EPA instituted emergency rules to protect isolated wetlands, essentially granting the Ohio EPA the authority to regulate and permit impacts to isolated wetlands. Therefore, in an attempt to establish the level of jurisdictional authority, the hydrology of each wetland within the subject property was evaluated to define whether or not the wetland should be considered adjacent or isolated.

The main criterion used to determine adjacency was whether or not the wetland had a direct connection to surface water, i.e., intermittent, ephemeral, or man-made, connection to a tributary system considered to be a WOUS. Any wetland adjacent to a tributary system is considered jurisdictional by the USACE under Section 404 of the federal CWA as regulated by the USACE. The Ohio EPA also regulates the filling of these wetlands under Section 401 of the CWA. Wetlands that meet the three wetland criteria as per the 1987 Manual but are considered not to have a connection to other WOUS are classified as isolated wetlands and thus fall within the regulation of the Ohio EPA only. The USACE regulates adjacent wetlands only and all streams.

In conclusion, the majority of the non-agricultural portion of the Project Area is wooded, with 61.3 acres considered jurisdictional forested or scrub/shrub wetland habitat and classified as Category 2 wetland according to the ORAM scoring. Emergent wetland was limited to 0.7 acres and was considered Category 1 wetland. A total 1,979 linear feet of intermittent and perennial streams were identified and had HHEI scores that considered them Class II headwater stream. A small, 0.3-acre, open water system was also identified. The wetlands and pond are considered a WOUS and jurisdictional because of their connection to the on-site Poplar Creek which drains to the off-site Big Indian Creek, that eventually drains into the Little Miami River.

All WOUS features identified within the Project Area are presented on the *Features Map*, provided in Appendix C. *Routine Data Forms* prepared for the wetlands are included in Appendix D. Tables 2 and 3 provide a summary of WOUS features identified within the Project Area.

**Table 2. Wetland Features Identified on the Project Area**

Feature	Classification	Jurisdictional	Adjacent	Size	ORAM
Wetland 1	Forested	Yes	Yes	3.3 acres	2
Wetland 2	Forested	Yes	Yes	0.1 acre	1
Wetland 3	Forested	Yes	Yes	12 acres	2
Wetland 4	Forested	Yes	Yes	5.7 acres	2

<b>Feature</b>	<b>Classification</b>	<b>Jurisdictional</b>	<b>Adjacent</b>	<b>Size</b>	<b>ORAM</b>
Wetland 5	Forested	Yes	Yes	1.3 acres	2
Wetland 6	Forested	Yes	Yes	9.4 acres	2
Wetland 7	Forested	Yes	Yes	6.5 acres	2
Wetland 8	Scrub-Shrub	Yes	Yes	23 acres	2
Wetland 9	Emergent	Yes	Yes	0.5 acre	1
Wetland 10	Emergent	Yes	Yes	0.2 acre	1
Pond	Open Water	Yes	Yes	0.3 acre	N/A

**Table 3. Stream Features Identified on the Project Area**

<b>Feature</b>	<b>Classification</b>	<b>Jurisdictional</b>	<b>Adjacent</b>	<b>Size</b>	<b>HHEI</b>
Stream A	Class II	Yes	Yes	1,060 feet	60
Stream B	Class II	Yes	Yes	153 feet	65
Stream C	Class II	Yes	Yes	394 feet	65
Stream D	Class II	Yes	Yes	372 feet	55
Stream E	Class II	Yes	Yes	588 feet	60

## 5.0 REFERENCES

Ohio EPA, Ohio Rapid Assessment Method Training Course, February 14, 2001.

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual, Technical Report &-87-1*, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0, ed. J.S. Wakeley, R.W. Lichvar, C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

NRCS. 1975. *Soil Survey of Clermont County, Ohio* U.S. Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Ohio Department of Natural Resources, Division of Soil and Water Conservation; the Ohio Agricultural Research and Development Center.

Soil Survey Staff. 1991. *Hydric Soils of the United States*. U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the National Technical Committee for Hydric Soils, Miscellaneous Publication Number 1491.

## COMMON WETLAND DEFINITIONS

Atypical wetland: This term refers to areas in which one or more parameters (vegetation, soil and/or hydrology) have been sufficiently altered by human activities or natural events to preclude the presence of wetland indicators of the parameter.

Emergent Wetland: Vegetative classification of a wetland system based on the dominant vegetation consisting of rooted herbaceous plant species that have parts extending above a water surface.

100-year flood: A flood with a magnitude, which has a 1% chance of occurring or being exceeded in any given year.

Floodplain: The area of land adjoining a river or stream that will be inundated by a 100-year flood.

Floodway: The channel of a river or stream and the portions of the floodplain adjoining the channel that are reasonably required to carry and discharge a 100-year flood.

Hydric soil: Soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (1991 National Technical Committee on Hydric Soils definition).

Hydrophytes: Plant species that grows in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content; plants typically found in wet habitats.

Scrub/Shrub Wetland: Vegetative classification of a wetland system based on the dominant vegetation consisting of woody plants less than three (3) inches in diameter but greater than three (3) feet in height.

Typical situation: That, which nominally, usually, or commonly occurs.

Wooded (Forested) Wetland: Vegetative classification of a wetland system based on the dominant vegetation consisting of woody plants Three (3) inches in diameter or greater regardless of height.

Wetland: “Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions,” as defined by Section 404 of the Clean Water Act.

Wetland hydrology: Hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season.

