

Letter of Notification

**The Dayton Power and Light Company
Clay Substation Project**

**Submitted to the Ohio Power Siting Board
November 12, 2019
Case No. 19-1822-EL-BLN**

Submitted by: The Dayton Power and Light Company



**LETTER OF NOTIFICATION FOR THE
DAYTON POWER AND LIGHT - CLAY SUBSTATION
PROJECT**

PUCO Case No. 19-1822-EL-BLN

**Submitted to:
The Ohio Power Siting Board
Pursuant to OAC 4906-6**

**Submitted by:
The Dayton Power and Light Company**

November 2019

LETTER OF NOTIFICATION

The Dayton Power and Light Company, Clay Substation Project

The Dayton Power and Light Company (DP&L) is providing the following information to the Ohio Power Siting Board (OPSB) in accordance with the procedures delineated in Ohio Administrative Code Section 4906-6: Accelerated Certificate Applications.

4906-6-05 (B) LETTER OF NOTIFICATION REQUIREMENTS

B (1) Project Description

The name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements of a letter of notification.

The name of this project is the *Dayton Power and Light – Clay Substation Project* (Project) and the OPSB Case No. is: 19-1822-EL-BLN.

The Dayton Power and Light Company is proposing the Clay Substation Project located in Clay Township, Highland County, Ohio (See Figure 1). The approximate center coordinates for the substation site are 39°4'18.72" N latitude and 84°47'40.9" W longitude. The Project involves tapping the existing 345 kV transmission line (34509 Stuart – Clinton Line) from the Stuart Substation to the Clinton Substation and building a new greenfield 345 kV three breaker ring bus for the purpose of interconnecting a new solar generator. The solar generator is PJM interconnection queue number AC1-085 (PUCO Case Number 18-1334-EL-BGN). DP&L will install three (3) 345kV circuit breakers with associated disconnect switches, line relaying, communication, control building, substation structures and foundations, station power, civil site work, interconnection metering, and other supporting substation equipment required to accommodate the interconnection of the AC1-085 generator and tap the existing Stuart – Clinton 345 kV line.

The Project meets the requirements for a Letter of Notification (LON) because it is within the types of projects defined by Item (3) of 4906-1-01 Appendix A "Application Requirement Matrix for Electric Power Transmission Lines", which states:

(3) Constructing a new electric power transmission substation.

B (2) Statement of Need

If the proposed LON is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

The new Clay Substation is needed to interconnect a new 400 MW solar project (PJM AC1-085; PUCO Case Number 18-1334-EL-BGN) to The Dayton Power and Light Company transmission system. The Project has been approved by PJM (PJM Network #s n5692, n5896, n5897, n5898).

B (3) Project Location

The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the project area.

The Project is located on North Gath Road in Clay Township, Highland County, Ohio. Figure 1 shows the location of the Project in relation to the existing DP&L Stuart – Clinton 345kV electric transmission line, as well as surrounding roads, populated areas, surface waters, and other features.

B (4) Alternatives Considered

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

The Project is required to interconnect a new generator (PUCO Case Number 18-1334-EL-BGN). The resulting alignment represents the most suitable and least-impactful alternative, and as a result, no other alternatives were considered. Factors playing a key role in the chosen location of the Project include the close proximity to the solar station and the ability to acquire needed easements from the solar project developer.

B (5) Public information Program

The applicant shall describe its public information program to inform affected property owners and tenants of the nature of the project and the proposed timeframe for project construction and restoration activities.

The Dayton Power and Light Company will send a letter describing the proposed facility to each property owner and affected tenant. A list of property owners contiguous to the Project is included in Appendix A. DP&L also maintains a website which provides the public information about the project and how to request a copy of the LON (<https://www.dpandl.com/About-DPL/Reliability/Transmission-Improvements/>). A copy of the LON will be served to the chief executive officer of the county and township, and the head of pertinent public agencies with the duty of protecting the environment or of planning land use in the area where the Project is located. A copy of the LON will also be served to the public library in the political subdivision affected by this Project. Copies of the cover letters to these officials and the local library are attached in Appendix B. DP&L will give public notice in newspapers of general circulation in the Project area.

B (6) Construction Schedule

The applicant shall provide an anticipated construction schedule and proposed in-service date of the project.

Construction is anticipated begin in March of 2020, upon approval of this LON and any required permits, and is expected to be completed by September 30, 2020. The proposed in-service date for the substation is October 31, 2020.

B (7) Area Map

The applicant shall provide a map of at least 1:24,000 scale clearly depicting the facility with clearly marked streets, roads, and highways, and an aerial image.

Figure 2 shows the location of the Project in relation to nearby streets and roads on an aerial image obtained from ESRI. The Project is located within Clay Township in Highland County, Ohio. To locate and view the Project from Cincinnati, take I-471 south to I-275. Then take I-275 east for approximately 11.6 miles to OH-32. Proceed east on OH-32 for approximately 26.5 miles. Turn left on to OH-134 N. Continue north on OH-134 for approximately 0.5 miles, then turn right onto Kay Road. Take the next left onto Duncanson Road. Continue north on Duncanson Road for approximately 1.4 miles, then turn left onto Gath Road. Proceed on Gath Road for approximately 2.5 miles until reaching the Project Area on the left.

B (8) Property Agreements

The applicant shall provide a list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the facility and a list of the additional properties for which such agreements have not been obtained.

The larger solar project developer (PJM AC1-085) will own the property (Parcel No. 05-23-000-246.00) that the new Clay Substation will be built on but will grant DP&L the necessary easements for the Project and operation of the substation. The substation easement area will cover the new microwave tower site, overhead conductors in and out of the substation, and new transmission poles.

4906-6-05 B (9) Technical Features

B (9)(a) Operating Characteristics

Operating characteristics, estimated number and types of structures required and ROW and/or land requirements.

Figures 5 through 9 show the proposed substation layout and proposed transmission poles to be constructed for this project. The solar project developer will grant DP&L the necessary easement to cover the substation area, microwave tower site, overhead conductors in and out of the substation, and the new transmission poles. The project has the following characteristics:

Station:

The equipment and facilities described below will be installed within the fenced area of the proposed station. Figures 5 through 8 provides the proposed site plan of the facility. Other portions of the project outside of the fenced area include a microwave tower and microwave building, both located near the southwest corner of the Project area.

Breakers: There will be (3) 345kV circuit breakers and foundations installed at the switching station.

Switches: The station will contain (7) 345kV disconnect switches mounted on tubular steel structures and foundations.

Bus Arrangements and Structures: The switching station will utilize a three-breaker ring bus configuration with w-flange and taper tubular structures and foundations.

Steel equipment support structures will be designed using hot-rolled structural steel shapes such as wide flange, tubing, channels and angles or as folded plate tapered tubular structures. Dead-end structures will be made of tapered tubular steel. All yard structures will be ASTM A36, ASTM A500, or ASTM A572 steel hot-dip galvanized for corrosion protection.

Transformers: There will be no power transformers within the station.

Control Building: The control house will consist of pre-engineered and factory fabricated 50'-3" by 14'-0" metal building to contain all switch control and relay panels and miscellaneous equipment. This would include an RTU, circuit breaker controls and line protection panels, batteries, battery chargers, and other miscellaneous equipment. The control houses will include building HVAC and internal lighting. The switch facility will not be manned. Plumbing facilities are not required.

Other Major Equipment: Other major equipment will include (9) 345kV SSVT's, and (3) CT/PT combination metering devices.

Lighting systems at the switching station will be necessary for safety, security, and to comply with applicable standards. There are two different illumination levels for switch yard lighting systems. NESC Section 11, Table 111-1 recommends a two foot-candle illumination level in stations for general service lighting. The IES Lighting Handbook, Figure 2-1, recommends a 0.5 foot-candle horizontal illumination level for general security lighting. Security lighting is dusk to dawn intended to illuminate the areas inside the switching station yard that might attract vandalism or theft. Service lighting is switch controlled and intended to provide additional lighting for unscheduled callouts to the station.

Transmission Line:

The Project involves installing approximately 295 feet of 345kV single-circuit electric transmission line and 1 new steel pole structure. The new structure will be a 3-pole galvanized steel structure on concrete pier foundations. A conceptual drawing of the proposed structure is shown on Figure 9.

Voltage: Single-Circuit 345kV

Structure Type: One galvanized steel 3-pole structure on concrete pier foundations.

Shield Wire: (2) 7#8 alumoweld (0.385in. diameter) will be used as shield wires above the phase conductors

Conductor: (3) 2-bundled 1024.5 kcmil 30/7 ACAR "Rail"

Insulators: Polymer with corona rings and standard pole and conductor attachments

B (9)(b)(i) Electric and Magnetic Fields

For electric power transmission lines that are within one hundred feet of an occupied residence or institution, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.

No EMF studies were conducted, as the proposed transmission line tap is not within one hundred feet of any occupied residence or institution.

B (9)(b)(ii) Design Alternatives

A discussion of the applicant's consideration of design alternatives with respect to electric and magnetic fields and their strength levels, including alternate conductor configuration and phasing, tower height, corridor location, and ROW width.

Design alternatives were not considered for EMF as the proposed transmission line tap is not within one hundred feet of any occupied residence or institution.

For additional information regarding EMF, the NIH has posted information on their website at www.niehs.nih.gov.

B (9)(c) Project Cost

The estimated capital cost of the project.

The total estimated capital cost of this project is \$6,300,000.

4906-6-05 (B)(10) Social and Ecological Impacts

B (10)(a) Land Use

Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

The Project is located within Clay Township in Highland County. There are four different land uses within the 1,000 feet of the proposed Project. Approximately 81% of the uses are agriculture, 11% are residential, 7% are forested, and 1% are open water. Additionally, four residences are noted within 1,000 feet of the substation site. No churches were identified within 1,000 feet of the proposed substation. Figure 3 shows the land use and land cover types within the Project Vicinity.

The characteristics of the Project are not significantly different from the existing 345kV transmission line and are not expected to adversely impact the local population. The Project is expected to adversely impact land use by negatively impacting agricultural land and requiring the impacted land to be removed from any future agricultural use.

B (10)(b) Agricultural Land

Provide the acreage and a general description of all agricultural land, and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.

Based on aerial imagery and land use/land cover data, the disturbance area of the Project is made up completely of agricultural land (approximately 3.15 acres). There are parcels adjacent to the Project area that are listed by the Highland County Auditor's Office as agricultural district land, although no agricultural district land exists directly within the Clay Substation Project Area. The adjacent agricultural district land is shown on Figure 3. This agricultural district land will not be impacted by the Clay Substation Project.

B (10)(c) Archeological and Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

A desktop review of the National Register of Historic Places (NRHP), as provided by the National Park Service (NPS), was performed by Commonwealth. Only two properties listed on the NRHP, the Hirons-Brown House (located southwest of Buford) and Workman Works (in Salem

Township), were identified within 5 miles of the Project. Both sites are approximately 3.7 miles from the Project and will not be impacted. There are no NRHP-listed or eligible properties, no National Historic Landmarks, and no historic bridges or structures within one mile of the Project site.

An archaeological and cultural resources study was conducted by Terracon Consultants, Inc (Terracon) on behalf of the generator for the new 400 MW solar project (PJM AC1-085; PUCO Case Number 18-1334-EL-BGN). This study area covered the Project area associated with the DP&L Clay Substation and included a Phase I archaeological survey, Phase II testing, and an architectural survey of the Area of Potential Effects (APE). The Terracon report describes an isolated find, a fragment of a single ball clay pipe, found within one mile of the Clay Substation site. It was determined that the archaeological site was recommended ineligible for inclusion in the NRHP. No significant archaeological or cultural resources were found within the Clay Substation Project Area. The complete Cultural Resources Investigations report will be provided to the OPSB under a separate cover in Appendix C. The report has also been submitted to the Ohio State Historic Preservation Office (SHPO) by Terracon.

B (10)(d) Local, State and Federal Government Requirements

Provide a list of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

This Project will be designed, constructed, and operated to meet or exceed the requirements of the National Electric Safety Code, DP&L design standards and all applicable Occupational Safety and Health Administration (OSHA) standards.

The Project proposes to discharge stormwater from the construction site. A Stormwater Pollution Prevention Plan (SWPPP) will be developed and a Notice of Intent (NOI) will be filed with the Ohio Environmental Protection Agency (OEPA) for authorization to discharge the stormwater under General Permit OHC000005 (General Permit Authorization for Storm Water Discharges Associated with Construction Activity Under the National Pollutant Discharge Elimination System), as required for construction projects involving land disturbance greater than one acre. DP&L will coordinate storm water permitting needs with Highland County and other local government agencies as necessary. DP&L will implement and maintain best management

practices as outlined in the project-specific SWPPP to minimize erosion and control sediment to protect surface water quality during storm events.

There are no known public-use airports within the Project vicinity. In accordance with CFR Title 14 Part 77.9; the Federal Aviation Administration (FAA) Notice Criteria Tool was utilized to determine if filing may be required (FAA Form 7460-1, Notice of Proposed Construction or Alteration). The FAA Notice Criteria Tool indicated there were not any new structures that would exceed notice criteria requirements. Therefore, filing is not necessary.

The Project will not require permanently placing any construction fills within streams or wetlands, or clearing trees from any forested wetland; therefore, the Project will not require authorization by the United States Army Corps of Engineers (USACE) and OEPA under Section 404 and 401 of the Clean Water Act (CWA).

A review of the FEMA Flood Hazard Layer indicated that the Project Area is not located within any 100-year flood zone areas, therefore the Project is not subject to any State or local floodplain permitting requirements.

No other local or state governmental agencies are known to have requirements that must be met in connection with construction of the project.

B (10)(e) Threatened, Endangered, and Rare Resources

Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

State Listed Species

Commonwealth conducted a desktop review of rare, threatened, and endangered species that may be present within the Project Area. A review of the State Listed wildlife and plant species in Highland County, Ohio was conducted utilizing resources from the Ohio Department of Natural Resources (ODNR) website. Species identified by the ODNR website are provided below in Table 1.

Table 1. State Listed Species within Highland County, OH, Identified by ODNR

Common Name	Scientific Name	Status
Mammals		
Indiana bat	<i>Myotis sodalis</i>	E
Eastern harvest mouse	<i>Reithrodontomys humilis</i>	T
Big brown bat	<i>Eptesicus fuscus</i>	SC
Silver-haired bat	<i>Lasionycteris noctivagans</i>	SC
Red bat	<i>Lasiurus borealis</i>	SC
Hoary bat	<i>Lasiurus cinereus</i>	SC
Prairie vole	<i>Microtus ochrogaster</i>	SC
Little brown bat	<i>Myotis lucifugus</i>	SC
Northern long-eared bat	<i>Myotis Septentrionalis</i>	SC
Tri-colored bat	<i>Perimyotis subflavus</i>	SC
Deer mouse	<i>Peromyscus maniculatus</i>	SC
Southern bog lemming	<i>Synaptomys cooperi</i>	SC
Badger	<i>Taxidea taxus</i>	SC
Evening bat	<i>Nycticeius humeralis</i>	SI
Reptile		
Timber rattlesnake	<i>Crotalus horridus</i>	E
Invertebrates		
Ohio cave beetle	<i>Pseudanophthalmus</i>	E
Snuffbox	<i>Epioblasma triquetra</i>	T
Frost cave isopod	<i>Caecidotea rotunda</i>	T
Buck moth	<i>Hemileuca maia</i>	SC
Elktoe	<i>Alasmidonta marginata</i>	SC
Wavy-rayed lampmussel	<i>Lampsillis fasciola</i>	SC
Creek heelsplitter	<i>Lasmigona compressa</i>	SC
Kidneyshell	<i>Ptychobranhus fasciolaris</i>	SC
Amphibians		
Eastern cricket frog	<i>Acris crepitans crepitans</i>	SC
Four-toed salamander	<i>Hemidactylum scutatum</i>	SC
Fishes		
Bigeye shiner	<i>Notropis boops</i>	T
Muskellunge	<i>Esox masquinongy</i>	SC
Plant		
Southern Hairy Rock Cress	<i>Arabis pynocarpa var. adpressipilis</i>	PT
Wall-rue	<i>Asplenium ruta-muraria</i>	T
Least grape fern	<i>Botrychium simplex</i>	E
Bachman's jelly lichen	<i>Collema bachmanianum</i>	E
Tennessee bladder fern	<i>Cystopteris tennesseensis</i>	PT
Wedge-leaved whitlow-grass	<i>Draba cuneifolia</i>	T
Plains frostweed	<i>Helianthemum bicknellii</i>	PT
Narrow-leaved pinweed	<i>Lechea tenuifolia</i>	PT
Slender blazing-star	<i>Liatris cylindracea</i>	T

Rock sandwort	<i>Minuartia michauxii</i>	PT
Large-leaved mountain-rice	<i>Oryzopsis asperifolia</i>	T
Balsam squaw-weed	<i>Packera paupercula</i>	T
Cliff-green	<i>Paxistima canbyi</i>	E
Wild kidney bean	<i>Phaseolus polystachios</i>	PT
Mountain-rice	<i>Piptatherum racemosum</i>	PT
Little gray polypody	<i>Pleopeltis polypodioides</i>	PT
Weak spear grass	<i>Poa saltuensis ssp. Languida</i>	PT
Wherry's catchfly	<i>Silene caroliniana ssp. Wherryi</i>	T
Downy carrion-flower	<i>Smilax pulverulenta</i>	E
Arbor vitae	<i>Thuja occidentalis</i>	PT
Three-birds orchid	<i>Triphora trianthophora</i>	PT
Soft-leaved arrow-wood	<i>Viburnum mole</i>	T
Walter's violet	<i>Viola walteri</i>	T
White wand-lily	<i>Zigadenus elegans</i>	PT

E = Endangered, T = Threatened, SC = Species of Concern, SI = Special Interest,
PT = Potentially Threatened

In addition, Terracon completed a threatened and endangered species review and habitat assessment of the overall generator project site (PUCO Case Number 18-1334-EL-BGN), including the Project area for the new Clay Substation. As part of the Terracon investigation, early consultation with ODNR was conducted. Terracon's complete Ecological Resource Analysis report, with agency correspondences will be provided under a separate cover in Appendix D.

The Project is within range of the Indiana bat, a state and federally listed endangered species, that utilizes wooded areas as primary summer habitat. The Clay Substation Project area does not encompass any wooded area. Therefore, the Project is not likely to negatively impact the Indiana Bat. However, if tree clearing is necessary for the Project, clearing may only occur between October 1 and March 31. If, during the summer months, an area is identified where additional clearing is needed then a presence/absence survey will need to be conducted in accordance with USFWS guidelines.

The Project is not likely to impact any other State-listed threatened or endangered species, as no suitable habitat is present within the Project site.

Federal Listed Species

Commonwealth conducted a desktop review of the United States Fish and Wildlife Service (USFWS) Ohio County Distribution of Endangered Species for Highland County. Species identified by the USFWS are provided below in Table 2.

Table 2. Federal Listed Species in Highland County Identified by USFWS

Common Name	Scientific Name	Status
Mammals		
Indiana bat	<i>Myotis sodalis</i>	E
Northern long-eared bat	<i>Myotis septentrionalis</i>	T
Invertebrate		
Snuffbox	<i>Epioblasma triquetra</i>	E
Reptile		
Timber rattlesnake	<i>Crotalus horridus</i>	SC

E = Endangered, T = Threatened, SC = Species of Concern

Additionally, Terracon conducted an early agency consultation with the USFWS, and conducted a habitat assessment on behalf of the generator for the overall solar project, including the Project area for the new Clay Substation. As previously stated, the Ecological Resource Analysis Report completed by Terracon will be provided with this LON under a separate cover.

The Project lies within the range of the Indiana bat and the Northern long eared bat and suitable habitat for both species was observed near the Project area. The USFWS assumes the presence of both mammals wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. As previously discussed above, any tree clearing should only be conducted between October 1 and March 31, unless a presence/absence survey is conducted following USFWS guidelines. It isn't anticipated that tree clearing will be needed for the construction of the Clay Substation. Therefore, the Project is not likely to negatively impact the Indiana bat or the Northern long eared bat.

The Project is within the range of 1 species of mussel. Because no in-water work is required the Project will avoid direct impact to these species.

It is not anticipated that any other Federal listed threatened or endangered species will be negatively impacted by this Project.

B (10)(f) Areas of Ecological Concern

Provide a description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the potential disturbance area of the project, a statement of the

findings of the investigation, and a copy of any document produced as a result of the investigation.

Commonwealth performed a desktop review for the presence of areas of ecological concern within the Project area. The Project does not cross any national or state forests, national or state parks, designated or proposed wilderness areas, national or state wild or scenic rivers, wildlife areas, wildlife refuges, wildlife management areas or wildlife sanctuaries.

A review of the FEMA Flood Hazard Layer indicated that the Project Area is not located within any 100-year flood zone areas.

A desktop review of the National Wetlands Inventory (NWI) database as well as the United States Department of Agriculture (USDA) Web Soil Survey (WSS) was conducted to identify any potential wetlands within the Project area. Soil types, specifically those classified as hydric soils, are potential indicators of wetlands. The project crosses 3 mapped soil types, Westboro-Schaffer silt loams, 0 to 2 percent slopes (WsS1A1), Westboro-Schaffer silt loams, 2 to 4 percent slopes (Ws1B1), and Rossmoyne silt loam, 6 to 12 percent slopes, eroded (RpC2), none of which are considered hydric soils. Additionally, none of the soils within the Project area are classified as Prime Farmland or Farmland of Statewide Importance. Soil types and hydric soils in the Project vicinity are shown on Figure 4. A discussion of the soils crossed by the Project disturbance area can be found within the USDA Soils Report in Appendix E. The desktop review indicated that it was unlikely for any wetlands to be within the Project Area as no NWI wetlands or hydric soils were present within the Project area.

An Ecological Resource Analysis (ERA) of the solar project area (PUCO Case 18-1334-EL-BGN), including the Project area for the new Clay Substation, was performed by Terracon on behalf of the generator. As part of the ERA, Terracon conducted a review wetlands and streams present within the study area. No wetlands, streams, or ponds were identified within the DPL Clay Substation Project boundaries, and there will be no permanent impacts to any wetlands, streams, or ponds associated with the Project. Nearby delineated wetlands, which will not be impacted by the Clay Substation Project as they are located outside of the substation project boundary, are shown on Figure 2. The Wetland Delineation Report completed by Terracon, as provided to the United States Army Corps of Engineers, will be provided to the OPSB under a separate cover in Appendix F.

B (10)(g) Unusual Conditions

Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

To the best of DP&L's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Construction and operation of the Project is expected to meet all applicable safety standards established by the Occupational Safety and Health Administration and to be in accordance with the requirements specified in the latest revision of the National Electric Safety Code as adopted by the Public Utilities Commission of Ohio.

4906-6-07 Documentation of Letter of Notification Transmittal and Availability for Public Review

This Letter of Notification is being provided concurrently with its docketing with the Board to the public officials listed in Appendix B. Copies of letters to the public officials are also included.

4906-6-08 Documentation of Public Notice to Property Owners for Letter of Notification

Letters of public notice are being provided to property to owners within and contiguous to the Project area via first class mail. A list of property owners and copies of letters are included in Appendix A. Proof of compliance with this requirement will be provided to the board.

FIGURES

Figure 1. Project Overview Map

Figure 2. Project Site Map

Figure 3. Land Use/Land Cover Map

Figure 4. Soils and Hydric Soils Map

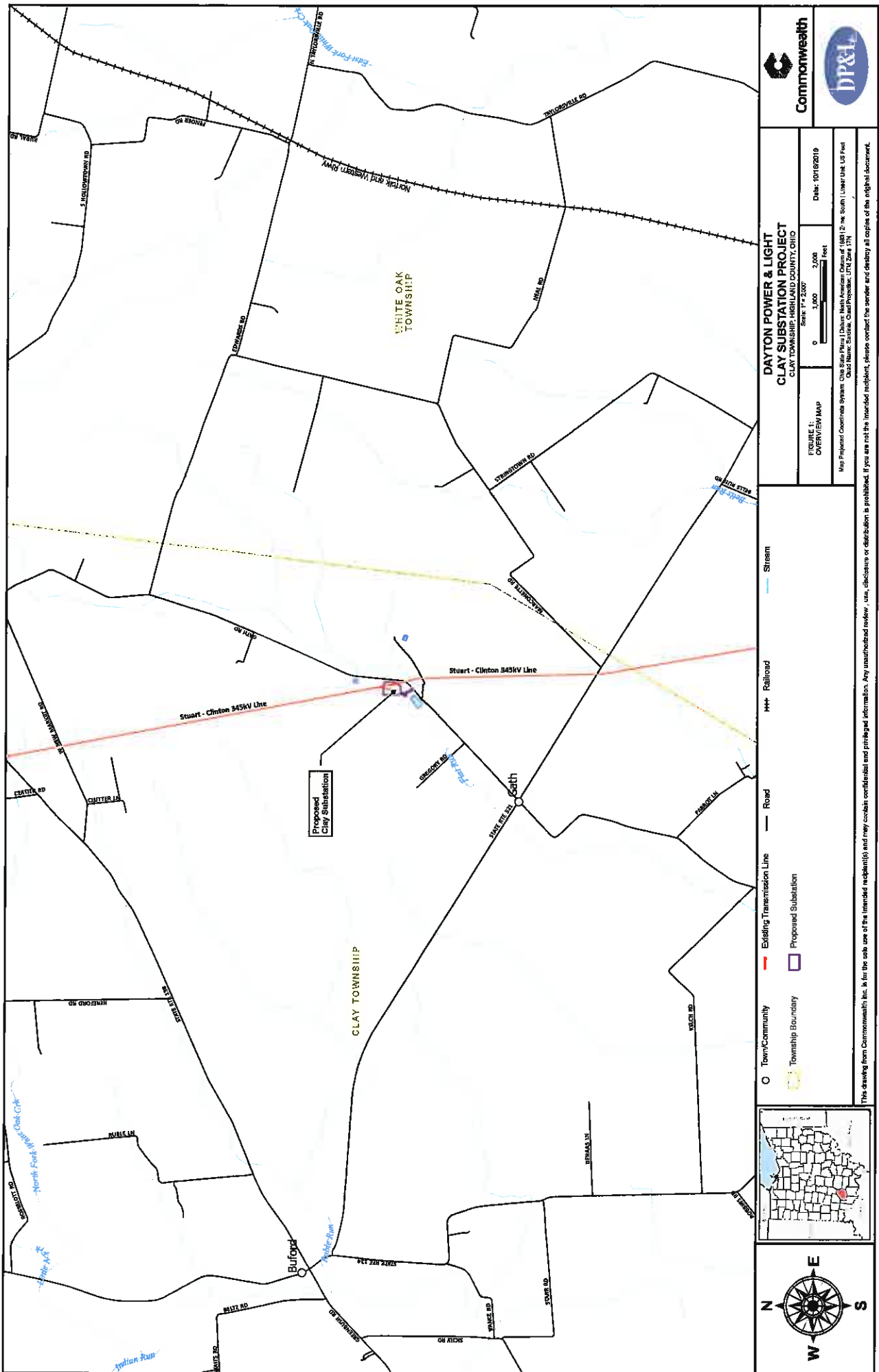
Figure 5. Preliminary Site Plan

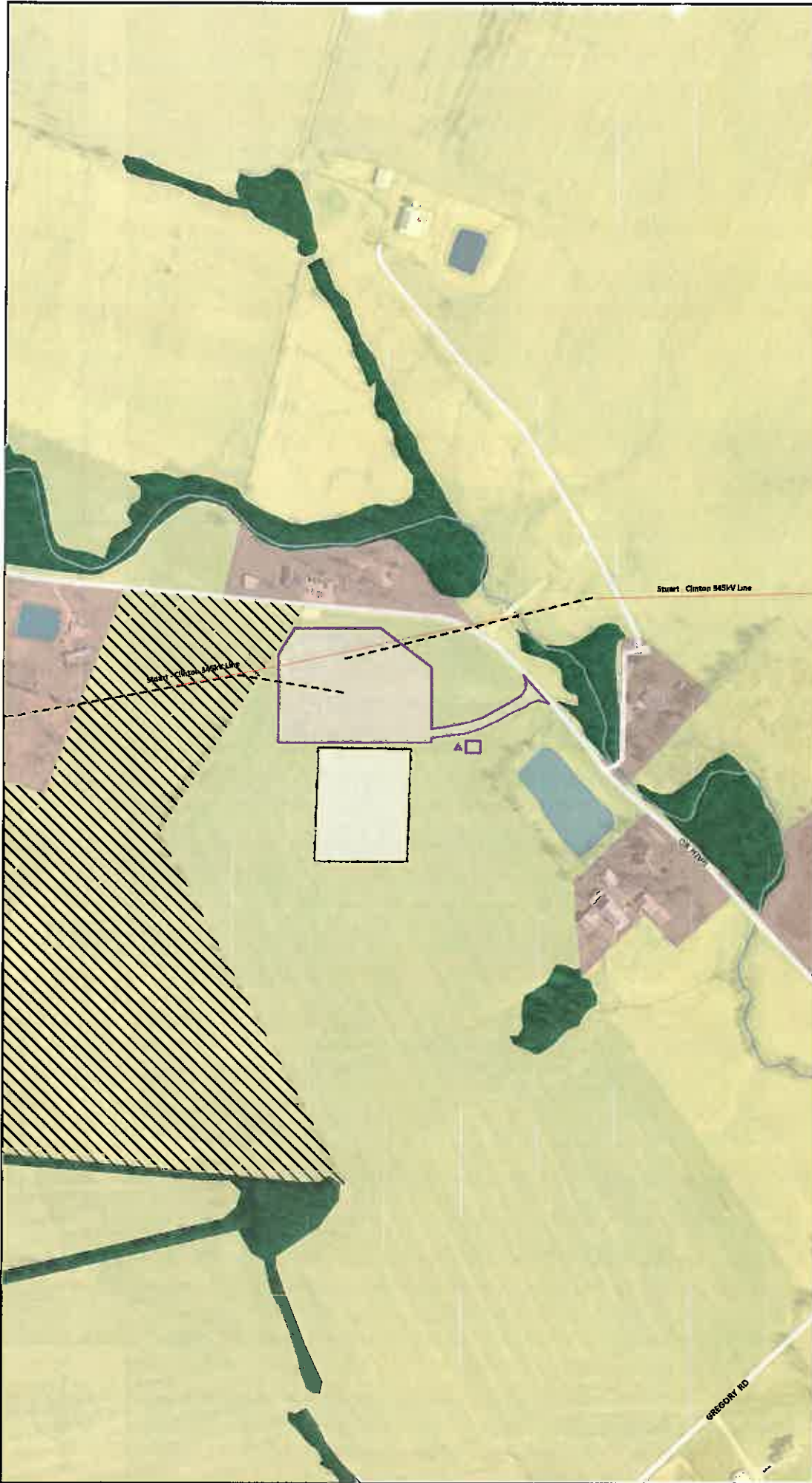
Figure 6. Electrical Layout 1


Figure 7. Electrical Layout 2

Figure 8. Electrical Layout 3


Figure 9. Transmission Line Structure Drawing







Commonwealth



DAYTON POWER & LIGHT

CLAY SUBSTATION PROJECT

CLAY TOWNSHIP, HAMILTON COUNTY, OHIO

Date: 10/16/2019

FIGURE 3:

LAND USE / LAND COVER

Scale: 1" = 250'

0 125 250 Feet

Date: 10/16/2019

LEGEND

Existing Transmission Line

Future Generation Substation (Non DPL)

Cropland & Pasture

Proposed Transmission Line

Open Water

Agriculture District

Road

Residential

Deciduous Forest


Proposed Substation

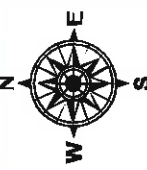
Proposed Oscillatory Station: Ohio State Power Plant | District: North American District of 1883 | Zone: South | Level: US Feet

Other Name: Station, Clay Substation, US Zone 18N

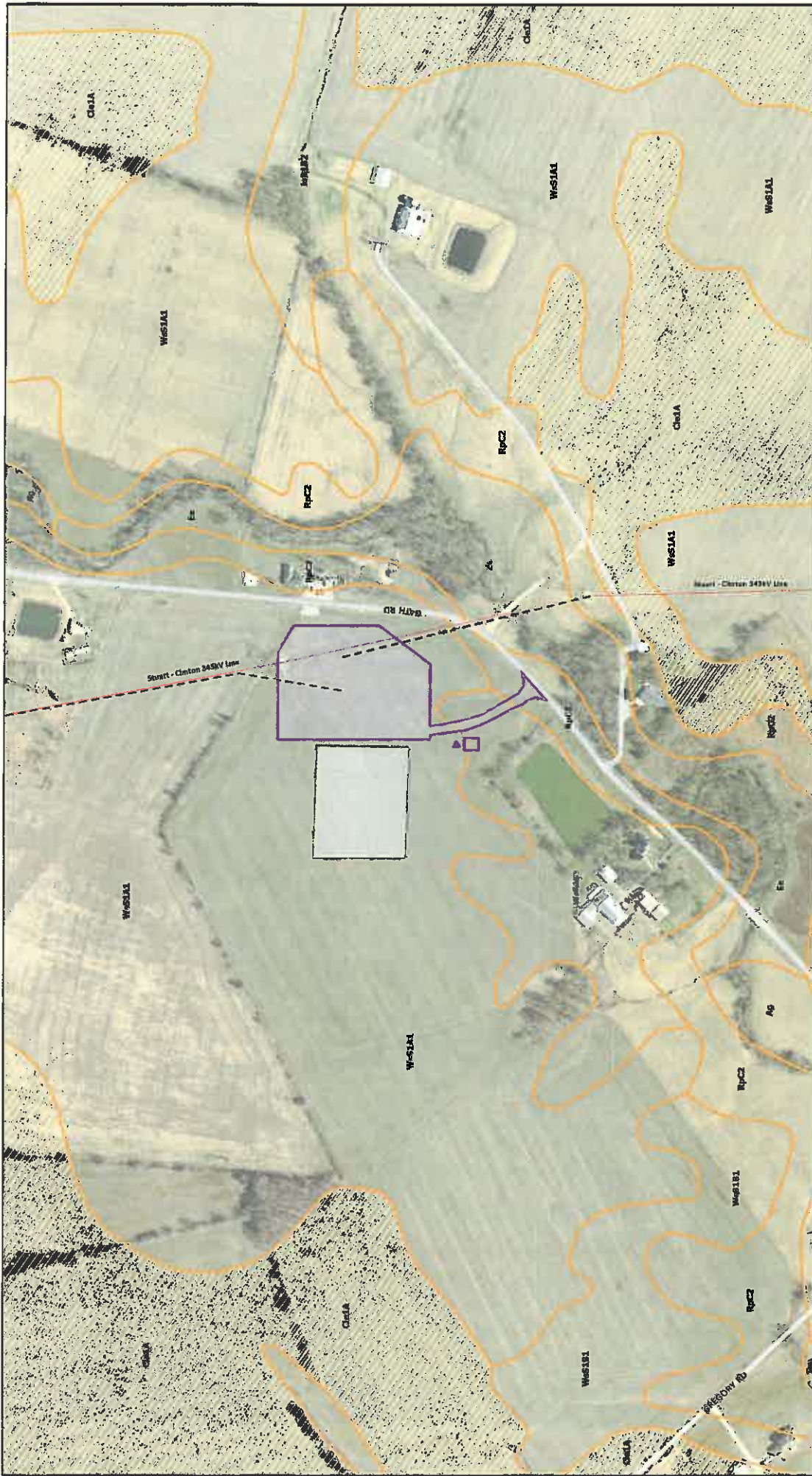
Proposed Oscillatory Station: Ohio State Power Plant | District: North American District of 1883 | Zone: South | Level: US Feet

Other Name: Station, Clay Substation, US Zone 18N





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Commonwealth



DAYTON POWER & LIGHT
CLAY SUBSTATION PROJECT
 CLAY TOWNSHIP, HAMILAND COUNTY, OHIO

FIGURE 4: HYDROLOGIC SOILS MAP

Scale: 1" = 200'

0 125 250 feet

Date: 10/16/2019

Project Coordinate System: Ohio State Plane East, NAD 83, Zone 17, Datum: North American Datum of 1983, Unit: Meter, Contour Interval: 100 feet

Legend

- Existing Transmission Line
- Proposed Transmission Line
- Future Generation Substation (Not DPL)
- Hydric Soil (95%)
- Soil
- Proposed Substation
- Road

Map of Hamilton County

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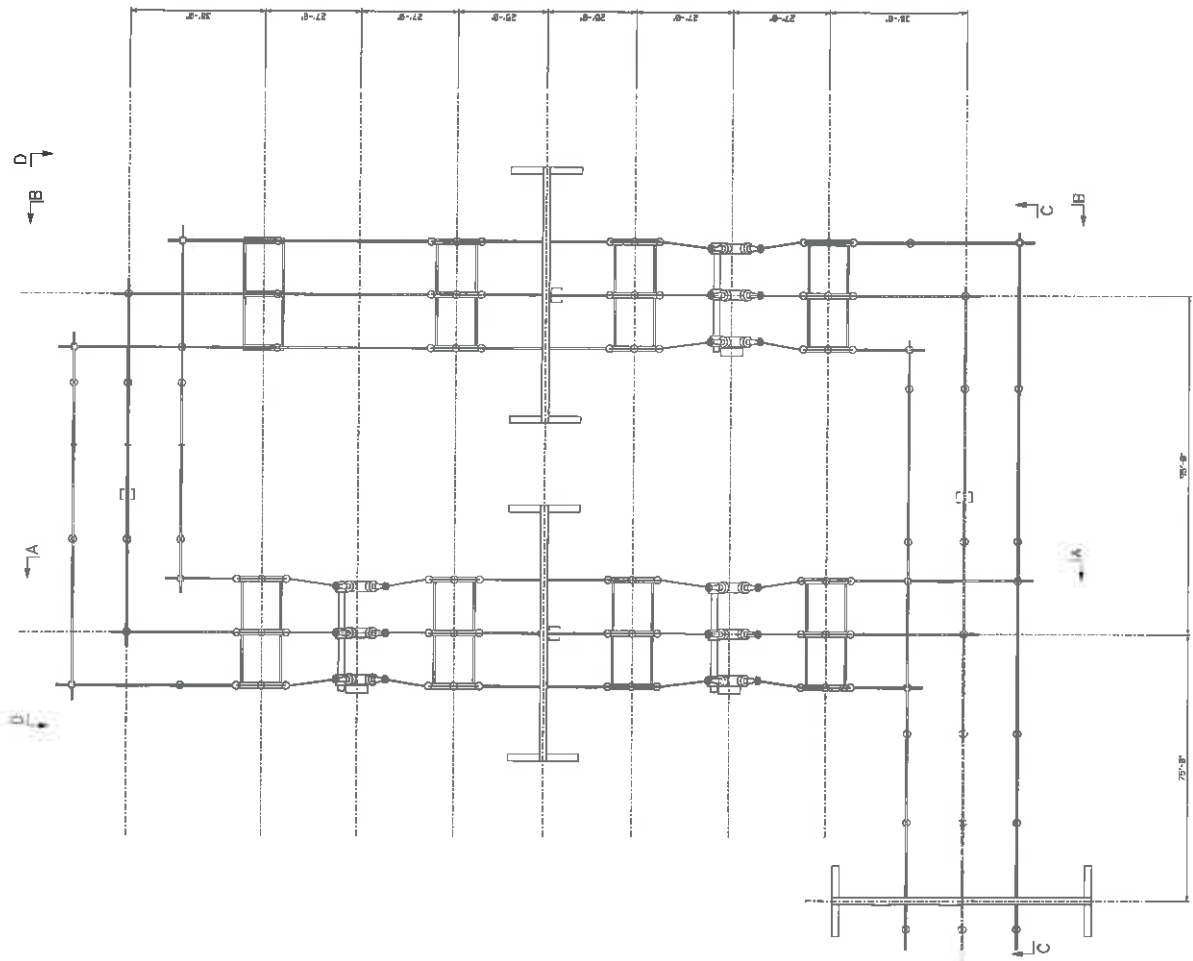


Figure 5. Electrical Layout 1

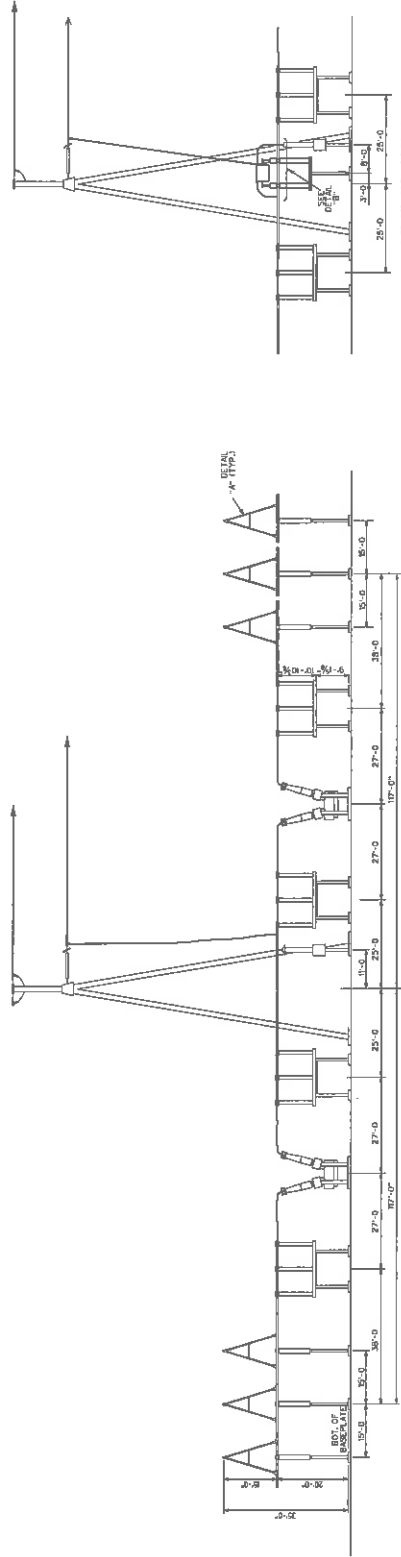
ISSUED FOR
CONCEPTUAL DESIGN
10/10/95

Companywide	
DATE	10/10/95
BY	10/10/95
CHECKED	10/10/95
APPROVED	10/10/95

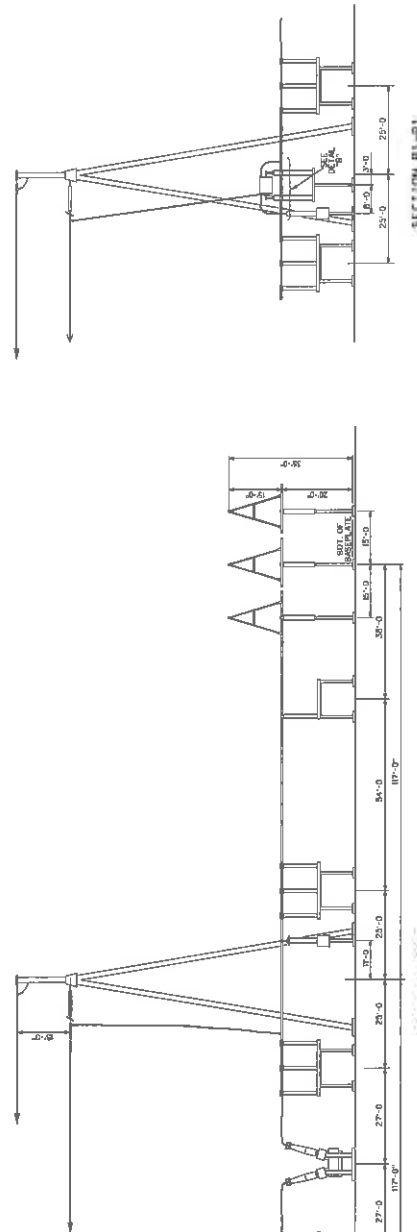
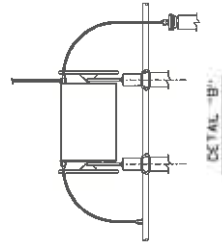
DP&L	
ELECTRICAL LAYOUT 545KV SWITCHGEAR	
CLAY SUBSTATION	
DATE	10/10/95
BY	10/10/95
CHECKED	10/10/95
APPROVED	10/10/95
DATE	10/10/95
BY	10/10/95
CHECKED	10/10/95
APPROVED	10/10/95

UNRECORDED SHEET

101



SECTION A-A



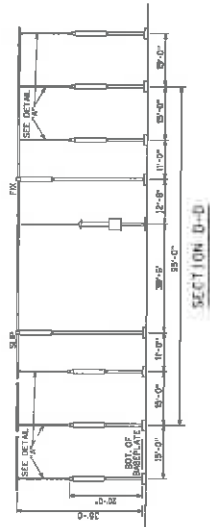
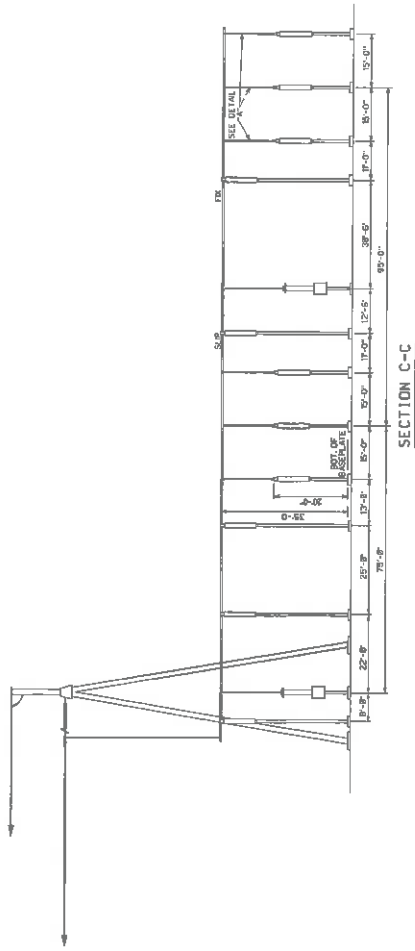
SECTION B-B

ISSUED FOR
CONSTRUCTION DESIGN
10/30/79



ELECTRICAL SECTIONS & DETAILS - 34.5KV SWITCHGEAR	
CLAY SUBSTATION	
PROJECT NO.	133-2-1501
DATE	10/30/79
DESIGNED BY	W. J. HARRIS
CHECKED BY	W. J. HARRIS
APPROVED BY	W. J. HARRIS
DATE	10/30/79
PROJECT NO.	133-2-1501
DATE	10/30/79
DESIGNED BY	W. J. HARRIS
CHECKED BY	W. J. HARRIS
APPROVED BY	W. J. HARRIS
DATE	10/30/79

Figure 7. Electrical Layout 2

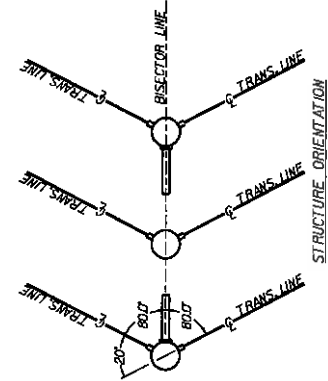
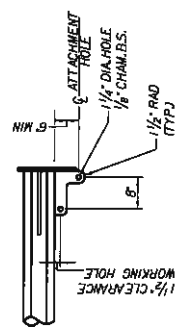
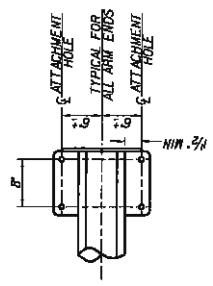
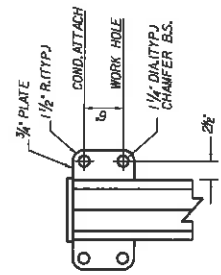
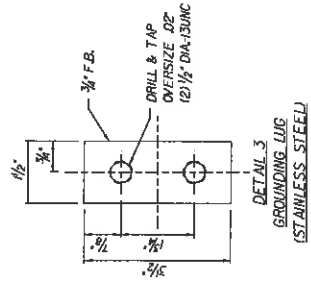
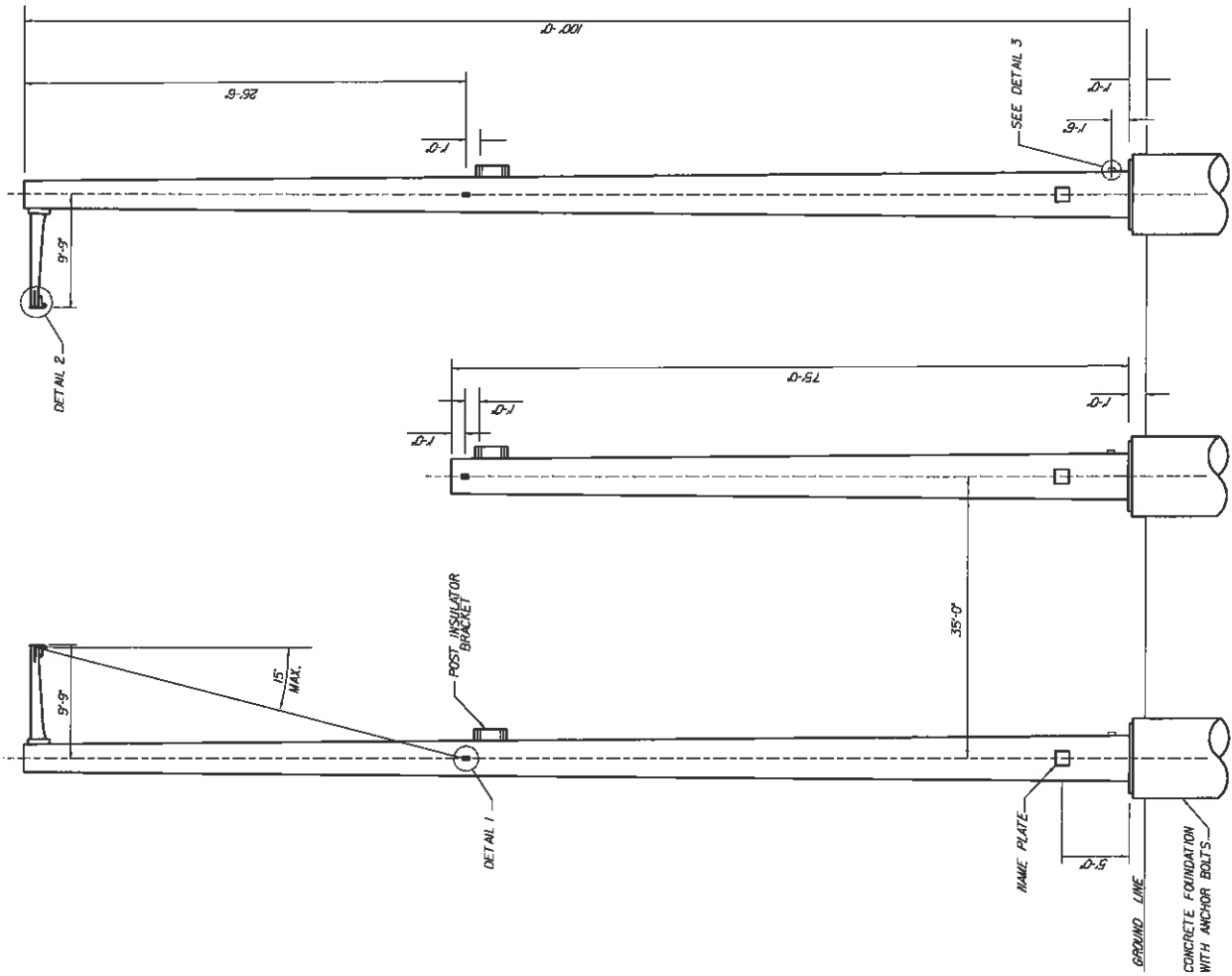


ISSUED FOR
CONCEPT DESIGN
10/30/19

Company	
DATE	10/30/19
BY	DP&L
CHECKED	
APPROVED	

ELECTRICAL SECTIONS	
DETAIL 3 145KV SWITCHYARD	
11.1V SUBSTATION	
NO.	11.1V
DATE	10/30/19
BY	DP&L
CHECKED	
APPROVED	
PROJECT	11.1V
LOCATION	11.1V
SCALE	1"=10'-0"
DATE	10/30/19
BY	DP&L
CHECKED	
APPROVED	

Figure 8. Electrical Layout 3



GENERAL NOTES:

1. STRUCTURE DESIGN DETAILS, MATERIALS AND FABRICATION SHALL BE IN ACCORDANCE WITH DP&L DRAWINGS AND SPECIFICATIONS.
2. STRUCTURES SHALL BE GALVANIZED.
3. STRUCTURES SHALL BE PROVIDED WITH CLIPS FOR MAGREGOR LADDERS. LADDERS ARE NOT REQUIRED.
4. POLE SHALL NOT HAVE MORE THAN 1 SLIP JOINT.
5. POLE DIAMETER AT GROUND SHALL NOT EXCEED POLE TOP DIAMETER x 3.
6. ALL LOADS ARE IN POUNDS AND INCLUDE OVERLOAD FACTORS. POLE DEAD LOAD SHALL BE MULTIPLIED BY THE FACTORS SHOWN IN THE TABLE.
7. STRUCTURE SHALL NOT DEFLECT MORE THAN 10% FROM VERTICAL POSITION AT THE TOP OF THE POLE WHEN SUBJECT TO DEFLECTION LOAD 10 PSF/1F CALCULATED DEFLECTION EXCEEDS THIS VALUE, THE POLES SHALL BE CARBERED DURING FABRICATION TO MEET THIS REQUIREMENT AND MARKED TO INDICATE THE DIRECTION OF THE CAMBER.

TITLE D/C 345KV STEEL 3-POLE D.E. (20°) STR. 163
 FOR ACI-085 CLAY SUBSTATION (STUART-CLINTON)

SCALE	NONE	PROJECT	FILE	DPLXX.XX.DGN
DRAWN	XXXXXX (CA)	XX/XXXX	APPROVED	
CHECKED	XXXXXX (CA)	XX/XXXX	APPROVED	
ENGINEER	XXXXXX (CA)	XX/XXXX	APPROVED	

Commonwealth
 ASSOCIATES, INC.

REVISIONS

Figure 9. Transmission Line Structure Drawing



The Dayton
 Power and Light
 Company

SHEET 1 OF 1 SHEETS

APPENDIX A

Public Notification to Contiguous Land Owners/Tenants

APPENDIX A

Property Owners Affected by the Dayton Power and Light – Clay Substation Project

Case No. 19-1822-EL-BLN

Property Owners

Parcel ID	Parcel Address	Owner Name	Owner Address
05-23-000-246.00	2221 N. Gath Rd	Carraher Farms Partnership	2455 Stringtown Rd, Sardinia, OH 45171
05-23-000-244-00	N. Gath Rd	Carraher Farms Partnership	2455 Stringtown Rd, Sardinia, OH 45171
05-23-000-245.00	N. Gath Rd	Carraher Farms Partnership	2455 Stringtown Rd, Sardinia, OH 45171
05-23-000-258.00	N. Gath Rd	Winkle, Nelson	1440 Parrot Ln, Sardinia, OH 45171
05-23-000-246.02	2221 N. Gath Rd	Kiley, David A	2221 N. Gath Rd, Sardinia, OH 45171
05-23-000-246.01	2320 N. Gath Rd	Dunseith, James R	2320 N. Gath Rd, Sardinia, OH 45171
05-23-000-256.00	2320 N. Gath Rd	Dunseith, James R	2320 N. Gath Rd, Sardinia, OH 45171
05-23-000-251.00	N. Gath Rd	AMC Farms LLC	PO Box 985 Waynesville, OH 45068



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

<<DATE>>

<<LANDOWNER>>

<<ADDRESS>>

<<CITY>>, <<STATE>> <<ZIP>>

Re: **Letter of Notification**
Dayton Power and Light - Clay Substation Project
PUCO Case Number 19-1822-EL-BLN

Dear <<ADDRESSEE>>:

You are receiving this letter because public records indicate that you own or live near a proposed electrical project. The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The Dayton Power and Light Company plans to build a new 345 kV substation off North Gath Road. The attached map shows the location of the project area. Construction is expected to start in March 2020 and be completed by September 30, 2020.

In accordance with Ohio Administrative Code (OAC) Rule 4906-6-05, this Project falls within the OPSB's requirements for a Letter of Notification (LON) Application. These rules also require the applicant to provide potentially affected property owners with notice of the Project and that the LON Application is pending before the OPSB. The Project has been assigned Case Number 19-1822-EL-BLN. Therefore, this letter is being sent to you, in compliance with OAC Rule 4906-6-05, to inform you of the Project.

The LON Application contains a description of the Project, and can be viewed at the following location:

- Hillsboro Public Library, 10 Willettsville Pike, Hillsboro, Ohio 4513

A copy of the Application is also available for public inspection at the offices of the OPSB, c/o Public Utilities Commission of Ohio, Utilities Department, 12th Floor, Borden Building, 180 East Broad Street, Columbus, Ohio 43215-3793, or on the website of the OPSB: <https://www.opsb.ohio.gov/>. To view an electronic version of the application, search Case Number 19-1631-EL-BLN. In addition, DP&L maintains a website (<https://www.dpandl.com/About-DPL/Reliability/Transmission-Improvements/>), which provides the public information about the Project and how to request a copy of the LON.

In accordance with OAC Rule 4906-6-08(A)(6), please be advised that interested persons may file motions to intervene and/or file comments with the OPSB within 10 days of the date of the publication of the public notice of the filing of this Project with the OPSB, as required by OAC Rule 4906-2-12, or later if good cause is shown. Petitions to intervene and comments should be addressed to the Ohio Power Siting Board, 180 East Broad Street, Columbus, Ohio 43215-3793 and reference Case No. 19-1822-EL-BLN.

Please contact Scott Teeters at 937-331-4314 or by email at dpltransmissionmaintenancengroup@aes.com if you have any questions about the project.

The logo for DP&L is a blue oval with the letters "DP&L" in white, serif, all-caps font.

DP&L

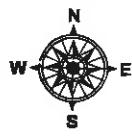
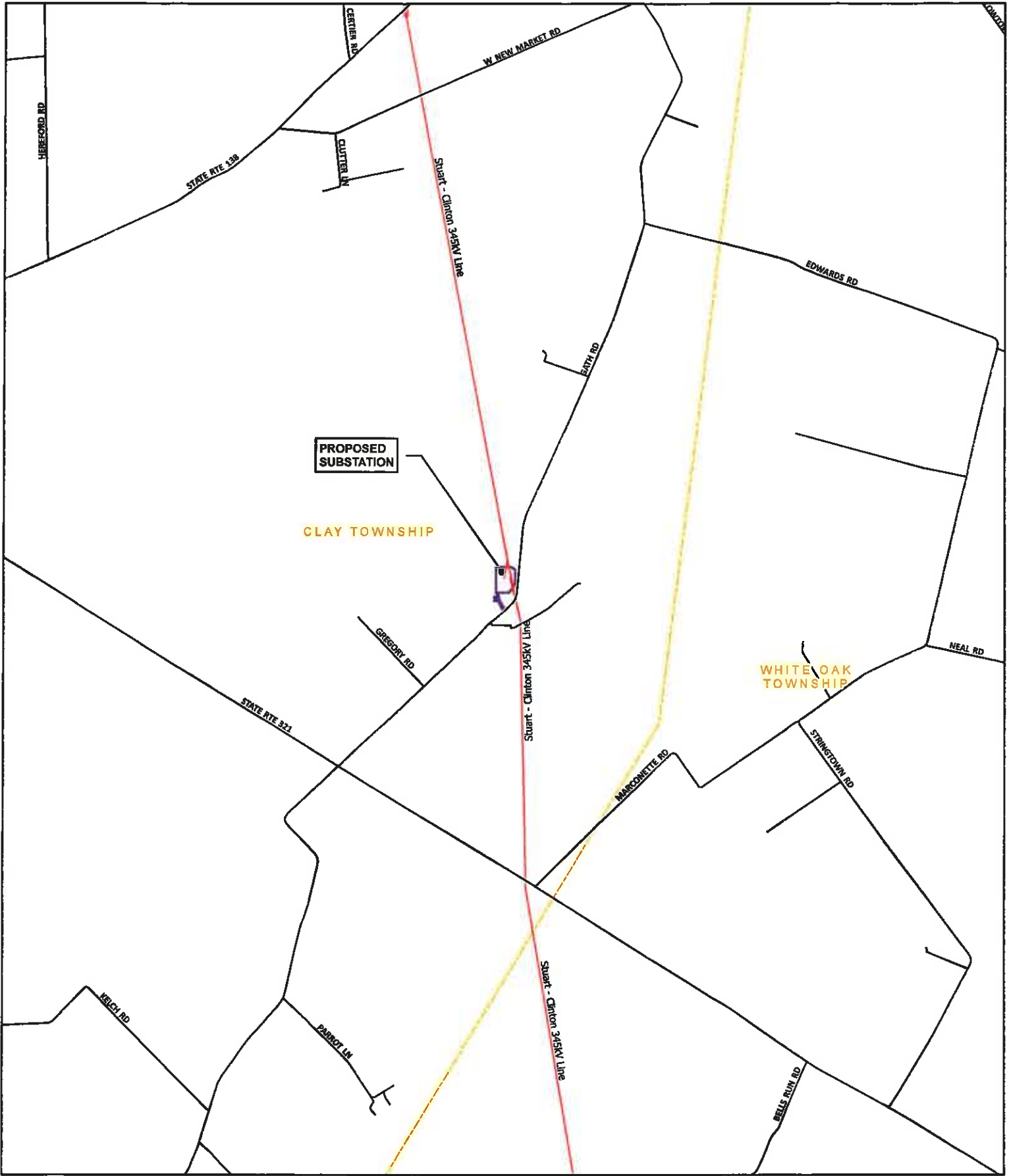
Sincerely,

A handwritten signature in black ink, appearing to read "Kathryn N. Storm".

Kathryn N. Storm

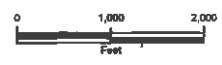
Kathryn N. Storm

Director T&D Asset Management, AES U.S. Utilities Operations



DAYTON POWER & LIGHT CLAY SUBSTATION PROJECT

- Existing Transmission Line
- Road
- Township Boundary
- Proposed Substation



APPENDIX B

List of Public Officials Served Letters to Public Officials

Appendix B
Officials Served Copy of Letter of Notification
Dayton Power and Light – Clay Substation Project
Case No. 19-1822-EL-BLN

Highland County

Mr. Chris Fauber
Highland County Engineer
138 Bowers Avenue
P.O. Box 297
Hillsboro, OH 45133

Mr. Jeff Duncan, President
Highland County Commissioners
119 Governor Foraker Place, Suite 211
Hillsboro, OH 45133

Mr. Terry Britton
Highland County Commissioners
119 Governor Foraker Place, Suite 211
Hillsboro, OH 45133

Mr. Gary Abernathy
Highland County Commissioners
119 Governor Foraker Place, Suite 211
Hillsboro, OH 45133

Highland County Planning Commission
119 Governor Foraker Place
Hillsboro, OH 45133

Pam Bushelman, District Operations
Manager
Highland County Soil and Water
Conservation District
514 Harry Sauner Road, Suite 2
Hillsboro, OH 45133

Clay Township

Mr. William Brett Glover, Trustee
Clay Township
455 Greenbush Road
Mount Orab, OH 45154

Mr. Kenneth L. Bohl, Trustee
Clay Township
1580 Gath Road
Sardinia, OH 45171

Mr. James Massey, Trustee
Clay Township
2473 State Route 134
Sardinia, OH 45171

Ms. Patricia Winkle
1440 Parrot Lane
Sardinia, OH 45171

Libraries

Hillsboro Public Library
Highland County Public Library
10 Willettsville Pike
Hillsboro, OH 45133



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Highland County Engineer
Mr. Chris Fauber
138 Bowers Avenue
P.O. Box 297
Hillsboro, OH 45133

**Re: Dayton Power and Light – Clay Substation Project
Service of Application on Local Public Officials
PUCO Case Number 19-1822-EL-BLN**

Dear Mr. Fauber,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

In accordance with Ohio Administrative Code (OAC) Rule 4906-6-05, this Project falls within the OPSB's requirements for a Letter of Notification (LON) application. In compliance with OAC Chapter 4906-6-05, we have prepared and filed the attached LON application with the OPSB for their review and approval. The application includes a project description and other pertinent information.

Copies of the application have been distributed to local government officials and local public libraries.

For additional details about the OPSB and this project, please refer to the OPSB website at <https://www.opsb.ohio.gov/>. To view an electronic version of the application, search Case Number 19-1822-EL-BLN. Please contact Scott Teeters at 937-331-4314 or by email at dpltransmissionmaintenancengroup@aes.com if you have any questions about the project.

Sincerely,

A handwritten signature in black ink, appearing to read "Kathryn N. Storm".

Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Highland County Board of Commissioners
Mr. Jeff Duncan
Mr. Terry Britton
Mr. Gary Abernathy
119 Governor Foraker Place, Suite 211
Hillsboro, OH 45133

**Re: Dayton Power and Light – Clay Substation Project
Service of Application on Local Public Officials
PUCO Case Number 19-1822-EL-BLN**

Dear Commissioners,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

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Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Highland County Planning Commission
119 Governor Foraker Place, Suite 211
Hillsboro, OH 45133

**Re: Dayton Power and Light – Clay Substation Project
Service of Application on Local Public Officials
PUCO Case Number 19-1822-EL-BLN**

Dear Commissioners,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

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Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Highland County Soil and Water Conservation District
Ms. Pam Bushelman
514 Harry Sauner Road, Suite 2
Hillsboro, OH 45133

Re: **Dayton Power and Light – Clay Substation Project**
Service of Application on Local Public Officials
PUCO Case Number 19-1822-EL-BLN

Dear Ms. Bushelman,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

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Sincerely,

Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Clay Township Board of Trustees
Mr. William Brett Glover
455 Greenbush Road
Mt. Orab, OH 45154

**Re: Dayton Power and Light – Clay Substation Project
Service of Application on Local Public Officials
PUCO Case Number 19-1822-EL-BLN**

Dear Mr. Glover,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

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Sincerely,

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Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Clay Township Board of Trustees
Mr. Kenneth L. Bohl
1580 Gath Road
Sardinia, OH 45171

Re: **Dayton Power and Light – Clay Substation Project**
Service of Application on Local Public Officials
PUCO Case Number 19-1822-EL-BLN

Dear Mr. Bohl,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

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Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Clay Township Board of Trustees
Mr. James Massey
2473 State Route 134
Sardinia, OH 45171

**Re: Dayton Power and Light – Clay Substation Project
Service of Application on Local Public Officials
PUCO Case Number 19-1822-EL-BLN**

Dear Mr. Massey,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

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Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Clay Township Board of Trustees
Ms. Patricia Winkle
1440 Parrot Lane
Sardinia, OH 45171

**Re: Dayton Power and Light – Clay Substation Project
Service of Application on Local Public Officials
PUCO Case Number 19-1822-EL-BLN**

Dear Ms. Winkle,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

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Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations



The Dayton Power and Light Company
1900 Dryden Road
Dayton, Ohio 45439

November 7, 2019

Hillsboro County District Library
Hillsboro Public Library
10 Willettsville Pike
Hillsboro, OH 45133

**Re: Dayton Power and Light Clay Substation Project
Service of Application on Local Public Libraries
PUCO Case Number 19-1822-EL-BLN**

Dear Director,

The Dayton Power and Light Company (DP&L) is in the process of obtaining approval from the Ohio Power Siting Board (OPSB) for the Clay Substation Project (Project) located in Clay Township, Highland County, Ohio. The purpose of this Project is to tap the existing 345 kV transmission line that connects the existing Stuart Substation to the existing Clinton Substation and to build a new greenfield 345 kV substation for the purpose of interconnecting a new solar generator. Construction is expected to start in March 2020 and be completed by September 30, 2020.

In accordance with Ohio Administrative Code (OAC) Rule 4906-6-05, this Project falls within the OPSB's requirements for a Letter of Notification (LON) application. In compliance with OAC Chapter 4906-6-05, we have prepared and filed the attached LON application with the OPSB for their review and approval. The application includes a project description and other pertinent information.

Per requirements of OAC Rule 4906-6-05, we are providing you an electronic copy of the LON application on compact disc and one hard copy so that you can make it available to local government officials and to the public for their review upon their request.

For additional details about the OPSB and this project, please refer to the OPSB website at <https://www.opsb.ohio.gov/>. To view an electronic version of the application, search Case Number 19-1822-EL-BLN. Please contact Scott Teeters at 937-331-4314 or by email at dpltransmissionmaintenancengroup@aes.com if you have any questions about the project.

Sincerely,

A handwritten signature in black ink, appearing to read "Kathryn N. Storm".

Kathryn N. Storm
Director T&D Asset Management, AES U.S. Utilities Operations

APPENDIX C

Cultural Resource Investigations at the Proposed Highland Solar Project

CULTURAL RESOURCE INVESTIGATIONS AT THE PROPOSED HIGHLAND SOLAR PROJECT

Highland County, Ohio

Terracon Project No. 73187213

August 2019



Prepared For:

Hecate Energy Highland LLC
621 Randolph Street, Suite 200
Chicago, Illinois 60661

Prepared By:

Terracon Consultants, Inc.
521 Clemson Rd.
Columbia, South Carolina 29229

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

**CULTURAL RESOURCE INVESTIGATIONS
AT THE PROPOSED HIGHLAND SOLAR FARM
HIGHLAND COUNTY, OHIO**

SHPO PROJECT NO. 2019-HIG-48877

DRAFT REPORT

Lead Public Agency: Ohio Power Siting Board

Prepared For:

**Hecate Energy Highland, LLC
621 Randolph Street, Suite 200
Chicago, Illinois 60661
(614) 205-3798**



**521 Clemson Road
Columbia, South Carolina
(803) 741-9000**

Project No. 73187213

Authors:

**Douglas Sain, Kelly Higgins, Beth Valenzuela,
William Green, Arianna Urban, and Ashley Gramlich**

With Contributions by:

Kyle Shalek, Keith Seramur, and Mills Dorn

A handwritten signature in black ink, appearing to read "William Green", positioned above a horizontal line.

**William Green, M.A., RPA #10387
Principal Investigator**

August 2019

MANAGEMENT SUMMARY

Terracon Consultants, Inc. (Terracon), on behalf of Hecate Energy Highland, LLC (Client), has completed cultural resource investigations of approximately 2,285 acres at the proposed Highland Solar Farm located in Highland County, Ohio, approximately one mile east of the unincorporated community of Buford (Figures 1 and 2). The investigations included a Phase I archaeological survey of the project area, a geophysical survey of an earthen berm, Phase II testing at site 33HI463, and an architectural survey of the Area of Potential Effects (APE). The purpose of these investigations was to identify and evaluate archaeological and aboveground historic resources that could be eligible for inclusion in the National Register of Historic Places (NRHP). The Area of Potential Effects (APE) is considered to be a 0.5-mile radius around the project area.

The cultural resource investigations were conducted for the Ohio Power Siting Board (OPSB) to fulfill the requirements of Ohio Administrative Code (OAC) § 4906-4-08(B). This project was conducted under contract to Hecate Energy Highland, LLC (Client), under the terms and conditions of the Consulting Services Agreement (CSA) between Hecate Energy, LLC, and Terracon dated November 21, 2014, and in accordance with a survey plan that was submitted to and approved by the Ohio State Historic Preservation Office (OHPO) on December 3, 2018 (letter from David Snyder to Ashton Holderbaum, OPSB).

Fieldwork for the archaeological survey was conducted from November 5 to December 5, 2018, April 2–23, and May 5–6, 2019. As a result of the investigations, 11 archaeological sites (33HI461–33HI471) and five isolated finds (33HI472–33HI476) were identified (Figures 1a and 2a, Table 1). These sites range in age from the Late Archaic Period (ca. 5500 B.P.) to the mid-twentieth century, with one site, 33HI469, possibly being older. Site 33HI469, a possible Archaic Period special purpose encampment, is recommended as being potentially eligible for inclusion in the NRHP. The remaining 10 archaeological sites and five isolated finds are recommended as being ineligible for inclusion in the NRHP. In addition, a portion of a low earthen berm, reported to be the head of a possible serpent mound, was detected in the project area using Lidar imagery. Despite careful examination, no artifacts were recovered in or near the reported mound. As a result of archaeological and geophysical investigations, it was determined that the earthen berm is not an archaeological feature.

A Historic Resources Survey (HRS) was conducted in October 2018, February 12–14, 2019, and again on May 3, 2019. As a result of this survey, 84 aboveground resources 50 years of age or older were identified in the proposed APE. Fourteen of the surveyed resources are recommended NRHP eligible. Two NRHP-eligible resources, Resource Nos. HIG0035913 and HIG0037113, are located within the project area. The remaining NRHP-eligible properties, HIG0034613 (Reedy School), HIG0035113, HIG0035713, HIG0036313 (Maple Grove School), HIG0038213, HIG0038313, HIG0038814, HIG0039514, HIG0039914, HIG0041414 (Roberts Cemetery),

HIG0041614, and HIG0041714 are located outside of the project area, but within the proposed APE for indirect effects (Figures 1b–1f and 2b–2f, Table 1).

Based on the results of the survey, it is Terracon’s recommendation that Resource Nos. HIG0035913 and HIG0037113 be avoided by any ground disturbing activities and that vegetative screening be placed as a buffer to avoid visual adverse effects on these properties. Furthermore, Resource Nos. HIG0034613 (Reedy School), HIG0035113, HIG0035713, HIG0036313 (Maple Grove School), HIG0038213, HIG0038313, HIG0038814, HIG0039514, HIG0039914, HIG0041414 (Roberts Cemetery), HIG0041614, and HIG0041714 could be affected by the proposed undertaking. It is recommended that vegetative screening be placed between the project and these historic properties to avoid potential adverse effects. The remainder of the project area is unlikely to contain any significant cultural resources and we recommend no additional work in these areas.

Table 1. Cultural Resources within the Area of Potential Effects.

Resource ID	Description	NRHP Eligibility	Recommendations
33HI461	Early Woodland lithic scatter	Not Eligible	No additional work
33HI462	Mid-19 th /20 th c. house site	Not Eligible	No additional work
33HI463	Mid-19 th -early 20 th c. house site; Prehistoric lithic scatter	Not Eligible	No additional work
33HI464	Late 19 th /20 th c. house site	Not Eligible	No additional work
33HI465	Mid-19 th /20 th c. house site; Prehistoric lithic scatter	Not Eligible	No additional work
33HI466	Mid-19 th /20 th c. house site; Prehistoric lithic scatter	Not Eligible	No additional work
33HI467	Late Archaic and Early Woodland lithic scatter; 19 th /20 th c. house site	Not Eligible	No additional work
33HI468	Prehistoric lithic scatter; Brick scatter	Not Eligible	No additional work
33HI469	Prehistoric special purpose encampment; Small historic brick scatter	Potentially Eligible	Avoidance or Phase II Testing
33HI470	Prehistoric lithic scatter	Not Eligible	No additional work
33HI471	Prehistoric lithic scatter; Historic artifact scatter	Not Eligible	No additional work
33HI472	Prehistoric Isolate - chert debitage	Not Eligible	No additional work
33HI473	Historic Isolate - ball clay pipe	Not Eligible	No additional work
33HI474	Prehistoric Isolate - chert debitage/utilized flake	Not Eligible	No additional work
33HI475	Prehistoric Isolate - chert debitage	Not Eligible	No additional work
33HI476	Prehistoric Isolate - chert debitage	Not Eligible	No additional work
HIG0034113	ca. 1953 Residential	Not Eligible	No additional work
HIG0034213	ca. 1961 Residential	Not Eligible	No additional work
HIG0034313	ca. 1948 Residential	Not Eligible	No additional work
HIG0034413	ca. 1909 Residential	Not Eligible	No additional work
HIG0034513	ca. 1901 Flat Barn, Shop, Silo, Shop	Not Eligible	No additional work
HIG0034613	ca. 1860s–1880s, Reedy School	Eligible	Vegetative screening
HIG0034713	ca. 20 th c. Residential	Not Eligible	No additional work
HIG0034813	ca. 1901 Residential	Not Eligible	No additional work

Cultural Resource Investigations

Highland Solar Farm ■ Highland Co, Ohio

August 2019 ■ Terracon Project No. 73187213



Table 1 continued. Cultural Resources within the Area of Potential Effects.

Resource ID	Description	NRHP Eligibility	Recommendations
HIG0034913	ca. 1900 Residential	Not Eligible	No additional work
HIG0035013	ca. 1901 Residential	Not Eligible	No additional work
HIG0035113	ca. 1920 Residential	Eligible	Vegetative screening
HIG0035213	ca. 1901 Residential	Not Eligible	No additional work
HIG0035313	ca. 1965 Residential	Not Eligible	No additional work
HIG0035413	ca. 1901 Residential	Not Eligible	No additional work
HIG0035513	ca. 1950 Residential	Not Eligible	No additional work
HIG0035713	ca. 1910s–1920s Farm Complex	Eligible	Vegetative screening
HIG0035813	ca. 1966 Residential	Not Eligible	No additional work
HIG0035913	ca. 1863–1970s Residential and agricultural	Eligible	Avoidance; vegetative screening
HIG0036013	ca. 1969 Agricultural Complex	Not Eligible	No additional work
HIG0036113	ca. 1901 Corn Crib, Flat Barn	Not Eligible	No additional work
HIG0036213	ca. 1950 Pole Barn	Not Eligible	No additional work
HIG0036313	ca. 1860s–1880s Maple Grove School	Eligible	Vegetative screening
HIG0036413	ca. 1901 Residential	Not Eligible	No additional work
HIG0036513	ca. 20 th c. Residential	Not Eligible	No additional work
HIG0036613	ca. 1901 Agricultural Complex	Not Eligible	No additional work
HIG0036713	ca. 1901 Agricultural Complex	Not Eligible	No additional work
HIG0036813	ca. 1969 Agricultural Complex	Not Eligible	No additional work
HIG0036913	ca. 20 th c. Residential/Agricultural Complex	Not Eligible	No additional work
HIG0037013	ca. 1962 Residential	Not Eligible	No additional work
HIG0037113	ca. 1860s–1880s Agricultural Complex	Eligible	Avoidance; vegetative screening
HIG0037213	ca. 1978 Residential	Not Eligible	No additional work
HIG0037313	ca. 20 th c. Residential/Agricultural Complex	Not Eligible	No additional work
HIG0037413	ca. 19 th /20 th c. Residential Complex	Not Eligible	No additional work
HIG0037513	ca. 1860–1880 Residential, Flat Barn, Lean-to	Not Eligible	No additional work
HIG0037613	ca. 1965 Residential, Flat Barn	Not Eligible	No additional work
HIG0037713	ca. 1920s–1930s Residential/Agricultural Complex	Not Eligible	No additional work
HIG0037813	ca. 1964 Residential/Agricultural Complex	Not Eligible	No additional work
HIG0037913	ca. 20 th c. Residential/Agricultural Complex	Not Eligible	No additional work
HIG0038013	ca. 20 th c. Residential/Agricultural Complex	Not Eligible	No additional work
HIG0038113	ca. 1901 Residential/Agricultural Complex	Not Eligible	No additional work
HIG0038213	ca. 1860s–1880s Residential	Eligible	Vegetative screening
HIG0038313	ca. 1851 Residential	Eligible	Vegetative screening
HIG0038413	ca. 1860/1901 Residential/Agricultural Complex	Not Eligible	No additional work
HIG0038513	ca. 1880 Residential Complex	Not Eligible	No additional work
HIG0038613	ca. 20 th c. Residential, Steel Grain Bin	Not Eligible	No additional work
HIG0038714	ca. 20 th c. Agricultural Complex	Not Eligible	No additional work
HIG0038814	ca. 1940 Residential/Agricultural Complex	Eligible	Vegetative screening
HIG0038914	ca. 1901 Flat Barn	Not Eligible	No additional work
HIG0039014	ca. 1901 Residential/Agricultural Complex	Not Eligible	No additional work
HIG0039114	ca. 1900s–1910s Residential/Agricultural Complex	Not Eligible	No additional work
HIG0039214	ca. 1901 Corn Crib, Flat Barn	Not Eligible	No additional work
HIG0039414	ca. 1880s–1890s, Residential/Agricultural Complex	Not Eligible	No additional work
HIG0039514	ca. 1850s Residential/Agricultural Complex	Eligible	Vegetative screening
HIG0039614	ca. 1901 Agricultural Complex	Not Eligible	No additional work
HIG0039714	ca. 20 th c. Residential/Agricultural Complex	Not Eligible	No additional work

Table 1 continued. Cultural Resources within the Area of Potential Effects.

Resource ID	Description	NRHP Eligibility	Recommendations
HIG0039814	ca. 1901 Residential	Not Eligible	No additional work
HIG0039914	ca. 1901/1960s Agricultural Complex	Unevaluated*	Vegetative Screening
HIG0040014	ca. 1901 Residential/Agricultural Complex	Not Eligible	No additional work
HIG0040114	ca. 1958 Residential	Not Eligible	No additional work
HIG0040214	ca. 1901 Agricultural	Not Eligible	No additional work
HIG0040314	ca. 1901 Agricultural Complex	Not Eligible	No additional work
HIG0040414	ca. 1860s–1890s, Residential/Agricultural Complex	Not Eligible	No additional work
HIG0040514	ca. 1901 Residential	Not Eligible	No additional work
HIG0040614	ca. 20 th c. Agricultural Complex	Not Eligible	No additional work
HIG0040714	ca. 1840s–1860s, Residential/Agricultural Complex	Not Eligible	No additional work
HIG0040814	ca. 1901 Residential	Not Eligible	No additional work
HIG0040914	ca. 1901 Agricultural	Not Eligible	No additional work
HIG0041014	ca. 1901 Flat Barn	Not Eligible	No additional work
HIG0041114	ca. 1901/1940 Residential Complex	Not Eligible	No additional work
HIG0041214	ca. 1890s Residential	Not Eligible	No additional work
HIG0041314	ca. 1890s–1910s Residential/Agricultural Complex	Not Eligible	No additional work
HIG0041414	ca. 1830 Roberts Cemetery	Eligible	Vegetative screening
HIG0041514	ca. 20 th c. Residential/Agricultural Complex	Not Eligible	No additional work
HIG0041614	ca. 1860s–80s Residential/Agricultural Complex	Eligible	Vegetative screening
HIG0041714	ca. 1901 Flat Barn	Not Eligible	No additional work
HIG0041814	ca. 1921 Residential	Not Eligible	No additional work
HIG0041914	ca. 1901 Flat Barn, Lean-to	Not Eligible	No additional work
HIG0042014	ca. 1901 Residential, Lean-to, Flat barn	Not Eligible	No additional work
HIG0042114	ca. 1901 Flat barn	Not Eligible	No additional work
HIG0042214	ca. 1840s–1860s Residential, Sheds	Not Eligible	No additional work
HIG0042314	ca. 1880/1974 Residential	Not Eligible	No additional work
HIG0042414	ca. 1901 Residential	Not Eligible	No additional work
HIG0042514	ca. 1960 Residential, Pole Barn	Not Eligible	No additional work
HIG0042614	ca. 1901 Residential/Agricultural Complex	Not Eligible	No additional work

**Due to the distance from the public right-of-way, review of building materials, form, and overall physical integrity was not possible. Therefore, the property is considered unevaluated.*

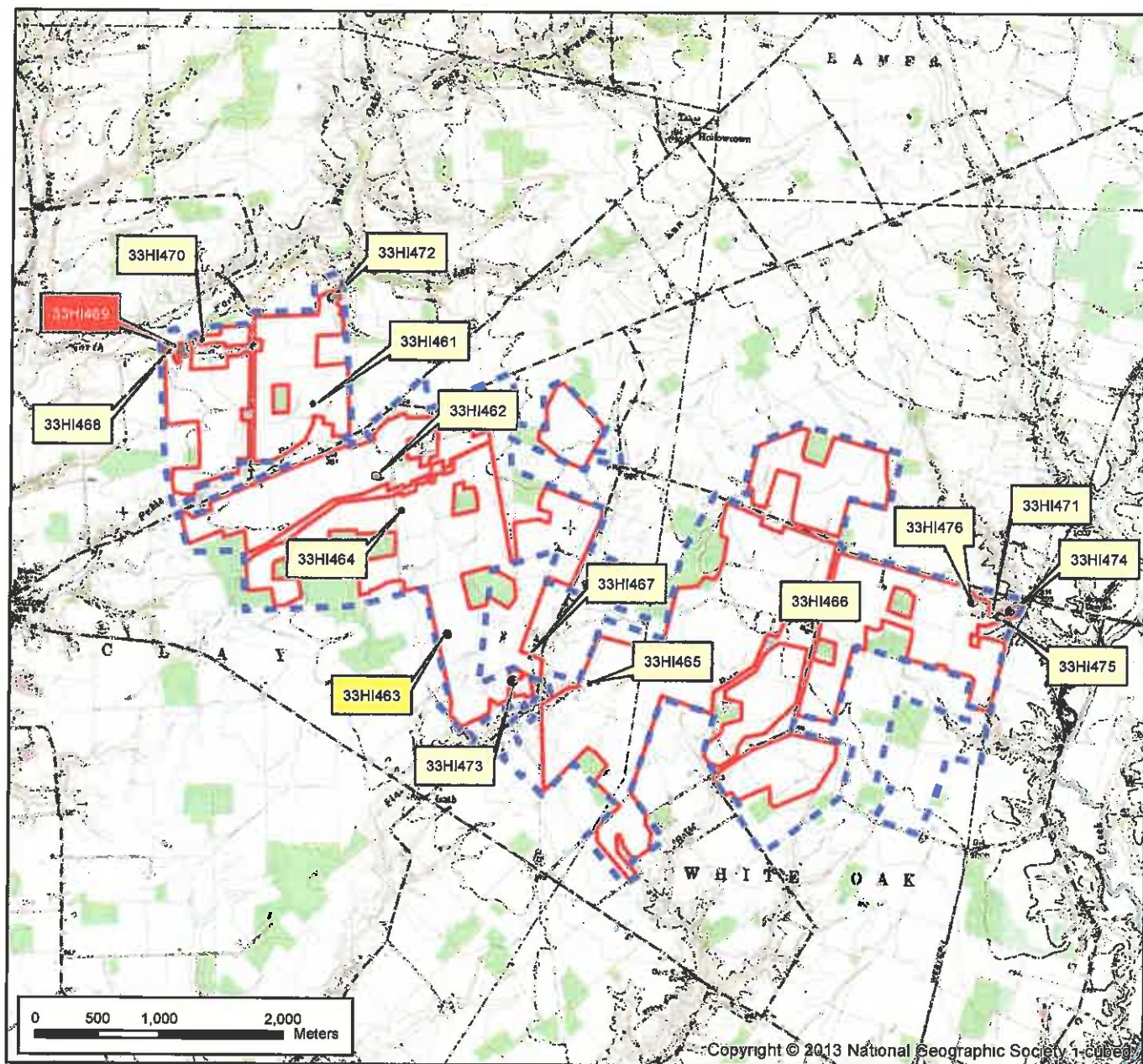
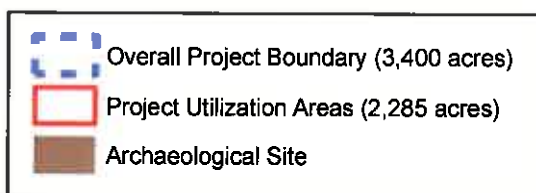


Figure 1a. Archaeological sites in the project area. Site labeled in red is recommended potentially eligible for the NRHP. Site in bright yellow was subject to Phase II testing. Base Maps: Sardinia (1979) and Sugar Tree Ridge (1974) USGS 7.5' topographic maps.