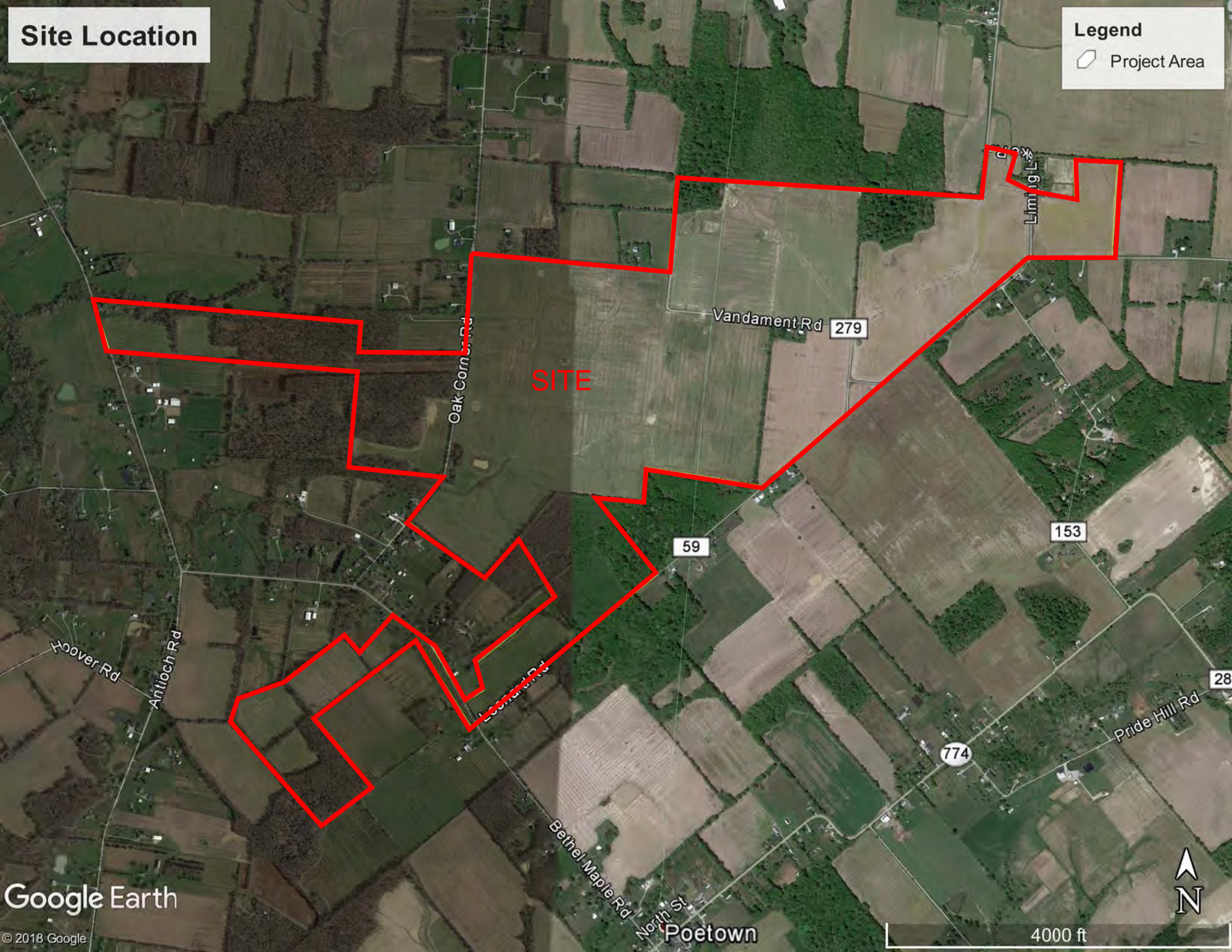
Wetland Indicator Status: OBL: Obligate wetland plant that occurs almost always, 99% of the time, in wetlands under natural conditions, but which rarely occur in non-wetlands; FACW: Facultative wetland plant, that occurs usually, 67% to 99% of the time, in wetlands, but also occurs 1% to 33% in non-wetlands; FAC: Facultative plant, that occurs in both wetlands and non-wetlands 33% to 67% of the time; FACU: Plant that occurs sometimes 1% to 33% of the time in wetlands but occurs more often, 67% to 99% in non-wetlands.

**APPENDIX A**  
**SITE LOCATION MAP**

# Site Location

Legend

 Project Area



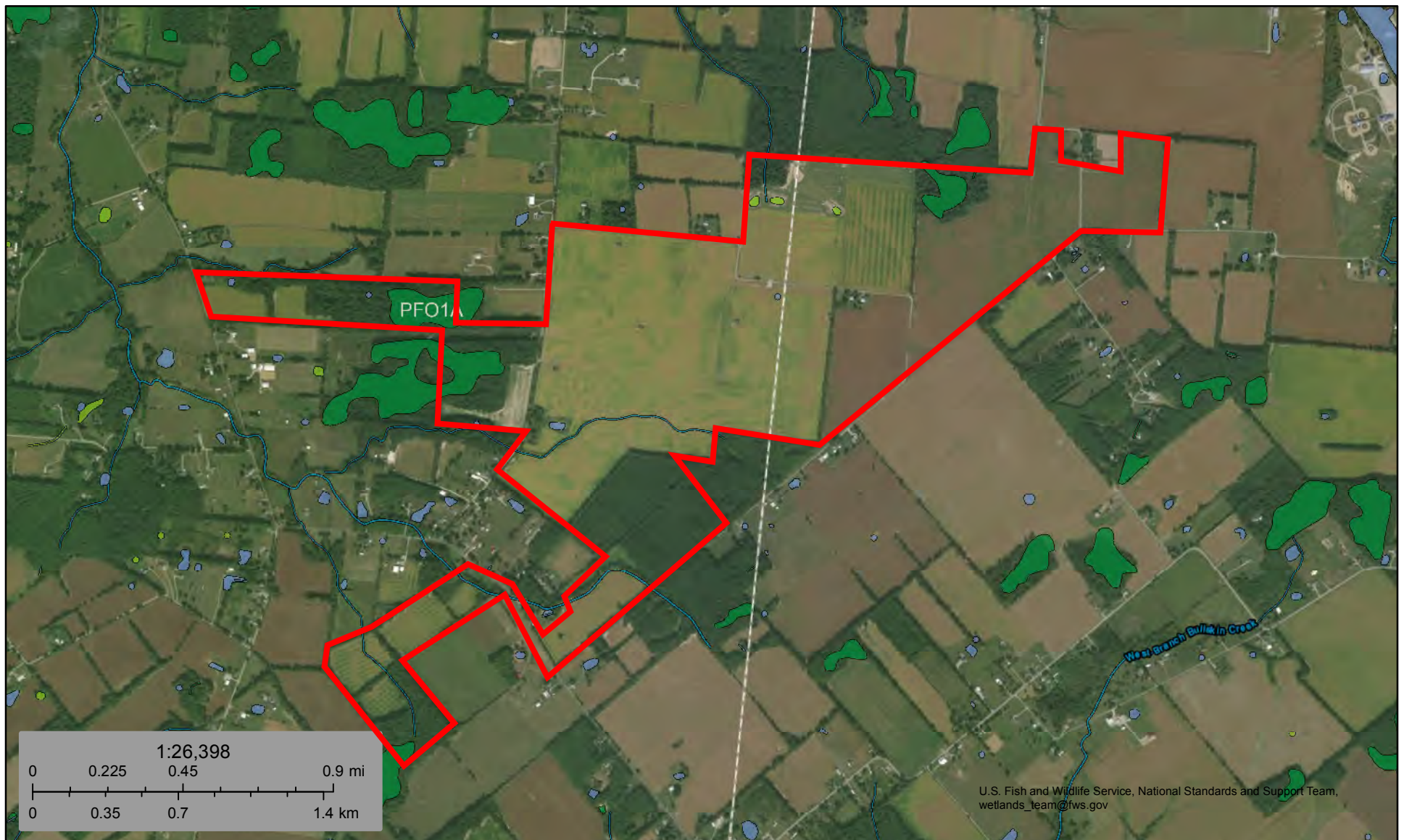
**APPENDIX B**  
**BACKGROUND AND HISTORICAL**  
**INFORMATION**