Project No.	73187213
Date:	August 2019
Drawn By:	BGG
Reviewed By:	DAS

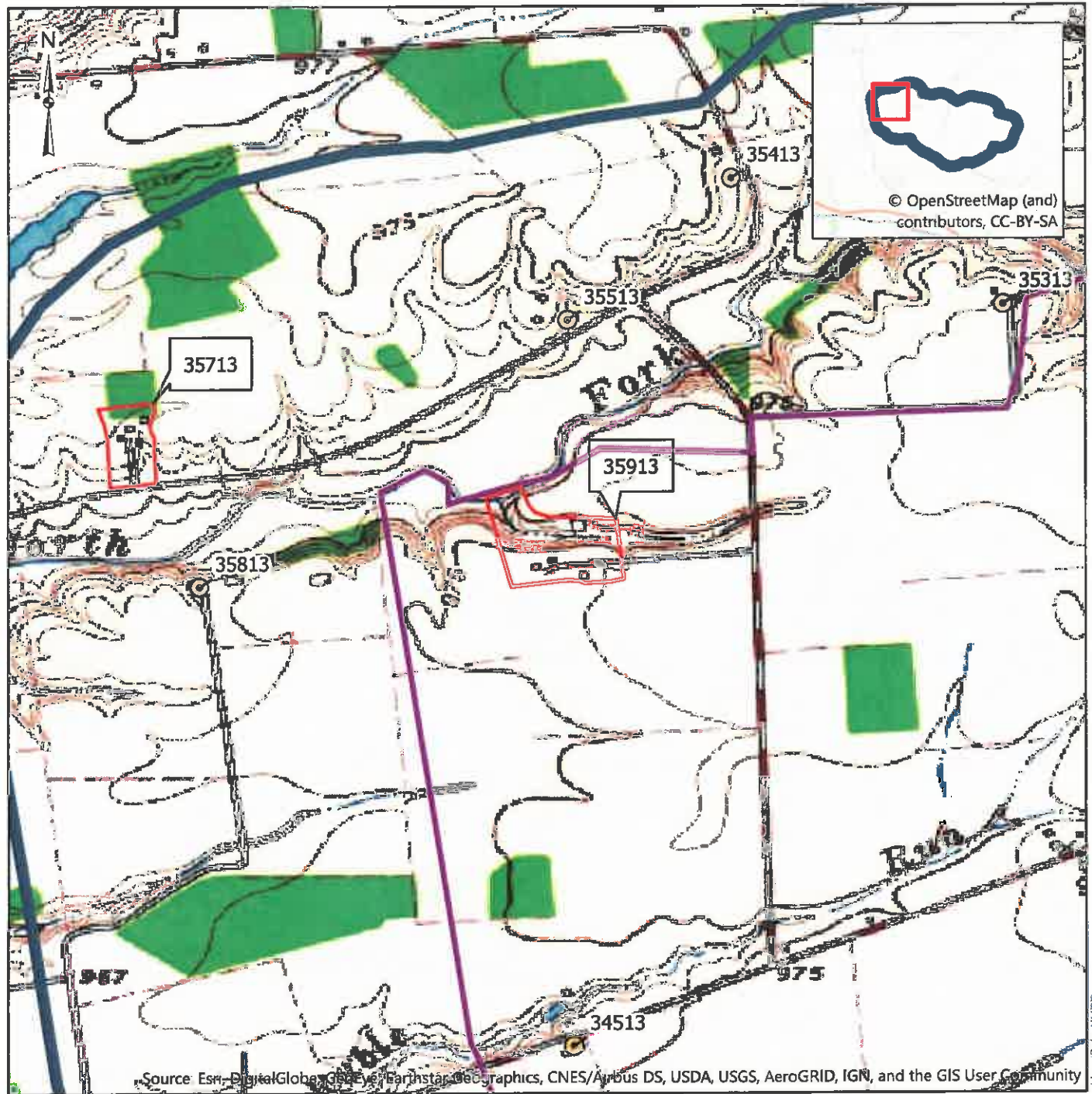
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 521 Clemson Rd. Columbia, SC
 PH. (803) 741-9000 terracon.com

ARCHAEOLOGICAL SURVEY

HIGHLAND SOLAR FARM
 HIGHLAND CO., OHIO

Figure

1a



Legend

- NHRP Ineligible Sites ●
- NRHP Eligible Site Parcel Boundaries
- APE
- Overall Project Boundary (3,400 acres)



DATA SOURCES:
 ESRI WMS - World Aerial Imagery, OpenStreetMap,
 Sardinia 1961 7.5 minute quadrangle, Sugar Tree Ridge
 1961 7.5 minute quadrangle

Project No.:	49187946
Date:	Jul 2019
Drawn By:	RC
Reviewed By:	BV

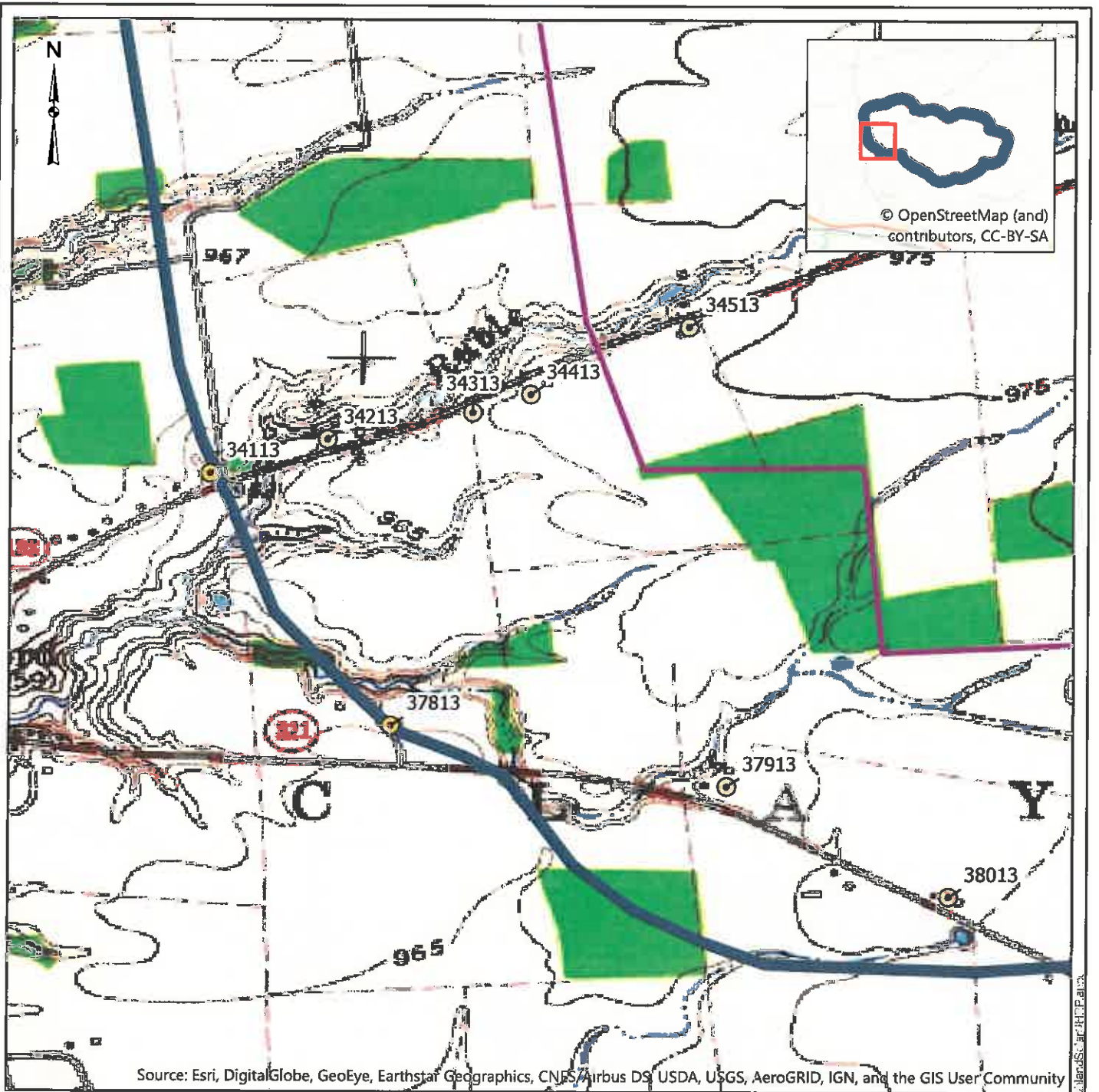
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Historic Resources Map





Highland Solar Farm
 Phase I Cultural Resources Project
 Hecate Energy Highland LLC

Figure

1 b



Legend

- NHRP Ineligible Sites 
- NHRP Eligible Site Parcel Boundaries 
- APE 
- Overall Project Boundary (3,400 acres) 

0 250 500 1,000 Meters

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap,
Sardinia 1961 7.5 minute quadrangle, Sugar Tree Ridge
1961 7.5 minute quadrangle

Project No.:	49187946
Date:	Jul 2019
Drawn By:	RC
Reviewed By:	BV

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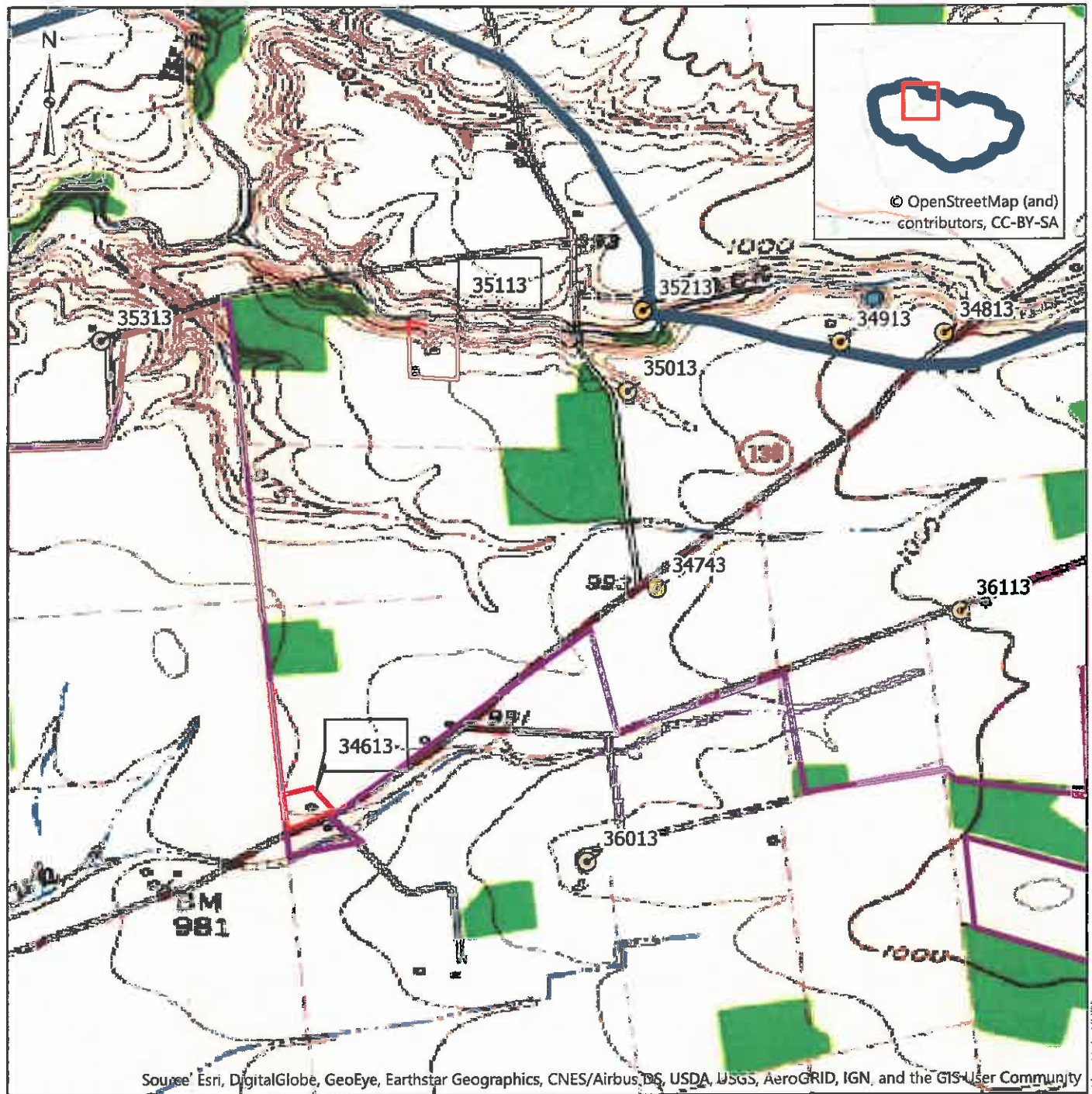
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Historic Resources Map

Highland Solar Farm
Phase I Cultural Resources Project
Hecate Energy Highland LLC

Figure

1c



Legend

- NHRP Ineligible Sites
- NRHP Eligible Site Parcel Boundaries
- APE
- Overall Project Boundary (3,400 acres)

0 250 500 1,000 Meters

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap,
Sardinia 1961 7.5 minute quadrangle, Sugar Tree Ridge
1961 7.5 minute quadrangle

Project No.:
49187946
Date:
Jul 2019
Drawn By:
RC
Reviewed By:
BV

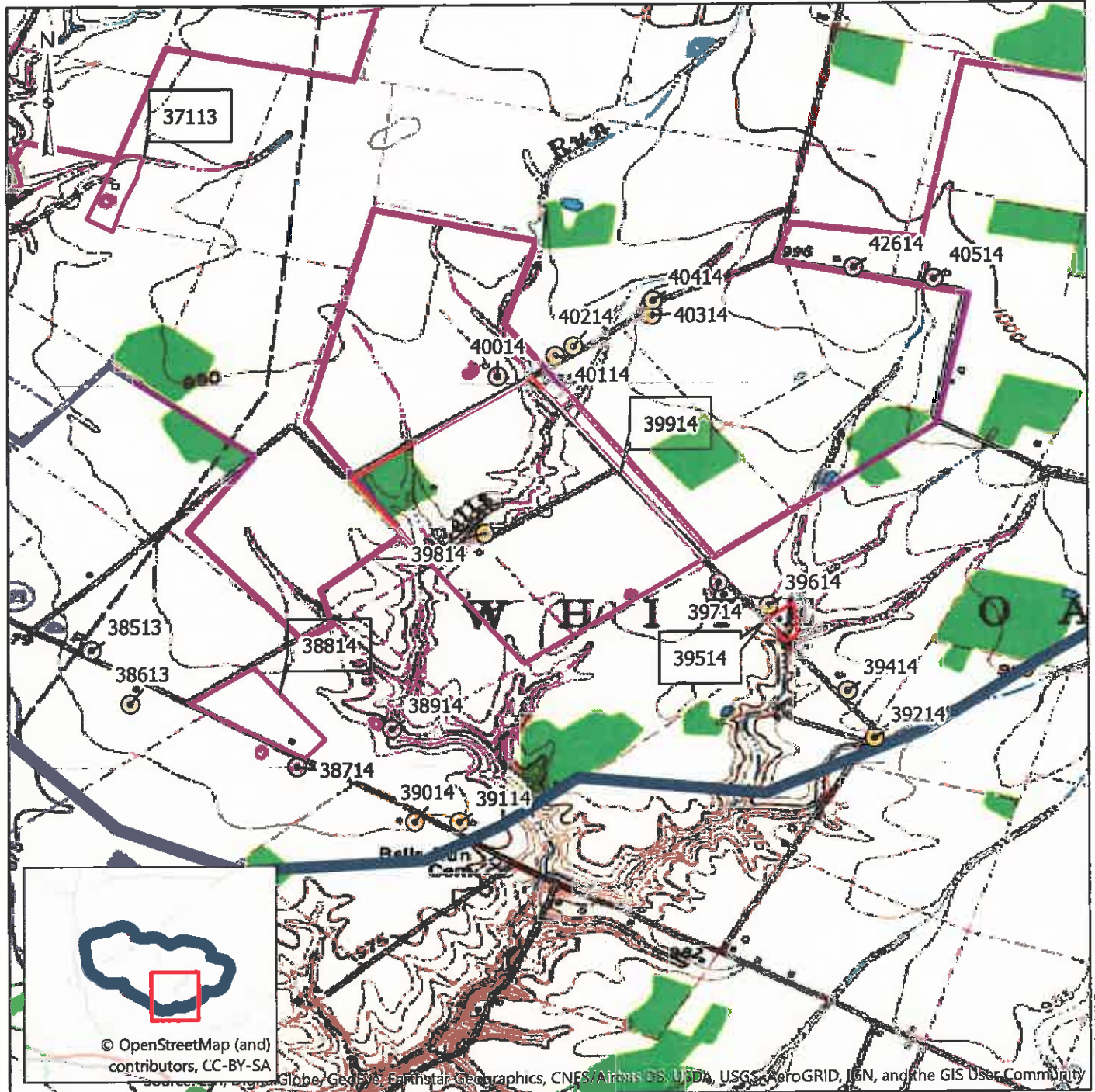
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Historic Resources Map





Highland Solar Farm
Phase I Cultural Resources Project
Hecate Energy Highland LLC

Figure

1d



Legend

- NHRP Ineligible Sites 
- NRHP Eligible Site Parcel Boundaries 
- APE 
- Overall Project Boundary (3,400 acres) 

0 250 500 1,000 Meters

DATA SOURCES:
 ESRI WMS - World Aerial Imagery, OpenStreetMap,
 Sardinia 1961 7.5 minute quadrangle, Sugar Tree Ridge
 1961 7.5 minute quadrangle

Project No.:
 49187946
 Date:
 Jul 2019
 Drawn By:
 RC
 Reviewed By:
 BV

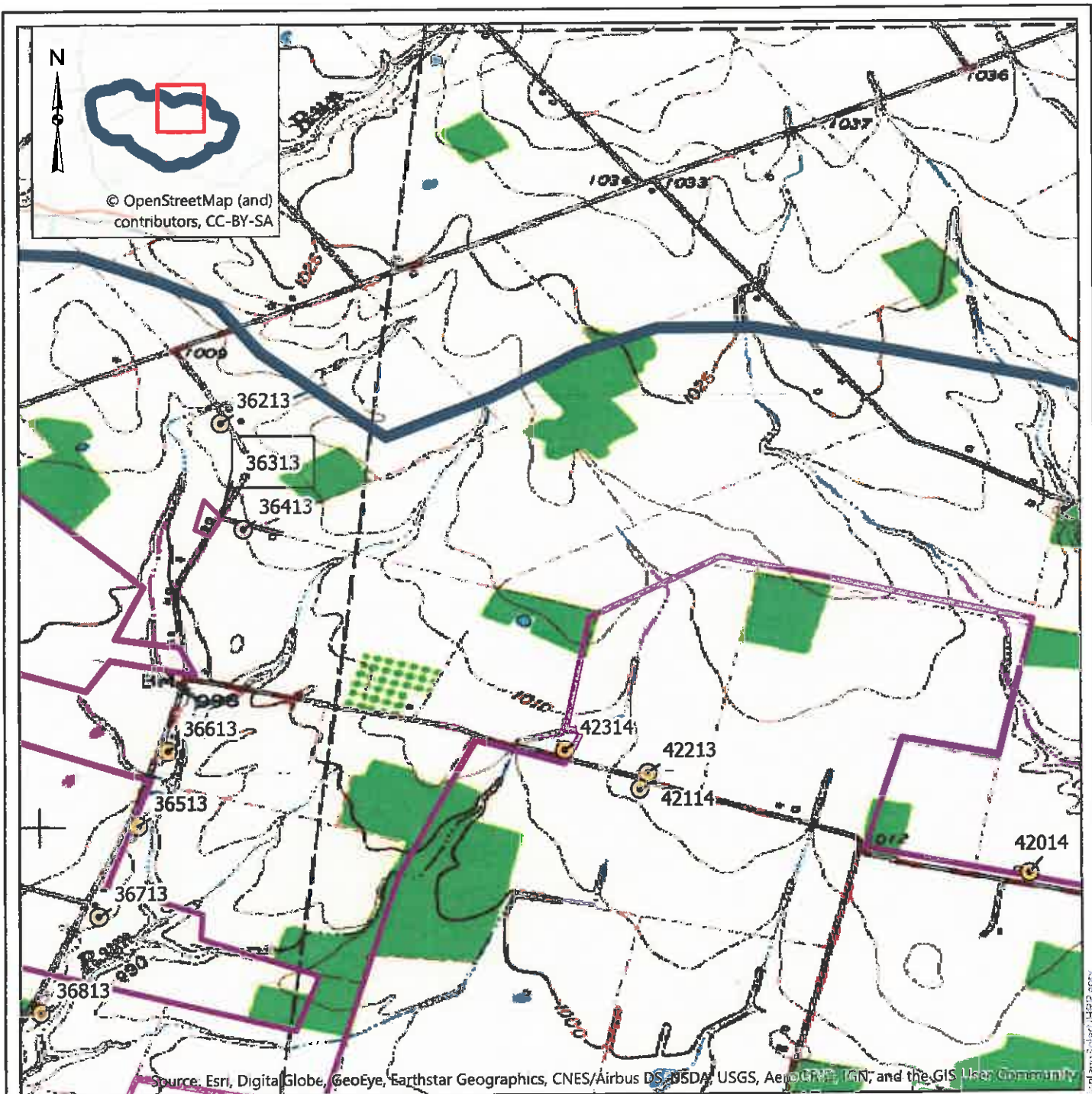
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Historic Resources Map

Highland Solar Farm
 Phase I Cultural Resources Project
 Hecate Energy Highland LLC

Figure

1f



Legend

NHRP Ineligible Sites



NRHP Eligible Site Parcel Boundaries



APE



Overall Project Boundary (3,400 acres)



0 250 500 1,000 Meters

DATA SOURCES:

ESRI WMS - World Aerial Imagery, OpenStreetMap, Sardinia 1961 7.5 minute quadrangle, Sugar Tree Ridge 1961 7.5 minute quadrangle

Project No.:

49187946

Date:

Jul 2019

Drawn By:

RC

Reviewed By:

BV

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Historic Resources Map

Highland Solar Farm
Phase I Cultural Resources Project
Hecate Energy Highland LLC

Figure

1h

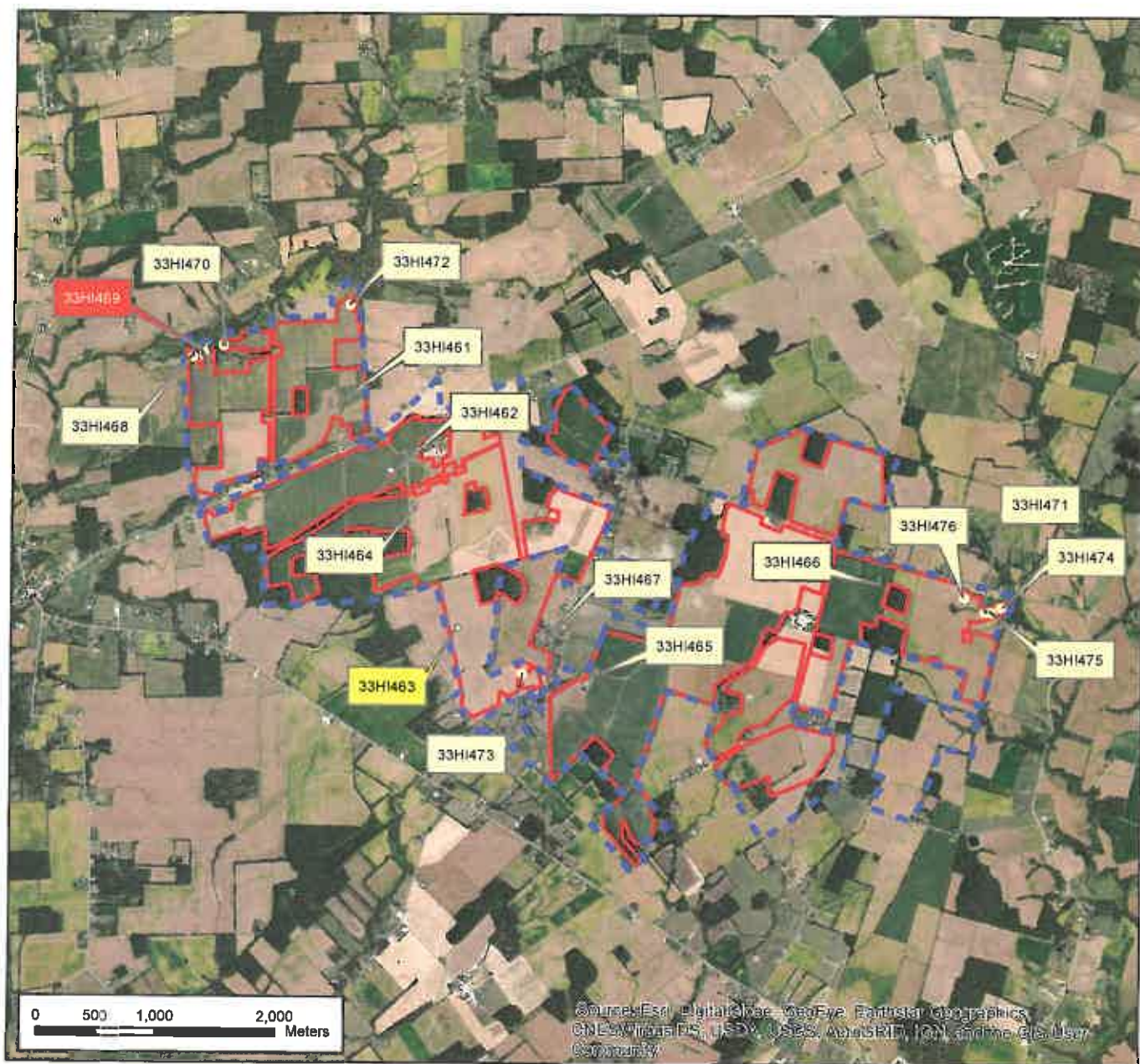
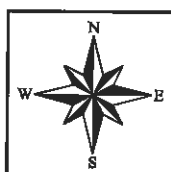
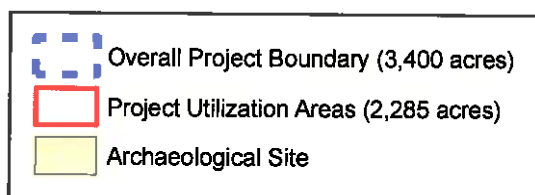


Figure 2a. Aerial imagery showing archaeological sites in the project area. Site labeled in red is potentially eligible for the NRHP. Site in bright yellow was subject to Phase II testing. Base Map: ESRI World Imagery.



Project No.	73187213
Date:	August 2019
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Reviewed By:	DAS

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AERIAL IMAGERY
HIGHLAND SOLAR FARM HIGHLAND CO., OHIO

Figure
2a



Legend

- NHRP Ineligible Sites
- NRHP Eligible Site Parcel Boundaries
- APE
- Overall Project Boundary (3,400 acres)

0 250 500 1,000 Meters

DATA SOURCES:
 ESRI WMS - World Aerial Imagery, OpenStreetMap,
 Sardinia 1961 7.5 minute quadrangle, Sugar Tree Ridge
 1961 7.5 minute quadrangle

Project No.:
49187946

Date:
Jul 2019

Drawn By:
RC

Reviewed By:
BV

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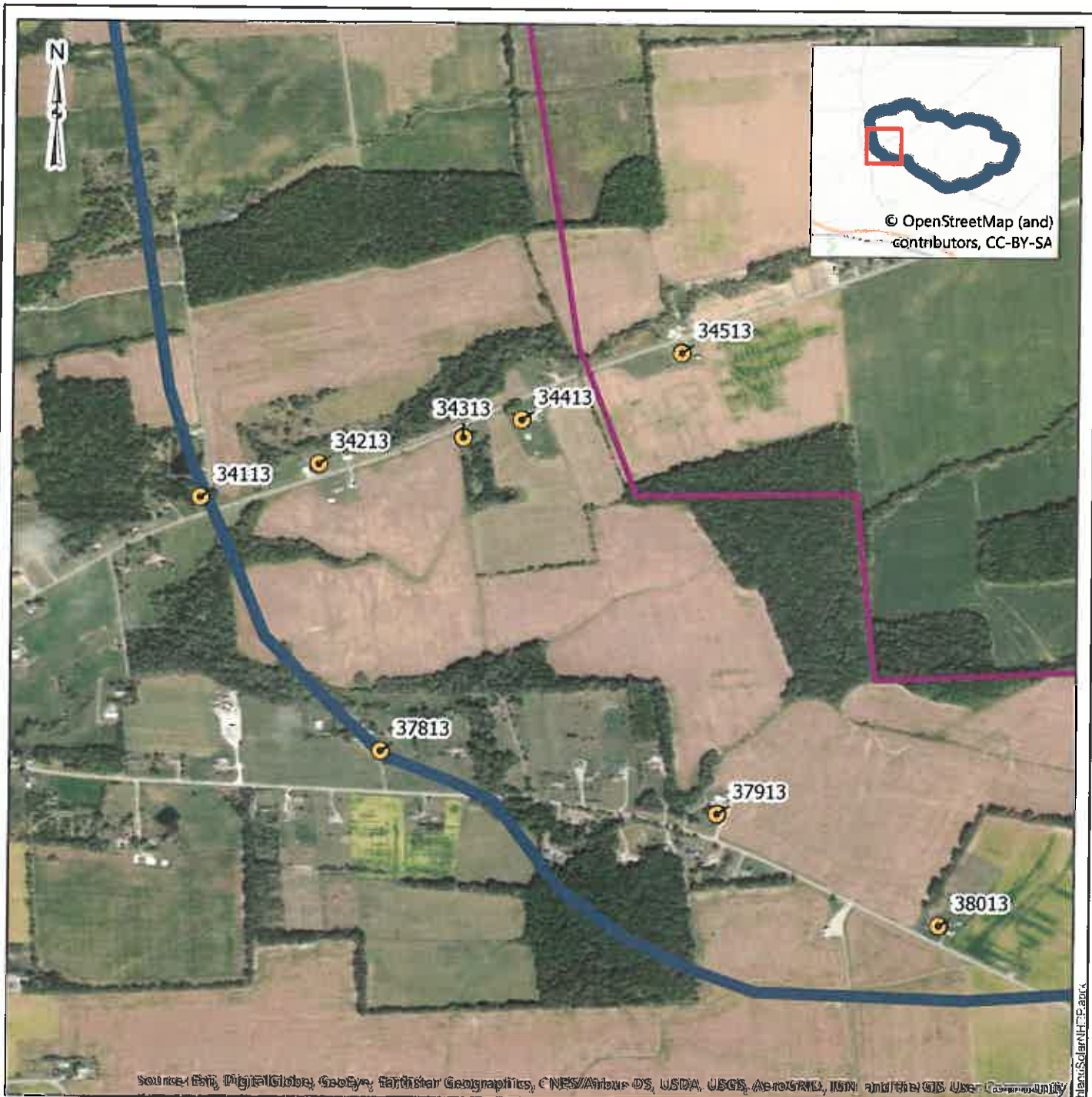
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Historic Resources Map

Highland Solar Farm
 Phase I Cultural Resources Project
 Hecate Energy Highland LLC

Figure

2b



Sources: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- NHRP Ineligible Sites
- NRHP Eligible Site Parcel Boundaries
- APE
- Overall Project Boundary (3,400 acres)

0 250 500 1,000 Meters

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap,
Sardinia 1981 7.5 minute quadrangle, Sugar Tree Ridge
1981 7.5 minute quadrangle

Project No.:	49187946
Date:	Jul 2019
Drawn By:	RC
Reviewed By:	BV

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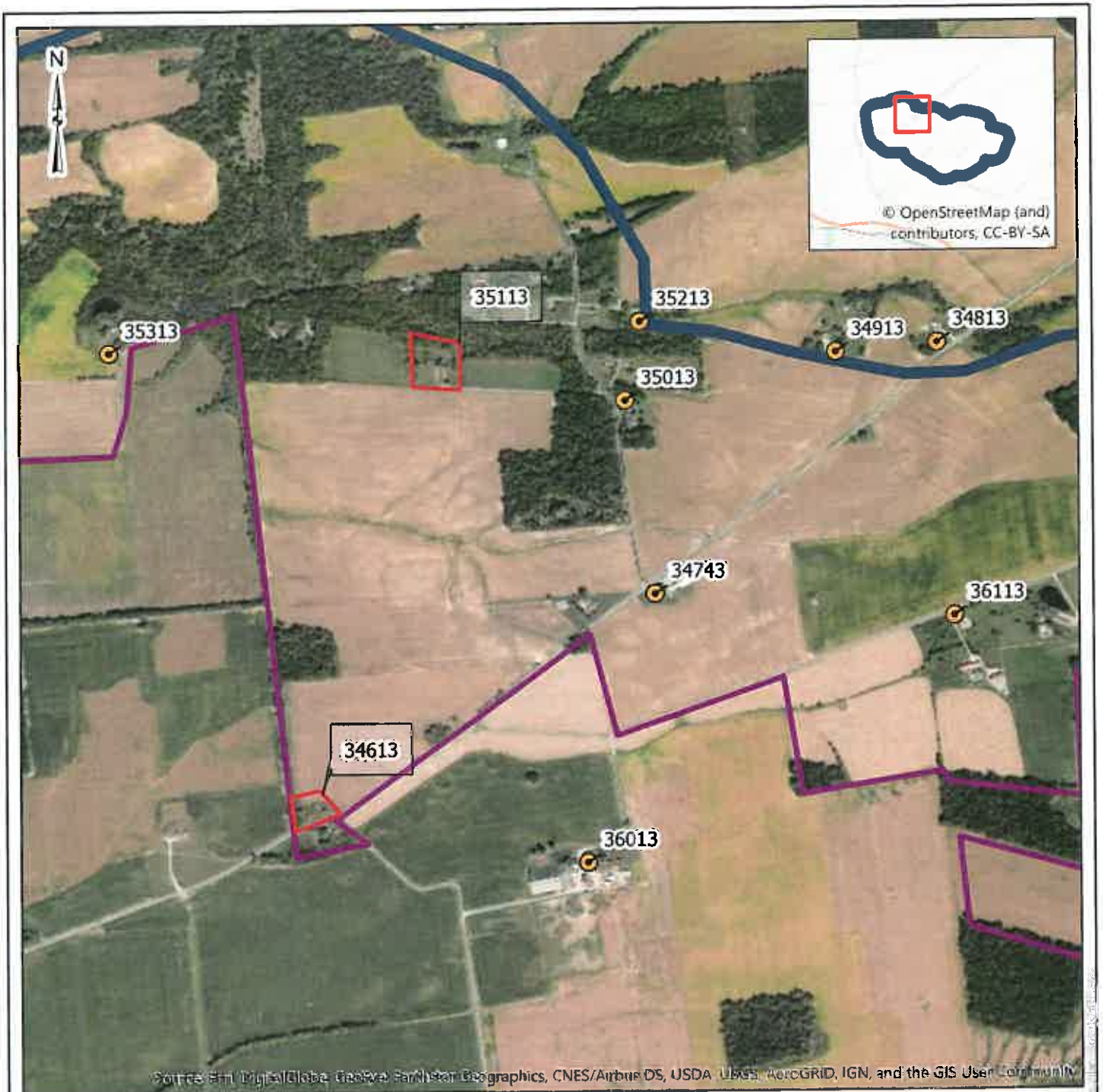
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Historic Resources Map

Highland Solar Farm
Phase I Cultural Resources Project
Hecate Energy Highland LLC

Figure

2 c



Legend

- NHRP Ineligible Sites
- NRHP Eligible Site Parcel Boundaries
- APE
- Overall Project Boundary (3,400 acres)

0 250 500 1,000 Meters

DATA SOURCES:
 ESRI WMS - World Aerial Imagery, OpenStreetMap,
 Sardinia 1981 7.5 minute quadrangle, Sugar Tree Ridge
 1961 7.5 minute quadrangle

Project No.:	49187946
Date:	Jul 2019
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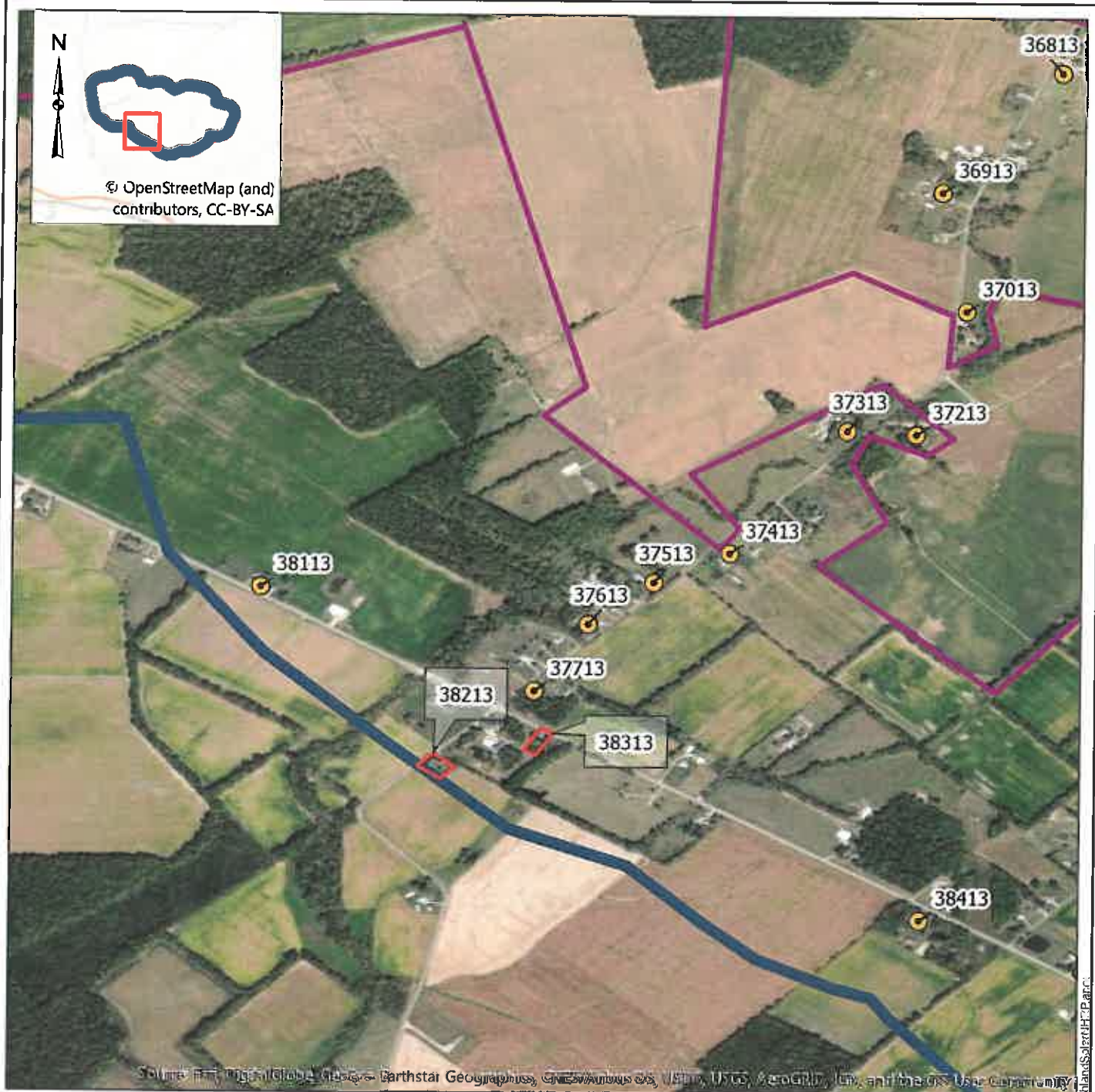
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Historic Resources Map

Highland Solar Farm
 Phase I Cultural Resources Project
 Hecate Energy Highland LLC

Figure

2d



Legend

- NHRP Ineligible Sites
- NHRP Eligible Site Parcel Boundaries
- APE
- Overall Project Boundary (3,400 acres)

0 250 500 1,000 Meters

DATA SOURCES:
 ESRI WMS - World Aerial Imagery, OpenStreetMap,
 Sardinia 1981 7.5 minute quadrangle, Sugar Tree Ridge
 1981 7.5 minute quadrangle

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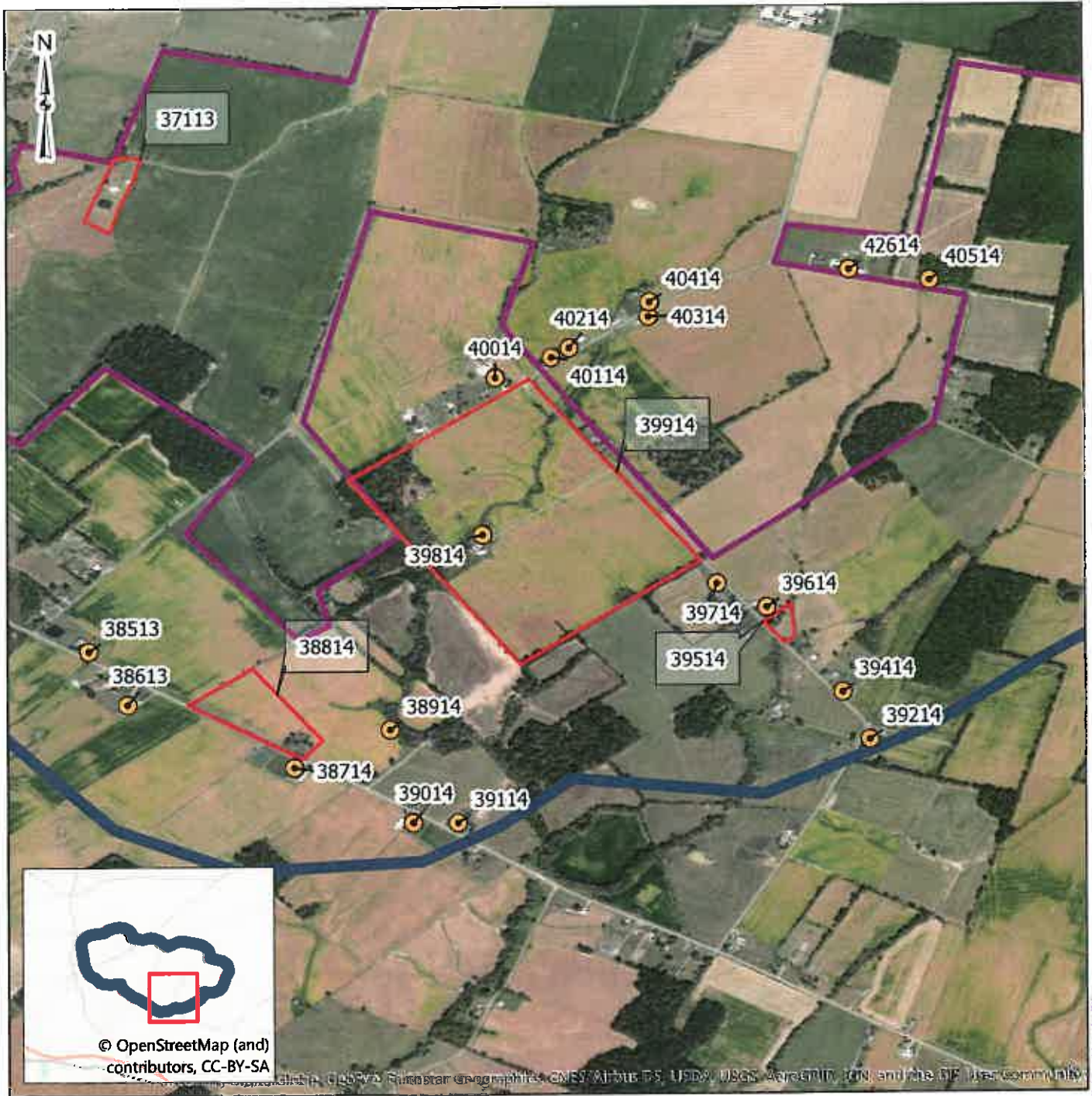
Historic Resources Map

Highland Solar Farm
 Phase I Cultural Resources Project
 Hecate Energy Highland LLC

Figure

2e

C:\Users\johnd\OneDrive\Documents\Projects\HighlandSolar\Map\HighlandSolarHCPMap.mxd



Legend

NHRP Ineligible Sites



NRHP Eligible Site Parcel Boundaries



Indirect APE



Overall Project Boundary (3,400 acres)



Meters
0 250 500 1,000

DATA SOURCES:

ESRI WMS - World Aerial Imagery, OpenStreetMap, Sardinia 1961 7.5 minute quadrangle, Sugar Tree Ridge 1961 7.5 minute quadrangle

Project No.:
49187946
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Jul 2019
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Historic Resources Map





Highland Solar Farm
Phase I Cultural Resources Project
Hecate Energy Highland LLC

Figure

2f



Legend

- NHRP Ineligible Sites 
- NRHP Eligible Site Parcel Boundaries 
- APE 
- Overall Project Boundary (3,400 acres) 

0 250 500 1,000 Meters

DATA SOURCES:
ESRI WMS - World Aerial Imagery, OpenStreetMap,
Sardinia 1961 7.5 minute quadrangle, Sugar Tree Ridge
1961 7.5 minute quadrangle

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BV

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Historic Resources Map

Highland Solar Farm
Phase I Cultural Resources Project
Hecate Energy Highland LLC

Figure

2g



Legend

NHRP Ineligible Sites



NHRP Eligible Site Parcel Boundaries



APE



Overall Project Boundary (3,400 acres)



0 250 500 1,000 Meters

DATA SOURCES:

ESRI WMS - World Aerial Imagery, OpenStreetMap, Sardinia 1981 7.5 minute quadrangle, Sugar Tree Ridge 1961 7.5 minute quadrangle

Project No.:	49187946
Date:	Jul 2019
Drawn By:	RC
Reviewed By:	BV

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Figure

2h

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1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon), on behalf of Hecate Energy Highland, LLC (Hecate), has completed a Phase I Cultural Resources Survey (CRS) of approximately 2,285 acres at the proposed Highland Solar Farm located in Highland County, Ohio, approximately one mile east of the unincorporated community of Buford (Figures 1 and 2). The purpose of the survey was to identify and evaluate archaeological and aboveground historic resources that could be eligible for inclusion in the National Register of Historic Places (NRHP). The Area of Potential Effects (APE) for the project is considered to be a 0.5-mile radius around the project area. In addition, Phase II testing was conducted at archaeological site 33HI463.

Work for this project was conducted for the Ohio Power Siting Board (OPSB) to fulfill the requirements of Ohio Administrative Code (OAC) § 4906-4-08(B). This project was conducted under contract to Hecate Energy Highland, LLC (Client) under the terms and conditions of the Consulting Services Agreement (CSA) between Hecate Energy, LLC, and Terracon dated November 21, 2014. The Archaeological Survey was conducted in accordance with a survey plan that was submitted to and approved by the Ohio State Historic Preservation Office (OHPO) on December 3, 2018 (letter from David Snyder to Ashton Holderbaum, OPSB).

The project is a proposed 3,400-acre solar farm, located in Highland County, approximately one mile east of the unincorporated community of Buford and approximately 7.5 miles northeast of the Village of Mount Orab. Of the 3,400-acre project area, approximately 2,285 acres will be utilized for the placement of solar panels and appurtenant facilities; it was this area that was surveyed for archaeological resources.

The project area is irregular in shape and numerous roads cross and bound the property, including Hereford Road, State Road 138, Gath Road, Edwards Road, Stringtown Road, Neal Road, and Marconette Road. The project area is bounded by private property in all directions. Based on the nature of the undertaking, topography, as well as existing vegetation and land use, the Area of Potential Effects for direct effects is considered to be the 2,285 acres that may be impacted by ground disturbing activities. For indirect effects, the APE is considered to be a 0.5-mile radius around the 3,400-acre project area.

Fieldwork for the Phase I archaeological survey was conducted from November 5 to December 5, 2018, and from April 2–23, and May 5–6, 2019, by Principal Investigator William Green, M.A., RPA; Archaeologists Douglas Sain, Ph.D., RPA, and Kelly Higgins, M.A.; Crew Chiefs Samantha Hunt and Matt Kinsey; and Field Technicians Katie Guttman, Brandon Jewett, Olivia Johnson, Aileen Kelly, Danielle Linder, Tim Mayer, Crystal Reedy, and Paige Reimers. The historic resources survey was conducted by Sam Carter, M.H.P. in October 2018 and February 12–14, 2019, and by Jon Brown, M.H.P. on May 3, 2019. A geophysical survey of an earthen berm was conducted on May 1–2, 2019, by Geologist Kyle Shalek, Ph.D., Staff Geophysicist Jared Topie,

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and Technician Chloe Bugni. Phase II testing of site 33HI463 was conducted from August 14–18, 2019, by William Green and Kelly Higgins, while the geophysical survey of 33HI463 was conducted from August 13–15 by Keith Seramur, Ph.D., Joey Anderson, and Emma Myrick of Seramur and Associates. The report was prepared by Douglas Sain, Kelly Higgins, Beth Valenzuela, M.A., William Green, Arianna Urban, M.S., and Ashley Gramlich, M.H.P., with contributions by Kyle Shalek, Keith Seramur, and Mills Dorn, M.H.P. Artifact analysis was conducted by Samantha Hunt with assistance from William Green.

This report has been prepared in compliance with the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.); the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.); procedures for the Protection of Historic Properties (36 CFR Part 800); and 36 CFR Parts 60 through 79, as appropriate. The investigation and report meet the qualifications outlined in the Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation (Federal Register 48:44716–44742), and the Ohio Historic Preservation Office's (OHPO) *Archaeology Guidelines* (1994). The Principal Investigator for the project meets the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) and is a Registered Professional Archaeologist (RPA).

2.0 ENVIRONMENTAL CONTEXT

2.1 PHYSICAL LOCATION AND SETTING

The proposed Highland Solar Farm is located in Highland County, Ohio, approximately one mile east of the unincorporated community of Buford. Highland County is located in southwest Ohio, approximately 20 miles north of the Ohio River, which serves as the Ohio/Kentucky border. Highland County covers an area of approximately 558 square miles and is bordered by Fayette County to the north, Ross County to the northeast, Pike County to the east, Adams County to the southeast, and Brown and Clinton counties to the southwest. The area surrounding the project tract is rural, and primarily consists of farmland and single-family residential properties.

2.2 GEOLOGY AND TOPOGRAPHY

The project area is located within the Illinoian Till Plains portion of the Till Plains physiographic region of western Ohio. This fertile region, covering over one third of Ohio, is characterized by gently rolling moraines composed of glacial deposits of moderate (100–200 feet) to moderately low (25–60 feet) relief. The Illinoian Till Plains is composed of narrow ridgetops with steep slopes and numerous valleys that alternate between broad floodplains and bedrock gorges. Local relief ranges from a few feet to tens of feet on ridgetops with stream valleys one to several hundred feet below adjoining uplands (Antilla and Tobin 1978). Topography in the project area is primarily flat, with moderate slopes around several of the dissected streams and small drainages across the tract. Elevations range from approximately 970 feet above mean sea level (AMSL) in the northwestern portion of the project area near the North Fork of White Oak Creek to 1,015 ft AMSL in the northeastern portion of the project tract (Figure 1).

2.3 HYDROLOGY

The project area lies within the White Oak Creek portion of the Ohio River watershed. The Ohio River is formed by the confluence of the Allegheny and Monongahela Rivers in Pittsburgh, Pennsylvania, and flows 981 miles through or along the border of six states. The White Oak Creek watershed covers 150,621 acres in Brown and Highland counties, Ohio and has 89 miles of tributaries. White Oak Creek originates immediately southwest of the intersection of West New Market Road and U.S. Highway 62 in New Market, Ohio and flows for approximately 49 miles before emptying into the Ohio River at Higginsport, Ohio. The closest water sources to the project area include North Fork White Oak Creek, located along the northwestern boundary of the project tract, and Ruble Run and Flat Run, both tributaries of North Fork that run through the project area. North Fork and Ruble Run join in Buford and continue south for approximately seven miles before joining White Oak Creek.

2.4 SOILS

Soils in the project area are composed of silty, clayey, or loamy alluvium and residuum derived from loess and till. Soil types include well-drained Hickory silty loam and Hickory clay loam; moderately well-drained Eel silty loam, Jonesboro-Rossmoyne silty loams, Rossmoyne silty loam, and Rossmoyne silty clay loam; somewhat poorly drained Algiers silty loam, Atlas silty loam, Shoals silty loam, Westboro-Schaffer silty loams; poorly drained Clermont silty loam; and very poorly drained Sloan silty loam (Table 2, Figure 3). The vast majority of the soils within the project area (97%) are somewhat poorly to very poorly drained, and 1.7 percent of the moderately well to well-drained soils are eroded, severely eroded, or occasionally flooded.

Table 2. Soils in the project area.

Series	Type	Slope	Drainage Class	Notes
Algiers	Silty loam		Somewhat poorly drained	
Atlas	Silty loam	2-6%	Somewhat poorly drained	
Atlas	Silty loam	2-6%	Somewhat poorly drained	Moderately eroded
Atlas	Silty loam	6-12%	Somewhat poorly drained	Moderately eroded
Clermont	Silty loam	0-1%	Poorly drained	
Eel	Silty loam	0-2%	Moderately Well Drained	Occasionally flooded
Hickory	Silty loam	6-12%	Well Drained	Moderately eroded
Hickory	Silty loam	12-18%	Well Drained	Moderately eroded
Hickory	Clay loam	6-12%	Well Drained	Severely eroded
Hickory	Clay loam	12-18%	Well Drained	Severely eroded
Jonesboro/Rossmoyne	Silty loams	2-6%	Moderately Well Drained	Eroded
Rossmoyne	Silty loam	2-6%	Moderately Well Drained	
Rossmoyne	Silty loam	6-12%	Moderately Well Drained	Eroded
Rossmoyne	Silty clay loam	6-12%	Moderately Well Drained	Severely eroded
Shoals	Silty loam	0-2 %	Somewhat poorly drained	Frequently flooded
Sloan	Silty loam		Very poorly drained	
Westboro-Schaffer	Silty loams	0-2%	Somewhat poorly drained	

2.5 CLIMATE

The climate in Highland County is classified as humid-continental with warm to hot summers and cold winters. The average temperature in winter is approximately 30° F with a daily low temperature of 22° F. The average temperature in summer is 72° F, with the average high temperature being 82° F. The lowest temperature recorded was -23° F in January 1985, while the highest temperature recorded was 103° F in August 1940. Precipitation in Ohio varies greatly across the state, with heavier amounts in the southeast and drier conditions the northwest. The average annual precipitation in Highland County is among the highest in the state at 44 inches of rain and 18 inches of snow per year. The growing season coincides with higher rainfall, lasting from April to September on average.