U.S. Fish and Wildlife Service






# National Wetlands Inventory

## Wetlands



November 6, 2018

### Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

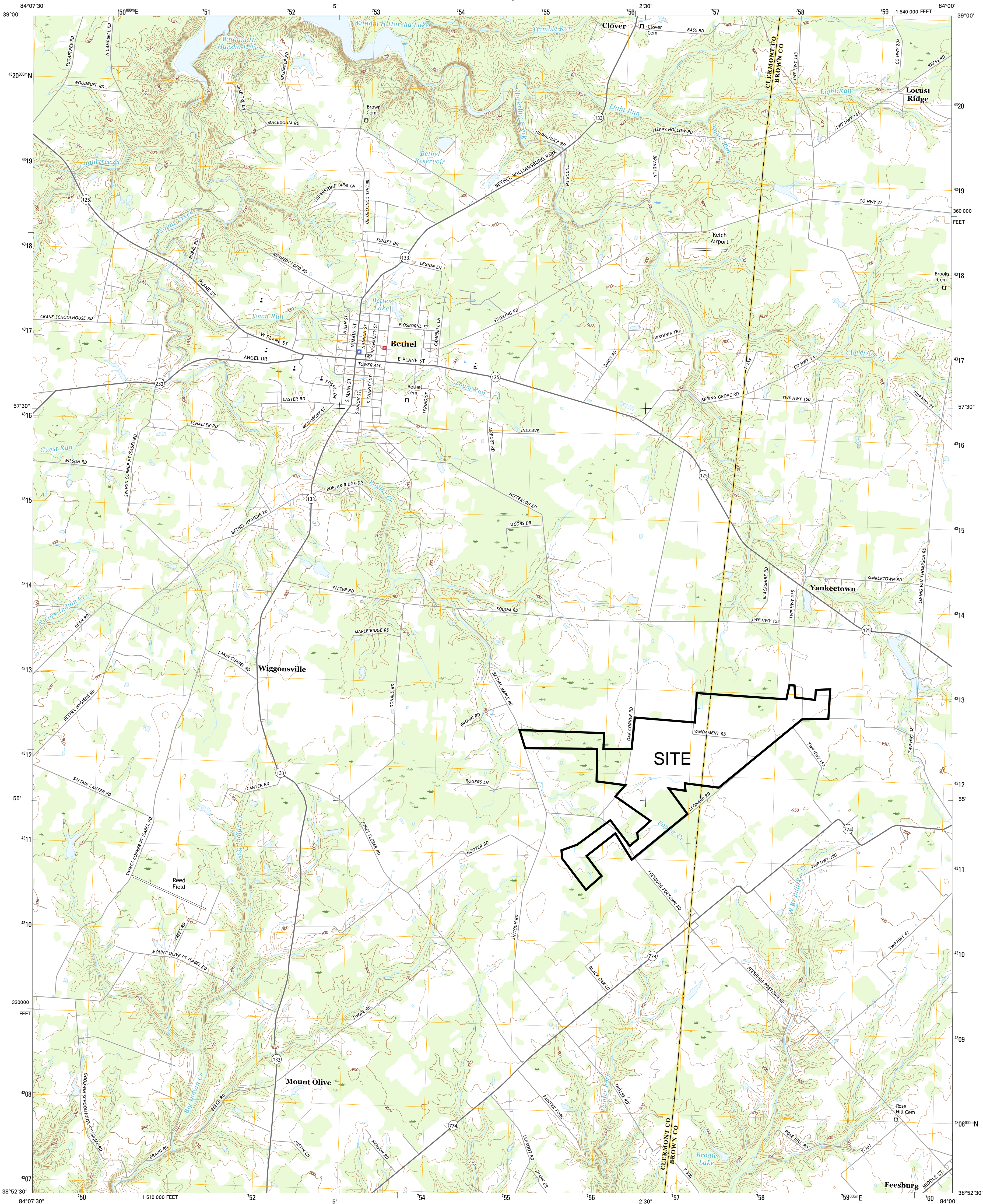
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



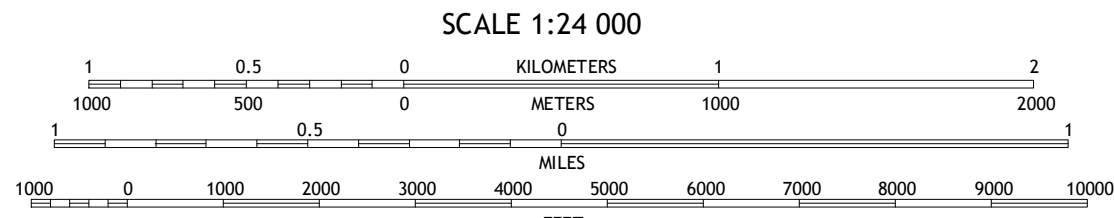
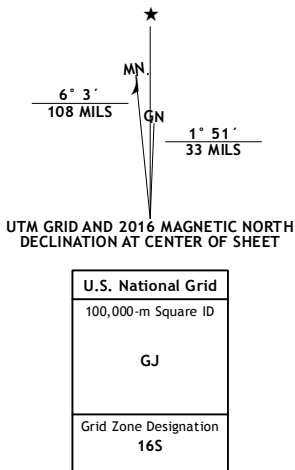
U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY



BETHEL QUADRANGLE  
OHIO  
7.5-MINUTE SERIES



**Produced by the United States Geological Survey**  
North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84). Projection and  
1 000-meter grid: Universal Transverse Mercator, Zone 16S  
10 000-foot ticks: Ohio Coordinate System of 1983 (south zone)  
This map is not a legal document. Boundaries may be  
generalized for this map scale. Private lands within government  
reservations may not be shown. Obtain permission before  
entering private lands.  
Imagery.....NAIP, October 2015  
Roads.....U.S. Census Bureau, 2015 - 2016  
Names.....GNIS, 2016  
Hydrography.....National Hydrography Dataset, 2010  
Contours.....National Elevation Dataset, 2010  
Boundaries.....Multiple sources; see metadata file 1972 - 2016  
Public Land Survey System.....BLM, 2013  
Wetlands.....FWS National Wetlands Inventory 1977 - 2014



CONTOUR INTERVAL 10 FEET  
NORTH AMERICAN VERTICAL DATUM OF 1988  
This map was produced to conform with the  
National Geospatial Program US Topo Product Standard, 2011.  
A metadata file associated with this product is draft version 0.6.19



**ROAD CLASSIFICATION**  
Expressway  
Secondary Hwy  
Ramp  
Interstate Route  
Local Connector  
Local Road  
4WD  
US Route  
State Route

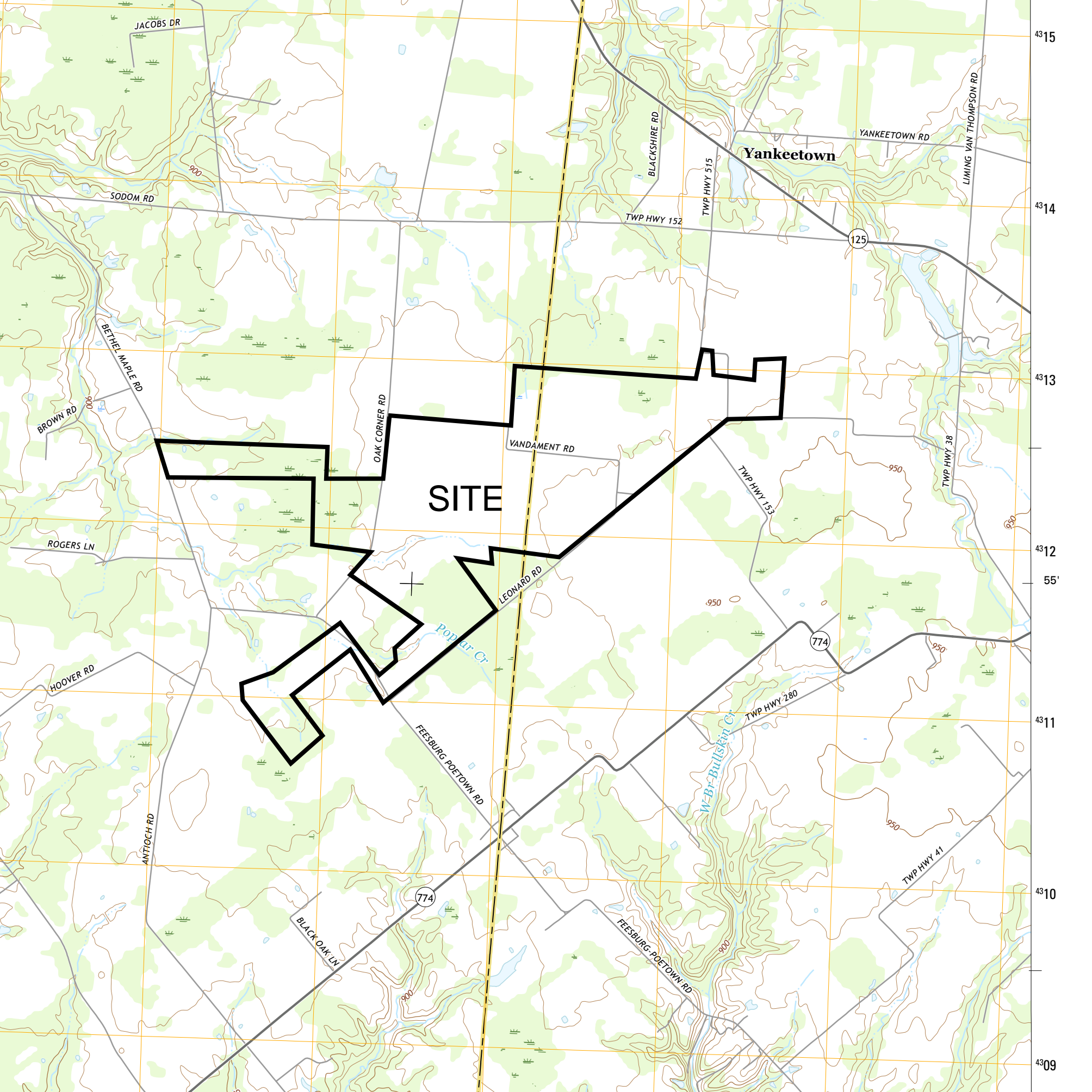
1	2	3
4	5	6
7	8	9

ADJOINING QUADRANGLES

1 Batavia  
2 Williamsburg  
3 Mount Orab  
4 Laurel  
5 Hamersville  
6 Moscow  
7 Felicity  
8 Higginsport

BETHEL, OH  
2016





SITE

Yankeetown

Poplar Cr

W-Br Bullskin Cr

4315

4314

4313

4312

4311

4310

4309

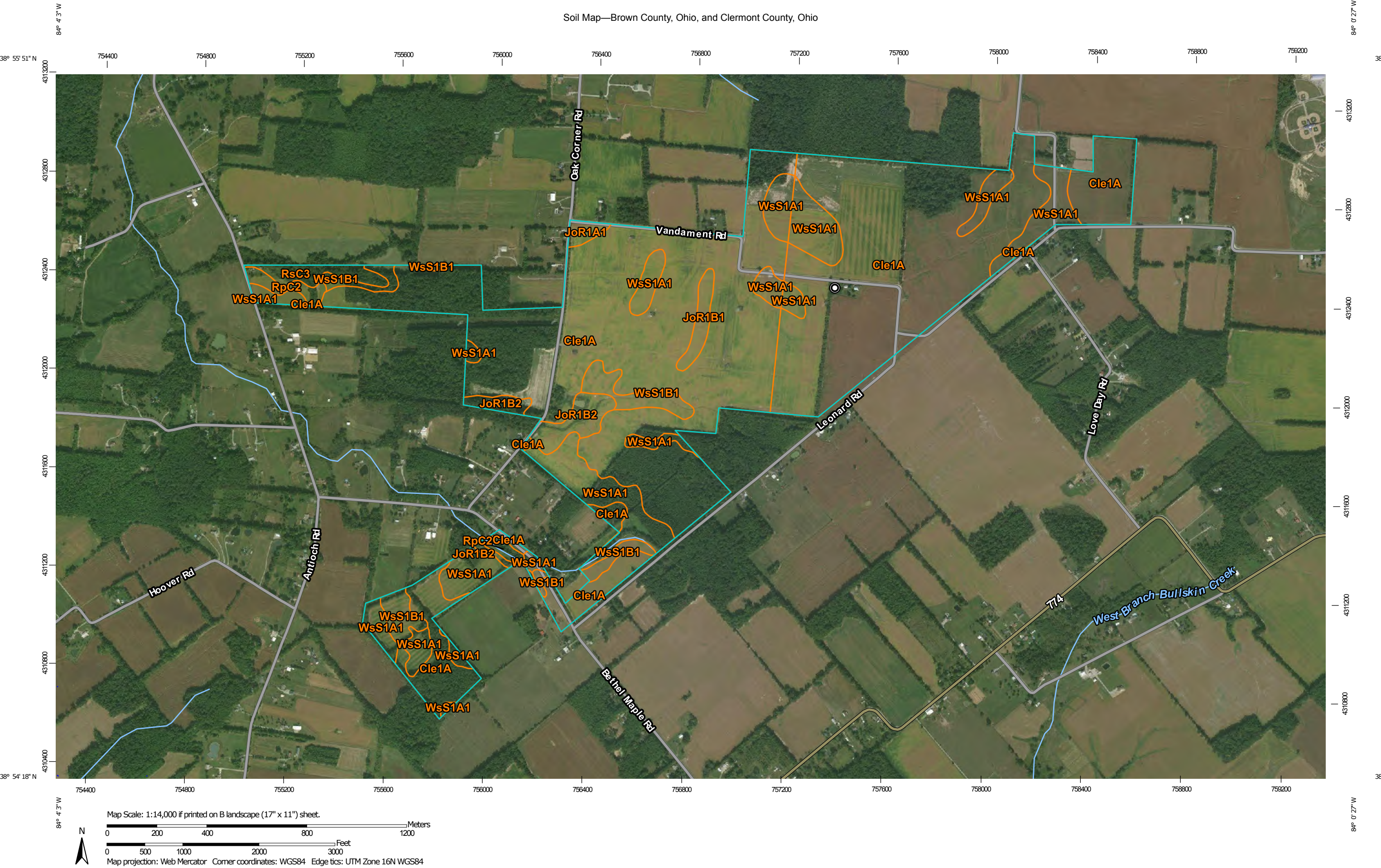
55'

125

774

774

Soil Map—Brown County, Ohio, and Clermont County, Ohio




Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

## 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 scales ranging from 1:15,800 to 1:20,000.

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: Brown County, Ohio

Survey Area Data: Version 18, Sep 17, 2018

Soil Survey Area: Clermont County, Ohio

Survey Area Data: Version 18, Sep 17, 2018

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Nov 7, 2015—Feb 5, 2017

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
Cle1A	Clermont silt loam, 0 to 1 percent slopes	188.3	30.2%
WsS1A1	Westboro-Schaffer silt loams, 0 to 2 percent slopes	30.0	4.8%
<b>Subtotals for Soil Survey Area</b>		<b>218.4</b>	<b>35.0%</b>
<b>Totals for Area of Interest</b>		<b>623.1</b>	<b>100.0%</b>

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cle1A	Clermont silt loam, 0 to 1 percent slopes	280.3	45.0%
JoR1A1	Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes	3.0	0.5%
JoR1B1	Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes	5.8	0.9%
JoR1B2	Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded	14.7	2.4%
RpC2	Rossmoyne silt loam, 6 to 12 percent slopes, eroded	6.9	1.1%
RsC3	Rossmoyne silty clay loam, 6 to 12 percent slopes, severely eroded	7.8	1.3%
WsS1A1	Westboro-Schaffer silt loams, 0 to 2 percent slopes	62.4	10.0%
WsS1B1	Westboro-Schaffer silt loams, 2 to 4 percent slopes	23.9	3.8%
<b>Subtotals for Soil Survey Area</b>		<b>404.8</b>	<b>65.0%</b>
<b>Totals for Area of Interest</b>		<b>623.1</b>	<b>100.0%</b>