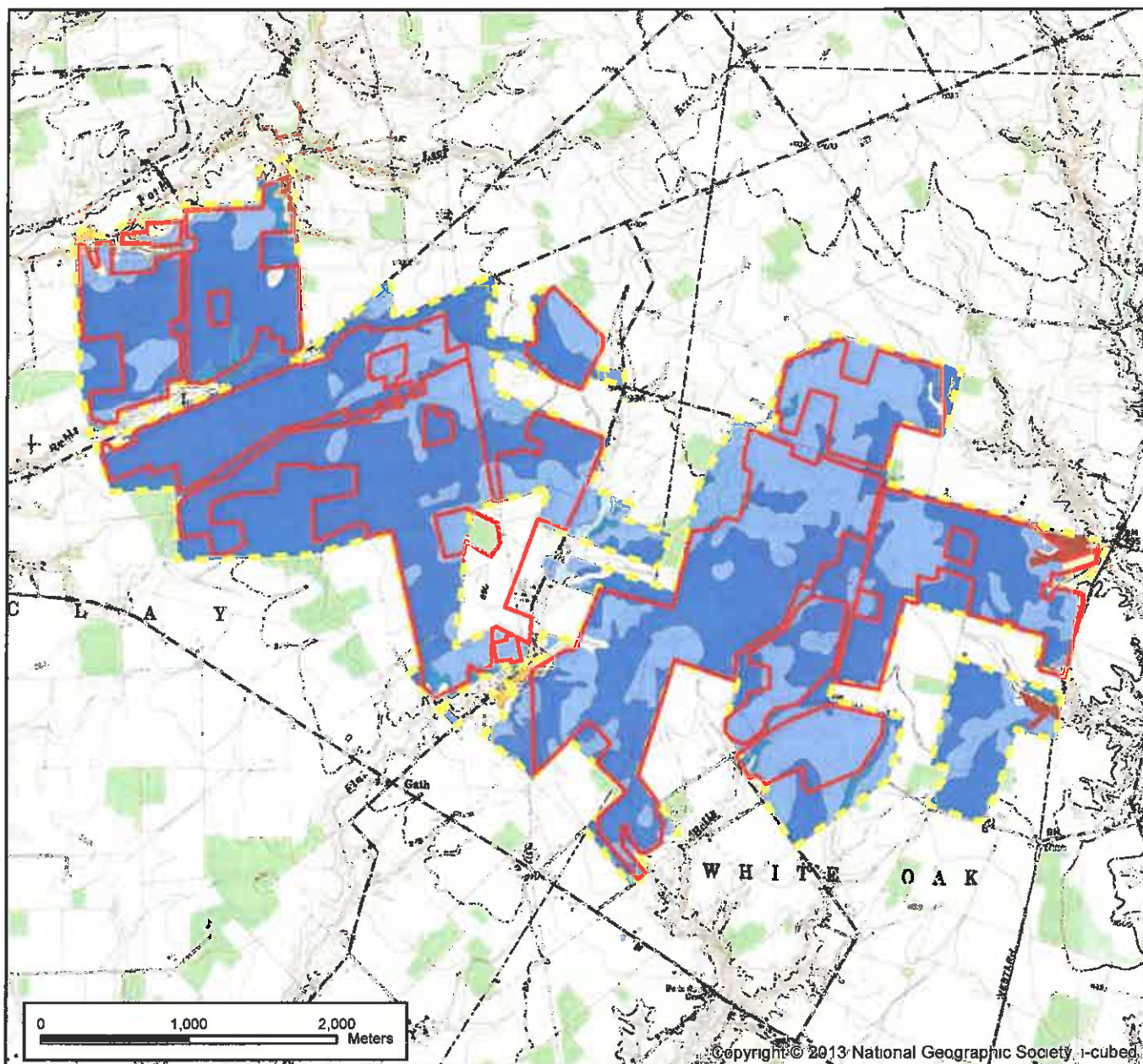
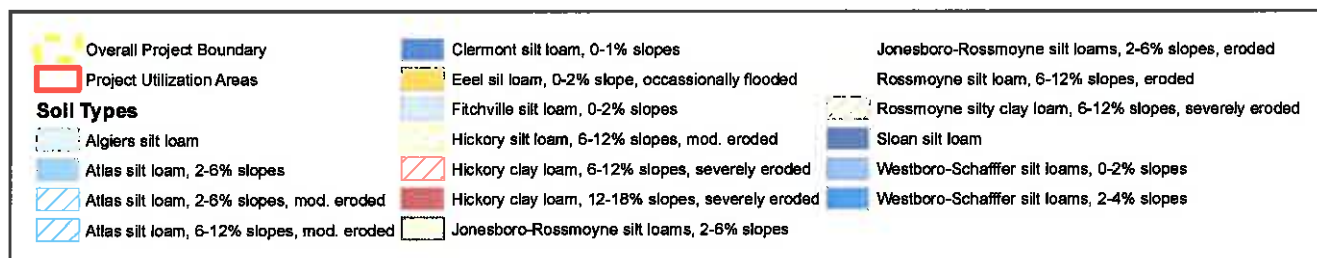


Figure 3. Soil types in the project area. Soil data obtained from NRCS Web Soil Survey (SSURGO). Soils in blue are poorly drained. Base Maps: Sardinia (1979) and Sugar Tree Ridge (1974) USGS 7.5' topographic maps.



Project No. 73187213
 Date: June 2019
 Drawn By: BGG
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SOIL TYPES

HIGHLAND SOLAR FARM
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Figure

3

2.6 VEGETATION

Throughout the latter half of the twentieth century, forests of the eastern United States were typically categorized according to the classification system based on the groundbreaking work of Lucy Braun (1950), which placed the project area at the boundary between the Mesophytic and Western Mesophytic region. In 2006, Dyer revised these forest regions, with the project area now being categorized as being in the Beech-Maple-Basswood forest region (Dyer 2006: Figure 3; ArcGIS shapefile available at https://people.ohio.edu/dyer/forest_regions.html). While this region is named for the American beech, sugar maple, and American basswood, they are not the dominant species in this region. Dominant species in the region include American elm, black cherry, white ash, northern red oak, and white oak. Vegetation in the project area consists primarily of plowed agricultural fields, with intermittent stands of mixed hardwoods and pines located along field boundaries, on slopes, and in low-lying areas (Figures 4 and 5).



Figure 4. Agricultural field in the central portion of the project area, facing south.

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Figure 5. Field surrounded by hardwoods in the northern portion of the project area, facing north.

3.0 CULTURAL CONTEXT

Highland County has a long and varied history spanning more than 13 millennia. The following provides a brief overview of that history.

3.1 PREHISTORIC CONTEXT

Over the last two decades, there has been growing debate over when humans first arrived in the New World. The traditional interpretation is that Clovis Period humans first arrived in North America by way of the Bering land bridge that connected Alaska to Siberia at the end of the Pleistocene, approximately 13,500 years ago. From Alaska and northwestern Canada, these people moved southward through an ice-free corridor separating the Cordilleran and Laurentide ice sheets to eventually settle in North and South America. A variation of this theme is that humans travelled along the Pacific Coast of North America during this time rather than going through an ice-free corridor (Erlandson et al. 2007; Fladmark 1979).

Recently these interpretations have been called into question, with several sites providing possible evidence for earlier (Pre-Clovis) occupations. These sites include Monte Verde in southern Chile (Dillehay 1989; Meltzer et al. 1997), Meadowcroft Rockshelter in Pennsylvania (Adovasio et al. 1979, 1980a, 1980b, 1990), Miles Point in Maryland (Lowery et al. 2010), Burnham in Oklahoma (Wyckoff et al. 2003), Cactus Hill (McAvoy and McAvoy 1997), Saltville (McDonald 2000), and the Smith Mountain Lake sites in Virginia (Johnson et al. 2018), and the Topper Site in South Carolina (Goodyear 2005; Goodyear and Sain 2018). Suggested dates for some of these sites (e.g., Topper) go back more than 50,000 years, although the evidence for this is hotly contested. More recently, a number of sites providing possible evidence for a presence in the New World between 13,500 and 15,000 years ago have been discovered. Although far from numerous, these sites are scattered across North and South America, including the Page-Ladson site in Florida, as well as sites in Alaska, Oregon, Wisconsin, and southern Chile. Thus, it does appear that humans may have been in the New World as far back as 15,000 years ago, although more research is needed to validate this claim.

3.1.1 Paleoindian Period (ca. 13,500–10,000 B.P.)

The Paleoindian Period can be tentatively dated from about 13,500–10,000 B.P., possibly extending as far back as 15,000 years ago. At the beginning of this period, most of Ohio was covered by the Wisconsin Glacier (Lillis-Warwick et al. 2010). As temperatures warmed, and the glacier receded, large megaherbivores moved into the area, followed by Paleoindians who relied on these animals for subsistence (Blank 1970, Potter 1968; Prufer and Baby 1963). The Paleoindians followed a semi-nomadic lifeway that included a subsistence strategy based on a generalized foraging strategy that was supplemented by the hunting of megafauna (Walker et al. 2001; Walker 2007; Hollenbach 2007). Shortly after this time the megafauna, which include

mammoth, mastodon, giant sloth and bison became extinct (Winters 1964). It is still not clear whether humans or the climate played a more prevalent role in the extinction of these large animals, although it is likely that both contributed to their extinction. Another recent hypothesis is that a meteor impact occurred roughly 12,900 years ago that may have led to the extinction of both the megafauna and some Clovis populations (West and Goodyear 2008). This hypothesis, however, is still highly controversial.

Most knowledge about the Paleoindian Period in southwestern Ohio is based on surface collections and inference rather than controlled subsurface excavations. The limited information we do have suggests that the earliest Native Americans employed a mixed subsistence strategy based on the hunting (or scavenging) of megafauna and smaller game combined with the foraging of wild plants. Groups are thought to have consisted of small, highly transient bands made up of several nuclear/and or extended families.

Paleoindian artifact assemblages consist of diagnostic lanceolate fluted projectile points, scrapers, graters, unifacial and bifacial knives, gouges, and burins. Fluted point surveys have produced high densities of Clovis and Late Paleoindian Cumberland and Gainey points throughout much of Ohio (Lepper 1986; Tankersley 1989; Anderson and Sassaman 1996; Metin et al. 2004). Seaman and Prufer (1982) have noted that fluted points occur more frequently near high quality raw material sources, along major river valleys, and in areas with little topographic relief. In Highland County, Cumberland and Gainey points have been recovered from surface contexts along East Fork White Oak Creek near Mowrystown, as well as near the little Miami River in Lynchburg; these are thought to be among the earliest artifacts recovered from the region (Bowman 2010). Nearby, buried Paleoindian artifacts have been found at the Manning Site (33CT476), a Late Paleoindian site located on a high terrace in Clermont County to the west of the project area (Cantley et al. 1986). Excavations at the site have revealed three stratigraphically intact deposits that have been radiocarbon dated to ca. 9800 B.P., 9700 B.P., and 9500-9000 B.P. (Lepper 1986).

Tools of the Paleoindian Period were typically well-made and manufactured from high quality cryptocrystalline rock. Paleoindians traveled long distances to acquire these desirable raw materials, and it is likely that particularly favored quarries were included in seasonal rounds, allowing them to replenish their stock of raw material on an annual basis. In addition to the above-mentioned points, other artifact types such as unifacial blades for scraping, wood tools, and bone tools were likely used as well, although wood and bone tools tend to not preserve in the archeological record and are underrepresented. The Dalton culture is considered transitional between the Paleoindian and Archaic Periods, and archaeological evidence in Ohio supports the likelihood of a wide-ranging Dalton population with a diversified subsistence base that became more intensified and varied into the Archaic Period.

3.1.2 Archaic Period (ca. 10,000–3000 B.P.)

Environmental changes at the end of the Pleistocene led to changes in settlement patterns, subsistence strategies, and technology. As the climate warmed and the Laurentide glacier retreated northward, megafauna became extinct and coniferous forests were replaced by a more temperate deciduous forest biome. Population size increased during this time, while territory size and settlement range decreased.

The Archaic Period has typically been divided into three subperiods, Early Archaic (ca. 10,000–8000 B.P.), Middle Archaic (8000–5500 B.P.), and Late Archaic (5500–3000 B.P.), based on changes in projectile point morphology, settlement patterns, and subsistence practices. Each of the Archaic subperiods appears to have been lengthy and successful in adapting technology to prevailing climatic and environmental conditions of the time.

3.1.2.1 Early Archaic (ca. 10,000–8000 B.P.)

The Early Archaic Period reflects a continuation of the semi-nomadic hunting and gathering lifestyle seen during the preceding Paleoindian Period; however, focus shifted to hunting modern animals after the megafauna became extinct. During the Early Archaic there appears to be a gradual increase in population and a shift in settlement patterns that focused more on forest-riverine resources. This was a time of changing environment, with biotic communities of the early Holocene (10,000–7300 B.P.) shifting from coniferous/spruce forests to a mesic deciduous woodland throughout much of central Kentucky and southern Ohio (Wilkins et al. 1991).

Current information suggests that Early Archaic groups intensively occupied the generally level Till and Lake Plain regions of Ohio, with very limited use of the rolling Glaciated Plateau during this period (Purtill 2009). In southwest Ohio, Early Archaic artifacts have been recovered almost exclusively from the upland river terraces (Vickery 1980). Based on the wide distribution of a very small number of preferred chert sources, Early Archaic groups of Ohio are viewed as highly mobile but tethered to a limited number of stone outcrops. These trends are most evident from the sudden increase in the number of bifaces and projectile points across the region. For example, Theler and Dalbey (1974) report on over 50 Palmer Corner Notched points that have been recovered from the Ferris Site (33CT31) and 30 Thebes points from the Dallas Burton Site (33CT58), both in southwestern Ohio. Based on this data, Vickery (1980) has noted at least two distinct Early Archaic complexes that occupied this region. It is not known however if these two sites represent temporal variability, different ethnic groups, or just functional variability of the tools (Cantley et al. 1986; Lillis-Warwick et al. 2010).

Very little is known about Early Archaic settlement or subsistence in Ohio, primarily because of the limited number of identified single component sites (Purtill 2009). During most of the year, small kin groups are thought to have roamed the landscape occupying short-term base camps

and utilizing resource extraction camps. Once resources became more plentiful in the fall, groups gathered together and settlements were composed of larger base camps (Bense 1994). It is generally thought that the Early Archaic Period reflects a reliance on forest communities similar to those found in the Eastern Woodland today (Cantley et al. 1986). Faunal remains found at Early Archaic sites include white-tailed deer, raccoon, squirrel, and turkey (Lewis and Lewis 1961). Botanical remains indicate a dependence on hickory and oak, as hickory nuts and acorns were increasingly relied upon as the period progressed (Chapman and Adovasio 1977).

Diagnostic artifacts of the Early Archaic Period in Ohio include a variety of corner-notched, side-notched, and bifurcated projectile points that are frequently serrated and have beveled blades and ground bases. Diagnostic point types of southern Ohio include Kirk, Palmer, Taylor, Thebes, LeCroy, Kanawha, and Lake Erie (Ebright 1986; Justice 1987). Other tools of this period include hafted and non-hafted unifacial scrapers, perforators, drills, graters, hammerstones, grinding stones, and choppers (Coe 1964; Daniel 1992:74).

3.1.2.2 Middle Archaic (ca. 8000–5500 B.P.)

The Middle Archaic subperiod coincides with the start of the Hypsithermal, a significant warming trend when oak-dominated forests declined as species variability increased, resulting in an increase in non-arboreal plants (Shane et al. 2001:30). During the Middle Archaic subperiod the environment became more stabilized, leading to increased diversification of exploited resources and to the use of a more varied tool kit (Lillis-Warwick 2010). Evidence indicates more permanent settlements during this time, which are represented at sites such as Carrier Mills District (Jeffries 1983), Koster (Brown and Vierra 1983), Modoc Rock shelter (Fowler 1959; Styles et al. 1981), and the Falls of the Ohio (Janzen 1977). Archaeological excavations at these sites have revealed evidence of thick middens that contain a variety of tools representing maintenance and extractive activities. A variety of woodworking and groundstone tools were also utilized indicating an increase in base camp permanence. In southwestern Ohio, small Middle Archaic sites are found primarily in stream valleys or on floodplain terraces, although large Middle Archaic assemblages are absent or lacking from this region (Genheimer 1980).

Middle Archaic tool kits are primarily characterized by two hafted biface types based on morphology: medium to large side-notched points that include Raddatz, Otter Creek, Big Sandy, and Newton Falls side notched, and medium-sized triangular-bladed points such as Stanly Stemmed (Purtill 2009). Other point types that occur with lesser frequency in the region include Sykes, Crawford Creek, White Springs, Eva, and Morrow Mountain points (Purtill 2009). Groundstone tools such as grooved axes, pendants, grinding stones, and bannerstones were also common during the Middle Archaic.

3.1.2.3 Late Archaic (ca. 5500–3000 B.P.)

The Late Archaic subperiod saw a number of important developments, including population growth, increasing sedentism, the use of pit storage, and possibly the beginnings of small-scale horticulture and regional exchange systems (Wyckoff 1984). Modern climate and environmental conditions were established in Ohio during the Late Archaic subperiod (Shane et al. 2001). Oak and hickory forests again dominated, although the western Till and Lake Plains of south-central Ohio likely had prairie-like conditions by this time.

Late Archaic artifact assemblages include evidence for increased sedentism. These artifact assemblages include drills, retouched flakes, scrapers, cores, hafted bifaces and bifacial knives, blanks, and preforms. More intensive use of nutting stones and mortars and pestles are thought to reflect an increased reliance on plant resources during the Late Archaic (Dragoo 1976). A “well-developed” micro-tool industry consisting of gravers, perforators, and drills produced on flakes has been documented in southwestern Ohio (Vickery 1976, 1980). These artifacts are thought to have been used for a variety of cutting, engraving, and perforating various types of organic materials. Diagnostic projectile point types from Ohio include McWhinney Heavy Stemmed, Brewerton, Vosburg, Motley, Robeson Constricting Stem, Lamoka, Normanskill, Snook Kill, and Ashtabula points (Vickery 1980). In the southeastern Unglaciaded Plateau region of Ohio, lithic assemblages seem to indicate “multidirectional cultural relationships” as different groups along the Ohio River would have had easy access to different regions and thus chances for interaction with other areas (Purtill 2009:573). Lithic assemblages identified at sites throughout the region reflect increased use of locally available cherts for tool manufacture; however, other evidence suggests that lithic procurement strategies were not the same across all sites, and at some sites raw material variability was more significant (Purtill 2009). For example, sites in Clermont County appear to have unexpectedly high frequencies of non-local Kentucky cherts such as Kentucky Flint Ridge (Hill Arians 2003). The use of Kentucky cherts is thought by some to reflect a “continuation of earlier procurement strategies” whereby cultural ties with southern groups could be maintained (Purtill 2009:574).

Seasonal use of the landscape during the Late Archaic was likely predicated on the distribution of resources. Accordingly, aquatic resources were likely exploited along major rivers during the spring and summer, while during the fall and winter subsistence likely shifted to the harvesting and storage of nuts and the hunting of game at base camps situated above the valleys (Lillis-Warwick 2010). In areas along the Ohio River, the presence of shell middens indicates a reliance on freshwater aquatic resources. Where site integrity has been preserved, Late Archaic components of southern Ohio often yield extensive bone and shell assemblages that consist of a variety of polished, perforated, ground, or pecked tools including awls, fishhooks, shuttles, flakers, and punches (Purtill 2009; Vickery 1980). A wide array of specialized objects was manufactured and used during the Late Archaic, including steatite and sandstone bowls, stone tubes and beads, polished plummets, net sinkers, whistles and rattles, birdstones, boatstones, bone awls, needles, and perforators among others (Chapman 1975:6). Moreover, ceremonialism became increasingly

It is also during the Late Archaic Period that incipient horticulture developed as indicated by the presence of domesticated seeds and fruits such as chenopodium, goosefoot, gourd, sunflower, and squash (Kay et al. 1980; Gremillion 1996; Watson 1985). Most data suggest that cultigens did not become a major part of the diet until after ca. 4000 B.P. The presence of Late Archaic archaeobotanical remains and other cultigens from the County Home Site (33AT40) in southern Ohio that date to 3600 B.P. are a good indicator for the timing of the arrival of an “initial crop complex” into the Ohio Valley (Patton and Curran 2016).

The Early Woodland subperiod in the Ohio River Valley is represented by the Adena Culture, which spread from this region into what is now Indiana, Kentucky, Virginia, Pennsylvania, and West Virginia. The Adena are known for the construction of accretional earthworks and conical mounds to bury the dead, the erection of circular paired-post structures, the use of exotic materials

such as copper, mica, and marine shell to make ornaments and jewelry, and increased social stratification and territoriality. Adena mounds were typically small, ranging in size from 20 to 300 feet in diameter, and were often located on bluffs overlooking major tributaries. By contrast, village sites were primarily situated along low terraces and floodplains (Webb and Baby 1973). Unlike the mortuary practices of the Archaic Period when people were buried near activity centers such as short-term habitation sites, the burial practices of the Early Woodland include a shift to the use of mounds for burial. Interments occurred within the mounds in shallow pits adjacent to sub-mound structures that were ritual rather than domestic in nature (Seeman 1986). In addition to these interments, evidence for cremations and cremation platforms has been also identified at a number of Adena sites (Schlarb et al. 2007).

The first formal investigation into what would become known as the Adena Culture was W.C. Mills' excavation at the Adena Mound in Ohio's Scioto River Valley (Mills 1902). A subsequent study would attribute more than 70 additional mounds to Adena based on the presence of 59 cultural traits (Greenman 1932). Webb and Snow (1945) used the data from these and other excavations to expand the list to 218 traits and increased the list of Adena sites to 173. Dragoo would later refine the list of Adena traits based on variations among 10 artifact groups that consisted of projectile points, pottery, stone tablets, gorgets, pendants, pipes, copper and mica objects, burial types, and construction methods (Dragoo 1963:176–178). Artifacts diagnostic of the Adena culture include Adena projectile points, copper and shell ornaments, pottery, gorgets, and pipes. Subsistence practices consisted of the hunting of game such as deer, elk, bear, wild turkey, rabbits, squirrels, and other animals; the gathering of wild plants; fishing; and cultivation (Seeman 1986).

Serpent Mound, located along Brush Creek in north central Adams County approximately 20 miles east/southeast of the project area, is the world's largest serpentine effigy mound. Serpent Mound was first reported from surveys by Squire and Davis (1848:277) who suggest that the serpent likely "entered widely into the superstitions" of prehistoric populations. In the late nineteenth century, Harvard University archaeologist Frederic Ward Putnam excavated Serpent Mound, but found no diagnostic artifacts at the site that would allow archaeologists to assign it to a particular age. Since the late twentieth century archaeologists have attributed construction of the mound to two different cultures, Early Woodland Adena and Late Prehistoric Fort Ancient (Fletcher et al. 1996; Herman et al. 2014; Romain et al. 2017). Site investigations in 1991 produced radiocarbon dates indicating that the mound was approximately 900 years old, and that the builders of the mound belonged to the Fort Ancient culture (1000–500 B.P.); however, a 2014 study presented a series of older radiocarbon dates suggesting that the mound was built by the Adena culture (ca. 2300 B.P.) (Fletcher et al. 1996; Herman et al. 2014). According to Herman et al. (2014), as well as a more recent study by Romain et al. (2017:1), the effigy mound is Adena in age, but was repaired or restored much later by peoples of the Fort Ancient culture, "thereby accounting for the late prehistoric radiocarbon-dated samples". Given its age and relationship to Adena, Serpent Mound is likely a precursor to the traditions of the Hopewell culture of Southern Ohio. Lepper et al. (2019:42) in a critique of these findings, suggests that the construction of Serpent Mound may

be historically linked to droughts in the Mississippi Valley that began at around 900 B.P. Four other large Early Woodland Adena mound sites have been identified in Hamilton County, approximately 30 miles west of the project area. These include Conrad Mound, Sentinel Mound (33HA310), Spearhead Mound (33HA24), and Saylor Park Mound (33HA243) (Lillis-Warwick 2010).

Evidence suggests there was an increase in population from the Late Archaic through Early Woodland Period in the Ohio River Valley, likely attributed to contact with the Hopewell culture emerging from Illinois (Dragoo 1976). However, the most significant aspect of this transition does not appear to be population increase but rather the adoption of horticulture, which provided a predictable subsistence base and led to increased sedentism (Seeman 1986:576). The construction of mounds served as territorial markers and areas of social integration, and were both a part of the gradual move towards sedentism (Clay 1991; Mink et al. 2005; Seeman 1986; Waldron and Abrams 1999).

3.1.3.2 Middle Woodland (2200–1500 B.P.)

The Middle Woodland Period of southern Ohio is represented by the Hopewell culture. The Hopewell culture is named for the Hopewell Mound Group of Ross County Ohio, which was initially explored by archaeologist Warren K. Moorehead in 1891 and 1892. The Hopewell culture is known for its burial ceremonialism, the development of extensive trading networks, and the widespread construction of earthen mounds. Evidence for the establishment of elaborate trade networks comes in the form of finely crafted artifacts produced from exotic raw materials that are frequently found interred with the dead. Artifacts were traded over long distances ranging from as far away as the Rocky Mountains to the North Carolina coast, and from Lake Superior to the Gulf of Mexico. Among the items traded were turtle shell, shark and alligator teeth, mica, chlorite, meteoric iron, native copper, silver, and obsidian. This elaborate trade network involved the exchange of exotic goods that have been sourced to various places, and the resulting interactions have commonly been referred to by archaeologists as the Hopewell Interaction Sphere (Caldwell 1964). Hopewell is thought to reflect an overarching, dynamic social network consisting of increased social complexity.

In Ohio, the Hopewell Interaction Sphere was strongest in the southern region of the state, including the Ohio, Scioto, and Miami valleys. Hopewell sites were typically placed near major waterways and at the confluence of subsistence resources that were required to support increased regional population and complex social networks. Hopewell settlements were generally small in size and consisted of short-term occupations where groups resided in one area for a period of time prior to relocating in search of new resources and trading routes. Evidence suggests that groups likely moved between upland rock shelters, floodplain camps, and large earthwork complexes throughout the year (Yerkes 2002:239). Settlement systems included tribal networks that consisted of small hamlets containing rectangular homes with thatched roofs and daub walls.

One of the more notable Hopewell earthworks of the region is Fort Hill, a Hopewell site located in the Brush Creek Township of Highland County, approximately 20 miles east of the project area. The earthwork at Fort Hill consists of a walled enclosure constructed of earth and stone ranging from six to 15 feet high and 30 feet wide at its base. Constructed around 2,000 years ago, Fort Hill sits atop a flat summit overlooking nearby portions of Ohio Brush Creek and encloses a total of 35 acres. Squire and Davis (1848) conducted investigations at Fort Hill in 1846 and suggested that the construction likely served as a defensive fortification. Today, the debate continues as to whether Fort Hill and other hilltop enclosures were built for secular or ceremonial functions (or both) (Connolly 1998; Riordan 1998).

Hopewell subsistence practices included the hunting of game, fishing, the gathering of wild plants, nuts and seeds, and the planting of seeds that were abundant in the fertile areas where villages were settled. Plants cultivated by Hopewell communities included sunflower, squash, and maygrass. During the Middle Woodland Period, a more stratified social structure was established, based primarily on settlement hierarchy. Around 1600 B.P. Hopewell culture began to decline. The cause of the collapse of the Hopewell Interaction Sphere is unknown, although archaeologists hypothesize that some combination of social unrest, warfare, and/or environmental pressures that affected the subsistence base were to blame (Brose 1979).

Diagnostic artifacts associated with the Middle Woodland Period in southern Ohio include Snyders corner-notched, Norton corner-notched, and Jacks Reef corner-notched projectile points (Bell 1958). Other artifacts recovered from Middle Woodland assemblages include bifaces, blades, unifaces, and bone and shell tools (Cantley et al. 1986).

3.1.3.3 Late Woodland (1600–1100 B.P.)

The Late Woodland in Ohio represents a period between the decline of the Hopewell Interaction Sphere and the development of the Fort Ancient culture. The Late Woodland Period is not well-defined and is characterized by a decrease in elaborate burials and mortuary goods, and in general the development of a "more egalitarian social structure." Settlement patterns of the Late Woodland transitioned from the tribal networks of small hamlets characteristic of the Hopewell and Adena to more permanent villages situated along major river valleys and floodplains with rich alluvial soils.

Subsistence practices during the Late Woodland included growing crops such as beans, sunflowers, and squash, and by around 1200 B.P. it also included maize. Large nucleated villages of the Late Woodland Period developed as maize agriculture became more prominent and hunting lost some of its importance in contributing to the diet. Structures within Late Woodland villages were often placed around central plazas. The development of agriculture corresponds with an increase in warfare during the Late Woodland Period. Many communities were surrounded by a palisade and ditch suggesting that warfare had become a major threat. One of the most important

innovations introduced during the Late Woodland Period was the bow and arrow. This allowed for increased efficiency in hunting, but it also was a more effective weapon of war.

Occupying central and southern Ohio during the Late Woodland Period were the people of the Cole Complex, named after excavations conducted in 1948 at the Walter S. Cole Site in Delaware County in central Ohio (Potter 1968:56-57). Archaeological evidence suggests that these Late Woodland inhabitants occupied semi-permanent villages as well as temporary camp sites. Subsistence practices consisted of the hunting of game and the collection and cultivation of wild plants. Projectile points associated with the Cole Complex vary in size and thickness but tend to be side notched. Additional lithic artifacts include large chipped triangular bifaces and chipped slate disks for skinning and hide working (Potter 1968:57). Ceramic vessels of the Cole Complex are generally large, grit-tempered cordmarked vessels (Potter 1968:59; Prufer 1975:13). It is unclear whether the people of the Cole Complex were related to the Hopewell who preceded them, or to the Fort Ancient people who followed them (Potter 1968:61-62).

Diagnostic artifacts of the Late Woodland Period in southern Ohio include small triangular projectile points, points associated with the Lowe Cluster, and well-made plain or cordmarked grit-tempered ceramics. Sites that date to the Late Woodland in southwestern Ohio are associated with the Newtown Phase, which dates from 1100–1600 B.P. The type site for the Newtown phase is the Turpin Site, (33HA28), located in the lower Little Miami River Valley near the town of Newtown in Hamilton County (Theler and Harris 1988). Other regional sites with Late Woodland components include the Sand Ridge Site (33HA17) in southern Hamilton County, and the Enos Holmes Mound (33HI6) and Robert McMullen Site (33HI7) in Highland County (Baby et al. 1968).

3.1.4 Mississippian Period (ca. 1100–400 B.P.)

The Mississippian Period is the final period of the prehistoric era in Ohio. Traditionally, primary areas where Mississippian settlements developed include the Illinois and Upper Mississippi River valleys and west along the Missouri River, with populations in southern Ohio, northern Kentucky and West Virginia only later adopting many of the conventional Mississippian cultural traits (Peregrine 1996:xii). In parts of central and northern Ohio, the Late Woodland Period continues until European Contact, and is often referred to as the Late Prehistoric Period. However, southwestern Ohio and portions of the Ohio River Valley were populated by a culture that were more closely aligned with Mississippian cultures of the southeastern United States.

The Fort Ancient Culture is subdivided into three periods: Early Fort Ancient (750–1000 B.P.), Middle Fort Ancient (750–550 B.P.), and Late Fort Ancient (550–250 B.P.). The peoples of the Fort Ancient Culture are notable for their intensive reliance on maize agriculture, increased social complexity, the construction of effigy mounds at ceremonial sites, and large, densely occupied villages. The reliance on maize agriculture was supplemented by hunting, fishing, and gathering. During this time populations ranged in size from about 100–500 residents living at villages comprised of large circular or rectangular houses encircled by palisades and open plazas (Cantley

et al. 1986). Mounds constructed by Fort Ancient peoples included effigies such as Alligator Mound near Granville, Ohio, with decreasing emphasis placed on the construction of mounds to serve as burial locations.

During the Early Fort Ancient Period dwellings were designed as single-family units, with mortuary practices still involving the burial of the dead in mounds. However, during the Middle Fort Ancient Period dwellings were constructed that were partially subterranean for warmth in winter and to stay cool in the summer. Also, mortuary practices during the Middle Fort Ancient Period shifted to burying the dead in graves rather than mounds. Sites at this time were primarily situated on high bluffs or terraces overlooking river valleys. During the Late Fort Ancient Period, dwellings consisted of structures constructed for much larger multi-family units and appear to have been more intensive occupations. Late Fort Ancient sites are also characterized by continued adaptations in mortuary practices, with the burial of individuals in cemeteries or under house floors now standard (Griffin 1977). There is also evidence for increased interaction between Late Fort Ancient and Mississippian peoples after 600 B.P. (Pollack 2008). The increase in population size and establishment of exchange networks among Late Fort Ancient peoples points to the existence of more complex social and political organization. Important sites with Fort Ancient components include the Turpin, Sand Ridge, and State Line sites in Hamilton County; the Hobson Site in Meigs County; and the Fuert Mound complex in Scioto County (Mills 1917; Murphy 1968; Owen 1999).

Diagnostic artifacts of the Fort Ancient culture include shell-tempered pottery and Mississippian Triangular and Nodena projectile points (Justice 1987:230-232). Early Fort Ancient vessels consisted primarily of cordmarked conoidal jars. During the Middle Fort Ancient Period the use of shell tempering and vessel decoration became more popular and some vessels included lugs and strap handles. After 600 B.P. new vessel forms were added to the inventory including bowls, pans, and globular jars (Pollack 2008). Other artifacts commonly found at Fort Ancient sites include chipped stone drills, knives, scrapers, and adzes; bone and antler fish hooks, beamers, needles, and awls; and groundstone tools including sandstone abraders, manos, and nutting stones (Griffin 1977; Pollack 2008).

People of the Fort Ancient culture began trading goods with Europeans as they began settling North America, and European trade items such as beads have been found at a number of sites in direct association with articles of indigenous manufacture (Pollack 2008:751). However, by 350 B.P. archaeological sites attributed to the Fort Ancient culture had largely disappeared, possibly succumbing from disease introduced by European settlers. It is unclear what relationship, if any, Fort Ancient people may have had with historic tribes encountered by later European explorers. It is possible that the Fort Ancient people were forced out of the area through conflict with neighboring groups. Other evidence suggests that they may have joined several different ethnically affiliated groups such as the Shawnee and Tutelo (Graybill 1988:30; Griffin 1977; Henderson et al. 1986; Pollack and Henderson 1992:277-278).

3.1.5 Early Historic Period

Members of the Society of Jesus, known as the Jesuits, were the first Europeans to explore and settle the area north of the Great Lakes in present-day Canada. The Jesuits were an order of the Roman Catholic Church founded in 1534 by Saint Ignatius of Loyola. Cardinal Richelieu engaged the Jesuits to colonize French claims in the New World. In 1611, a group of Jesuits arrived in North America (New France) at Nova Scotia. Their experiences are recorded in the annual reports sent to France beginning in 1632, *Jesuit Relations* (Relations des jésuites). The documents provide the first written documentation of the area of New France and the American Indians that inhabited the area (Lacombe 2006).

French exploration of the area south of the Great Lakes began with Father Jacques Marquette, a Jesuit. By the mid-seventeenth century, the Jesuits were well established as missionaries in New France. Father Marquette arrived in New France in 1666, where he served at Sault Ste Maria and Chequamegon (mission to the Huron and Ottawa). Beginning in 1668, he founded the missions within the Great Lakes region—St. Ignace (Quebec) in 1671 and La Pointe on Lake Superior near present-day Ashland, Wisconsin in 1673. Marquette then received orders to accompany French-Canadian explorer and fur trader, Louis Joliet's on his planned expedition to explore the region west and south of the Great Lakes. They embarked on their four-month journey on May 17, 1673, at St. Ignace, located at the head of Lake Michigan. The group traversed across present-day Wisconsin and then followed the Mississippi River south to the present-day Mississippi. They explored the region at the mouth of the Arkansas River and theorized that the Mississippi River drained to the Gulf of Mexico. Marquette and Joliet returned to the mission of St. Francis Xavier (present day DePere, Wisconsin) by way of the Illinois River and Lake Michigan. As a result of the information gathered during their expedition, a network of trading posts along the Mississippi River, from the Great Lakes south to the Gulf of Mexico, were established (WHS nd).

René-Robert Cavelier, Sieur de La Salle is believed to have been the first European to explore the lands between the Great Lakes, east of the Mississippi River and along the Ohio River. Looking for a passage to China from a river system that flowed into the Gulf of California, La Salle planned his first expedition of the area in 1669. La Salle initially traveled with missionaries from the Society of St. Sulpice—an order competing with the Jesuits to convert the American Indians in New France. René de Bréhant de Galinée, a trained mathematician and mapmaker, and François Dollier de Casson, a Sulpician missionary, enlisted La Salle as an interpreter to accompany them on their exploration of the Ohio River region. The group departed from La Chine near Montreal in July and traveled along the St. Lawrence River. They explored Lake Ontario and then, on the northern shore of Lake Erie, the group encountered Louis Joliet (WHS 1917). It was here that Dollier and Galinée continued along Joliet's route and La Salle separated from the group to explore the Ohio River valley. He turned southward from Lake Erie and it is believed he traveled down the Alleghany and Ohio rivers, reportedly to an area near present-day Louisville, Kentucky (OHC 2005a).

Maps created using the narrative provided in *Jesuit Relations* illustrate the territory of New France from 1610–1791 (Figure 6). The map charts the tributaries of the Ohio River, but it does not indicate settlements were in the region now known as Highland County. The map provides information on the lands occupied by American Indians—Shawanese are noted as living south of the Ohio River. The nearest fort to present-day Highland County is Fort Miami (1660), located to the north near Lake Erie, and Fort Vincennes (1732), located to the southwest. Both were located along the Wabash River. The map also denotes the exploration of the Falls of Ohio by La Salle in 1669 (WHS 1896). By the mid-eighteenth century, the land south of the Great Lakes was claimed by both the French and the English. The French continued the construction of fortifications to protect trading posts within the Great Lakes region. As the French sought to protect trade routes along major water ways, the number of settlements in the region increased. The nearest to Highland County included Fort Vincennes and Fort Miami on the Wabash River and Fort Sandusky (1745) on Lake Erie (Hall 1920).

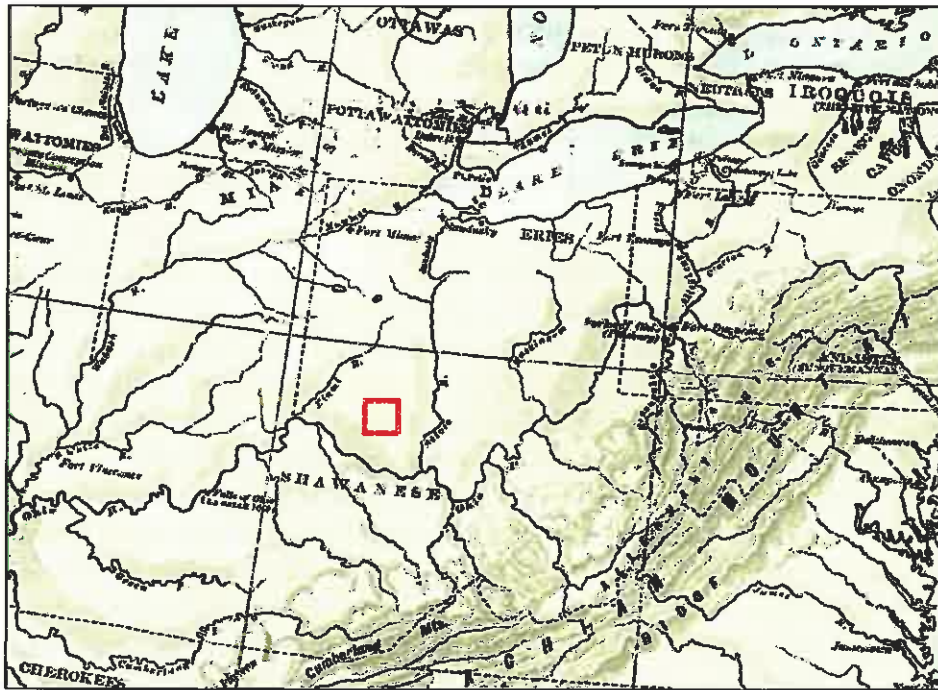


Figure 6. Map of New France, 1690–1791 to illustrate the *Jesuit Relations* and Allied Documents (1896), showing the approximate location of the project area in red.

3.2 HISTORIC CONTEXT

Ohio has a long history and, as it was claimed by both the English and the French, it was subjected to the rivalry between these two countries. Dissatisfied in the success of their trade with other European countries, England declared war on Spain in 1739, to halt their trade with France.

However, the War of the Austrian Succession began in Europe as Maria Theresa assumed the Austrian throne in 1740. Britain and France took opposite sides in the conflict and while Britain was successful in blockading France's trade routes to the New World, they suffered significant losses in Belgium. The war extended to their colonies in the New World, where it was known as King George's War. While the Treaty of Aix-la-Chapelle brought an end to fighting, it did not settle the question of land ownership in the colonies. This left the ownership of Ohio Country, as the region between the Great Lakes and the Ohio River was known, in dispute (Eccles 2006).

Because of the success of the blockade during King George's War, England was able to assume interior trade routes, previously held by the French with the American Indians. Without European manufactured goods to offer in trade, the French fur trade suffered a significant decline. The Ohio Company of Virginia was formed in 1748 by a group of investors from the British colony of Virginia. The company hoped to expand colonization efforts into the Ohio Country and establish their presence in the disputed territory. King George II granted the company 200,000 acres near the headwaters of the Ohio River in western Pennsylvania. The company was tasked with constructing a fort to protect the colonists and to distribute the land among 100 families. Christopher Gist was selected to survey the land along both sides of the Ohio River to help the company select an area for settlement. The notes taken by Gist during his survey provided the earliest descriptions of the land within southern Ohio and northeastern Kentucky. As a result of his survey, the Ohio Company selected land in modern-day Pennsylvania and West Virginia. (OHS 2005b).

Roland-Michel Barrin de la Galissonnière, the French governor of New France (1747–1749) ordered Pierre-Joseph Celeron de Bienville to conduct a military expedition into the Ohio Country to re-establish their presence in the region after King George's War (Busch 1896). Together with 250 French soldiers and Jesuit priests, Joseph Pierre de Bonnacamps, Bienville departed from Montreal in 1748 and traveled down the Allegheny River to the headwaters of the Ohio River. Bonnacamps kept a journal and map of the journey, documenting the route and interactions with American Indians and British traders along the way. To assert France's claim to the Ohio Country, Bienville traveled with lead plates that proclaimed France's title to the land. He buried at least six plates at the intersection of major rivers and the Ohio River, as illustrated on Bonnacamps map (Figure 7). The map also notes the location of settlements, including villages at the Scioto River and the "River Blanche le Baril," south of present-day Highland County. Bienville ordered British traders to the Ohio Country when they encountered them during their travels. Most ignored the orders and continued their trade with the American Indians. Largely unsuccessful in renewing previous relationships with the American Indians and driving out British traders, the expedition traveled north from the Miami River, portaged to Fort Miami and continued to Montreal (OHS 2005c). French traders returned to the area, but tensions between the two countries escalated to the point of war.

Trade continued in the Ohio Country, as illustrated by a trader's map from 1753. The map (Figure 8) illustrates a route across modern-day Highland County, beginning at a camp at the point the Scioto River meets the Ohio River, and continuing northwest to "Maade Creek," intersecting an



Figure 7. Father Bonnecamp's Map (1749). Approximate location of the project area is indicated in blue.



Figure 8. A trader's map of the Ohio Country (1753), with the approximate location of the project area in red.

east–west route to the Miami River (LOC 1753). Prompted by growing tensions with the English, the French built forts along the upper Ohio River to emphasize their presence in Ohio Country. In 1753, with the support of 1,500 soldiers, France established Fort Le Boeuf (Waterford, Pennsylvania) and Fort Machault (Franklin, Pennsylvania) in the disputed area within Ohio Country. In response, Robert Dinwiddie, the lieutenant-governor of Virginia, sent Major George Washington and Christopher Gist to Fort Le Boeuf to persuade the French to release their claims on the Ohio Country. The French commander at Fort Le Boeuf refused and added that he would arrest all English colonists who entered Ohio Country. The French continued their aggression in the region by capturing a British trading post, Logstown in 1754. There they constructed Fort Duquesne near present-day Pittsburgh. Dinwiddie again sent Washington, this time with a force of Virginia militiamen, to the disputed area. Washington built Fort Necessity to counter the French presence at Fort Duquesne. It did not deter the French, and together with a group of American Indian allies, the soldiers attacked Fort Necessity. Over the next seven years, the two countries battled for control of North America in the French and Indian War (OHS 2005b).

3.2.1 The Treaty of Paris, Northwest Indian War, and Statehood (1763-1803)

Similar to King George's War, the French and Indian War in North America occurred as the Seven Years War began in Europe in an effort for major European countries to gain land and exert their dominance. After seven years, the French and Indian War came to an end in North America once the British were able to overtake Fort Carillon and Quebec—the main fortress of New France in Canada. The Treaty of Paris (1763) was signed between Great Britain, France, Spain, and Portugal, with France yielding territory in New France to the British. This decision worried American Indians in the Ohio Country who feared British control would lead to a significant colonization effort on their native lands. An attempt to drive back British colonists, known as Pontiac's Rebellion, initially deterred the westward expansion of British colonies, even though the uprising was stopped by British authorities. To avoid continued military engagements after a lengthy and costly series of wars, Britain issued the Proclamation of 1763. The proclamation prohibited colonists from occupying land west of the Appalachian Mountains from Hudson Bay to the area north of Florida. This land would be reserved as American Indian territory. While effective against conflicts with the American Indians of Ohio Country, the expansion of British colonies into this region was the impetus for the French and Indian War. Lands claimed by the Ohio Company of Virginia could not be settled under the Proclamation. Combined with higher taxes levied to pay for the expense of the French and Indian War, many colonists became resentful of British rule (OHS 2005d).

Settlers continued to occupy land west of the colonial divide established in the Proclamation of 1763, which led to conflicts with the American Indians of the Ohio Country. In 1768, representatives from a confederation of six Iroquoian tribes met with the British at Fort Stanwix in New York to establish a new demarcation line. In the Treaty of Fort Stanwix (1768), the Iroquois abandoned their claim to land in the Ohio Country. The Cherokee negotiated a similar treaty in

1770 and ceded land south of the Ohio River in the Treaty of Lochaber. As a result of the two treaties, prairie land was opened to settlement by the British colonists. However, the treaties were not recognized by the Shawnee, Delaware, Seneca, and Cayuga. The land relinquished in the treaties included their hunting grounds and they claimed the Iroquois did not have the right to negotiate on their behalf (Perkins 1998).