**Clermont/Brown County**

Leonard Road

Hamersville, OH 45130

Inquiry Number: 5457535.1

October 22, 2018

## The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

**Date EDR Searched Historical Sources:**

Aerial Photography October 22, 2018

**Target Property:**

Leonard Road

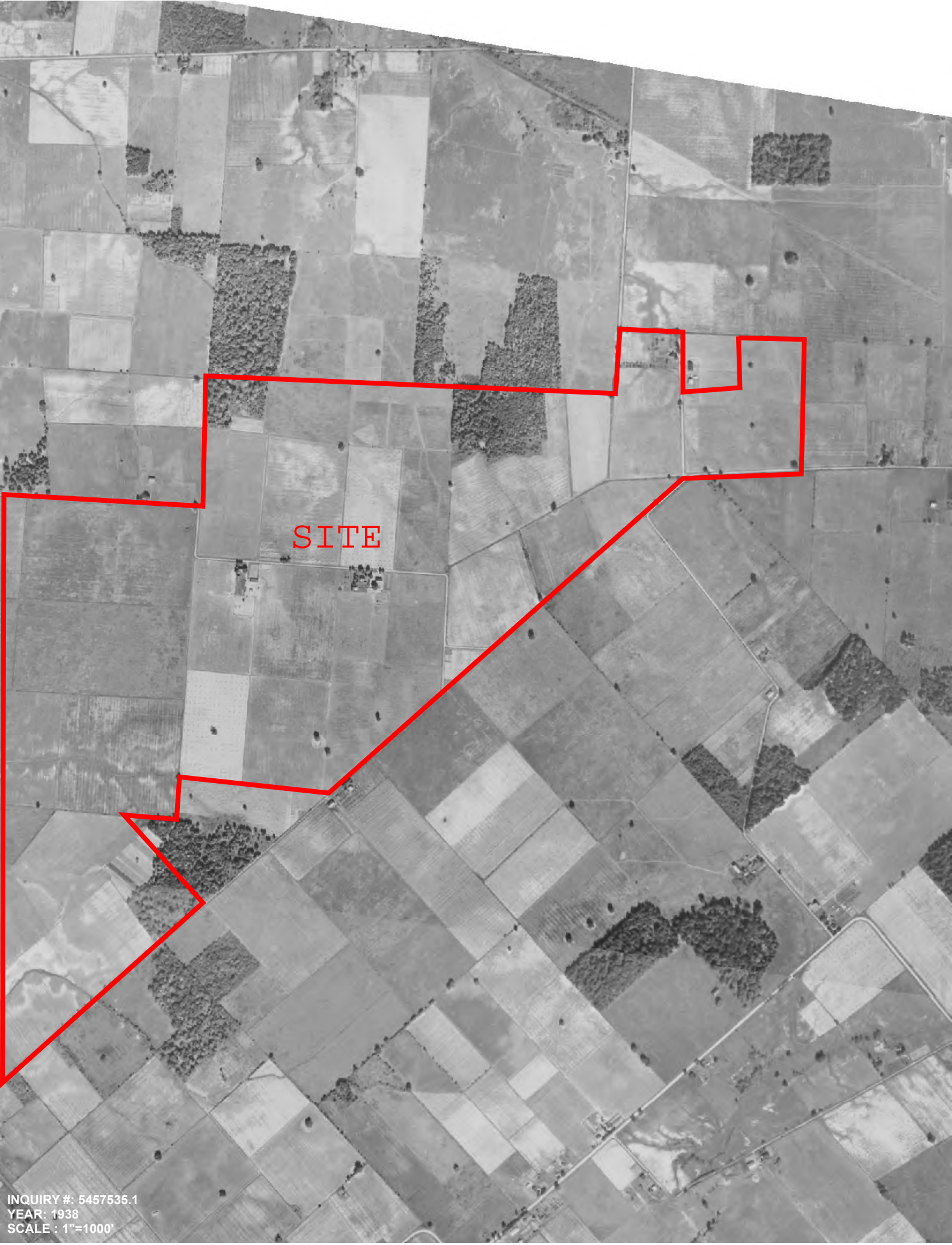
Hamersville, OH 45130

<b><u>Year</u></b>	<b><u>Scale</u></b>	<b><u>Details</u></b>	<b><u>Source</u></b>
1938	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1938	USDA
1950	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1950	USDA
1952	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1952	USGS
1960	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1960	USGS
1967	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1967	USGS
1974	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1974	USGS
1976	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1976	USGS
1984	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1984	USDA
1994	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1994	DOQQ_USGS
2004	Aerial Photograph. Scale: 1"=1000'	Flight Year: 2004	NAIP_USGS
2010	Aerial Photograph. Scale: 1"=1000'	Flight Year: 2010	NAIP_USGS
2013	Aerial Photograph. Scale: 1"=1000'	Flight Year: 2013	NAIP_USGS
2017	Aerial Photograph. Scale: 1"=1000'	Flight Year: 2017	NAIP_USGS





INQUIRY #: 5457535.1  
YEAR: 1938  
SCALE : 1"=1000'



SITE



INQUIRY #: 5457535.1  
YEAR: 1950  
SCALE: 1"=1000'

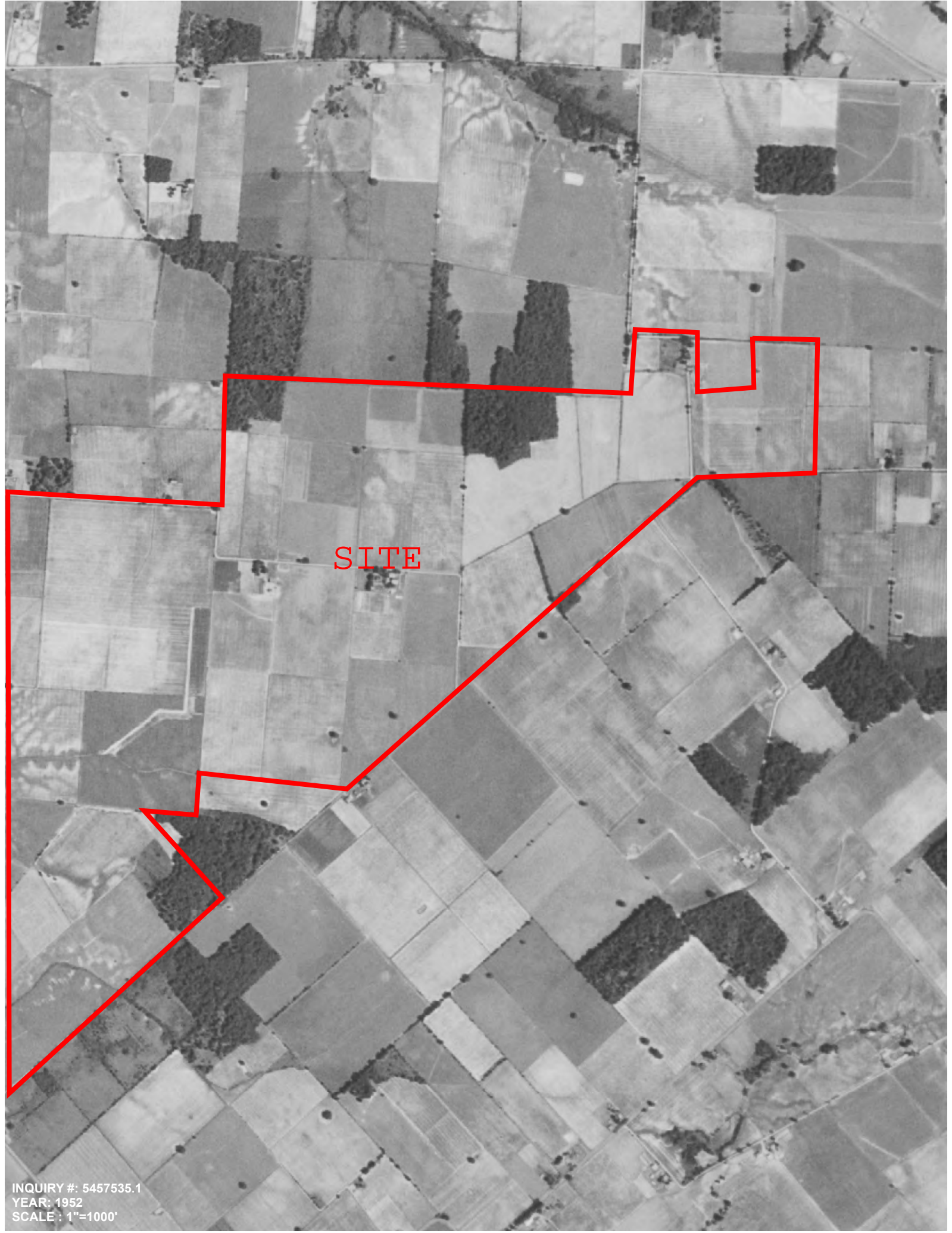
An aerial photograph of a rural landscape, likely a farm or agricultural area. The image shows a patchwork of fields, some of which are dark and appear to be wooded or overgrown. A prominent red line is drawn across the image, forming a large, irregular polygon that encloses a significant portion of the central and lower-left areas. The word "SITE" is written in red, capital letters within this red-outlined area. The right side of the image is mostly black, suggesting a missing or obscured portion of the photograph.

SITE

INQUIRY #: 5457535.1  
YEAR: 1950  
SCALE : 1"=1000'



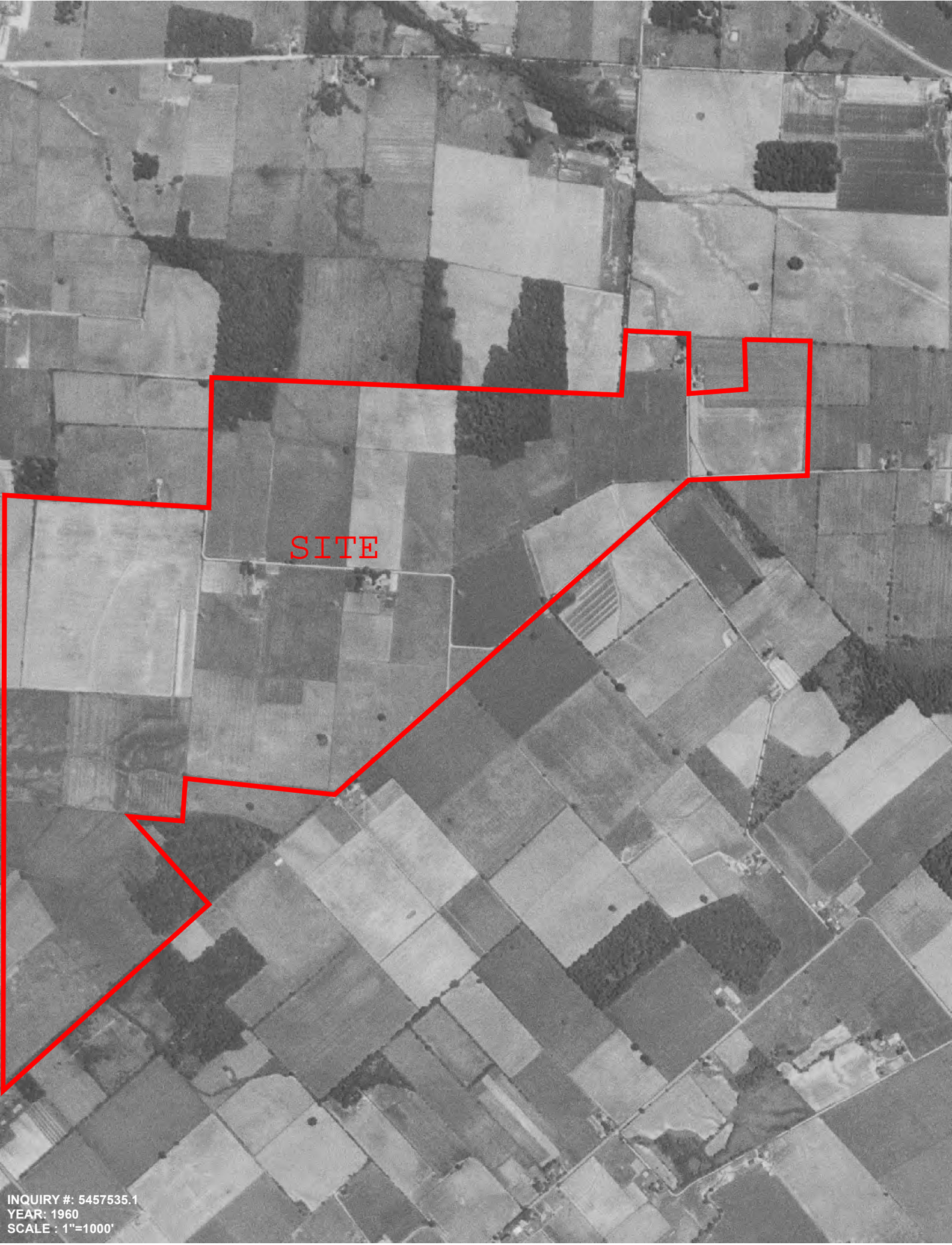
INQUIRY #: 5457535.1  
YEAR: 1952  
SCALE : 1"=1000'