Tensions heightened between British colonists and the American Indians of the Ohio Country. The Northwest Indian Wars (1774–1795) encompassed a lengthy military campaign against the American Indians in a continued dispute over the Ohio River as a boundary for settlement. After British colonists killed 11 Seneca and Cayuga in 1774 in what they viewed a pre-emptive strike, the tribes retaliated by killing 13 colonists living south and east of the Ohio River. British regulars at Fort Pitt and Virginia militiamen sent by Lord Dunmore, the royal governor of Virginia, clashed with American Indians in the Battle of Point Pleasant on October 10, 1774. The war (Lord Dunmore's War) moved north of the Ohio River onto American Indian lands, where the British and Virginia military destroyed Shawnee villages on the Pickaway Plains, north of present-day Chillicothe, Ohio, and northeast of present-day Highland County. As a result, the Shawnee agreed to a peace treaty (Treaty of Camp Charlotte, 1774) and conceded the loss of access to their hunting lands east and south of the Ohio River (OHC 2005f).

The American Revolution began in the colonies with the Declaration of Independence on July 4, 1776. American Indians generally sided with the British, who had worked to prevent settlement of the Ohio Country by American settlers. During the war, the American Indians carried out raids of settlements along the Ohio River. At the conclusion of the war, the territory within the Ohio Country was ceded by the British government to the United States. With competing land claims, ownership of the land was debated among the state and national governments. Compromise led to the control of the land by the federal government, with land grants given to Virginia and Connecticut (Figure 9). Virginia reserved 3.7 million acres near the rapids of the Ohio River (included present-day Ohio counties of Adams, Brown, Clermont, Highland, Clinton, Fayette, Madison, and Union counties; and portions of Scioto, Pike, Ross, Pickaway, Franklin, Delaware, Marion, Hardin, Logan, Clark, Champaign, Green, and Warren). Connecticut reserved 3.6 million acres near Lake Erie. Virginia then sold small tracts of lands to settlers. Land grants between the Miami and Scioto rivers were reserved for veterans of the American Revolution. Thus, the area became known as the Virginia Military District and evolved into the first area of survey and settlement (Hardesty 1882).

The Northwest Ordinance, adopted by Confederation Congress on July 13, 1787, established a territorial government for the Northwest Territory and formalized the process by which it could become a state. The ordinance guaranteed that new states within the territory would be admitted to the union on an equal basis as the original 13 states once they met certain requirements—established a territorial government, reached a voting population of 60,000 (free adult males), and drafted a state constitution. The constitution was required to include basic rights to its citizens, such as religious freedom, freedom of speech, and a trial by jury. An emphasis was placed on public support of education and the abolition of slavery (OHC 2005g). General Arthur St. Clair was selected as governor of the Northwest Territory. The settlement at Losantiville became the

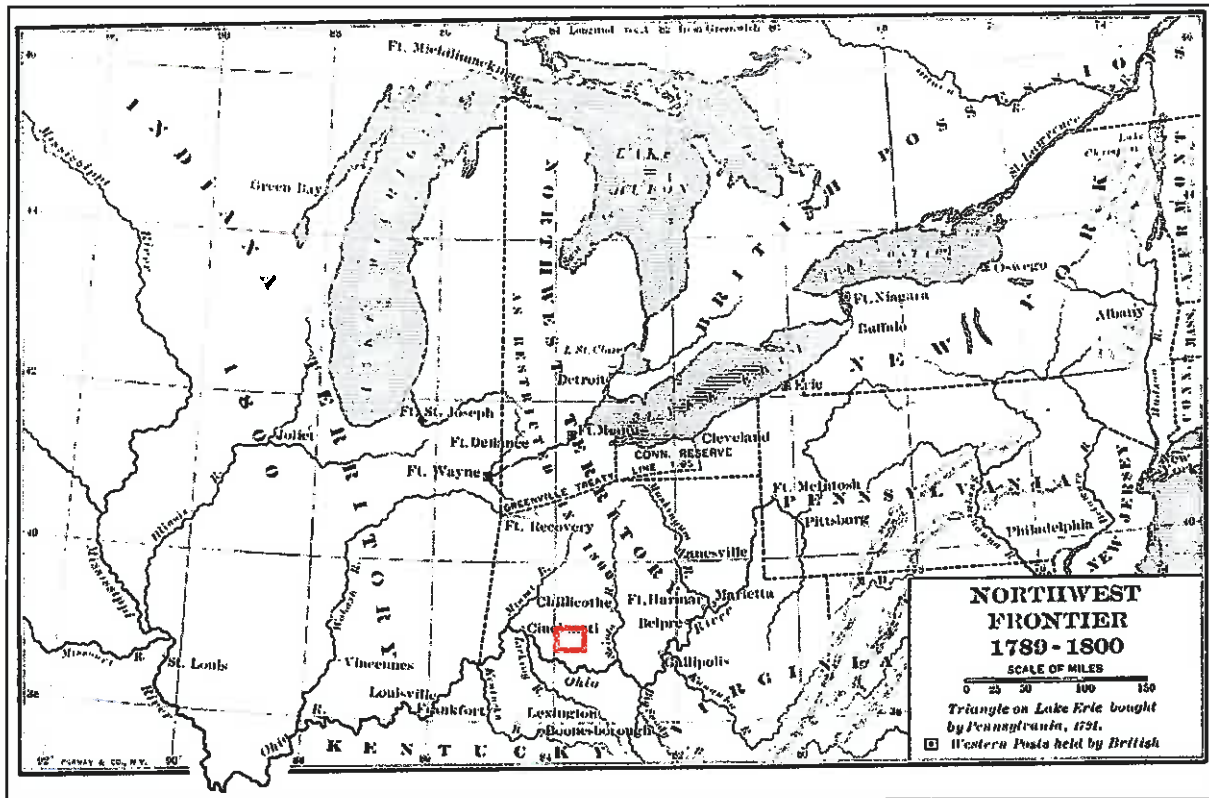


Figure 9. Northwest Frontier, 1789–1800 with the approximate location of the project area in red.

territorial capitol in 1788; the name of the town was changed to Cincinnati in 1790 to honor an organization of Revolutionary War veterans, the Society of the Cincinnati (Wills 1996).

In 1786, the Ohio Company of Associates was formed and two years later the group became the first to purchase land for settlement in the Northwest Territory. The group of land speculators purchased about 1.5 million acres from the U.S. government; the U.S. gave an additional 100,000 acres of land, known as a “Donation Tract,” to serve as a buffer between their settlements and land occupied by American Indian tribes in the region (OHC 2005f). The first group of settlers, which consisted of 48 men and their families, departed from New England during the spring of 1788. They founded the fortified town of Adelphi at the junction of the Ohio and Muskingum rivers within the lands of the Ohio Company of Associates. The town was soon renamed Marietta in honor of the French Queen, Marie Antoinette. Over the next two years, about 10,000 New Englanders migrated to the Northwest Territory and established communities that reflected those they had left in the East (Wills 1996).

Settlement of the Northwest Territory along its southern border with Kentucky increased significantly in the 1790s. Kentucky surveyor Nathaniel Massie established the town of Massie’s Station during the winter of 1790–1791. It was the first settlement within the Virginia Military District. He constructed cabins enclosed with pickets and built a blockhouse at each corner for

defense. Eventually renamed Manchester, the town was the fourth to be settled within the present boundaries of the state of Ohio (Klise 1902). He continued to survey lands along Brushcreek and then west along the Little Miami River (Scott 1890).

As settlement increased within the Ohio Country, hostility between settlers and the American Indians increased. Prior to 1790, the United States suffered many defeats, but in an effort to bring an end to the war, President George Washington appointed General Anthony Wayne to reorganize the state militia to create a professional army. Their ultimate goal was to conduct aggressive military campaigns against the American Indians that would lead to a negotiated peace. The United States eventually defeated the western Indian Confederacy near the shores of Lake Erie in 1794 at the Battle of Fallen Timbers. The defeat resulted in the negotiation of the Treaty of Greenville (1795) in which 12 American Indian tribes of Ohio Country (Wyandots, Delawares, Shawnees, Ottawas, Chippewas, Pattawatimas, Miamis, Eel Rivers, Weas, Kickapoos, Piankeshaws, and Kaskaskias) relinquished control of their native lands to the U.S. government and relocated to northwestern Ohio. The treaty also outlined that Americans would be allowed free passage by land and water through the country by way of a chain of frontier posts (Perkins 1998).

With the Treaty of Greenville, emigration to the Northwest Territory was renewed. One of the earliest settlers within Highland County was John Wilcoxon from Kentucky. In the spring of 1795, together with his wife and child, he traveled to the lands to the west of the Scioto River. He eventually settled in the area of Sinking Spring. Nathaniel Massie continued his work in the Virginia Military District, laying out the town of Chillicothe on the Scioto River in 1796. The settlement would become an economic and political center within the Northwest Territory and was selected as the site of the first state capitol of Ohio. Nathaniel's brother, Henry Massie, together with Joseph Kerr, laid out the town of New Market in Highland County in 1797, at the midpoint of a road connecting Chillicothe to the northeast with Williamsburg to the southwest (Klise 1902). The road, constructed by William Lytle in 1790, crossed the Whiteoak River north of Williamsburg and is one of the first recorded activities in Clay Township (Martin 1955).

In 1800, the Northwest Territory had reached the first threshold for statehood and Congress organized the eastern part as the Ohio Territory and the western part became the Indiana Territory. By 1802, the Ohio Territory had reached the second threshold as its voting population had reached 60,000. A territorial legislature convened at Chillicothe to draft a state constitution and on March 3, 1803, Ohio was admitted as the 17th state and the first state formed from the Northwest Territory (Wills 1996). The state boundaries (Figure 10) were defined by Lake Erie to the north and a line directly to the southern tip of Lake Michigan, Pennsylvania and Virginia to the east, the Ohio River to the south (and east), and to the west by the Indiana Territory from the mouth of the Great Miami River to the Michigan line (Hardesty 1882).

3.2.2 Early Statehood (1803-1846)

During the first decade of statehood, the population grew by 200,000 persons. After the War of 1812, British support to American Indian tribes against American settlers within the state ended

and they were forced to abandon military posts within the Northwest Territory along the Great Lakes (Wills 1996). Without opposition, the settlement of the state increased dramatically over the next 30 years. By 1830, population had increased to almost 950,000 persons (Forstall 1996). Most of the state's growth was focused in central and southern Ohio. The Scioto River, which begins in Auglaize County and flows south to the Ohio River, was a major waterway located in this region of the state and offered transportation and fertile farmland in its drainage basin. With the increase of settlement along the river, the state capitol was moved from Chillicothe to Columbus in 1816. While eastern Ohio was settled primarily by those migrating from New England, the Scioto River Valley was settled by Virginians and southwestern Ohio was settled by Kentuckians (Wills 1996).

Five counties were established within the Ohio Territory prior to statehood, according to the provisions of the Northwest Ordinance. The first county created by declaration of the territorial governor was Washington County in 1788. Washington County encompassed all land east of the Scioto River, to the line of the Greenville Treaty (1795) to the north. Hamilton County was created next and covered all the land west of the Scioto River to the Indiana Territory boundary to the west and north to the line of present-day Michigan. The two counties were subsequently divided into three portions: Adams County (1797), Jefferson County (1797) and Ross County (1798). An additional county, Wayne County, was created to the north, but that land was ultimately included within the state boundaries of Michigan (Downes 1970). Adams County, created on July 10, 1797, included both sides of the Scioto River and extended northwest to Wayne County. As discussed previously, Nathaniel Massie founded the first permanent settlement in Adams County, Manchester, in 1795 (Scott 1890). Ross County was created out of Adams County on August 20, 1798, and the county seat was established at the territorial capitol town of Chillicothe (Downes 1970).

3.2.2.1 Highland County

After statehood, the number of counties in Ohio increased by 25 for a total of 42 in 1810 (Figure 10). The reason for the significant increase was likely the difficulty in traveling within the state to local seats of government. Highland County was created out of Ross, Adams, and Clermont (1800) counties on May 1, 1805, and the county seat was established as New Market (Downes 1970). The county was named for its topography that included rolling forested hills within the watershed of the Miami and Scioto rivers. When it was organized, less than 2,000 acres of land had been cleared and were tillable. Its boundaries originally contained portions of Fayette and Clinton counties, both created in 1810 (Klise 1902). The town of Hillsboro was founded in 1807 to serve as the permanent county seat and is located at the approximate center of the county. A requirement of the Northwest Ordinance outlined that counties would be organized according to the New England Township–County Plan. Townships were delineated to include 36 square miles with a township center located at its middle. The township center served both the economic center and the first form of local government for the state (Downes 1970).



Cultural Resource Investigations

Highland Solar Farm ■ Highland Co, Ohio

August 2019 ■ Terracon Project No. 73187213



The four townships—Paint, Union, Madison, and Concord—that had formed prior to the creation of Highland County were “collected into one view” by county commissioners on April 14, 1825 and four new townships were established: Brush Creek, Fairfield, Liberty, and New Market (Thompson 1878) (Table 3).

Table 3. History of Highland Townships (Thompson 1878).

Highland County Township	Date Organized	Created from Townships	Total Acreage (1875)	
			Acres Improved	Woodland
Brush Creek	1825	—	25,563	
			16,860	8,703
Clay	December 5, 1831	Whiteoak, Salem	17,670	
			11,127	6,543
Concord	pre-1805	—	20,508	
			15,658	4,850
Dodson	June 7, 1830	Union, Salem, New Market	16,859	
			11,994	4,865
Fairfield	1825	—	26,305	
			19,777	6,528
Hamer	June 5, 1849	Salem, New Market, Union, Dodson	12,392	
			8,134	4,258
Jackson	September 24, 1816	Brush Creek, Concord	20,164	
			11,461	8,703
Liberty	1825	—	29,588	
			21,488	8,100
Madison	pre-1805	—	20,506	
			13,717	6,789
Marshall	January 15, 1844	Liberty, Jackson, Brush Creek, Paint	14,104	
			10,595	3,509
New Market	1825	—	14,092	
			9,988	4,104
Paint	pre-1805	—	32,608	
			23,290	9,318
Penn	March 2, 1852	Liberty, Fairfield, Union	18,952	
			14,389	4,563
Salem	August 19, 1819	New Market, Union	10,927	
			7,352	3,575
Union	pre-1805	—	16,578	
			11,713	4,865
Washington	June 6, 1850	Liberty, Concord, Jackson, Marshall	13,881	
			9,552	4,329
Whiteoak	1821	New Market, Salem	15,255	
			10,375	4,880

One of the first acts of the county government was the construction of roads leading to the county seat. Planned roads led from major Ohio towns to New Market or connected with a major road that led to the county seat. The Anderson State Road from Chillicothe to Cincinnati was surveyed and constructed under the leadership of Col Richard C. Anderson beginning in 1804. Along with the initiation of road construction, the first year of Highland County was a prosperous one and ended with successful crops and increased settlement (Klise 1902). Reverend John W. Klise provides a description of the early residences of Highland County in his history of the county:

The people lived in log cabins, without perhaps a single exception even in the towns. Some of these cabins had lap shingle roof, and possibly a four-glass window, which was regarded by some as an undue waste of means and decidedly aristocratic in tendency which out not to be encouraged. Furniture was not plentiful and what they had was rude and clumsy. The absence of roads and the great distance to be traveled through an unbroken forest made the transportation of this class of goods impossible, and few, if any, of the emigrants thought of making the effort. After reaching their new home it required but a few hours to make the needed supply for their one-room cabin (Klise 1902:116).

Stephen Clark established one of the first settlements near the project area, located on Flat Run. George Campbell, Philip Noland, Levin Wheeler, William Paris and their families joined Clark and established a community on the creek ca. 1798. James B. Finley moved with his wife in the spring of 1801 to land purchased by his father on nearby Whiteoak Creek. Robert W. Finley joined the couple in the fall; James Davidson also settled with his family on Whiteoak and the community quickly grew to 15 people within the year (Scott 1890).

3.2.2.2 Clay and Whiteoak Townships

As noted, Concord Township was organized prior to the establishment of Highland County and included land within present-day Whiteoak and Clay townships. Whiteoak Township was created from Concord in 1821 and Clay Township was divided from land within Whiteoak on December 5, 1831, containing 17,760 acres (Thompson 1878). Located in the southwestern corner of Highland County, the land was initially viewed as too swampy for settlement and farming; however, once the forest had been cleared and ditches constructed, the land became one of the most fertile in the county. Lands drained to two principal streams—the Whiteoak Creek and Flat Run. One branch of the Whiteoak begins in Dodson Township to the north and the other begins in Danville (Hamer Township) to the northeast. The two branches join just south of Buford (Martin 1955).

The settlement of the area that would become the Clay and Whiteoak townships began after the creation of Highland County around 1805. Boyd (first name not known) constructed a log cabin west of the north fork of the Whiteoak Creek near present-day Buford, where he lived with his family for less than a year. John Florence began residence in the Boyd cabin by 1807 and was the first permanent settler in Clay Township. His land was remote—the nearest settlement was over 20 miles away and his nearest neighbor, James Ball, lived 10 miles away. In Daniel Scott's history of Highland County, the region is described as, "the wildest and most uncompromising in

the county (Scott 1890:143).” He constructed a two-story house and opened a tavern on Lytle’s Williamsburg Road, on which operated a regular stage coach line from Chillicothe to Cincinnati (Martin 1955).

3.2.2.2.1 Community Histories

Buford, located west of the project area, was platted in 1834 by Robert Lindsey and named for his wife, Mary. Mary was the daughter of Colonel Thomas Abraham Buford of Lexington, Kentucky. Although it does not appear Col. Buford ever lived in Clay Township, the U.S. government granted him 3,660 acres in 1790 for his service in the American Revolutionary War. His land was located north and northeast of present-day Buford, along the north fork of Whiteoak Creek and Ruble Run. The New Market–Williamsburg Road bisected his land holdings and made parcels attractive to early settlers (Figure 11). As noted, the first settlement and store opened near Buford in 1832, operated by John Florence. He supplied goods for settlers traveling by wagon “through the wilderness” from Cincinnati (Martin 1955).

Strausbourg (Gath), located south of the project area, was a settlement of French immigrants on Flat Run in the eastern portion of Clay Township, at the point where Flat Run Road crosses Buford–Mowrystown Road. The area was first settled by John P. Marconett in 1845 and named for his home town of Strausburg in northern France. Marconett opened a store on Flat Run in 1850 and built a two-story house nearby in 1851. A 1955 historical account of Clay Township indicates the two-story house was extant in the 1950s, and it appears that Resource No. HIG0038313, although altered, is the original 1851 Marconett House. Marconett opened a sawmill and flour mill in 1857, but both burned in 1861. He rebuilt the sawmill and installed the first circular saw in the township. A letter to the editor of the *Highland Weekly News* in 1869 provides additional information on the settlement and its inhabitants, “at present (Strausburg) looks quite beautiful, as nature is decorating field and grove with Summer glories.” Residents were described as, “healthy, industrious, and enterprising.” The article noted that the town offered a cooper shop, blacksmith shop, saddler shop, carpenter shop, and a dram shop, with a school house under the direction of Miss Elma Lyle. Sabbath School was held at the school house every Sunday afternoon with about 70 people in regular attendance (*Highland Weekly News* 1869). A post office was established, and the town name was changed to Gath sometime after 1917 (Martin 1955).

Hollowtown, located northeast of the project area, was situated in the northeast corner of Clay Township at the intersection of Pricetown Road and the Buford–Danville Road. Anthony Hollow owned a candy store and a saloon at this location in the early 1800s, and the Dunkard Church (a religious sect of German immigrants who originally resided in Ephrata, Pennsylvania [Green et al. 2009:13]) was constructed in Hollowtown in 1857 (Martin 1955). An 1866 article describes Hollowtown and notes it maintains two dry goods and grocery stores operated by German immigrants, Stazel & Heller; a harness shop and a shoe shop; and a saloon (*Highland Weekly News* 1866). On July 4, 1920, the last store and the church were destroyed by fire (Martin 1955).

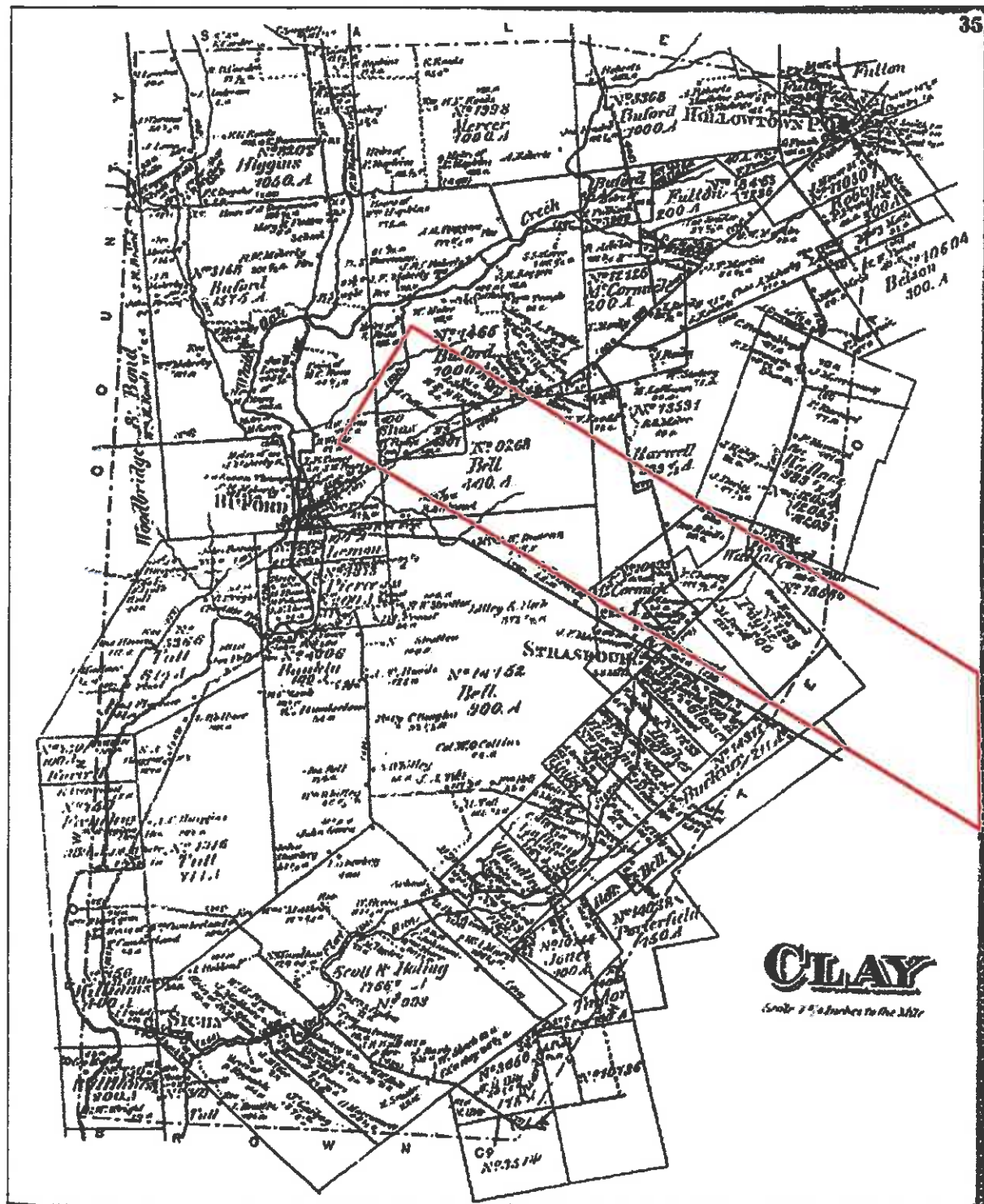


Figure 11. Clay Township (1876) with the approximate location of the project area in red.

Mowrystown, located southeast of the project area, is situated on the east fork of Whiteoak Creek in southwestern Whiteoak Township. A mill was first erected on what would become the townsite in 1812 by George Barngrover. Mowrystown was settled by French Huguenots in the early 1830s and served as their first permanent settlement in the United States. Barngrover's land was purchased by Samuel Bell, who platted the town with 42 in-lots and several large outlots. The town was named after Abraham Mowry who held large landholdings in the area. John N. Bell served as the first postmaster when the post office was established on April 6, 1832. Within a few years, over 100 families had joined the original group of French settlers and by 1880, of the 1,052 residents of Whiteoak Township, 414 lived in Mowrystown. At the turn-of-the-nineteenth century, the town had a general store, blacksmith, tinner, carpenter, and two doctors. Hotels and manufacturing plants were also located within its town limits (The Press-Gazette 1966).

Taylorville, located east of the project area, was established on land owned by Isaiah Roberts. Mr. Roberts was a brick mason and in ca. 1813, he constructed the first brick house in Highland County. He purchased 300 acres of land upon arrival from Pennsylvania and his son, Isaiah Jr. platted the town of Taylorville in November 1846. By 1856, the town had a sawmill operated by J. Frank Fender of the firm of Fender and Son, a blacksmith, wagon maker and dealer, and farming implements supplier (Noah Gayman), and several general merchandise stores (Klise 1902).

3.2.2.3 American Civil War (1860–1865)

Although the Northwest Ordinance outlined the process for states to be added to the Union, tensions between northern and southern states over the expansion of slavery, state's rights, and the fair market escalated as new states petitioned for admittance to the United States. Abraham Lincoln spoke of ending slavery and once he was elected president, 11 southern states seceded from the Union between December 1860 and June 1861. Once war was declared, Ohio supported the Union with its regular enlistments of artillery, cavalry, and infantry men. Over 260 regiments (a total of 310,654 Ohioans) served in the Union army during the American Civil War. Ohioans helped to secure Kentucky and West Virginia, and volunteer companies helped the Union win the only fighting seen along Ohio's southern boundary (OHC 2005g).

Morgan's Raid was the only major attack by Confederate forces to occur on Ohio soil. Confederate cavalry leader Brigadier General John Hunt Morgan was ordered to divert pressure from attacking Union forces in Tennessee by drawing them into southern Ohio from its border with Indiana to West Virginia. On July 8, 1863, Morgan and 2,100 soldiers crossed over the Ohio River into southern Indiana. After gathering supplies and feeding false stories regarding their location of attack in Indiana, Morgan moved instead into Ohio at Harrison, 20 miles northwest of Cincinnati. His goal was to evade, not engage with Union forces. Over 60,000 militiamen responded to a proclamation of Ohio Governor David Tod to defend Ohio's southern border from Morgan's Raiders. Volunteer companies mustered into service enlisted for 100 days of service. One company, known as the Eagle Creek Expedition, were armed and equipped to assist General Hobson in pursuit of Morgan (Johnson 1887). After skirmishes at Camp Dennison, located 16

miles northeast of Cincinnati, Morgan divided his men into two lines: one traveling southeast from Georgetown to Ripley and the main force headed north of the first, from Mt. Orab to Sardinia, following the Highland–Brown County line east to Winchester in Adams County. While traveling just south of the project area, a review of maps documenting the raid (Figure 12) indicates that Morgan likely did not engage with Union forces or Ohio militiamen within Highland County (OHC 2005g).

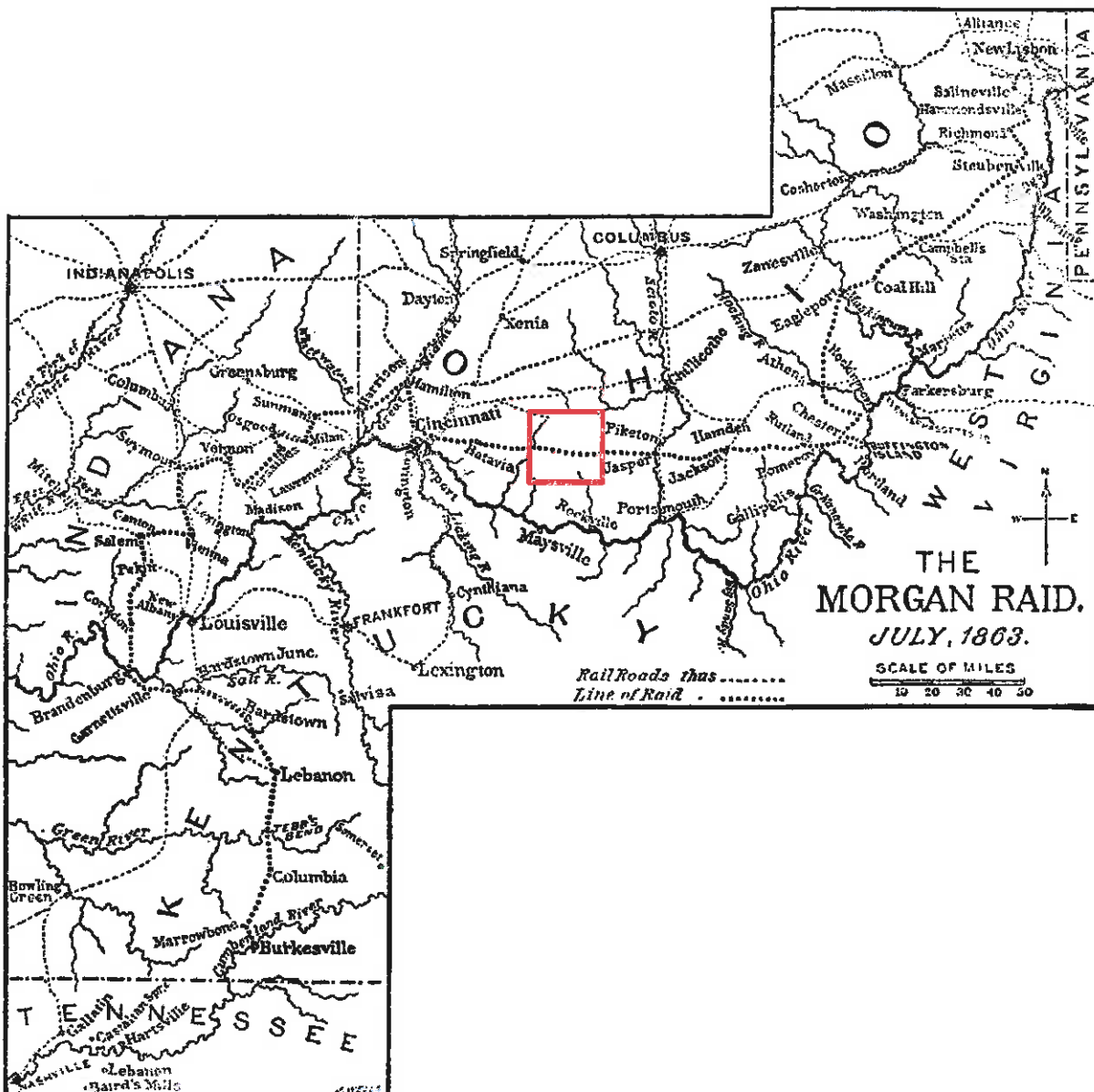


Figure 12. Battles and Leaders of the Civil War, Volume 3 (1887) showing the Morgan Raid with the approximate location of Highland County in red.

The two lines regrouped northeast of Cherry Fork in Adams County and continued east across the Scioto River to Jackson. There, the cavalry split again, and Morgan's men engaged with 1,500 Ohio militiamen at the Berlin Crossroads in Jackson County. The two lines met again at Hanesville in Meigs County and then began their search to find a crossing of the Ohio River into West Virginia and Confederate territory. However, they met with heavy resistance from both Ohio militiamen and Union soldiers near Middleport and Pomeroy on their way to the low-water ford at Buffington Island. Ohio militiamen defended a small earthwork at the Buffington Island ford and combined with flooding of the Ohio River, made the crossing impassable. Union forces engaged with Morgan at Buffington Island and on the run to West Point in Columbiana County, where Morgan and 364 of his command were captured (OHC 2005g).

Almost 4,400 Ohioans filed claims for compensation resulting from damages incurred during Morgan's Raid, for a total of \$678,915 (OHC 2005g). The Ohio militiamen that had assisted in the capture of Morgan disbanded (Johnson 1887), but Highland County kept and sustained its *eclat* in the militia system after the Civil War. The militiamen organized as the Ohio National Guard as the Noble Light Guards, after David Noble of Hillsboro and the Scott Dragoons, in honor of William Scott of Hillsboro (Thompson 1878).

3.2.3 Agriculture to Industrialization (1866–1900)

Prior to statehood, the economy of the Ohio region was based primarily on agriculture. Wheat, corn, and other grains served as the staple crops for the state and by 1849, Ohio produced more corn than any other state in the Union. Corn continued as the main crop into the late nineteenth century, but farmers also diversified into oats, potatoes, barley, rye, and buckwheat. Southern Ohio farmers raised tobacco and hemp, while orchards were predominant along the Ohio River. Livestock such as cattle, sheep, and pigs were raised throughout the state (OHC 2005h).

The layout of farmsteads remained consistent throughout the nineteenth and early twentieth centuries. The farmer's residence was located along a main road that passed in front of, or through, the farm, and associated agricultural and domestic outbuildings (e.g., springhouses, cisterns, smokehouses, woodsheds, utility sheds, and root cellars) were located nearby. Livestock shelters were located away from the main house and storage sheds for crops (corn cribs and granaries) were sited near livestock barns. Agricultural fields and pasture land surrounded the domestic core of the farmstead (Gray & Pape 2010).

With the lack of reliable trade routes across the Appalachian Mountains, Ohioans produced and sold their goods locally, without reliance on European manufactured goods (Wills 1996). The Tariff of 1816 was implemented to generate funds for capital loans to industrialists and to bring costs for American goods in line with their European counterparts. As a result, the transition to an industrial economy in Ohio began as early as the 1810s when textile factories, distilleries and breweries, cotton mills, and glass manufacturers opened in larger cities such as Cincinnati (OHC 2005i). Factories naturally grew out of the production needs of the agricultural industry and grew to include the processing of Ohio's abundance of raw materials (OHC 2005h).

Improvements to transportation infrastructure connected farmers and industry to markets in the east. Paved roads and turnpikes provided access through the Appalachian Mountains, steamboats improved river transportation, and canals constructed in the 1820s and 1830s opened both the Ohio River and Lake Erie to increased traffic. Products could be sent via the Erie Canal from Lake Erie to the Hudson River and eastern New York. The Ohio and Erie Canal connected northern Ohio to the Ohio River. Railroads constructed in the 1840s and 1850s connected Ohio to other states and allowed products to be shipped cheaply and quickly to market. By the late nineteenth century, the Ohio economy shifted away from agriculture, as competition from western states for farm products increased and the manufacturing industry in Ohio grew more successful (OHC 2005h).

3.2.3.1 Growth and Development of Highland County

Although the state of Ohio began to move away from an agrarian economy, Highland County remained focused on agriculture for most of the nineteenth century. The county benefitted from improved transportation infrastructure and by the 1890s, the western portion of Whiteoak Township also had a branch line of the Norfolk and Western Railroad. Beginning as early as 1820, Ohioans had looked for construction of a railroad system through the state. They looked to the railroad as a more reliable and efficient means of travel across the state from east to west. Although companies had located in the state by 1840, progress was hindered by the Panic of 1837, a financial crisis that saw 10 percent unemployment and closed approximately 800 banks in the U.S, and the success of the canal system. The Norfolk and Western Railway (originally the Scioto Valley Railroad) began in 1876 and connected Cincinnati to Portsmouth to the east along the Ohio River. A branch line from Sardinia to Mowrystown, Taylorsville, and Hillsboro was extended by the 1890s and lineside industries prospered (Lamb 2018).

In Highland County, agriculture continued as the primary occupation for residents into the late nineteenth century. Corn was the major crop, followed by wheat. Orchard crops were also successful—apple was the primary crop, while peaches, pears, grapes, and wine were also cultivated. Hogs, cattle, and sheep were all raised within Highland County during this time period. In 1870, Clay Township had a total population of 1,345 people; Whiteoak Township had slightly less with 1,052 persons (Thompson 1878). The following table summarizes the population and industry in the three towns (Strausbourg/Gath, Buford, and Taylorsville) adjacent to the project area at the end of the nineteenth century (Table 4).

Table 4. Demographics, Clay and Whiteoak Townships, 1870 (Thompson 1879).

Township	Population	Churches	Mills	Hotels	Schools	Teachers	Students
Clay	1,345	4	3	1	9	9	457
Whiteoak	1,052	6	4	1	7	7	334

The first schools within Highland County were pay or subscription schools and were taught at intervals dictated by the agricultural seasons. Sicily was home to the first school of Clay Township. Constructed in 1829, John Shelladay taught a three-month school for area children. The 1917

USGS topographic map indicates at least six schools were once located near the project area. Reedy School (HIG0034613), Maple Grove School (HIG0036313), are still extant and are located within the APE; Bell Run School is still extant but is located outside the APE (Martin 1955).

3.2.4 Urbanization, the Great Depression, and War (1900–1945)

With the shift of the economy from agriculture to industry, the population of Ohio and throughout the United States moved from rural farms to industrial cities. Immigrants and rural residents moved to cities for the promise of work in factories and manufacturing plants and cities like Columbus and Cincinnati experienced a significant increase in population. The population of rural Highland County grew from 29,048 in 1890 to a high of 30,982 in 1900. Less than one percent of the county's land was considered urban and the industry at the turn-of-the century was still largely agriculturally focused. However, over the next 30 years the population decreased by 18 percent to a low of 25,416 in 1930, likely representing a move from the rural farm to industrial centers. During this same time period, industrialized counties like Hamilton County (Cincinnati) grew significantly from 374,573 in 1890, steadily increasing to a high of 924,018 in 1970. The biggest increase over a decade was 116 percent from 1920 to 1930 and again from 1950 to 1960 (Forstall 1996). Cincinnati was the largest city in Ohio by 1890 and had the densest population of any city in the U.S. The city benefitted from the railroad as it was connected by rail to cities across the United States. Its primary industry in the early twentieth century was iron production, but also had meatpacking, cloth production, and woodworking factories. Iron was shipped to Cincinnati from all parts of Ohio and manufactured into finished products (OHC 2005k).

While cities continued to grow, especially as industry increased production to meet wartime needs, they struggled to keep pace with required infrastructure improvements and combat political corruption that followed the success of industry. There were also problems with disease that accompanied overcrowded conditions, and employment primarily consisted of low-paying factory jobs. Ohio Progressives worked to advance legislation and project to improve urban conditions (OHC 2005l).

The Great Depression had a profound effect on both rural farmers and industrial cities in Ohio. The overall unemployment rate in Ohio in 1932 had reached 37.3 percent and by 1933, almost half of all factory workers were unemployed. Just as industrialization shifted population from rural to urban areas, the Great Depression witnessed the reverse—population moved away from cities to rural farms to produce the food necessary to support themselves and their families (OHC 2005m). While the programs initiated under President Roosevelt's New Deal did not bring an end to the Great Depression, the government aid Ohioans sought through its programs did help support them until the economy recovered as a result of the United States entrance into World War II (OHC 2005n).

Ohio supported the United States during World War II through its participation in the U.S. armed services and the production of equipment and materials for the war effort. Over 800,000 Ohio residents served in the U.S. military during the war. The defense industry boomed during the war, manufacturing plants such as Willys-Overland Company in Toledo produced jeeps and the

Goodyear Aircraft Corporation in Akron produced airplanes for the U.S. military. Ohio cities again saw an increase in population as women and workers from Appalachia found job opportunities in defense plants in urban centers (OHC 2005o).

3.2.5 Ohio and Highland County in the Mid-Twentieth Century (1946–1975)

The prosperity experienced during World War II continued into the next several decades. Farmers had cash reserves to invest in land and machinery and to pay down debts incurred in previous years. Transportation improvements during the mid-twentieth century forever changed Ohio's rural landscape and impacted future development patterns. Industry that supported the war effort transitioned to providing domestic products.

Remaining focused on agriculture, Highland County contributed to the state's overall success in the postwar years. A high demand for agricultural products after World War II helped to maintain food prices in the short term; but, as modern agricultural techniques boosted crop yields earlier issues of crop surpluses and price fluctuations returned. The Highland County Soil and Water Conservation District was formed on April 18, 1942, to help develop processes and provide educational opportunities for local farmers to practice conservation techniques (such as water erosion across cultivated fields). Federal price support programs helped to stabilize the farm economy and farmers continued to advance their efforts through mechanization, technological innovation, and scientific research. The Rural Electrification Act of 1936 provided federal loans for the installation of electrical distribution systems to rural communities of Ohio. After World War II, Ohio had a higher percentage of electrified farms than any other U.S. state—97.6 percent of Ohio farms had electricity by 1948 (Hurt 1984).

The methods of production and the overall landscape of a typical farmstead in Ohio experienced significant change in the postwar years. Indoor plumbing made some earlier outbuildings fall into disuse and eventual abandonment (e.g., privies, cisterns, and springhouses). The design of equipment sheds changed to accommodate larger farm equipment and machinery. Advances in pre-fabricated buildings allowed farmers to construct agricultural outbuildings quickly and economically, using "kit" structures. Pre-fabricated silos and barns became commonplace on the agricultural landscape and represented a distinct departure from the character of earlier farmsteads built of vernacular designs using locally available materials (Gray & Pape 2010).

During the 1960s and 1970s, farmers worked to increase crop yields on fewer acres through technological advances, farm management practices, and scientific research. This inevitably led to reduced needs for outside labor and favored large agri-business models rather than the small farmer. By 1970, farmers represented only three percent of the population of Ohio, but the average farm size had increased from 93.7 acres in 1940 to 165 acres in 1975 (Hurt 1984). This trend has continued for farms within Highland County. Review of historic and current aerials (1959–2015) indicates that while the land dedicated to crops remains constant, cultivated tracts within the project area have been combined to form larger fields.

3.3 BACKGROUND RESEARCH

3.3.1 Previously Recorded Archaeological Sites

Background research for the project was conducted using the Ohio Historic Preservation Office's (OHPO) Online Mapping System (OMS), a searchable GIS-based program depicting previously recorded archaeological and historic resources in Ohio. Also examined were prior cultural resource reports and the archaeological site files located at the OHPO. The area examined was a one-mile radius around the project area.

Based on this research, there were two sites, 33HI315 and 33HI387, within a one-mile radius of the project area (Figure 13). Site 33HI315 is a Late Archaic open site located in a field approximately 0.8 mile east of the project area. Site 33HI387 is a historic artifact scatter located approximately 0.6 mile north of the project area. Neither of these sites is eligible for inclusion in the NRHP. Additionally, two previous cultural resources surveys were within one mile of the project area. These surveys consist of a Phase I and II archaeological survey of Bridge 13-1.40 in Clay Township (Buehrig 1993, Survey No.13119) and a Phase I archaeological survey of a proposed telecommunications tower site in Buford (Meyer-Landis and Brown 2016, Survey No. 20238). Neither of these surveys were within the project area.

3.3.2 Previously Recorded Historical Resources

Background research for the project area was conducted using resources available from the OHPO OMS. The database included review of the Ohio History Inventory, National Register of Historic Places (NRHP) files, the Historic Bridge Inventory, and information on cemeteries maintained by the Ohio Genealogical Society (OGS). The area examined was a one-mile radius around the project area.

The records review of OMS identified no previously recorded NRHP-listed or eligible properties or surveyed architectural resources within the project boundaries. Furthermore, there are no NRHP-listed properties, NRHP-eligible properties, National Historic Landmarks (NHL), bridges, or historic structures within one-mile. The background research did identify 10 Ohio Genealogical Society (OGS) cemeteries within the one-mile search radius (Table 5). None of the OGS cemeteries have been determined eligible for the NRHP and none are located within the project area (Figure 13).

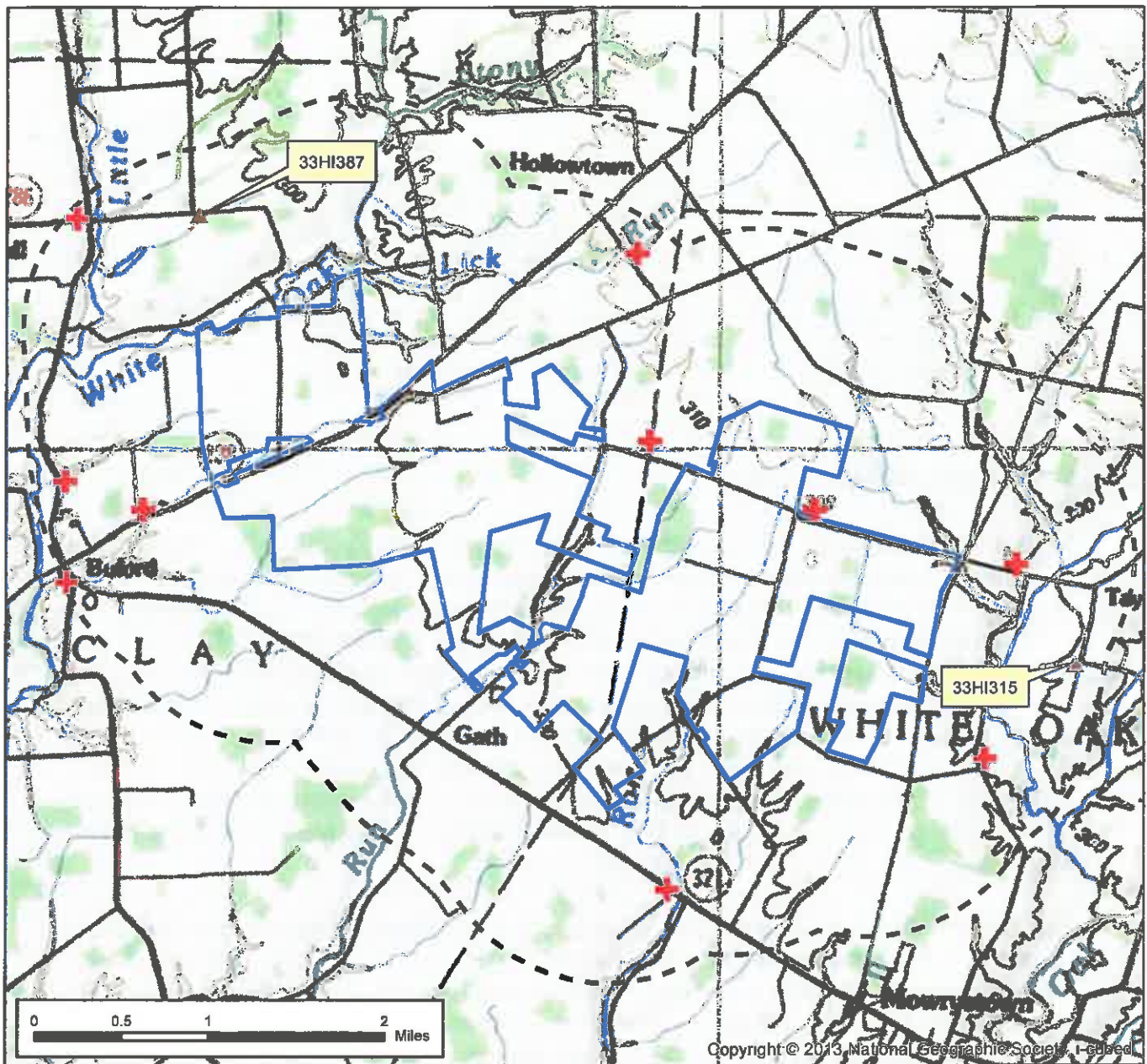
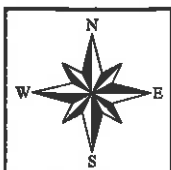
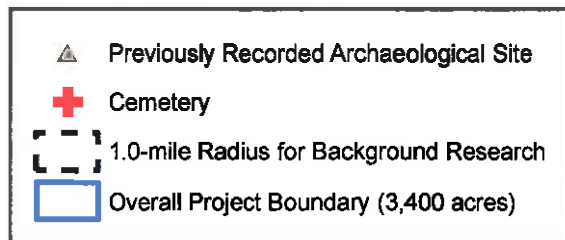


Figure 13. Previously recorded cultural resources within a 1.0-mile radius.
Base Maps: Sardinia (1979) and Sugar Tree Ridge (1974) USGS 7.5' topographic maps.