SITE



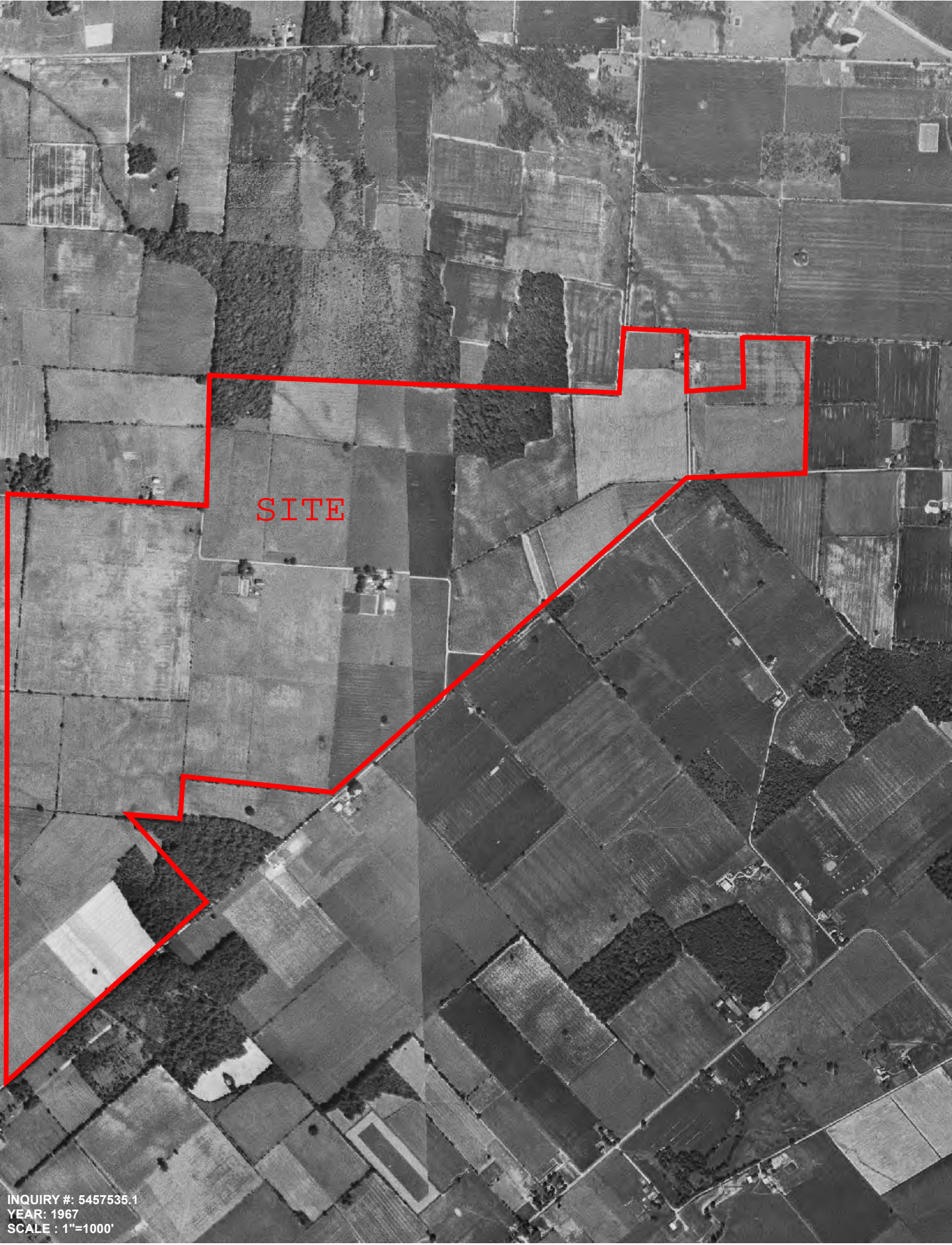
SITE



SITE

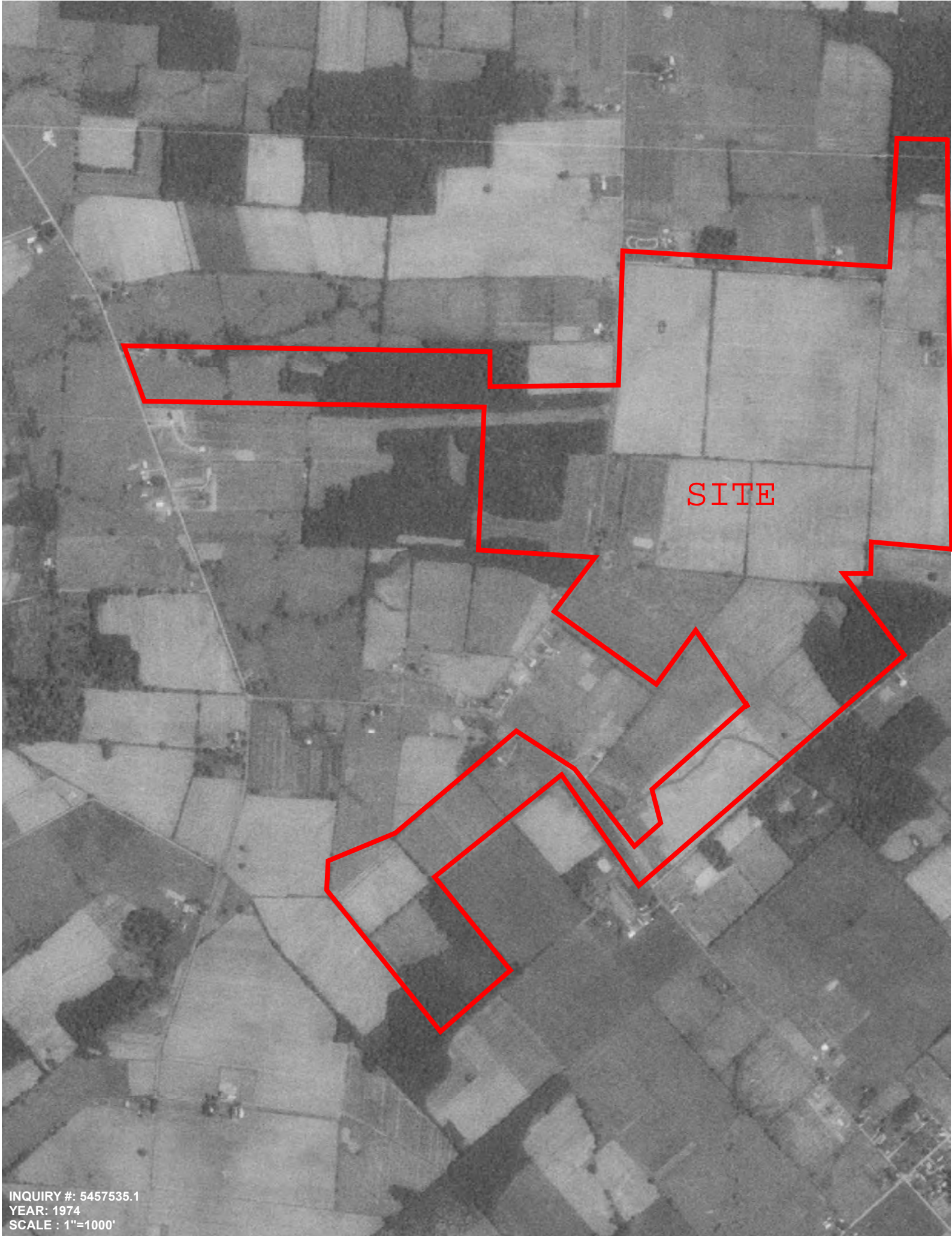


INQUIRY #: 5457535.1  
YEAR: 1967  
SCALE : 1"=1000'