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PREVIOUSLY RECORDED SITES
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Figure
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Table 5. OGS Cemeteries within a one-mile radius of the project area.

OGS ID	Cemetery Name	Location Description	Location Confidence
5351	Dunn-Roberts	North side of CR 56A, west of CR20B	Yes
5356	Kibler	East side of CR 20B, just north of TR 145A	No
5367	Unnamed #3	North side of CR 56A, just east of CR 60A	No
5162	Unnamed #2	East from SR 134, west from TR 411A, south From TR 406A, north from SR 138	No
5157	Hopkins	NE corner of intersection of SR 134 and TR 210A	No
5163	Unnamed #3	In bed of TR 401A connecting SR 138 with CR 5A	No
5160	Taggart	NE corner of intersection of TR411A and SR 138	No
5366	Unnamed #2	Near Clay Township, north of CR 56A	No
5349	Bells Run	SR 321 between TR 141A and TR 143A	Yes
5152	Buford	SR 134 south of Buford	Yes

3.3.3 Historic Map Research

In addition to the records review, nineteenth and twentieth century maps of the property were examined to determine whether historic resources were likely to be present within the project area. Colton's 1851 Map of the State of Ohio places the project area in a rural setting, just northeast of Buford. The map depicts two unnamed streams, likely North Fork of White Oak Creek and White Oak Creek, and an unnamed road, likely West New Market Road (Figure 14). The 1914 Mills Archaeological Atlas of Ohio shows the project area as being sparsely populated and located between Buford and Hollowtown, and to the southeast of Little North Fork White Oak Creek (Figure 15). The map depicts 10 prehistoric mounds, two earthen enclosures, and one burial in the vicinity. Although none of these resources are within the project boundary, there are two mounds, one burial, and two earthen enclosures within a one-mile radius of the project boundary.

The 1917 Hillsboro and Sardinia USGS topographic maps show the project area is sparsely populated, with the majority of settlements located next to the roads (Figure 16). Three schools are indicated on the maps as well: Reedy School located just north of the project boundary near Ruble Run, Maple Grove School located 0.2 mile north of the project boundary, and Bell Run School located 0.1 mile to the south. The Hillsboro Branch railroad is also shown running roughly north to south along the eastern project area boundary. The 1944 Hillsboro and Sardinia USGS topographic maps show a slight increase in population density with the presence of more structures, especially adjacent the roads (Figure 17). The three schools shown on the 1917 USGS maps appear again on these 1944 maps. The railroad is also still present, however, the name of the line has changed to "Norfolk and Western." Finally, the 1961 Sardinia and Sugar Tree Ridge USGS topographic maps show the project area with fewer structures and the absence of the three local schools seen in the 1917 and 1944 USGS maps (Figure 18). All of these maps show a sparse distribution of structures in the project area.



Figure 14. Colton's (1851) Map of Ohio showing the approximate location of the project area.

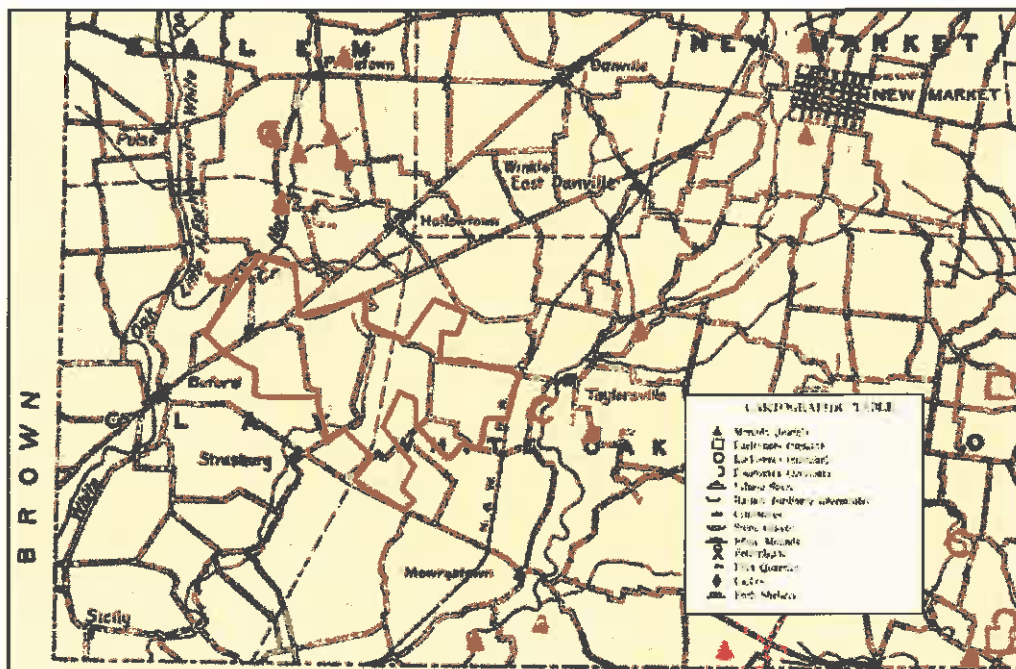


Figure 15. Mills Archaeological Atlas (1914) showing the project area and surrounding archaeological sites.

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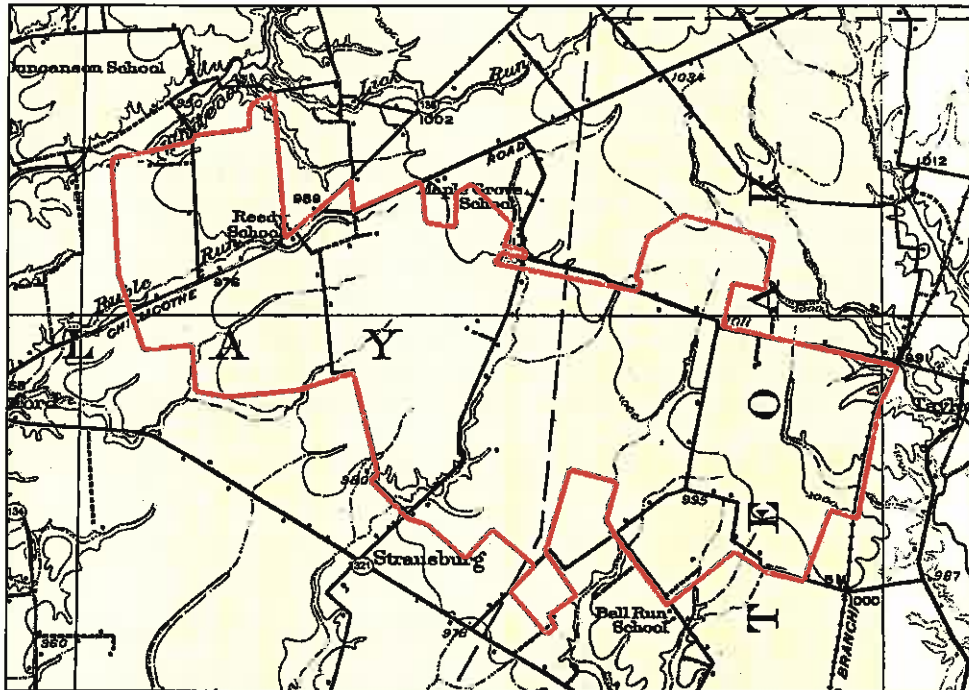


Figure 16. Hillsboro and Sardinia (1917) USGS topographic maps showing the project area.

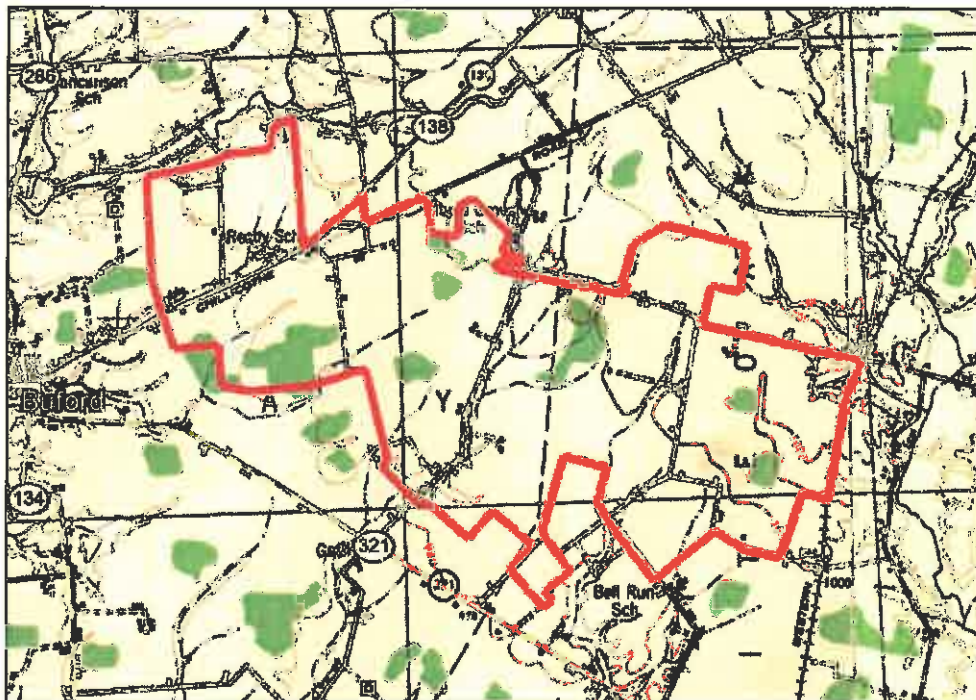


Figure 17. Hillsboro and Sardinia (1944) USGS topographic maps showing the project area.

Responsive ■ Resourceful ■ Reliable

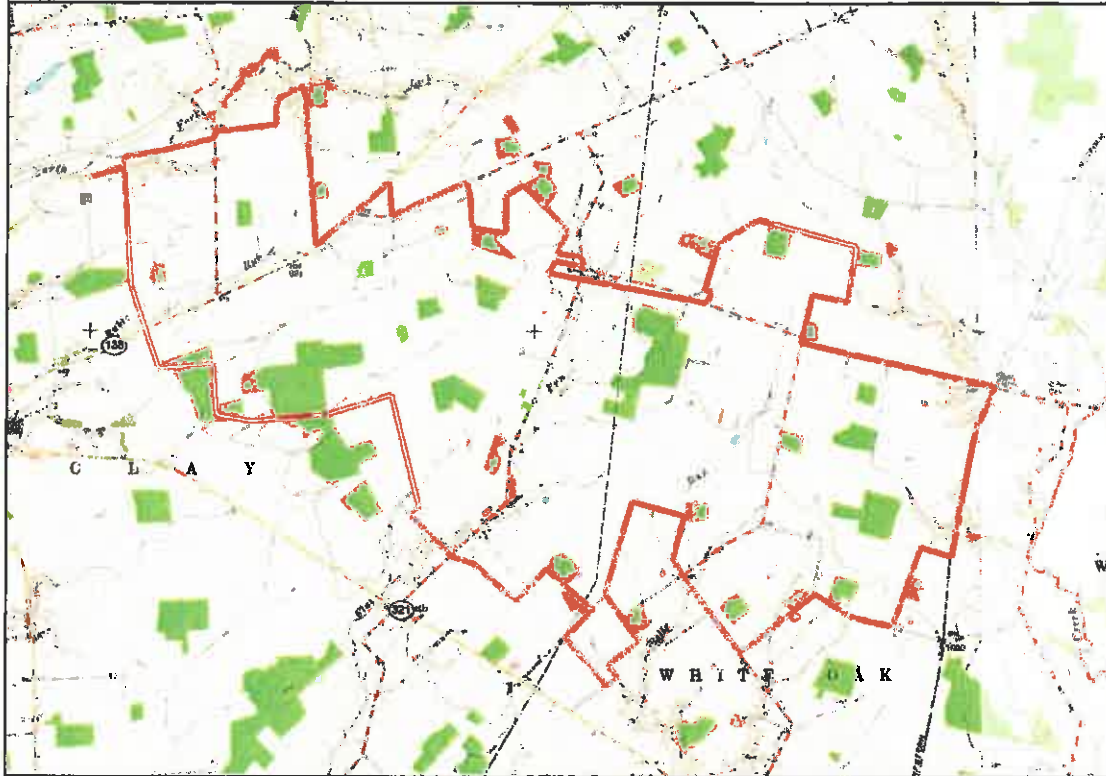


Figure 18. Sardinia and Sugar Tree Ridge (1961) USGS topographic maps showing the overall project area.

3.4 RESEARCH DESIGN AND EXPECTED RESULTS

The goal of the investigation was to identify and evaluate significant archaeological and historic resources within the project APE. Terracon conducted an archaeological and historic resources field survey of the proposed project area. Upon completion of the background and literature review, a predictive model was developed which encompassed both prehistoric and historical resources (Figure 19). In general, the most significant variables for determining archaeological site location appear to be distance to a permanent water source or wetland, slope, and soil drainage characteristics. Prehistoric sites tend to occur on low slope areas with well drained soils that are within 200 meters of a permanent water source or wetland. Historic sites tend to be located within 100 meters of old roads.

Based on these parameters, approximately 28 acres (1.2%) of the 2,285-acre project area have high potential for containing prehistoric archaeological sites. These are areas having well drained soils within 100 meters of a water source. Approximately 1,090 acres (47.7%) have a moderate probability for containing prehistoric archaeological sites. These include all areas within 200 meters of a water source, regardless of soil drainage. Approximately 388 acres (17%) have a high

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probability of containing historic archaeological sites, which include all areas within 100 meters of a road or other transportation feature (Figure 19). However, approximately 159 acres of the historic high probability areas overlap with the prehistoric high and moderate probability areas, leaving only an additional 229 acres. The remaining 938 acres (41.1%) have a low probability for containing archaeological resources. It is expected that prehistoric sites will be located in areas with moderately well drained to well drained soils and in locations within 200 meters of a natural water source. It is expected that historic sites would be found in areas adjacent to old roads and in the vicinity of structures that appear on nineteenth and twentieth century maps of the project area.

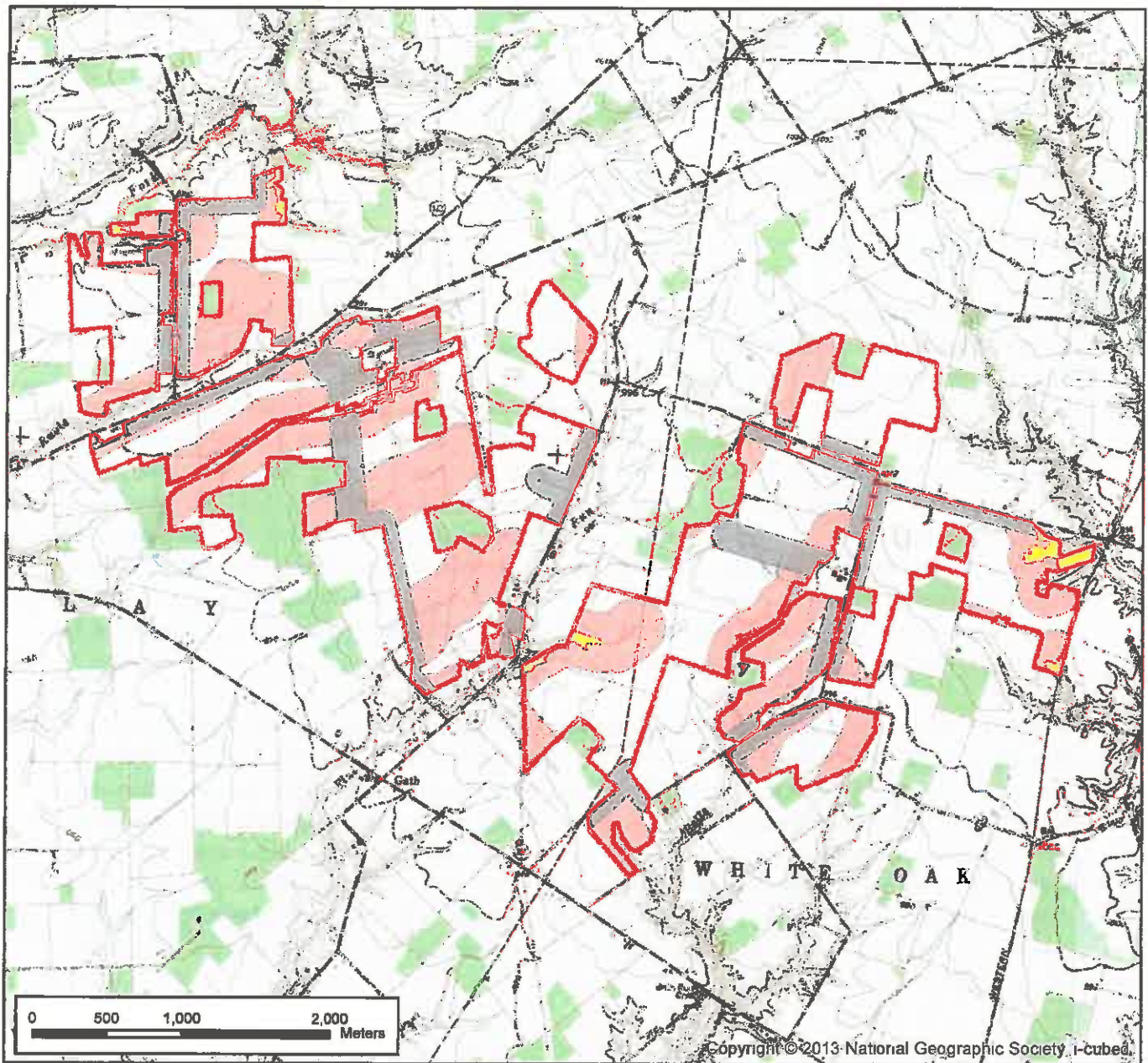
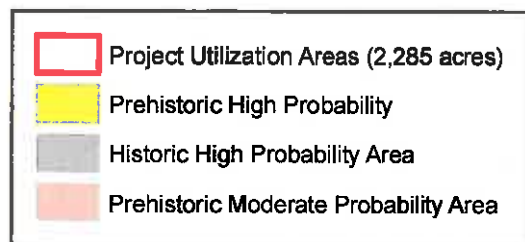


Figure 19. Archaeological site probability model.
Base Maps: Sardinia (1979) and Sugar Tree Ridge (1974) USGS 7.5' topographic maps.



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SITE PROBABILITY
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Figure
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4.0 FIELD AND LABORATORY METHODS

4.1 ARCHAEOLOGICAL FIELD METHODS

4.1.1 Phase I Survey

Based on the predictive model discussed in Section 3.4, high probability areas having good surface visibility (i.e., greater than 50 percent) were surveyed by pedestrian survey using transects spaced 10 meters apart. In high probability areas with poor surface visibility shovel testing was conducted at 15-meter intervals. In areas of moderate probability having good surface visibility, a surface inspection was performed along transects spaced 15 meters apart. In moderate probability areas having poor surface visibility, shovel testing was conducted at 25-meter intervals. In areas having a low archaeological potential with good surface visibility, a surface inspection along transects spaced 30 meters apart was conducted. In low probability areas with poor surface visibility, shovel testing was conducted at intervals spaced 30-meters apart. Systematic survey methods were supplemented by judgmentally placing shovel tests on landforms or other areas that appeared to have a high potential for containing archaeological resources, regardless of the initial probability model determinations

If artifacts were found in areas of good surface visibility, eight shovel tests were excavated across the site to help determine its stratigraphic integrity. If artifacts were found on the surface, all temporally diagnostic prehistoric artifacts and tools, as well as a sample of debitage was collected. Similarly, a sample of historic artifacts was collected from the surface of historic sites. If artifacts were found in areas of poor surface visibility, shovel tests were excavated at 5-meter intervals to help define site boundaries. Sites were recorded in the field using field journals, detailed site maps, Terracon site forms, and photographed using a high-resolution digital camera (10 megapixel or higher). Archaeological sites found during the survey were recorded with the OHPO upon conclusion of the fieldwork.

Each shovel test excavated during the project was at least 50-x-50 cm in size and excavated to 50 cm below the ground surface (cmbbs) or until culturally sterile subsoil, the water table, bedrock, or an impenetrable obstacle was encountered. Soil from each shovel test was screened through 1/4-inch wire mesh and artifacts, if recovered, were bagged by site and relative provenience within each site. Information for each shovel test regarding artifact content, shovel test depth, soil texture and color (using the Munsell soil color chart), and other relevant environmental factors were kept in a field journal. Sites were located using a Garmin GPSMAP 78 receiver (using UTM Zone 16, NAD 27) and plotted on USGS 7.5-minute topographic maps. State archaeological site forms were completed and submitted to the Ohio State Preservation Office (OHPO) at the completion of the fieldwork.

For the purposes of the project, an archaeological site was defined as an area yielding three or more prehistoric or historic artifacts within a 30-meter radius and/or an area with visible or historically recorded cultural features such as shell middens, cemeteries, rockshelters, chimney falls, and earthworks. An "isolated find" was defined as no more than two historic or prehistoric artifacts found within a 30-meter radius.

4.1.2 Phase II Testing

Phase II testing was conducted at site 33HI463 from August 15–17, 2019, by William Green and Kelly Higgins. Geophysical survey and analysis was conducted by Keith Seramur, Joey Anderson, and Emma Myrick. Phase II testing included a geophysical survey, Oakfield coring, and the excavation of two 1-x-1-meter test units and one 0.50-x-2-meter test unit.

4.1.2.1 Geophysical Investigations

Geophysical surveys have the greatest accuracy when two different methods are used to interpret the subsurface. The combination of Ground Penetrating Radar (GPR) and Magnetometer methods allowed us to identify magnetic and radar anomalies and image these anomalies on the radar profiles.

Two GPR systems were used to survey the grids. These included a Geophysical Survey Systems, Inc. (GSSI) UtilityScan GPR System with a 350 MHz hyperstacking antenna and a GSSI SIR-3000 Single Channel Data Acquisition System with a 400 MHz antenna. The GPR systems send pulses of electromagnetic energy or radar into the earth through a transmitter. The radar waves propagate through the subsurface and are partially reflected back to the receiver when material with different dielectric properties (conductivity) are encountered below the surface. Soil in pit features, along the base of hearths and in other areas of disturbance have different dielectric properties than the surrounding undisturbed soil. The GPR systems detect these changes and show them as reflections or anomalies on the radar profiles.

The GPR grid data was processed and modeled using the GPR Slice® software. The GPR data processing typically includes adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid data produced with GPR Slice® were used to image time slices (or depth slices) which are horizontal (plan-view) maps of reflections across the grids. Each depth slice is a horizontal slice of reflections across a designated thickness of the subsurface. For example, a GPR depth slice of 0.25 to 0.45 meter can be used to observe reflections in the radar data along the base of the plowzone.

The Magnetometer survey was completed with a GEM Systems GSM-19W Walking Overhauser Magnetometer. The GSM-19W Magnetometer is designed to measure changes in the Earth's

magnetic field associated with cultural features. Magnetometer data was compiled in an Excel spreadsheet and hillshade maps of the magnetic data were drafted using Golden Software's Surfer® modeling program. Soil in the base of a hearth is exposed to high temperatures and reducing (anoxic) conditions. This can cause hematite and ferrioxides in soil to be converted to magnetic particles. Soil rich in organics such as found in middens, pit features and possibly post holes can have a magnetic signature that differs from the surrounding soil. Changes in the earth's magnetic field related to magnetic minerals in these cultural features can be imaged with the Overhauser Magnetometer.

GPR and magnetometer transects were surveyed in parallel or sub parallel rows along the X and/or Y axes to look for radar reflections and magnetic anomalies. The combination of GPR and magnetometer improves the accuracy of the geophysical surveys by providing two data sets with which to evaluate anomalies. The anomalies detected at site 33HI463 were characterized based on size, distribution, and magnetic and/or reflection characteristics, allowing a sample of the different types of anomalies to be investigated further by the archaeologists.

4.1.2.2 Oakfield Core Samples

Subsurface anomalies identified during the geophysical survey were ranked into three broad categories according to their potential archaeological significance: 1) high probability; 2) medium probability; and 3) low probability. All identified anomalies were investigated using a hand-held Oakfield soil core to discern whether soil staining indicative of features or archaeological materials such as lithic debitage, pottery, charcoal, bone, or shell were present. The area immediately surrounding each of the flagged anomalies was probed four times in a rectangular pattern with the Oakfield corer.

4.1.2.3 Test Units

Based on the results of the geophysical survey and coring, Terracon, in consultation with the OHPO, selected three anomalies at the site that were believed to have the greatest potential for being archaeological features such as foundations, wells, or privies. Test units were excavated around each of the three selected anomalies. Each test unit excavated the plowzone, which was removed as a single level. Test units were excavated to the base of the plowzone to expose intact features, if present. The southwest corner of each test unit served as unit datum and its location was recorded with a Trimble GeoExplorer GeoXT receiver (submeter accuracy). The datum was set consistently at 10 cm above the ground surface of the southwest corner of the test unit.

Soil from test units was screened through 1/4-inch wire mesh, and features, if encountered, were photographed, drawn in plan, and excavated. Artifacts were placed in plastic bags containing the appropriate project and provenience information. Information regarding artifact content, excavation depth, soil texture and color (using the Munsell soil color chart), and other relevant

environmental factors was kept in a field journal and on standard Terracon archaeological field forms.

4.2 LABORATORY METHODS AND CURATION

Artifacts recovered during the survey were cleaned, identified, and analyzed using the methods summarized below. Following the completion of the analyses, artifacts were bagged according to site, provenience, and catalog number and the information was entered into an Excel spreadsheet (Appendix A). Acid-free plastic bags and artifact tags were used for the curation purposes.

Lithic artifacts were initially identified as either debitage (flakes and shatter) or tools. Debitage was sorted by raw material type, presence/absence of cortex, and size graded using a modified form of the mass analysis method described by Ahler (1989). Tools were classified as either being flaked or ground stone, with flake tools being subdivided into bifaces, unifaces, or expedient tools (i.e., retouched or utilized flakes). Where possible, formal tools were classified by type, and the length, width, and thickness was recorded for each unbroken tool. Projectile point typology generally followed those contained in Coe (1964), Justice (1987), McNutt (2008), and Ritchie (1961).

Prehistoric ceramics greater than 2 cm² were sorted by vessel portion (rim, shoulder, body, or base), surface treatment, and temper (using the Wentworth scale). Once sorted, the artifacts were analyzed for other diagnostic attributes such as interior treatment, rim form, and rim/lip decoration. Where possible, this data was used to place the pottery sherds within established regional types. Information on the ceramic typology of the project area was derived primarily from Koerner, 2005, Moore and Smith (2001), and Wesler (2011). Sherds less than 2 cm² were classified as “residual” and only their count and weight were recorded.

Historic artifacts were first sorted by material (e.g., ceramics, glass, and metal), and then into classes (e.g., earthenware, container glass, nails) and types (e.g., whiteware, amethyst, hand wrought). Technological attributes, decorations, maker's marks, and other chronologically sensitive indicators were then used to help establish a temporal framework for the artifacts using such references as Miller (1991), Noel Hume (1970), and South (1977), for historic ceramics, and Deiss (1981) Ketchum (1971), Lorrain (1968), Munsey (1970), and Putnam (1965) for glass. In addition, the Florida Museum of Natural History's on-line digital type collection (http://www.flmnh.ufl.edu/histarch/gallery_types/) was also used to identify historic ceramics.

The artifacts, notes, maps, photographs, and other materials generated as a result of this project will be temporarily curated at the Terracon office in Columbia, South Carolina. After conclusion of the project, these materials will either be returned to the landowners (if requested) or delivered to a facility meeting the curation standards set forth in 36 CFR Part 79, *Curation of Federally-Owned and Administered Archaeological Collections*.

4.3 ARCHITECTURAL SURVEY METHODS

An architectural survey was conducted to locate potential historic properties within the proposed 0.5-mile APE. Accessible public roads within the APE were driven to locate historic structures more than 50 years old that retained at least a modest degree of architectural integrity. Each identified resource was photographed, and its location recorded in the field. Each resource was plotted on a USGS 7.5-minute topographic quadrangle map and notes regarding its historical value, appearance, and integrity were recorded in a field journal.

4.4 NATIONAL REGISTER ELIGIBILITY ASSESSMENT

For a property to be considered eligible for the NRHP it must retain integrity of location, design, setting, materials, workmanship, feeling and association (National Register Bulletin 15:2). In addition, a property must meet one or more of the criteria below:

- A. are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. are associated with the lives of persons significant in our past; or
- C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. have yielded or may be likely to yield information important in history or prehistory.

A resource may be eligible under one or more these criteria. Criteria A, B, and C are most frequently applied to historic buildings, structures, objects, non-archaeological sites (e.g., battlefields, cemeteries, natural features, and designated landscapes), or districts. Also, a general guide of 50 years of age is used to define "historic" in the NRHP evaluation process. A resource may, however, be eligible for the National Register even if it is less than 50 years of age but has exceptional significance.

The most frequently used criterion for assessing the significance of an archaeological site is Criterion D, although other criteria were considered where appropriate. For an archaeological site to be considered, it must have potential to add to the understanding of the area's history or prehistory. A commonly used standard to determine a site's research potential is based on a number of physical characteristics including variety, quantity, integrity, clarity, and environmental context (Glassow 1977). Another important factor is the uniqueness of the site. Sites that are commonly found such as twentieth century home sites should exhibit exceptional integrity and research potential to be eligible for inclusion in the NRHP. Site types that are rarely found (e.g.,

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Clovis Period sites), or those that have strong cultural significance to descendant populations (e.g., burial mounds), may have lesser requirements for inclusion in the NRHP.

5.0 RESULTS

5.1 ARCHAEOLOGICAL RESULTS

A Phase I archaeological survey was conducted from November 5 to December 5, 2018, April 2–23, May 1–2, and May 5–6, 2019. Ground surface visibility varied across the project tract and influenced the methodology employed. In areas with greater than 50 percent visibility a pedestrian survey was conducted, which included 856 transects placed at 10–30-meter intervals (depending on the archaeological probability). In areas with less than 50 percent surface visibility, 2,824 shovel tests, raging in depth from 10–60 cmbs, were excavated along 247 transects spaced 15–30 meters apart from one another. Phase II testing at site 33HI463 was conducted from August 14–17, 2019.

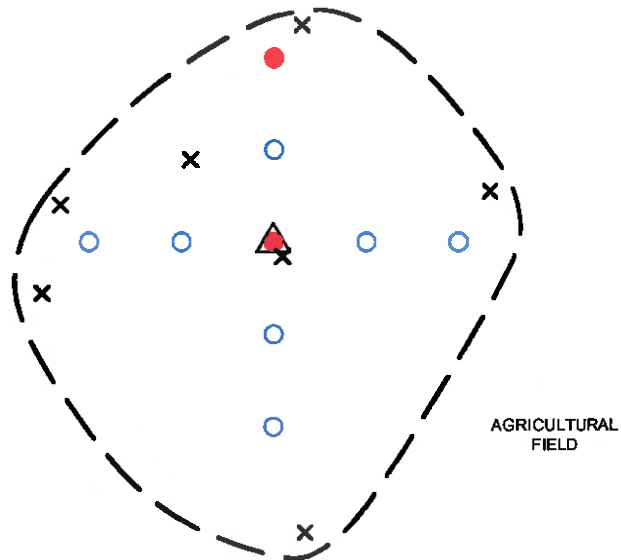
In general, two soil profiles were observed within the project area. The first consisted of approximately 10 cm of dark grayish brown (10YR 4/2) loam (Ap horizon), followed by 10+ cm (10–20+ cmbs) of brownish yellow (10YR 6/8) loamy clay subsoil (Bt horizon). The second consisted of approximately 20 cm of dark yellowish brown (10YR 4/6) loamy clay (Ap horizon), followed by 10+ cm (20–30+ cmbs) of yellowish brown (10YR 5/6) clay subsoil (Bt horizon). As a result of the archaeological survey 11 new sites, 33HI461–33HI471, and five isolated finds, 33HI472–33HI476, were identified (Figures 1a and 2a, Table 1).

5.1.1 Site 33HI461

Site Number: 33HI461	NRHP Recommendation: Not Eligible
Site Type: Lithic Scatter	Elevation: 980 ft. AMSL
Components: Early Woodland	Landform: Rise in plowed field
UTM coordinates: E256442, N4330525 (NAD 27)	Soil Type: Clermont silty loam
Site Dimensions: 30 m E/W x 25 m N/S	Vegetation: Agricultural Field
Artifact Depth: 0–10 cmbs	No. of STPs/Positive STPs: 9/1

Site 33HI461 is an Early Woodland lithic scatter located on a small rise in the northwest portion of the project area, approximately 350 meters north of State Highway 138 (Figure 1a). The site is located in a plowed agricultural field and ground surface visibility was approximately 75 percent. The site is bounded by the extent of the surface scatter and two negative shovel tests in each cardinal direction. Based on shovel testing and the extent of a surface collection, the site measures approximately 30 meters east/west by 25 meters north/south (Figures 20 and 21).

During the investigation, nine shovel tests were excavated in and around the site. A total of two lithic artifacts was recovered from one positive shovel test between 0–10 cmbs, while an additional nine artifacts were collected from the surface of the site. A typical soil profile consisted of approximately 20 cm of brown (10YR 4/3) silty loam (Ap horizon), overlying 10+ cm (20–30+



EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- △ SITE DATUM
- × SURFACE ARTIFACT
- SITE BOUNDARY

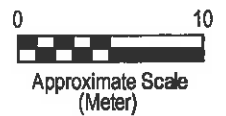


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND
IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mgr: DAS	Project No. 73187213	<div>Terracon Consulting Engineers and Scientists 521 CLEMSON ROAD COLUMBIA, SC 29228 PH. (803) 741-8000 FAX. (803) 741-9900</div>	SITE DIAGRAM	Figure
Drawn By: PTK	Scale: AS SHOWN		HIGHLAND COUNTY SOLAR PHASE I	20
Checked By: DAS	File No. 73187213		34HI461	
Approved By: BGG	Date: JUNE 2019		HIGHLAND COUNTY, OHIO	



Figure 21. Site 33HI461, facing southwest.



Figure 22. Adena point base from surface of 33HI461.

cmbs) of yellowish brown (10YR 5/6) clay mottled with light brownish gray (10YR 6/2) loamy clay subsoil (Bt horizon).

In total, 11 artifacts were recovered from the site consisting of one chert Adena point (Figure 22), nine chert flakes, and one quartz flake (Appendix A). The Adena point dates to the Early Woodland Period, ca. 2800–2300 B.P. (Justice 1987:192).

Site 33HI461 is an Early Woodland lithic scatter located in a plowed agricultural field in the northwest portion of the project area. The site contains a small number of artifacts, has little artifact diversity, and all artifacts were found either on the ground surface or in the plowzone indicating that it is unlikely that archaeological integrity has been preserved. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – The site contains one projectile point that can be dated to the Early Woodland Period. However, it has a small number of artifacts and little artifact diversity. In addition, there is no stratigraphic integrity. Based on these factors, the site is unlikely to yield significant information about the prehistory of the area.

Site 33HI461 contains a relatively sparse lithic assemblage and little artifact diversity. Only one diagnostic artifact was found, and all of the artifacts were recovered from the surface of the site or in the plowzone. For these reasons, the site is unlikely to yield any new information about the Early Woodland Period in the area. Site 33HI461 does not meet any of the criteria necessary for inclusion in the National Register and is recommended ineligible for the NRHP.

5.1.2 Site 33HI462

Site Number: 33HI462	NRHP Recommendation: Not Eligible
Site Type: House site	Elevation: 981 ft. AMSL
Components: Mid-19 th to mid-20 th century	Landform: Level field
UTM coordinates: E256979, N4329945 (NAD 27)	Soil Type: Westboro Schafer silty loam; Clermont silty loam
Site Dimensions: 75 m EW x 55 m N/S	Vegetation: Agricultural Field
Artifact Depth: 0–15 cmbs	No. of STPs/Positive STPs: 9/3

Site 33HI462 is a mid-nineteenth to mid-twentieth century house site located in a flat, plowed agricultural field in the western portion of the project area, approximately 450 meters south of State Highway 138 (Figure 1a). The site is situated near a residence that appears on the Hillsboro (1917) USGS quadrangle map of the area. The site is located in a plowed agricultural field and ground surface visibility was approximately 90 percent (Figure 24). Based on shovel testing and the extent of a surface collection, the site measures approximately 75 meters east/west by 55 meters north/south and is bounded by the extent of the surface scatter (Figure 23).

During the investigation, nine shovel tests were excavated in and around the site. A total of 23 artifacts was recovered from three positive shovel tests between 0–15 cmbs. Thirty-one additional artifacts were recovered from the surface of the site. A typical soil profile consisted of approximately 18 cm of yellowish brown (10YR 5/4) clayey loam (Ap horizon), overlying 15+ cm (18–33+ cmbs) of very dark brown (10YR 3/2) silty clay mottled with yellowish brown (10YR 5/6) clay subsoil (Bt horizon).

Recovered artifacts included three porcelain sherds, 18 stoneware sherds (seven brown glazed, six Bristol glazed, two Albany slip, one salt-glazed, one gray glazed, and one blue glazed), nine whiteware sherds (seven plain and two polychrome), one refined earthenware sherd, 10 container glass shards (four milk, three clear, two aqua, and one amber), two pieces of window glass, two cut nails, one bolt, one shackle, six brick fragments, and one mortar fragment (Appendix A). These artifacts date from the mid-nineteenth to mid-twentieth centuries. The presence of architectural remains such as brick, mortar, and window glass indicate that a structure once stood on the property (Figures 15 and 16).

Site 33HI462 is a mid-nineteenth to mid-twentieth century house site located the western portion of the project area. The site contains a small number of artifact classes (kitchen and architectural), is a common site type, and has no stratigraphic integrity. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15).



EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- △ SITE DATUM
- x SURFACE ARTIFACT
- SITE BOUNDARY

AGRICULTURAL
FIELD

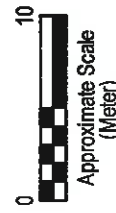
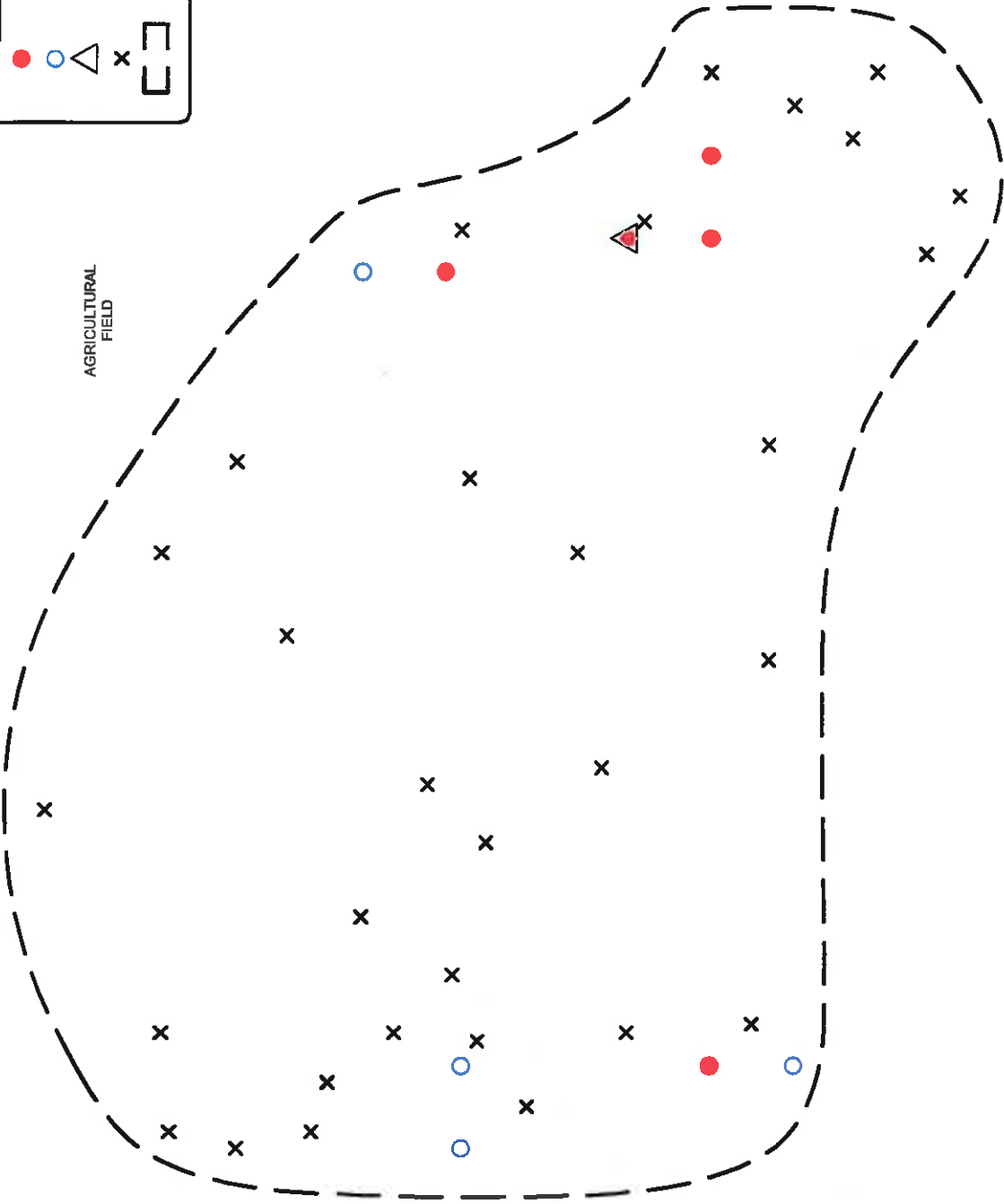


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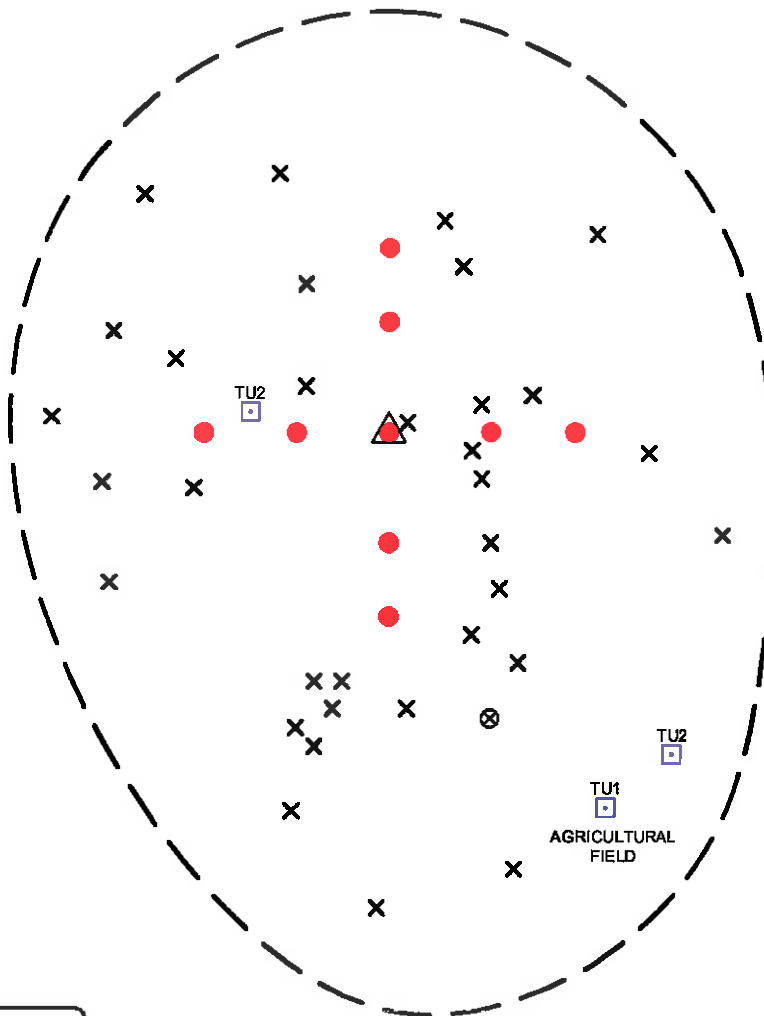
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Drawn By: DAS	Scale: AS SHOWN	Scale: AS SHOWN	Scale: AS SHOWN
Checked By: PTK	File No. 73187213	File No. 73187213	File No. 73187213
Approved By: DAS	Date: JUNE 2019	Date: JUNE 2019	Date: JUNE 2019
Project Mgr: BGG		Project Mgr: BGG	
<div><div></div><div>Terracon Consulting Engineers and Scientists 521 CLEMSON ROAD COLUMBIA, SC 29228 PH. (803) 741-6000 FAX. (803) 744-6000</div></div>			
<div><div>SITE DIAGRAM</div><div>HIGHLAND COUNTY PHASE I 33HI462 HIGHLAND COUNTY, OHIO</div></div>			
Figure			23



Figure 24. Site 33HI462, facing west.



Figure 25. Site 33HI463, facing north.



EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- △ SITE DATUM
- x SURFACE ARTIFACT
- TEST UNITS
- ⊗ PREHISTORIC LITHIC
- [] SITE BOUNDARY

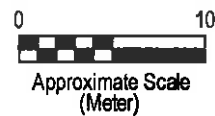


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Checked By:	DAS
Approved By:	BGG
Project No.	73187213
Scale:	AS SHOWN
File No.	73187213
Date:	AUGUST 2019

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PH. (803) 741-9000 FAX. (803) 741-9900

SITE DIAGRAM
HIGHLAND COUNTY SOLAR PHASE II 33HI463 HIGHLAND COUNTY, OHIO

Figure
X

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – The site is a common site type contains a relatively small number of artifacts. The site also lacks stratigraphic integrity as all of the artifacts were recovered from the disturbed contexts. Based on these factors, the site is unlikely to yield significant information about the history of the area.

Site 33HI462 is a common mid-nineteenth to mid-twentieth historic site containing only two artifact classes (kitchen and architectural). In addition, the site lacks integrity and is unlikely to yield significant information about the history of the area. Based on these factors site 33HI462 does not meet the criteria necessary for inclusion in the National Register and is recommended ineligible for the NRHP.