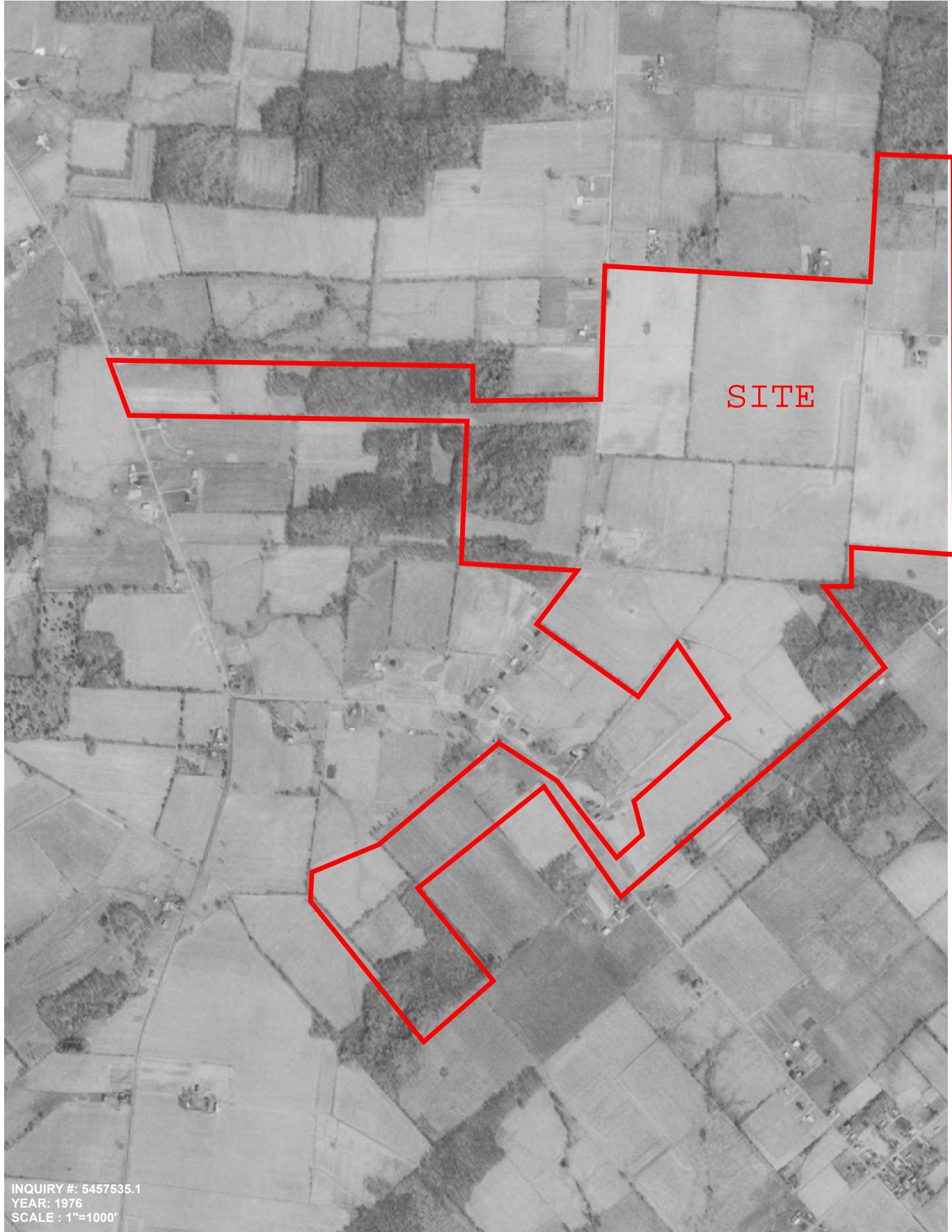
SITE

INQUIRY #: 5457535.1  
YEAR: 1967  
SCALE : 1"=1000'





INQUIRY #: 5457535.1  
YEAR: 1974  
SCALE : 1"=1000'



SITE

An aerial photograph of a rural landscape, likely a farm or agricultural area. The terrain is divided into numerous rectangular and irregular plots of land, some of which are covered in dense vegetation or trees. A prominent red line is drawn across the image, forming a large, irregular polygon that encloses a significant portion of the land. The word "SITE" is written in red capital letters within the enclosed area, centered horizontally and slightly above the vertical center. The overall tone of the image is grayscale, with the red line and text providing a strong contrast.

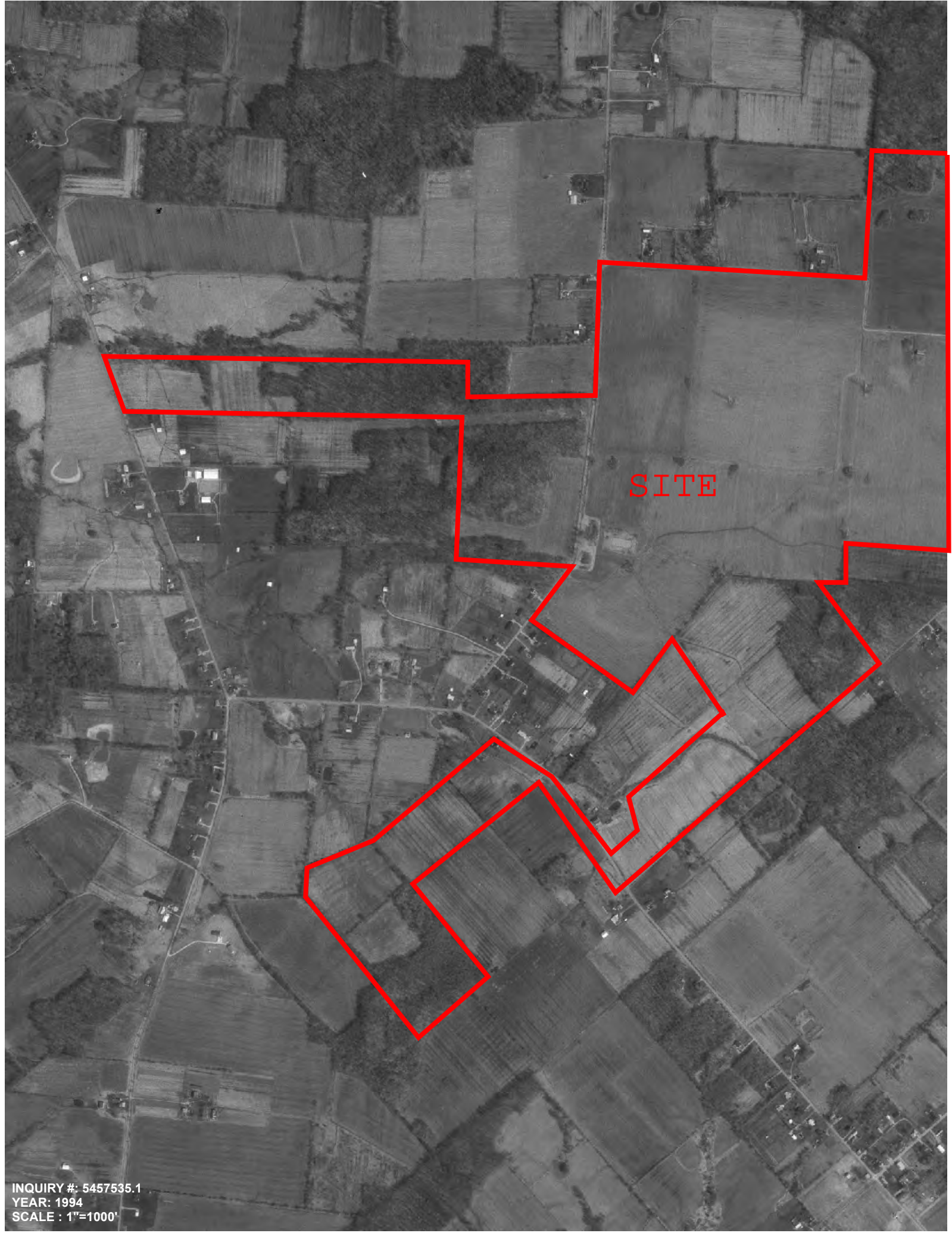
SITE



SITE



SITE



An aerial photograph of a rural landscape, likely in the Midwest, showing a patchwork of agricultural fields. A prominent red line outlines a specific area of interest. The word "SITE" is printed in red capital letters within this outlined area. The landscape includes various types of fields, some with distinct patterns suggesting different crops or tillage, and some areas of denser vegetation or trees. A few small buildings or structures are visible in the lower right portion of the image.

SITE

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**12/14/2018 11:29:41 AM**

**in**

**Case No(s). 18-1546-EL-BGN**

Summary: Application Appendix G (Part 1 of 5) electronically filed by Mr. Michael J. Settineri  
on behalf of Nestlewood Solar I LLC