5.1.3 Site 33HI463

Site Number: 33HI463	NRHP Recommendation: Not Eligible
Site Type: House site; Lithic scatter	Elevation: 987 ft. AMSL
Components: mid-19 th /early 20 th c.; Unknown Prehistoric	Landform: Level field
UTM coordinates: E257534, N4328667 (NAD 27)	Soil Type: Clermont silty loam
Site Dimensions: 55 m N/S x 45 m E/W	Vegetation: Agricultural Field
Artifact Depth: 0–25 cmbs	No. of STPs/Positive STPs: 9/8
No. of Test Units: 3	Artifact Density: 33.7/m ² *

* Based on test unit data only.

5.1.3.1 Phase I Investigations

Site 33HI463 is a mid-nineteenth to early twentieth century house site and prehistoric lithic scatter located in a field beside an old farm road approximately 800 meters west of Gath Road in the south-central portion of the project area (Figure 1a). The site is situated in a plowed agricultural field and surface visibility across the site was excellent at approximately 90 percent (Figure 25). Based on shovel testing and the extent of a surface collection, the site measures approximately 55 meters north/south by 45 meters east/west (Figure 26).

Deed research indicates the site was part of a larger tract of land surveyed for John A. Smith by Abraham Lowman in October 1860. The parcel consisted of approximately 87 acres, owned by

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George Roads, and included one tract of seven acres sold to Henry Edington and another tract of 10 acres sold to Edward Brown. John C. Edington sold the 10-acre tract back to George Roads in 1893; the seven-acre tract was sold back in 1899. The selling and re-acquirement of the parcels between George Roads and these individuals indicates the parcels were likely agricultural fields. Interestingly, these transactions are not indicated on historic maps of the area. On the 1871 of Clay Township, the parcel is listed as being under the ownership of George and Ephraim Roads and consisted of 90 acres (Figure 27). By 1887, the Highland County map shows the parcel in a different alignment, with 87 ½ acres belonging to George Roads and Ephraim Roads owning an adjacent parcel of 90 acres (Figure 28). This map places a structure near the center of George Roads' land, the first map to do so. However, this structure was gone by the time of the 1917 Sardinia USGS topographic map (Figure 29).

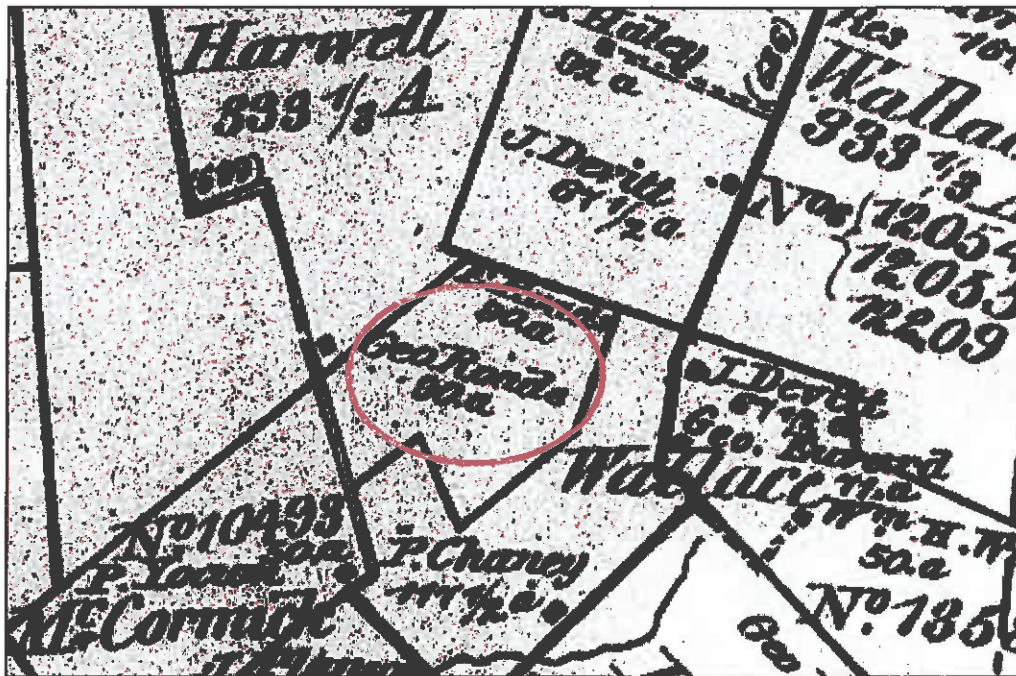


Figure 27. Highland County (1871) map showing the location of the parcel owned by George Roads and Ephraim Roads.

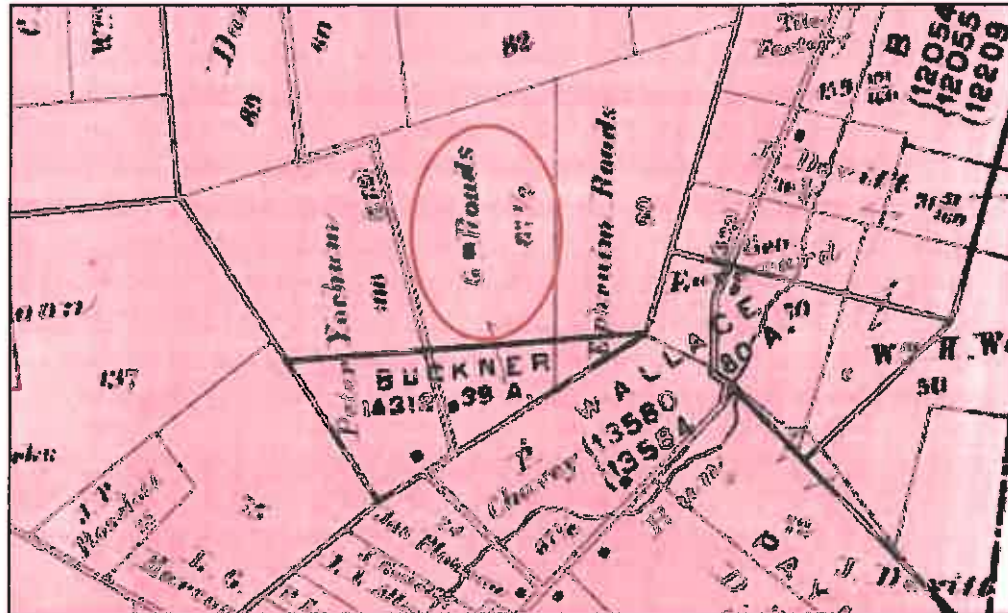


Figure 28. Highland County (1887) map showing the location of the parcel owned by George Roads and structure.



Figure 29. Sardinia (1917) USGS topographic maps showing the location of the structure.

During the initial survey, nine shovel tests were excavated in and around the site. A total of 97 artifacts was recovered from eight positive shovel tests between 0–20 cmbs. An additional 23 artifacts were collected from the surface of the site. A typical soil profile consisted of approximately 14 cm of brown (10YR 4/3) silty loam (Ap horizon), overlying 16+ cm (14–30+ cmbs) of pale brown (10YR 6/3) loamy clay subsoil (Bt horizon).

In total, 116 historic and three prehistoric artifacts were recovered from the site during the Phase I investigation. Sixty-six historic ceramics were recovered, consisting of one hard paste porcelain sherd, 12 Albany slip stoneware sherds, 12 salt-glazed stoneware sherds (11 gray and one buff), seven unidentified stoneware sherds, one American blue and gray stoneware sherd with an Albany slip interior, one tan stoneware sherd, five pieces of plain pearlware, 26 whiteware sherds (one hand-painted pink, one hand-painted polychrome, and 24 plain), and one unrefined earthenware sherd. Glass recovered from the site includes 24 container glass shards (five amethyst, six aqua, and 13 clear) and four window glass shards. Additionally, 12 pieces of metal including eight cut nails, two unidentified nails, one horseshoe, and one piece of unidentified metal and 10 brick fragments were recovered. The prehistoric assemblage consists of one utilized chert flake and two pieces of chert debitage (Appendix A). While the prehistoric assemblage is not temporally diagnostic, the historic artifacts likely date from the mid-nineteenth to early twentieth centuries. The historic component of the site was believed to be potentially significant and Phase II testing was recommended.

5.1.3.2 Phase II Testing

During the Phase II investigation at 33HI463, a geophysical survey was conducted, Oakfield core samples were taken of 27 anomalies, and two 1-x-1-meter test units and one 0.50-x-2-meter test unit were excavated. Vegetation at the site at the time of the Phase II investigation consisted of mature soybeans and surface visibility was minimal.

5.1.3.2.1 Geophysical Survey

A geophysical survey was conducted by Seramur and Associates to help locate the remnants of a house that was identified during the Phase I investigation and historical research of 33HI463. The results of the geophysical survey are summarized in this section; however, the report can be found in its entirety in Appendix B. The site location was delineated in the field based on the presence of pieces of brick and ceramics. The brick and ceramics were spread over an area of about 40 m in the east-west direction and 50 m in the north-south direction (Appendix B, Figures 1 and 2).

A total of 29 anomalies was identified in the geophysical data. Four of these were magnetic anomalies. The survey area was relatively clean of magnetic material. One dipolar anomaly (A-1) was recorded in the northern portion of Grid 1. This likely represents a piece of metal. The magnetometer reading at anomaly A-1 was significantly different from all other readings collected

in Grid 1. This value was excluded from the hillshade and color contour maps in order to look for more subtle anomalies across the grids.

Anomaly A-4 was very localized and likely represents a small ferrous object. Anomalies A-2/3 and A-28 are large dipolar anomalies. These could represent areas of soil disturbance, burnt soil or areas where weakly magnetic material is distributed over a larger area. These anomalies are apparent on the hillshade image, but the color contour map does a better job of delineating the edges of the areas of higher magnetometer readings.

The green and yellow areas on the GPR depth slices represent higher amplitude reflections and the blue areas are lower amplitude reflections or reflection-free areas. Patterns of high and low amplitude reflections can indicate areas of historic activity or occupation. The GPR depth slices between the ground surface and 20 cm show a striped pattern of north-south plow scars. Anomalies begin to appear at the base of the plow zone and this was the focus of our investigation. North-south striped plow scars are still apparent on the 20–30 cm depth slice, but interesting patterns are also present (Appendix B, Figure 7). There is a circular or arcuate area of lower amplitude reflections in the western portion of Grid 2.

Within the arc are four high amplitude reflections that form a rectangular pattern (including A-7, A-8 and A-9). Historic structures were often supported by corner stones. Remnants of these corner stones would produce localized high amplitude reflections in a rectangular pattern. Two east-west linear patterns are present in Grid 1 (Appendix B, Figure 7). On the north side of Grid 1 is a low amplitude east-west linear pattern and on the south side of is a higher amplitude east-west linear pattern. The low amplitude anomaly likely represents backfill in a trench for a tile drain and the higher amplitude anomaly could also be a tile drain. Anomaly A-16 is a distinctly rectangular low amplitude anomaly with high amplitude reflections along the north and east side of the anomaly. A backfilled excavation (pit, privy, well...) would produce this type of pattern on the GPR depth slice. Anomaly A-10 is a distinct high amplitude reflection in the southern portion of Grid 1.

The north-south plow scars are less apparent on the 30–40 cm depth slice, but caution must still be used when interpreting anomaly patterns that have a north-south orientation. Anomalies A-23, A-24 and A-22/26 were distinct high amplitude reflections in Grid 2. Anomaly A-5/6 is a linear northeast to southwest high amplitude reflection (Appendix B, Figures 8 and 9). It begins to show up on the 30–40 cm depth slice but is better defined on the 40–50 cm depth slice. Anomaly A-29 is a rectangular area of low amplitude reflections. The anomaly is best defined by linear reflection-free borders along the northwest and northeast edges (Appendix B, Figure 8). Anomaly A-19/20/21 is a wide linear set of high amplitude reflections that extend across the northwest corner of Grid 1. This feature is observed on several depth slices and different areas of this anomaly appear on the different depth slices indicating that it slopes slightly down to the east. Similar anomalies at other historic properties have been interpreted as an old roadbed. Anomalies A-16 and A-11 are still visible on the 30–40 cm depth slice. A rectangular outline of high amplitude

reflections is present in the southern portion of Grid 1. Anomalies A-12, A-13, A-14 and A-15 were assigned to the four corners of this rectangle. Initially, this appeared to be a possible footprint of a former structure. Two sides of this anomaly are oriented north-south parallel to the plow scars and the southern edge of the anomaly is parallel to the possible drainage tile. The appearance of a rectangular feature could be enhanced by the plow scars and the drainage tile. Anomalies A-17 and A-18 are localized areas of high amplitude reflections (Appendix B, Figure 8).

Anomaly A-5/6 is a well-defined linear set of reflections on the 40–50 cm depth slice in Grid 2 (Appendix B, Figure 9). The possible roadbed (A-19/20/21) is also fairly well defined on this depth slice. A thin, linear and arcuate reflection-free anomaly is present to the west of anomaly A-11 (Appendix B, Figure 9). This extends along the west side of the rectangular anomaly (A-12/13/14/15) observed on the 30–40 cm slice.

GPR profiles (or radargrams) of the anomalies were reviewed to assess their reflection characteristics. Two of these are discussed below. The profiles of anomaly A-16 show disrupted reflections or a possible area of disturbed soil (Appendix B, Figure 10). The profiles of anomaly A-19/20/21 show a set of hyperbolae across this feature (Appendix B, Figure 11). The high amplitude hyperbola is typical of a tile drain. It appears on the two profiles shown in Figure 11, but it is missing from other profiles that cross this feature and thus it is not a continuous feature such as a tile drain. Historic roadbeds at other sites we have surveyed show a much more distinct set of reflections across the feature. These were associated with gravel encountered when tested with a soil probe. Feature A-19/20/21 was probed and no evidence of gravel was recorded.

It appears that the highest concentration of brick and ceramics is in the center of the study area in the vicinity of anomaly A-7. In this area there are several different reflection patterns observed that could be associated with a historic house site. However, a footprint of a foundation and/or cellar were not observed in the GPR data. Magnetic anomalies A-28 and A-21 are also located in this area. The anomalies identified in the geophysical data are listed in Table 3 (Appendix B). Their ranking is based on reflection characteristics, location in association with other anomalies and past experience at historic properties.

5.1.3.2.2 Oakfield Core Samples

As a result of the geophysical survey, 27 anomalies were identified in the field. Two anomalies were identified later during processing of the geophysical data after fieldwork had been completed. The 27 anomalies identified in the field were tested using an Oakfield corer to determine if subsurface features were present at these locations. Several high probability anomalies included a possible structure (Anomalies 10–15), a possible privy or well (Anomaly 16), and a possible road (Anomalies 19–21). With the exception of Anomalies 19 and 21, which had brick and mortar on the surface, none of these probes contained cultural material. Additional probes at Anomalies 6 and 7 contained melted glass and a small piece of stoneware, while

Anomalies 1, 5, 23, 24, and 25 contained very small brick fragments. The remaining 11 anomalies did not contain any cultural material.

5.1.3.2.3 Test Units

Test Unit 1 was located in the southeastern portion of the site at UTM coordinates E257551, N4328651 (Figure 26). Test Unit 1 measured 0.50-x-2-meters and was placed between Anomalies 13 and 15 across the eastern wall of a possible structure found during the GPR survey. Test Unit 1 contained one level that was excavated to the base of the plowzone to a depth of 35 cm below datum (cmbd) (25 cmbs). Soils consisted of 25 cm (10–35 cmbd) of brown (10YR 4/3) clayey loam (Ap horizon), overlying mottled yellowish brown (10YR 5/6) and light gray (10YR7/1) loamy clay subsoil (Bt horizon) (Figures 30 and 31). Plow scars were evident around 35 cmbd. A total of 13 historic artifacts was recovered from Test Unit 1 between 10 and 35 cmbd. These included one salt-glazed stoneware sherd with an Albany slip interior, one refined earthenware sherd, one clear glass shard, and 10 brick fragments (Appendix A). No features were observed and excavation of the test unit was terminated at 35 cmbd at sterile subsoil.

Test Unit 2 was located in the central portion of the site at UTM coordinates E257530, N4328669 (Figure 26). The unit was placed around Anomaly 7, which contained one piece of stoneware and one brick fragment in the coring sample and had a concentration of artifacts on the surface. Test Unit 2 measured 1-x-1-meter and contained one level excavated to a depth of 30 cmbd (20 cmbs). Soils consisted of 20 cm (10–30 cmbd) of brown (10YR 4/3) silty loam (Ap horizon), overlying mottled light yellowish brown (10YR 6/4) and brownish yellow (10YR 6/6) clayey silt subsoil. Plow scars were evident around 30 cmbd. A total of 126 artifacts was recovered from Test Unit 2 between 10 and 30 cmbd. The assemblage consisted of two four-hole Prosser buttons; two plain hard paste porcelain sherds; seven gray salt-glazed stoneware sherds (three with an Albany slip interior); two buff salt-glazed stoneware sherds with an Albany slip interior; eight stoneware sherds (three gray, two brown, and three unglazed with an Albany slip interior); three plain whiteware sherds; one transfer-printed whiteware sherd; nine pieces of refined earthenware (two annular blue, one dipped blue, and six unidentified); two brown coarse earthenware sherds; one unidentified copper object; 11 container glass shards (2 amethyst, 9 aqua); 17 window glass shards, 29 nails (24 cut and five unidentified), and 32 brick fragments (Appendix A). No features were observed and excavation of the unit was terminated at 30 cmbd at sterile subsoil.

Test Unit 3 was located in the southeastern portion of the site at UTM coordinates E257559, N4328655 (Figure 26). The test unit was placed around Anomaly 16, initially identified as a possible privy or well during the geophysical survey. Test Unit 3, measuring 1-x-1-meter in size, contained one level excavated to a depth of 31 cmbd (21 cmbs). Soils consisted of 21 cm (10–31 cmbd) of brown (10YR 5/3) silty loam (Ap horizon), followed by mottled brownish yellow (10YR 6/6) and very pale brown (10YR 7/3) clayey silt subsoil (Bt horizon) (Figures 32 and 33). Only four artifacts were recovered from Test Unit 3 between 10 and 31 cmbd. These consisted of two plain whiteware sherds, one amethyst container glass shard, and one aqua window glass shard



Figure 30. Site 33HI463, Test Unit 1 east wall profile.

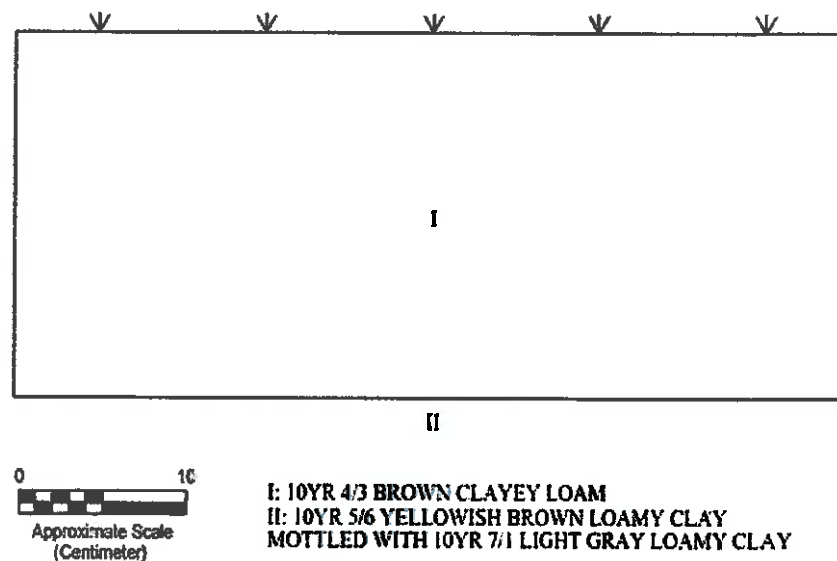


Figure 31. Site 33HI463 Test Unit 1, east wall profile drawing.



Figure 32. Site 33HI463, Test Unit 3 east wall profile and Feature 1 plan view.

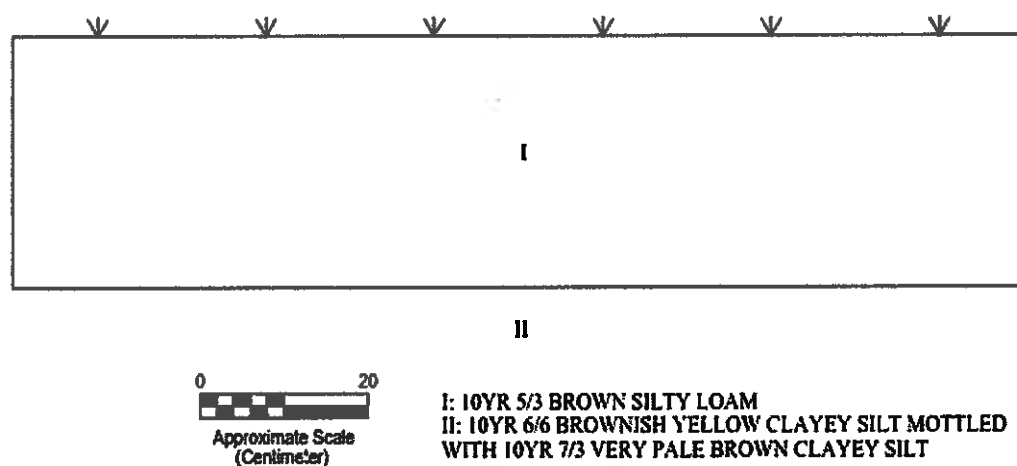


Figure 33. Site 33HI463, Test Unit 3 east wall profile drawing.

(Appendix A). Excavation of the unit was terminated at 31 cmbd at sterile subsoil. One feature was identified near the northeast corner of Test Unit 3. Feature 1 was identified in the northeast corner of Test Unit 3 at approximately 20 cmbd. The feature consists of a shallow, amorphous depression measuring 29 cm long by 34 cm wide by 11 cm deep (Figure 34). Soil within the feature consisted of 11 cm of brown (10YR 5/3) silty loam. Artifacts recovered from feature included 12 brick fragments and two large rocks (Appendix A). Based on the size, content, and morphology, Feature 1 is interpreted to be the possible remains of a footer for a structure.

5.1.3.3 Results of Analysis

The artifact assemblage for site 33HI463 contained 274 historic artifacts and three prehistoric artifacts. Historic artifacts recovered from the site included ceramics, glass, metal, and brick (Figure 35). Historic ceramics consisted of 51 stoneware sherds (18 gray salt-glazed, three buff salt-glazed, 12 Albany slip, one American blue and gray, two brown, three gray, one tan, three unglazed, and seven with a brown interior); 32 whiteware sherds (one hand-painted pink, one hand-painted polychrome, one transfer-printed, and 29 plain); 13 earthenware sherds (10 refined, two coarse, one unrefined); five pieces of plain pearlware; and three pieces of plain hard paste porcelain. There were 59 pieces of glass (37 container glass shards, and 22 window glass shards); two Prosser buttons; 42 metal objects (32 cut nails, five unidentified nails, one horseshoe, one unidentified iron object, and one unidentified copper object); 64 brick fragments; and two large fossiliferous rocks that may have been part of a footer.

Artifact density at the site had a mean of 33.7 artifacts per square meter based on test unit data, excluding brick fragments and rock. Most of these were found in the central portion of the site near Test Unit 2, with Tests Units 1 and 3 only having 13 and four artifacts respectively. The majority of artifacts at the site were recovered from the surface or the plowzone, with the only exceptions being the brick and rock recovered from Feature 1. Of the 274 artifacts in the historic assemblage, 140 are associated with the Kitchen group, 127 are associated with the Architectural group, two are associated with the Activities group, and two are associated with the Personal group (South 1977). The three remaining historic artifacts were not assigned to an activity group. The prehistoric assemblage from the site consists of one utilized chert flake and two pieces of chert debitage.

5.1.3.4 Summary of Results

Site 33HI463 is a mid-nineteenth to early twentieth century house site with a small prehistoric component located in the south-central portion of the project area. The historic component of the site contains a large number of artifacts, most of which date to the mid- to late-nineteenth century. In addition, many different artifact classes are represented including kitchen, architectural, personal, and activities groups.

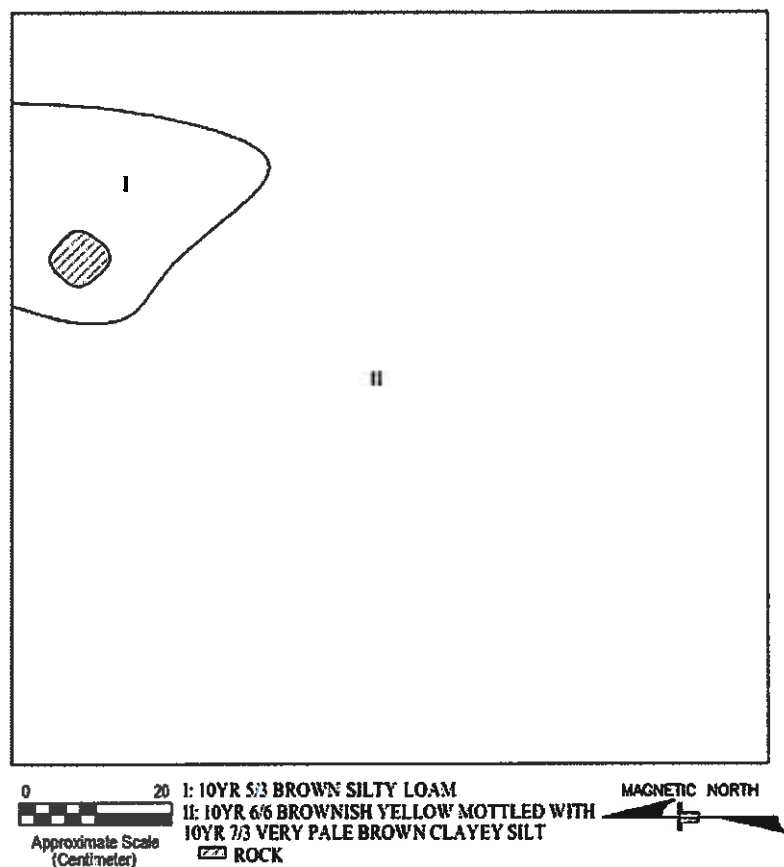


Figure 34. Site 33HI463, Feature 1 plan view drawing.

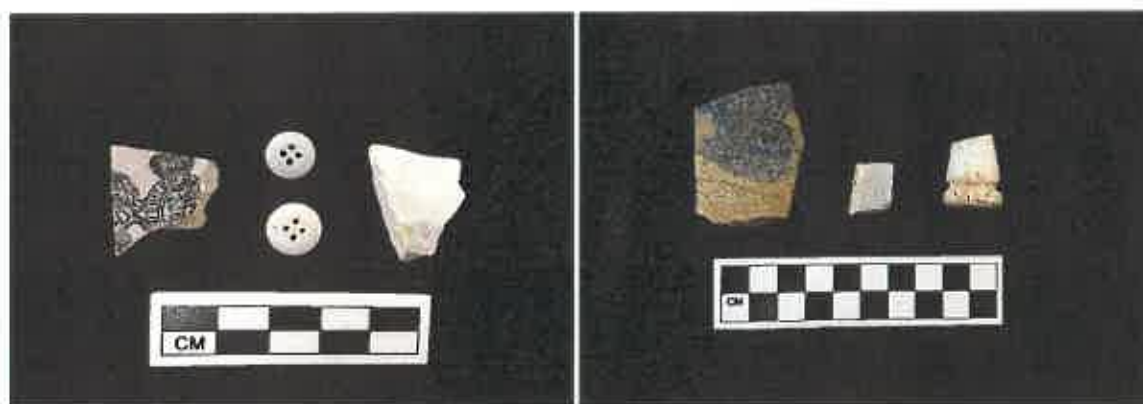


Figure 35. Selected artifacts from site 33HI463. Left: transfer-printed whiteware, Prosser buttons, hand-painted whiteware. Right: American blue and gray stoneware, pearlware, whiteware.

Determining the eligibility of nineteenth and twentieth century farmsteads has been discussed at length among historic archaeologists (Messick et al. 2001), and various ranking systems have been developed over the years (e.g., Hinks et al. 1998). Miller and Klein (2001) developed a checklist of traits used for evaluating the significance of historic farmsteads, giving them a point value that can be used to estimate the research potential of a site. Based on this checklist, which includes Site Type, Structural Evidence, Archaeological Evidence, Documents, Oral History, Occupation Period, and Length of Occupation, site 33HI463 scores a 13 well below the threshold (19) Miller and Klein (2001:164) recommend for an owner-occupied farmstead with good research potential. Other criteria to consider when determining the eligibility of a farmstead site include the presence of a farmhouse or main agricultural building, the presence of one or more outbuildings dating to the period of significance, and an identifiable agricultural landscape with few changes from the period of significance (Messick et al. 2001). Though geophysical investigations and test excavations identified the possible presence of subsurface features, site 33HI463 does not contain extant structures and the one feature that was found was inconclusive as to its function. Furthermore, the agricultural landscape has been modified since the period of significance as changes such as the removal of buildings and road have impacted the historic landscape.

In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value. The site does not retain significant and recognizable components that shaped the agricultural landscape during the period of significance.

Criterion D – The historic component of the site contains a large number of nineteenth and early twentieth century artifacts and artifact groups. Additionally, Phase II investigations indicated the possible presence of features beneath the plowzone at the site. However, the vast majority of the artifacts recovered from the site were recovered from disturbed contexts and site scores below the significance threshold identified in Miller and Klein (2001). Based on this, the historic component of the site is unlikely to yield significant information about nineteenth century lifeways in Ohio. The prehistoric component is small, contains few artifacts, contains no temporally diagnostic artifacts, and is unlikely to yield significant information about the prehistory of the area.

Cultural Resource Investigations

Highland Solar Farm ■ Highland Co, Ohio

August 2019 ■ Terracon Project No. 73187213



Site 33HI463 is a dense mid-nineteenth to early twentieth century house site with a small prehistoric component located in the south-central portion of the project area. The historic component of the site has a large number and variety of artifacts and possible subsurface features were identified during Phase II testing at the site. However, there are no extant structures on the site, the landscape has been modified since the site was occupied, and it is unlikely the artifact assemblage can be identified to a specific occupant or provide significant information regarding agricultural practices and lifeways. Therefore, the historic component of site 33HI463 is recommended as being ineligible for the National Register. The prehistoric component is small, contains no temporally diagnostic artifact, and is also recommended as being ineligible for the NRHP.

5.1.4 Site 33HI464

Site Number: 33HI464	NRHP Recommendation: Not Eligible
Site Type: House site	Elevation: 990 ft. AMSL
Components: Late 19 th to mid-20 th century	Landform: Level field
UTM coordinates: E257135, N4327674 (NAD 27)	Soil Type: Clermont silty loam
Site Dimensions: 30 m N/S x 25 m E/W	Vegetation: Agricultural Field
Artifact Depth: 0–20 cmbs	No. of STPs/Positive STPs: 9/5

Site 33HI464 is a late nineteenth to mid-twentieth house site located in a level field in the central portion of the project area approximately 20 meters east of an old farm road and 700 meters south of State Highway 138 (Figure 1a). The site is situated in a plowed agricultural field and surface visibility across the site was 70–80 percent (Figure 37). Based on shovel testing and a surface collection, the site measures approximately 30 meters north/south by 25 meters east/west. The site is bounded by the extent of the surface scatter (Figure 36).

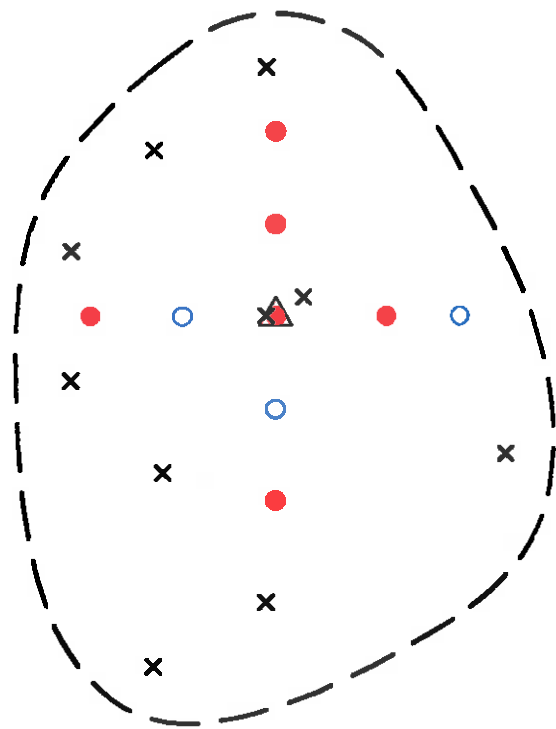
During the investigation, 10 artifacts were found on the ground surface prompting the excavation of nine shovel tests in and around the site. An additional 32 artifacts were recovered from five positive shovel tests between 0–20 cmbs. A typical soil profile consisted of approximately 14 cm of brown (10YR 4/3) silty loam (Ap horizon), overlying 16+ cm (14–30+ cmbs) of pale brown (10YR 6/3) loamy clay subsoil (Bt horizon).

In all, 42 historic artifacts were recovered from the site. The assemblage includes 11 whiteware sherds, one unidentified stoneware sherd, eight container glass shards (three aqua, three clear, one milk, and one green), four window glass shards, three unidentified nails, and 15 brick fragments (Appendix A). These artifacts date from the late nineteenth through mid-twentieth centuries.

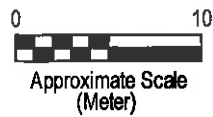
Site 33HI464 is a late nineteenth to mid-twentieth century house site located in the central portion of the project area. The site is a common site type and has only two artifact classes (kitchen and



FARM ROAD



AGRICULTURAL
FIELD



EXPLANATION	
	POSITIVE STP
	NEGATIVE STP
	SITE DATUM
	SURFACE ARTIFACT
	SITE BOUNDARY

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Checked By:	DAS	File No.	73187213
Approved By:	BGG	Date:	JUNE 2019

Consulting Engineers and Scientists

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PH. (803) 741-9000 FAX. (803) 741-9800

SITE DIAGRAM
HIGHLAND COUNTY SOLAR PHASE I 33H1464 HIGHLAND COUNTY, OHIO

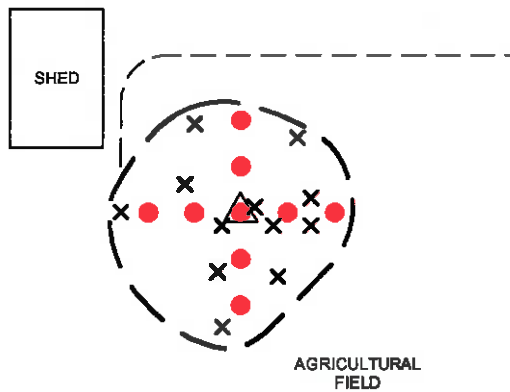
Figure
36



Figure 37. Site 33HI464, facing south.



Figure 38. Site 33HI465, facing east.




EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- △ SITE DATUM
- × SURFACE ARTIFACT
- FIELD BOUNDARY
- SITE BOUNDARY



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Drawn By:	PTK	Scale:	AS SHOWN			
Checked By:	DAS	File No.	73187213			
Approved By:	BGG	Date:	JUNE 2019			39

architecture). The site is situated in a plowed field with all the artifacts being found either in the plowzone or on the ground surface. The presence of brick and window glass indicates that a structure likely existed on the site at one time, although there is no evidence for former structures on historic maps of this portion of the project area.

In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – The site is a common site type, has only two artifact classes, and lacks stratigraphic integrity. Based on these factors, the site is unlikely to yield significant information about the history of the area.

Site 33HI464 is a historic house site located in the central portion of the project area. The site is a common site type, has low artifact diversity, and lacks archaeological integrity. Based on this evidence site 33HI464 does not meet any of the criteria necessary for inclusion in the National Register and the site is recommended ineligible for the NRHP.

5.1.5 Site 33HI465

Site Number: 33HI465	NRHP Recommendation: Not Eligible
Site Type: House Site, Prehistoric isolate	Elevation: 986 ft. AMSL
Components: Mid-19 th to mid-20 th century; Unk. Prehistoric	Landform: Level field
UTM coordinates: E258670, N4328252 (NAD 27)	Soil Type: Westboro Schafer silty loam; Clermont silty loam
Site Dimensions: 30 m N/S x 30 m E/W	Vegetation: Agricultural Field
Artifact Depth: 0–20 cmbs	No. of STPs/Positive STPs: 9/7

Site 33HI465 is a mid-nineteenth to mid-twentieth century house site and prehistoric isolate located at the edge of an agricultural field approximately 10 meters east of an outbuilding and 375 meters east of Gath Road in the southern portion of the project area (Figure 1a). The site is in the vicinity of an abandoned farm that appears on late nineteenth to mid-twentieth century maps of the area. The site is located in a plowed agricultural field and surface visibility across the site ranged from 50 to 75 percent (Figure 38). Based on shovel testing and surface inspection, the

site measures approximately 30 meters north/south by 30 meters east/west and is bounded by the extent of the positive shovel tests (Figure 39).

Nine shovel tests were excavated in and around the site. A total of 64 artifacts were recovered from seven positive shovel tests between 0–20 cmbs and one additional artifact was collected from the surface of the site. A typical soil profile consisted of approximately 10 cm of dark grayish brown (10YR 4/2) loam (Ap horizon), overlying 10+ cm (10–20+ cmbs) of brownish yellow (10YR 6/8) loamy clay subsoil (Bt horizon).

In total, 65 artifacts were recovered. Historic artifacts consist of three porcelain sherds (two bone china, one hard paste), six stoneware sherds (four brown salt glazed, one Albany slip, one brown), five whiteware sherds (three plain, one hand-painted, and one blue scalloped rim), nine container glass shards (six clear and three aqua), eight window glass shards, one pharmaceutical glass shard, 13 nails (nine unidentified, two cut, and two wire), one metal spike, three pieces of iron, one unidentified piece of metal and 15 brick fragments (Appendix A). Based on these artifacts, the site dates to the mid-nineteenth to mid-twentieth century. The prehistoric component at the site consists of one piece of chert debitage and is not temporally diagnostic.

Site 33HI465 is a mid-nineteenth to mid-twentieth century artifact scatter and prehistoric isolate located in the southern portion of the project area. All of the artifacts were recovered from the surface or from the plowzone and the site does not retain archaeological integrity. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – The site is a common site type, lacks integrity, and is not a good example of its type. Based on these factors, the site is unlikely to yield significant information about the prehistory or history of the area.

The historic component of site 33HI465 contains common nineteenth and twentieth century artifacts that are unlikely to yield significant information about the history of the area. The site also lacks archaeological integrity, with both prehistoric and historic artifacts recovered from disturbed contexts. Based on these factors site 33HI465 does not meet any of the criteria necessary for inclusion in the National Register and is recommended ineligible for the NRHP.

5.1.6 Site 33HI466

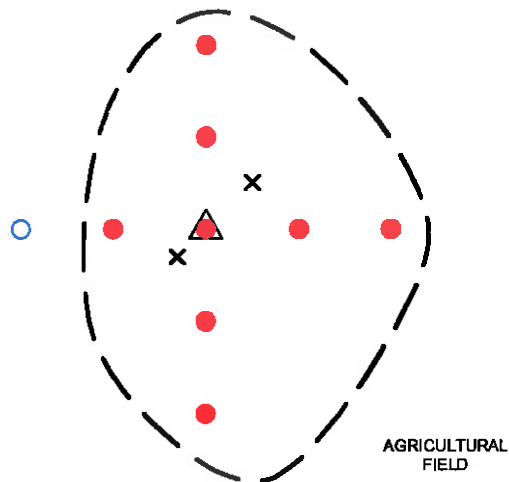
Site Number: 33HI466	NRHP Recommendation: Not Eligible
Site Type: House site, Lithic scatter	Elevation: 1010 ft. AMSL
Components: Mid-19 th to mid-20 th c.; Unknown Prehistoric	Landform: Slight rise
UTM coordinates: E2561066, N4329061 (NAD 27)	Soil Type: Westboro Schafer silty loams; Clermont silty loam
Site Dimensions: 22 m N/S x 20 m E/W	Vegetation: Agricultural Field
Artifact Depth: 0–20 cmbs	No. of STPs/Positive STPs: 9/7

Site 33HI466 is a mid-nineteenth to mid-twentieth century house site and prehistoric lithic scatter located in an agricultural field approximately 450 meters southeast of the intersection of Stringtown Road and Edwards Road in the northeast portion of the project area (Figure 1a). Although there are currently no standing structures in the immediate vicinity of the site, this area corresponds to the location of a structure on the 1917 Hillsboro USGS topographic map (see Figure 16). The site is in a plowed agricultural field and surface visibility across the site was 75 percent (Figure 41). Based on shovel testing and surface inspection, the site measures approximately 22 meters north/south by 20 meters east/west and is bounded by the extent of the surface scatter (Figure 40).

During the investigation four brick fragments were found in the surface; however, these were not collected. Nine shovel tests were excavated in and around the site. A total of 117 artifacts were recovered from seven positive shovel tests that ranged in depth from 0–20 cmbs. A typical soil profile consisted of approximately 20 cm of dark grayish brown (10YR 4/2) loam (Ap horizon) overlying 10+ cm (20–30+ cmbs) of brownish yellow (10YR 6/8) loamy clay subsoil (Bt horizon).

The artifacts recovered from the site include 34 pieces of historic ceramics including 22 pieces of whiteware, four pieces of Bristol type slip stoneware, three pieces of unidentified stoneware, two pieces of Albany slip stoneware, and three pieces of soft paste porcelain. There were also 38 pieces of container glass including clear (n=21), aqua (n=8), amber (n=4), cobalt blue (n=4), and light green (n=1); seven pieces of clear window glass, nine pieces of brick, 22 nails (two cut, five wire, and 15 unidentified), four pieces of iron, and one game piece (ca. 1969). These artifacts date from the mid-nineteenth to mid-twentieth centuries. The prehistoric component of the site consists of two pieces of chert debitage (Appendix A).

Site 33HI466 is a mid-nineteenth to mid-twentieth century house site and prehistoric lithic scatter located in the northeast portion of the project area. All of the artifacts were recovered from the surface or in the plowzone and the site does not retain archaeological integrity. Although the site contains a large number of historic artifacts, all of the artifacts (except the 1969 game piece) are common artifact types and would not contribute to our knowledge of the history of the area. The prehistoric component of the site contains only two artifacts, neither of which are temporally



EXPLANATION

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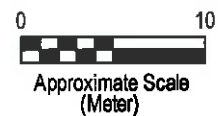


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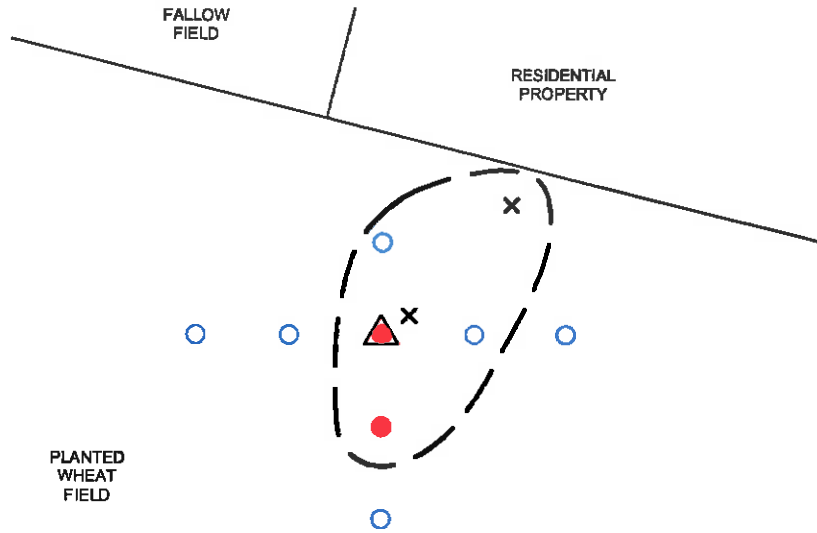
Figure
40



Figure 41. Site 33HI466, facing south.



Figure 42. Site 33HI467, facing south.



EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- △ SITE DATUM
- X** SURFACE ARTIFACT
- SITE BOUNDARY



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Figure
43

diagnostic. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – The site contains a low number of historic artifact groups and is a common site type, while the prehistoric component of the site has a low artifact diversity and density. Both components lack stratigraphic integrity and all of the artifacts were recovered from the surface or from the plowzone. Based on these factors, the site is unlikely to yield significant information about the prehistory of the area.

The historic and prehistoric components of site 33HI466 have low artifact density and diversity and lack archaeological integrity. Based on these factors site 33HI466 does not meet any of the criteria necessary for inclusion in the National Register and is recommended ineligible for the NRHP.

5.1.7 Site 33HI467

Site Number: 33HI467	NRHP Recommendation: Not Eligible
Site Type: Lithic Scatter; Historic isolate	Elevation: 985 ft. AMSL
Components: Late Archaic and Early Woodland; 19 th /20 th c.	Landform: Level Field
UTM coordinates: E258206, N4328484 (NAD 27)	Soil Type: Westboro Schafer silty
Site Dimensions: 16 m N/S x 10 m E/W	Vegetation: Agricultural Field
Artifact Depth: 0–20 cmbs	No. of STPs/Positive STPs: 7/1

Site 33HI467 is a Late Archaic and Early Woodland lithic scatter and historic isolate located in an agricultural field approximately 50 meters west of Gath Road in the central portion of the project area (Figure 1a). This location is immediately south of the location of a structure that appears on the 1917 Hillsboro USGS map of the area (see Figure 16). Vegetation at the site consisted of planted wheat and surface visibility was approximately 90 percent (Figure 42). Based on shovel testing and a surface inspection, the site measures approximately 16 meters north/south by 10 meters east/west. The site is bounded by the extent of the surface scatter and negative shovel tests to the north and east (Figure 43). The site could extend outside of the project boundary to the north onto private residential property.

During the investigation two artifacts were found on the ground surface. In addition, eight shovel tests were excavated in and around the site. One shovel test resulted in the recovery of one additional artifact found from 0–20 cmbs. A typical soil profile consisted of approximately 20 cm of dark yellowish brown (10YR 4/4) silty loam (Ap horizon), overlying 10+ cm (20–30+ cmbs) of grayish brown (10YR 5/2) clayey loam mottled with brownish yellow (10YR 6/8) clay subsoil (Bt horizon).

A total of three artifacts was recovered from the site, two prehistoric and one historic. The prehistoric assemblage consists of one quartz Adena point and one chert Lamoka point (Figure 44). One piece of transfer-printed porcelain was also recovered (Appendix A). The Lamoka point dates to the Late Archaic Period, ca. 5500–4500 B.P., while the Adena point dates to the Early Woodland, ca. 2800–2300 B.P. (Justice 1987:129, 192). The transfer-printed porcelain sherd has a date range spanning the nineteenth and twentieth centuries.



Figure 44. Lamoka point (left) and Adena point (right) from site 33HI467.

Site 33HI467 is a Late Archaic and Early Woodland lithic scatter and nineteenth/twentieth century isolate located in the central portion of the project area. The prehistoric component of the site has only two artifacts, both broken projectile points. Although the points date to the Late Archaic and Early Woodland periods, they were both recovered from the ground surface and are not in stratigraphic context. Additionally, both points have broken tips, indicating they were probably

hunting losses. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – Although the site contains two temporally diagnostic projectile points, these are the only prehistoric artifacts found at the site and likely represent hunting losses. In addition, the site lacks integrity as both points were found on the ground surface. Based on these factors, the site is unlikely to yield significant information about the prehistory of the area.

Site 33HI466 has few artifacts and lacks archaeological integrity. Based on these factors site 33HI466 does not meet any of the criteria necessary for inclusion in the National Register and is recommended ineligible for the NRHP.

5.1.8 Site 33HI468

Site Number: 33HI468	NRHP Recommendation: Not Eligible
Site Type: Brick scatter; Lithic scatter	Elevation: 975 ft. AMSL
Components: Unknown historic; Unknown prehistoric	Landform: Slight rise
UTM coordinates: E255284, N4330950 (NAD 27)	Soil Type: Jonesboro-Rossmoyne silt loam; Westboro-Schaffer silt loam
Site Dimensions: 40 m N/S x 15 m E/W	Vegetation: Grassy Field
Artifact Depth: 0–30 cm	No. of STPs/Positive STPs: 10/3

Site 33HI468 is a brick scatter and prehistoric lithic scatter located in a grassy field approximately 650 meters west of Hereford Road and 175 meters south of the North Fork of White Oak Creek in the northwest portion of the project area (Figure 1a). The site is approximately 250 meters west of a structure that appears on the Hillsboro (1944) USGS topographic map (see Figure 17). Vegetation at the site consists of a grassy field and surface visibility was negligible (Figure 46). Based on shovel testing, the site measures approximately 40 meters north/south by 15 meters east/west. The site is bounded by two negative shovel tests to the south, west, and east, and the property boundary to the north (Figure 45). It is likely that the site extends outside of the project boundary to the north.

Cultural Resource Investigations

Highland Solar Farm ■ Highland Co, Ohio

August 2019 ■ Terracon Project No. 73187213



During the investigation, 10 shovel tests were excavated in and around the site, with three containing a total of 10 artifacts found between 0 and 30 cmbs. A typical soil profile consisted of approximately 35 cm of yellowish brown (10YR 5/4) loamy clay (Ap horizon), overlying 10+ cm (35–45+ cmbs) of yellowish brown (10YR 5/8) clay subsoil (Bt horizon).

The artifacts recovered from the site included two chert flakes and eight brick fragments (Appendix A). None of these are temporally diagnostic. Additionally, all of the artifacts were recovered from the plowzone, indicating the site has no archaeological integrity. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

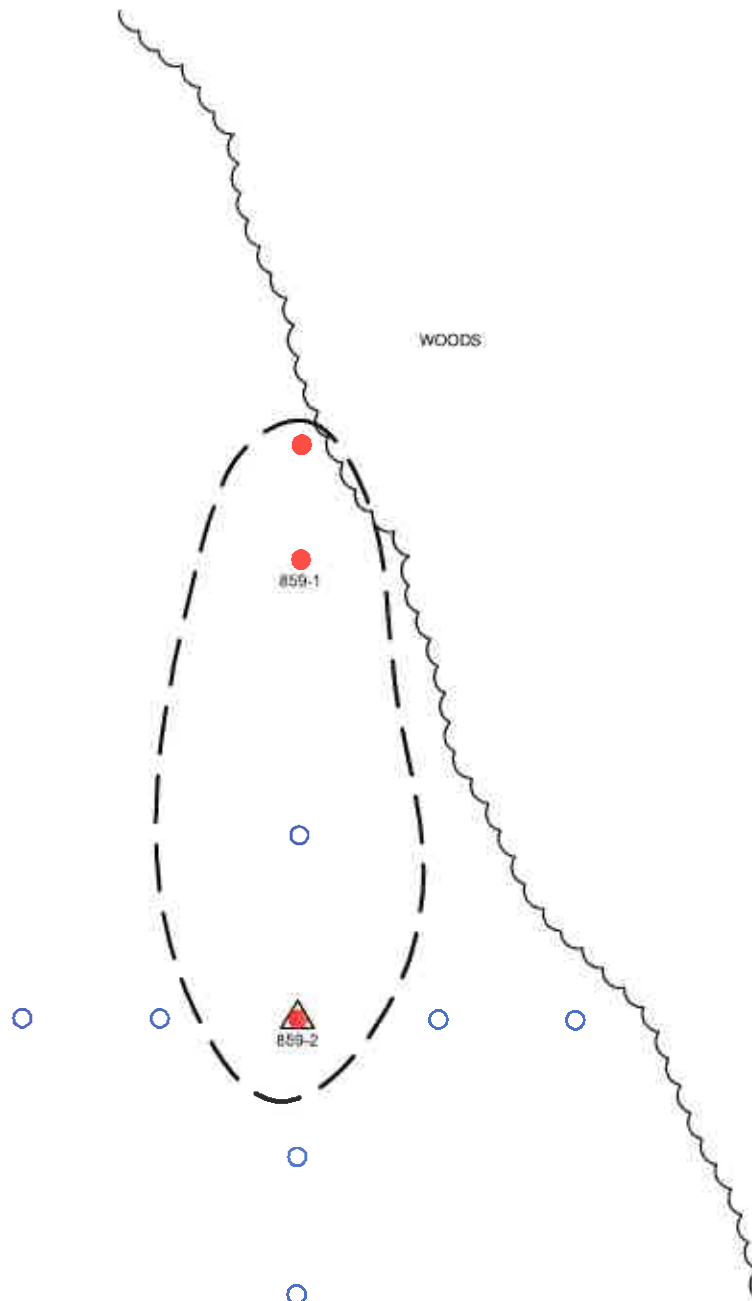
Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – The site contains few artifacts, has no artifact diversity, and contains no temporally diagnostic artifacts. The site also lacks stratigraphic integrity. Based on these factors, the site is unlikely to yield significant information about the prehistory or history of the area.

Site 33HI468 is a brick scatter and prehistoric lithic scatter situated in a grassy field in the northwest portion of the project area. The site contains few artifacts, has no artifact diversity, and lacks stratigraphic integrity. Based on these factors site 33HI468 does not meet any of the criteria necessary for inclusion in the National Register and is recommended ineligible for the NRHP.



EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- △ SITE DATUM
- SITE BOUNDARY



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mgr:	DAS
Drawn By:	PTK
Checked By:	DAS
Approved By:	BGG
Project No.	73187213
Scale:	AS SHOWN
File No.	73187213
Date:	JUNE 2019

Terracon
Consulting Engineers and Scientists

521 CLEMSON ROAD COLUMBIA, SC 29228
PH. (803) 741-9000 FAX. (803) 741-9900

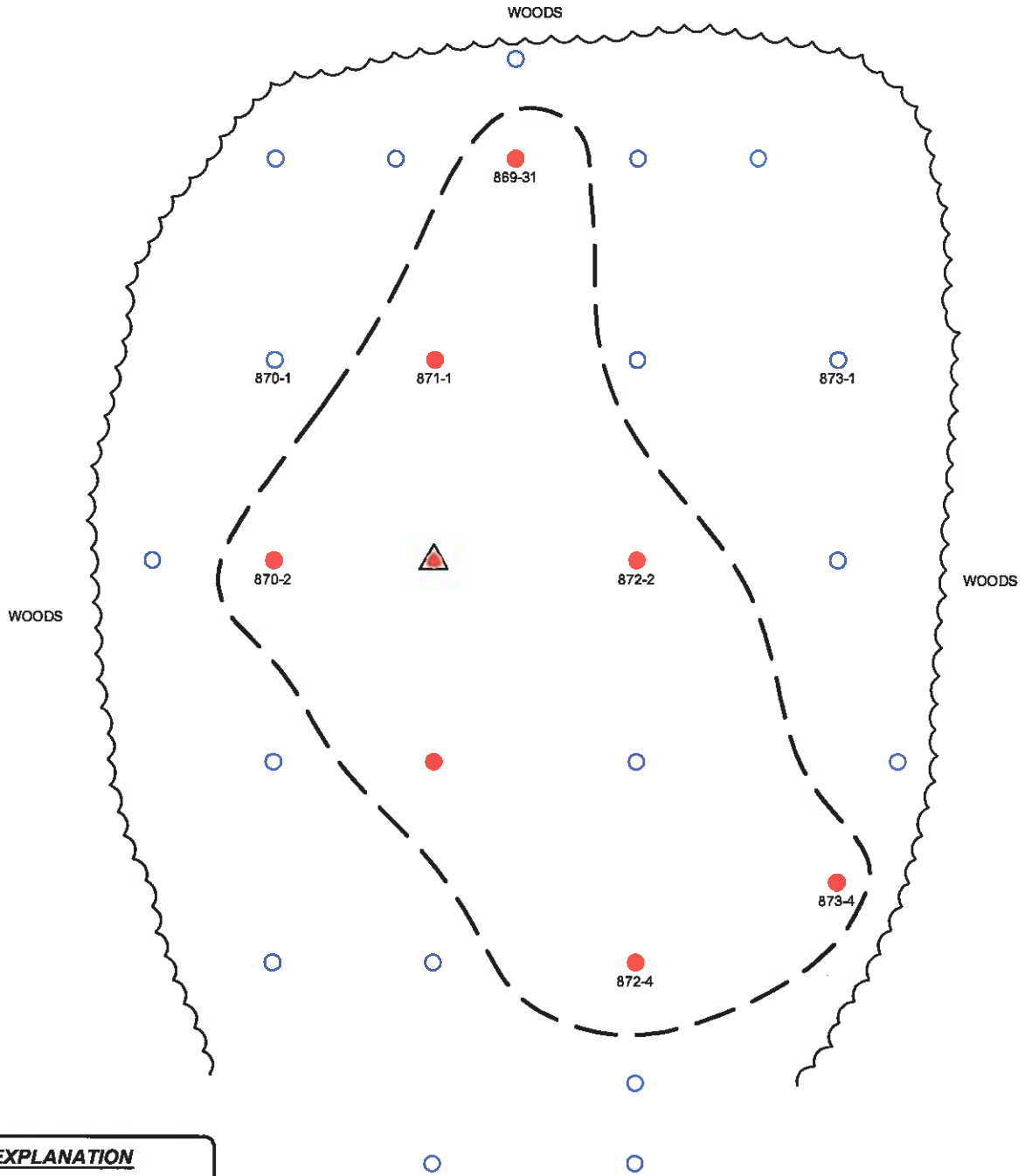
SITE DIAGRAM
HIGHLAND COUNTY SOLAR PHASE I 33HI468 HIGHLAND COUNTY, OHIO



Figure 46. Site 33HI468, facing northeast.



Figure 47. Site 33HI469, facing north.




EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- △ SITE DATUM
- SITE BOUNDARY

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES



Project Mgr: DAS	Project No. 73187213	 <p>Consulting Engineers and Scientists</p> <p>521 CLEMSON ROAD COLUMBIA, SC 29228 PH. (803) 741-9000 FAX. (803) 741-9600</p>	<p align="center">SITE DIAGRAM</p> <p align="center">HIGHLAND COUNTY SOLAR PHASE I 33HI469 HIGHLAND COUNTY, OHIO</p>	Figure
Drawn By: PTK	Scale: AS SHOWN			48
Checked By: DAS	File No. 73187213			
Approved By: BGG	Date: JUNE 2019			

5.1.9 Site 33HI469

Site Number: 33HI469	NRHP Recommendation: Potentially Eligible
Site Type: Special purpose encampment(?); Hist. isolate	Elevation: 975 ft. AMSL
Components: Unknown Prehistoric; Unknown Historic	Landform: Rise along a bluff
UTM coordinates: E255377, N4330959 (NAD 27)	Soil Type: Jonesboro-Rossmoyne silt loams; Westboro-Schaffer silt loams
Site Dimensions: 120 m N/S x 80 m E/W	Vegetation: Grassy Field
Artifact Depth: 10–35 cmbs	No. of STPs/Positive STPs: 15/8

Site 33HI469 is a prehistoric lithic scatter and small historic brick scatter located in a grassy field along a bluff approximately 55 meters south of the North Fork of White Oak Creek and 550 meters west of Hereford Road in the northwest portion of the project area (Figure 1a). The site is also approximately 150 meters west of the location of a structure that appears on the Hillsboro (1944) USGS topographic map (see Figure 17). Vegetation at the site consisted of a grassy field and surface visibility was negligible (Figure 47). Based on shovel testing, the site measures approximately 120 meters north/south by 80 meters east/west. The site is bounded by two negative shovel tests to the south, west, and east, and one negative shovel test and the property boundary to the north (Figure 48).

During the investigation, 15 shovel tests were excavated in and around the site. A total of eight artifacts was recovered from seven positive shovel tests at depths ranging from 10–35 cmbs. An additional shovel test had very small brick fragments that fell through the screen and were not recovered. A typical soil profile consisted of approximately 20 cm of dark yellowish brown (10YR 4/6) loamy clay (Ap horizon), overlying 10+ cm (20–30+ cmbs) of yellowish brown (10YR 5/6) clay subsoil (Bt horizon).

The artifacts recovered from the site include one chert biface fragment, three chert scrapers, two pieces of chert debitage, one piece of quartz debitage, and one brick fragment (Figure 49, Appendix A). Although no temporally diagnostic prehistoric artifacts were identified from the site, the absence of prehistoric ceramics coupled with the presence of three scrapers could indicate that the site is Archaic (or older) in age.

Site 33HI469 is a prehistoric lithic scatter and small historic brick scatter located in the northwest portion of the project area. Although the prehistoric component of the site has a low overall density of artifacts, the recovery of three scrapers could indicate this was a special purposed encampment used for processing materials such as hides. The historic component is represented only by brick, most of which was too small to recover. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

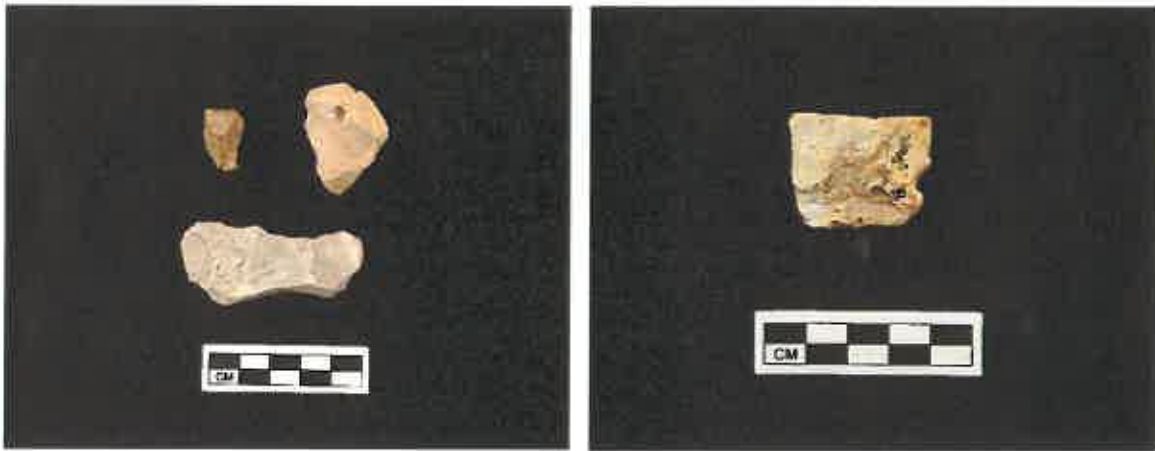


Figure 49. Chert scrapers (left) and chert biface (right) from Site 33HI469.

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – Although the prehistoric component of the site has an overall relatively low density of artifacts, the presence of three scrapers in this small collection, all recovered from shovel tests, indicates that site may have served a specialized function such as processing hides. Based on the unusual nature of the site, it could yield significant information about the history of the area.

Site 33HI469 is a prehistoric lithic scatter and historic isolate located in a grassy field on a bluff in the northeast portion of the project area. The site has a unique artifact signature for the project area and could represent a special purpose encampment used for processing hides or other materials. Based on this, site 33HI469 is recommended as being potentially eligible for inclusion in the NRHP under Criterion D.

5.1.10 Site 33HI470

Site Number: 33HI470	NRHP Recommendation: Not Eligible
Site Type: Lithic scatter	Elevation: 980 ft. AMSL
Components: Unknown prehistoric	Landform: Slight rise
UTM coordinates: E255539, N4331047 (NAD 27)	Soil Type: Jonesboro-Rossmoyne silt Loam; Westboro-Schaffer silt loam
Site Dimensions: 45 m N/S x 20 m E/W	Vegetation: Grassy Field
Artifact Depth: 10–30 cm	No. of STPs/Positive STPs: 24/3

Site 33HI470 is a prehistoric lithic scatter located in a grassy field immediately south of a stand of mixed pines and hardwoods that overlooks the North Fork of White Oak Creek in the northwest portion of the project area (Figure 1a). Vegetation at the site consisted of a grassy field and surface visibility was negligible (Figure 51). Based on shovel testing, the site measures approximately 45 meters north/south by 20 meters east/west and is bounded by two negative shovel tests in each cardinal direction (Figure 50).

During the investigation, 24 shovel tests were excavated in and around the site, with three shovel tests containing three artifacts found between 10 and 30 cmbs. A typical soil profile at the site consisted of approximately 20 cm of yellowish brown (10YR 5/4) loamy clay (Ap horizon) overlying 10+ cm (20–30+ cmbs) of yellowish brown (10YR 5/6) clay subsoil (Bt horizon).

The artifacts recovered from the site included two pieces of chert debitage and one piece of siltstone debitage (Appendix A). None of these artifacts are temporally diagnostic and all were recovered from the plowzone, indicating the site does not retain archaeological integrity. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

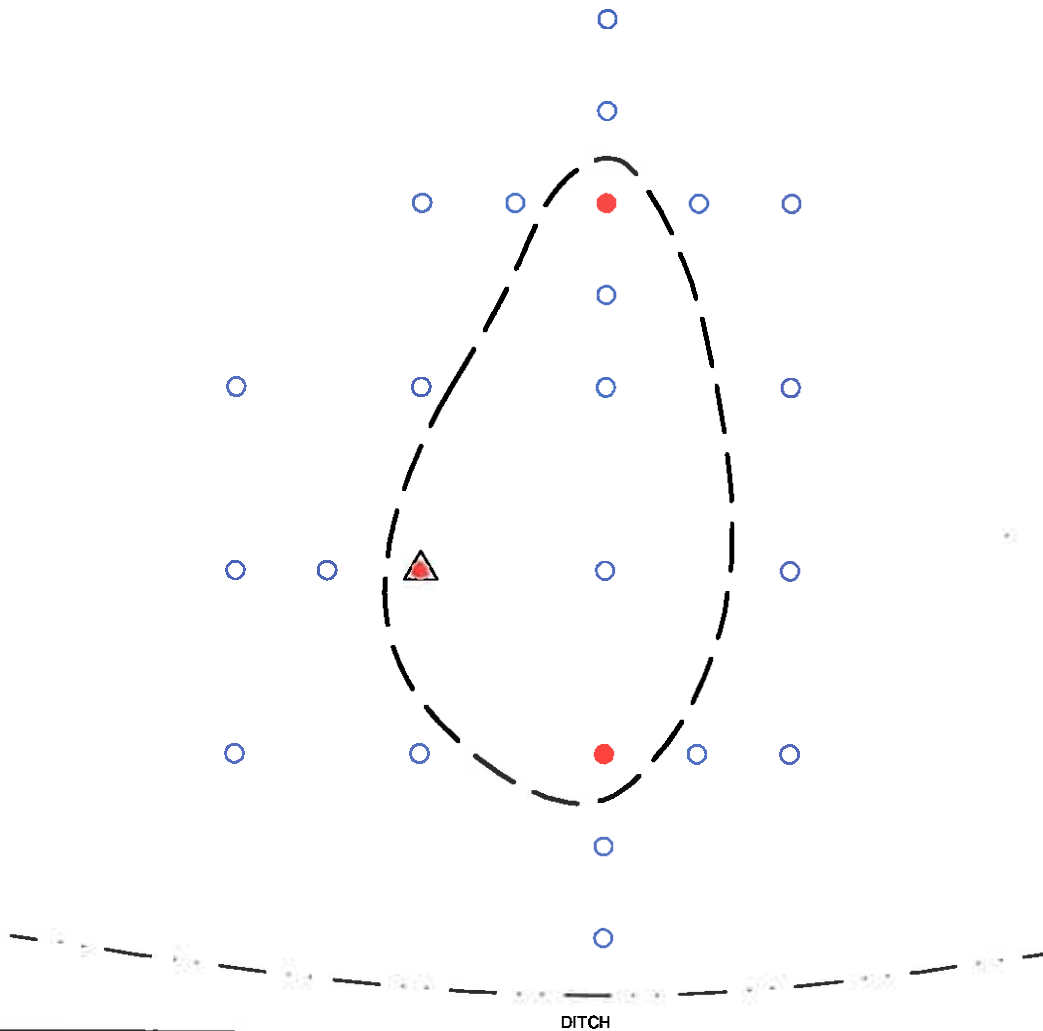
Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – The site contains few artifacts, has no artifact diversity, and no temporally diagnostic artifacts were recovered. The site also lacks archaeological integrity as all of



MAGNETIC NORTH

WOODS



EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- ▲ SITE DATUM
- SITE BOUNDARY

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES




Project Mgr: DAS	Project No. 73187213	 Consulting Engineers and Scientists 521 CLEMSON ROAD COLUMBIA, SC 29228 PH. (803) 741-9000 FAX. (803) 741-8800	SITE DIAGRAM	Figure
Drawn By: PTK	Scale: AS SHOWN		HIGHLAND COUNTY SOLAR PHASE I	
Checked By: DAS	File No. 73187213		33HI470	
Approved By: BGG	Date: JUNE 2019		HIGHLAND COUNTY, OHIO	50



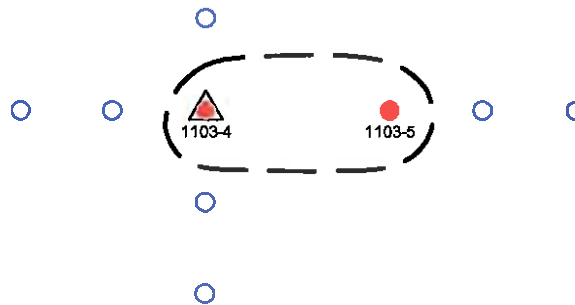
Figure 51. Site 33HI470, facing south.



Figure 52. Site 33HI471, facing south.



SLOPE



EXPLANATION

- POSITIVE STP
- NEGATIVE STP
- SITE DATUM
- SITE BOUNDARY

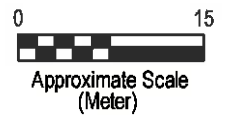


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND
IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mgr:	DAS	Project No.	73187213	<div style="text-align: center;"> Terracon Consulting Engineers and Scientists </div>		<div style="text-align: center;"> SITE DIAGRAM HIGHLAND COUNTY SOLAR PHASE I 33H1471 HIGHLAND COUNTY, OHIO </div>		<div style="text-align: center;"> Figure 53 </div>
Drawn By:	PTK	Scale:	AS SHOWN					
Checked By:	DAS	File No.	73187213	521 CLEMSON ROAD COLUMBIA, SC 29229 PH. (803) 741-9000 FAX. (803) 741-9900				
Approved By:	BGG	Date:	JUNE 2019					

the artifacts were found in the plowzone. Based on these factors, the site is unlikely to yield significant information about the prehistory of the area.

Site 33HI470 is a temporally non-diagnostic lithic scatter located in a grassy field on a bluff in the northwest portion of the project area. The site has a few artifacts, no artifact diversity, and lacks stratigraphic integrity. Based on these factors, site 33HI470 does not meet any of the criteria necessary for inclusion in the National Register and is recommended ineligible for the NRHP.

5.1.11 Site 33HI471

Site Number: 33HI471	NRHP Recommendation: Not Eligible
Site Type: Lithic scatter; Historic artifact scatter	Elevation: 1000 ft. AMSL
Components: Unknown Prehistoric; Unknown Historic	Landform: Rise/Hill
UTM coordinates: E261958, N4328834 (NAD 27)	Soil Type: Westboro-Schaffer silt loams
Site Dimensions: 10 m N/S x 20 m E/W	Vegetation: Grassy Field
Artifact Depth: 0–55 cm	No. of STPs/Positive STPs: 9/2

Site 33HI471 is a small prehistoric lithic scatter and historic artifact scatter located on a grassy hill approximately 175 meters south of Edwards Road in the northeast portion of the project area (Figure 1a). Vegetation at the site consists of a grassy field and surface visibility was approximately 15 percent (Figure 52). The 1944 Hillsboro USGS topographic map shows a road near the location of the site, although no evidence for this road exists today. Based on shovel testing, the site measures approximately 10 meters north/south by 20 meters east/west and is bounded by two negative shovel tests to the east, west, and south, and one negative shovel test and a steep slope to the north (Figure 53).

During the investigation, nine shovel tests were excavated in and around the site. A total of seven artifacts was recovered from two positive shovel tests between 0–55 cmbs. A typical soil profile consisted of approximately 30 cm of brown (10YR 4/3) clayey loam (Ap horizon), overlying 10+ cm (30–40+ cmbs) of yellowish brown (10YR 5/8) clay subsoil (Bt horizon). In all, seven artifacts were recovered from the site. These consisted of two pieces of chert debitage, two unidentified nails, and three iron fragments (Appendix A). None of these artifacts is temporally diagnostic.

Site 33HI471 is a small prehistoric lithic scatter and historic artifact scatter located in the northeast portion of the project area. The prehistoric component of the site has few artifacts, no artifact diversity, and contains no temporally diagnostic artifacts. The historic component contains only two unidentified nails and three corroded metal fragments, all found in the same shovel test. In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – The site has no known association with events that have made a significant contribution to the broad patterns of our history.

Criterion B – The site has no known association with the lives of significant persons in our past.

Criterion C – The site contains no architectural or other aboveground remains. It does not embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value.

Criterion D – The prehistoric component of the site has few artifacts, no artifact diversity, and contains no temporally diagnostic artifacts. The historic component contains only two unidentified nails and three corroded metal fragments, all found in the same shovel test. Based on these factors, the site is unlikely to yield significant information about the prehistory or history of the area.

Site 33HI471 is a small lithic scatter and historic artifact scatter situated on a grassy hill in the northeast portion of the project area. The site contains a small number of temporally non-diagnostic artifacts and has no artifact diversity. Based on these factors, Site 33HI471 does not meet any of the criteria necessary for inclusion in the National Register and is recommended as being ineligible for inclusion for the NRHP.

5.1.12 Isolated Finds

Isolated Find 33HI472 is a single piece of chert debitage found in shovel test 1006–1 between 0 and 30 cmbs in the northernmost portion of the project area at UTM coordinates E256600, N4331595 (NAD 27). Eight additional shovel tests were excavated at 7.5-meter intervals in cardinal directions around the initial positive shovel test; however, no other artifacts were found. This single piece of chert shatter has little research potential and is recommended as ineligible for inclusion in the NRHP.

Isolated Find 33HI473 is a single ball clay tobacco pipe fragment found on the ground surface in a plowed field in the south-central portion of the project area at UTM coordinates E258070, N4328329 (NAD 27). Nine shovel tests were excavated at 7.5-meter intervals around the surface find; however, no other artifacts were recovered. Isolated find 33HI473 has little research potential and is recommended ineligible for inclusion in the NRHP.

Isolated Find 33HI474 consists of one chert utilized flake and one chert flake recovered from STP 1101–13 between 10 and 20 cmbs in an agricultural field with poor surface visibility at UTM coordinates E262089, N4328872 (NAD 27). Seven additional shovel tests were excavated around the initial positive shovel test; however, no other artifacts were found. The isolated find has little research potential and is recommended ineligible for inclusion in the NRHP.

Isolated Find 33HI475 is a single piece of chert debitage recovered from STP 1101–7 between 0 and 10 cmbs. The isolated find was found on a grassy hill located in the easternmost portion of

the project area at UTM coordinates E262009, N4328828 (NAD 27). Eight additional shovel tests were excavated in cardinal directions around the initial positive; however, no other artifacts were found. Isolated Find 31HI475 has little research potential and is recommended ineligible for inclusion in the NRHP

Isolated Find 33HI476 consists of a single piece of chert debitage recovered from STP 1057–14 between 0 and 25 cmbs. The isolated find was found on a grassy hill in the easternmost portion of the project area at UTM coordinates E261786, N4328950 (NAD 27). Eight additional shovel tests were excavated in cardinal directions around the location of the initial positive shovel test; however, no other artifacts were found. This isolated find has little research potential and is recommended ineligible for inclusion in the NRHP.

5.1.13 Earthen Berm Investigations

On April 2 and 9, 2019, and again from May 1–6, 2019, Terracon conducted archaeological and geophysical investigations of an earthen berm located near the southwest boundary of the project area (Figure 54) that was reported to be part of a “serpent mound.” The purpose of the investigation was to determine if the remnants of an effigy mound were located on the subject property, as reported to the Ohio Power Siting Board by Mr. Jeffrey Wilson in an e-mail on March 25, 2019.

In the plowed fields with excellent surface visibility (over 90 percent) located north and east of the earthen berm, a pedestrian survey consisting of 33 transects spaced five meters apart was conducted; however, no artifacts were found. Twenty-six shovel tests placed along two transects in the woods west of embankment revealed hydric soils and no artifacts were recovered. A small, circular raised area was identified in the Lidar data and in the field as a slight rise, approximately five meters in diameter and 10–30 cm above the surrounding landscape (Figure 55). South of the raised area, the berm, which is almost imperceptible, extends in a southwesterly direction where it intersects with the property boundary (Figure 54). Another field, located approximately 350 meters east of the southern portion of the berm (the portion falling outside of the project area), was subject to a pedestrian survey consisting of 10 transects; no artifacts were identified in this area.

Geophysical investigations were performed on May 1 and 2, including electromagnetic induction (EMI), magnetic gradiometer, and ground penetrating radar (GPR) (Appendix C). The surveys were conducted along the berm and in the surrounding fields (Figure 56). The results of the EMI and gradiometer surveys were plotted and interpreted for potential soil anomalies and the locations of each anomaly was flagged in the field; Figures 57 and 58 display the EMI data (conductivity and magnetic susceptibility respectively). EMI is sensitive to different soil types, soil conditions (including moisture), metallic objects, and buried objects to an approximate depth of 15 feet. The gradiometer data is shown in Figure 59. The data for the north side of the creek is

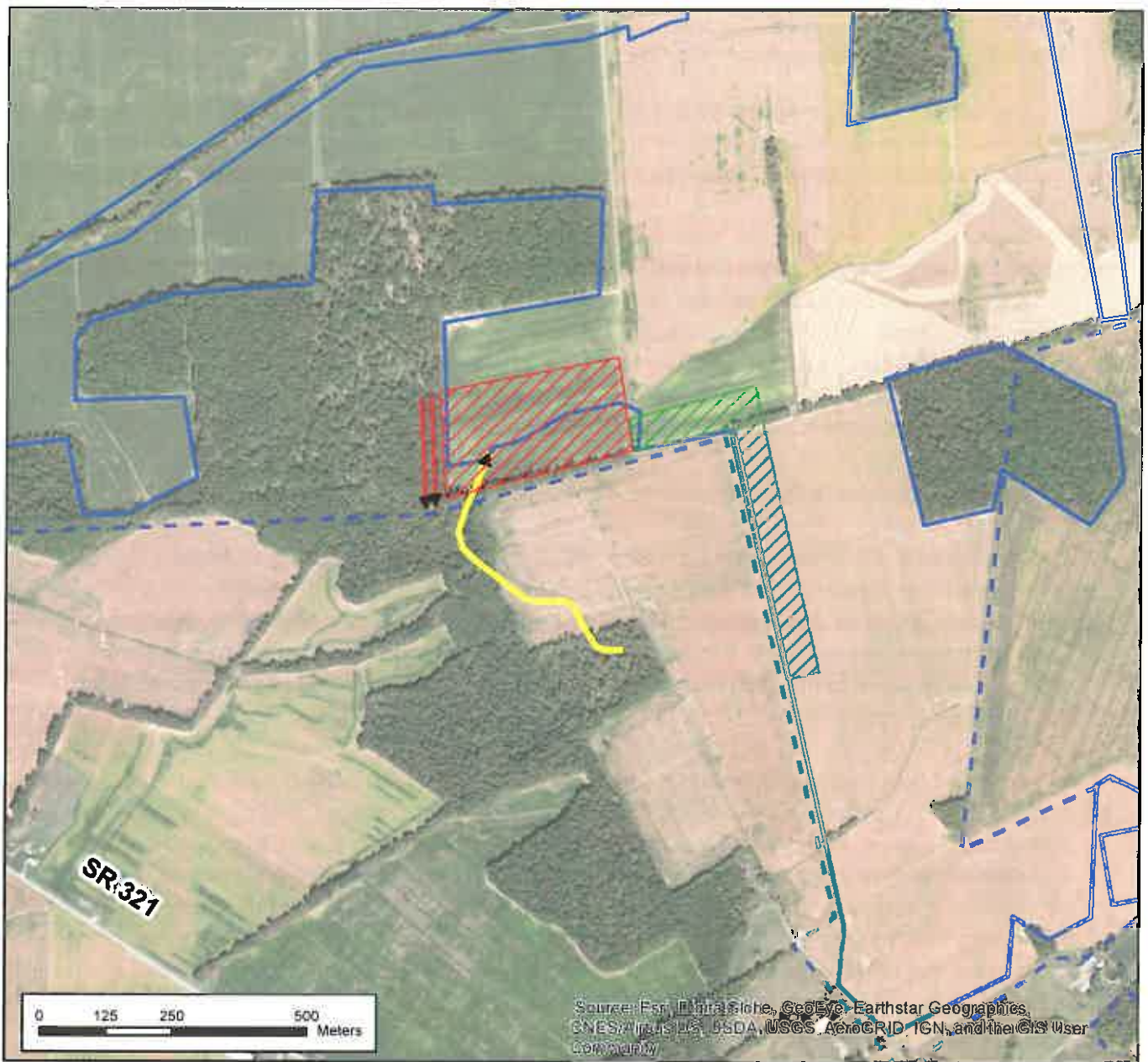
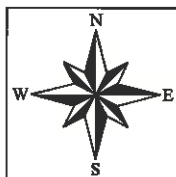
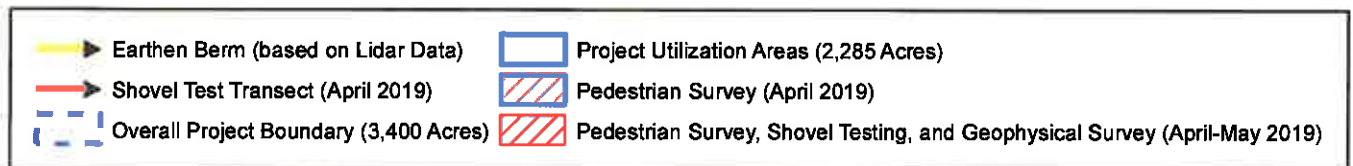


Figure 45. Location of earthen berm.
Base Map: ESRI World Imagery.



Project No.	73187213
Date:	June 2019
Drawn By:	BGG
Reviewed By:	DAS

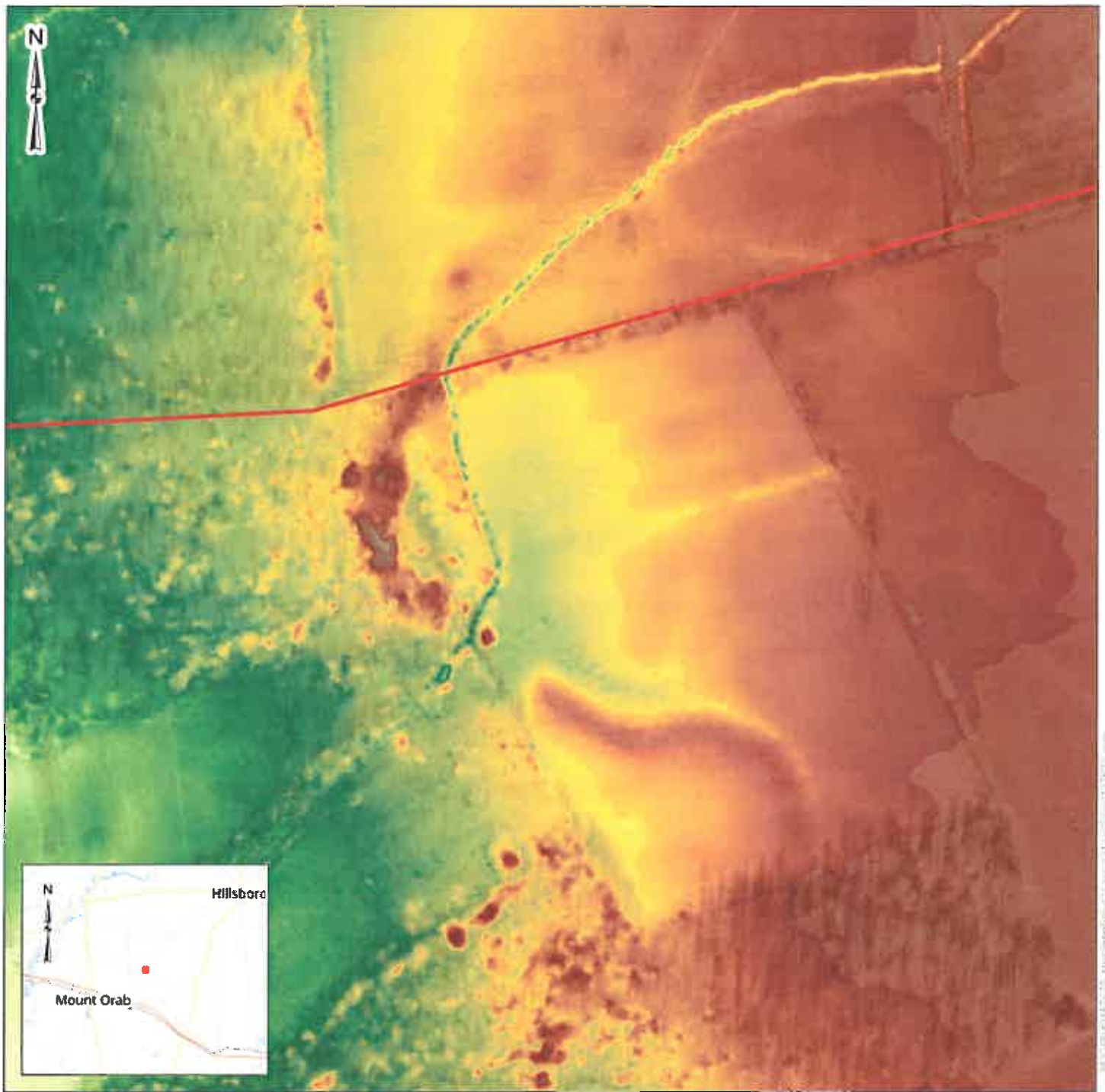
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EARTHEN BERM
HIGHLAND SOLAR FARM HIGHLAND CO., OHIO

Figure
54

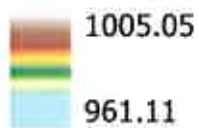


Figure 55. Location of the earthen berm, facing north. The red arrow is pointing to the approximate center of the rise.



Digital Elevation Model — Project Site

Elevation (ft)



DATA SOURCES:
Digital Elevation Model created from LIDAR data
Basemap - 1959 Aerial Imagery

Project No.:	49187638
Date:	Jun 2019
Drawn By:	PNM
Reviewed By:	JRG

Terracon

611 Lunken Park Dr. Cincinnati, OH 45226

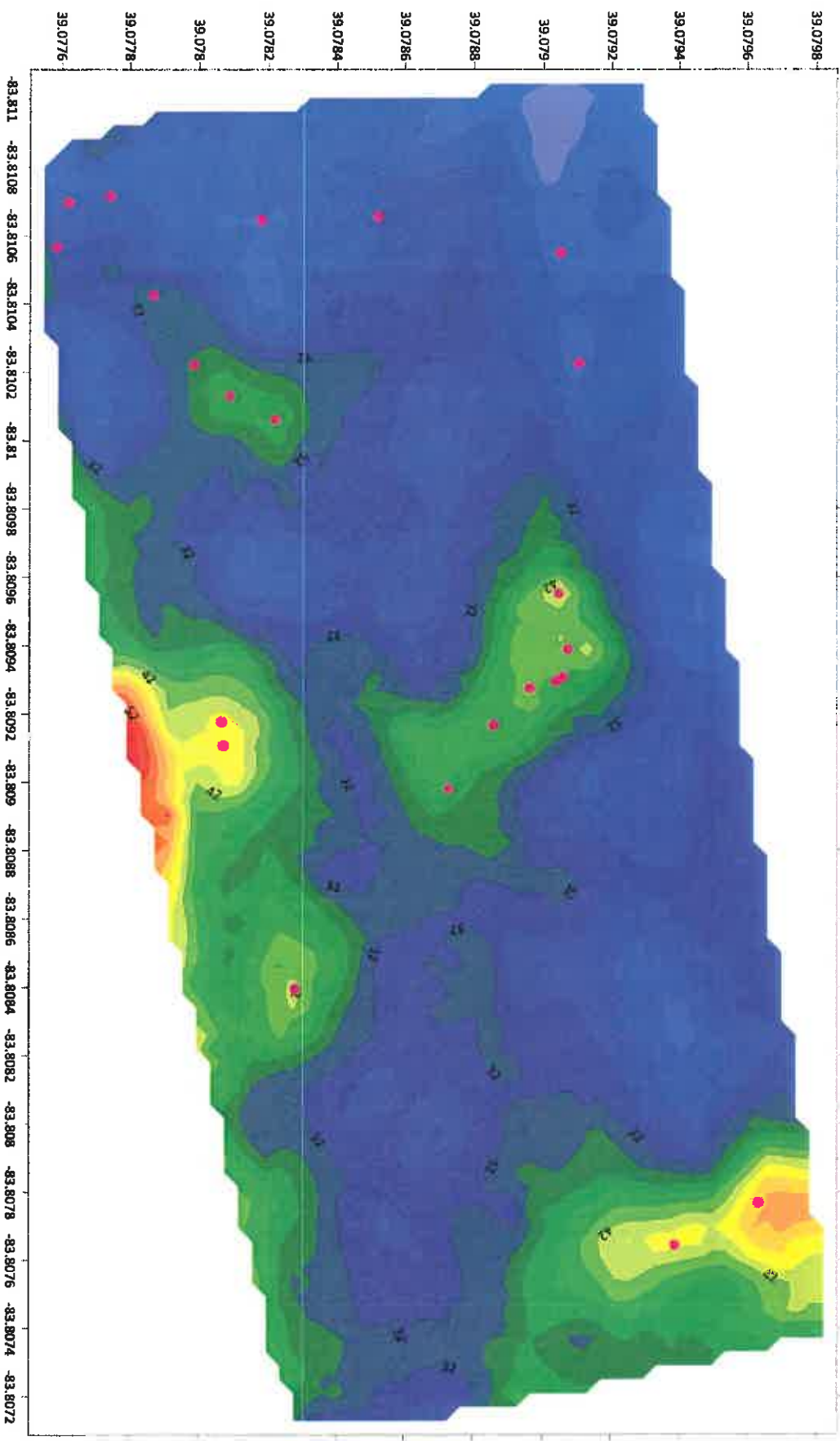
PH. (513) 321-5816 terracon.com

Serpent Mound DEM from LIDAR

Highland Solar
Clay Township, OH 45171

Figure

56



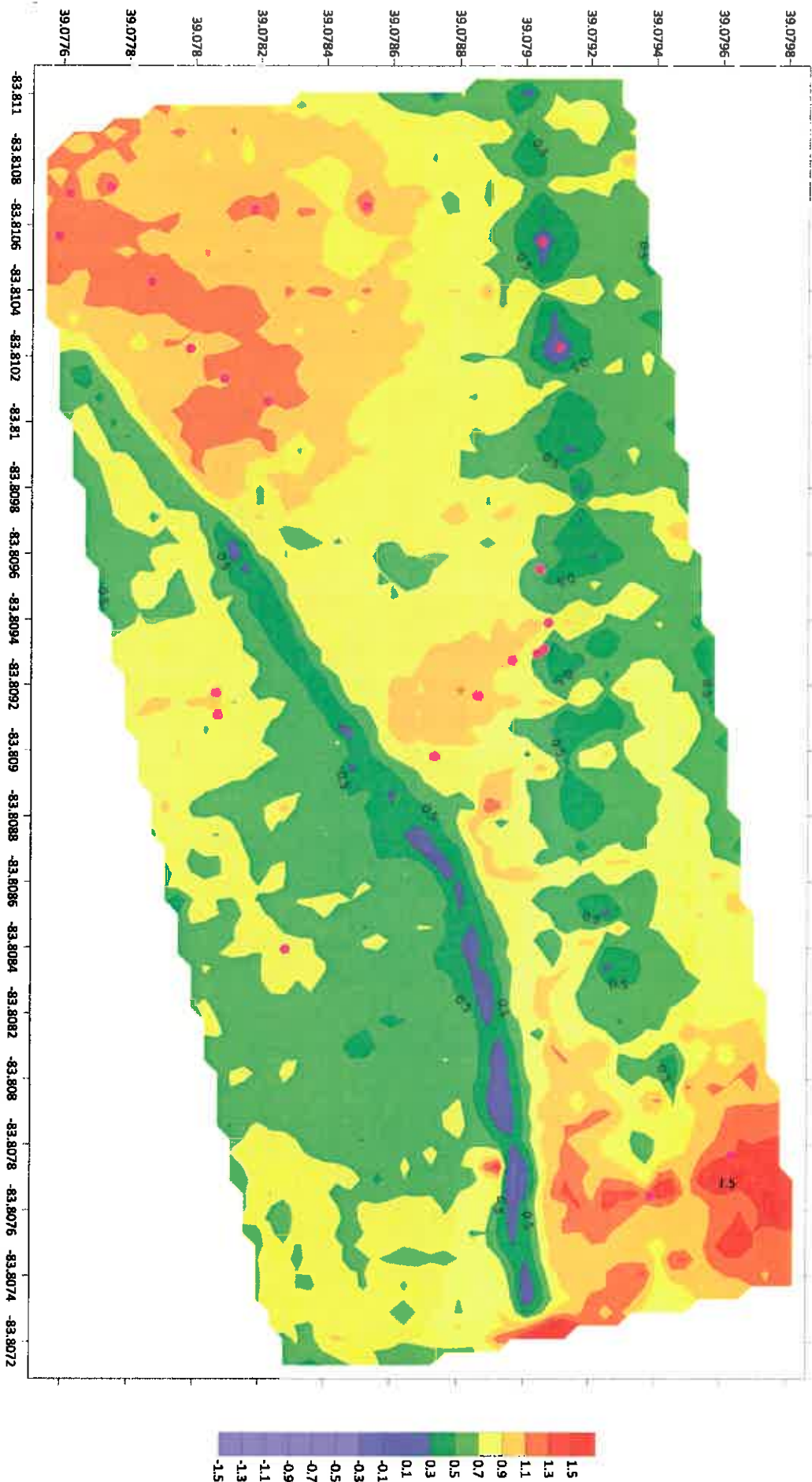
● Anomaly Location

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Project Name:	KJS
County:	KJS
Geography:	RSL
Acquisition:	RSL

Project No:	N118167
Scale:	As Shown
File Name:	08/07/2019
Tool:	Geospatial

Terracon Consulting Engineers & Scientists 611 Lumber Park Drive Cincinnati, Ohio 45228	EMI - Conductivity Plot Highland Solar Clay Township, OH 45171	Figure 57
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● Anomaly Location

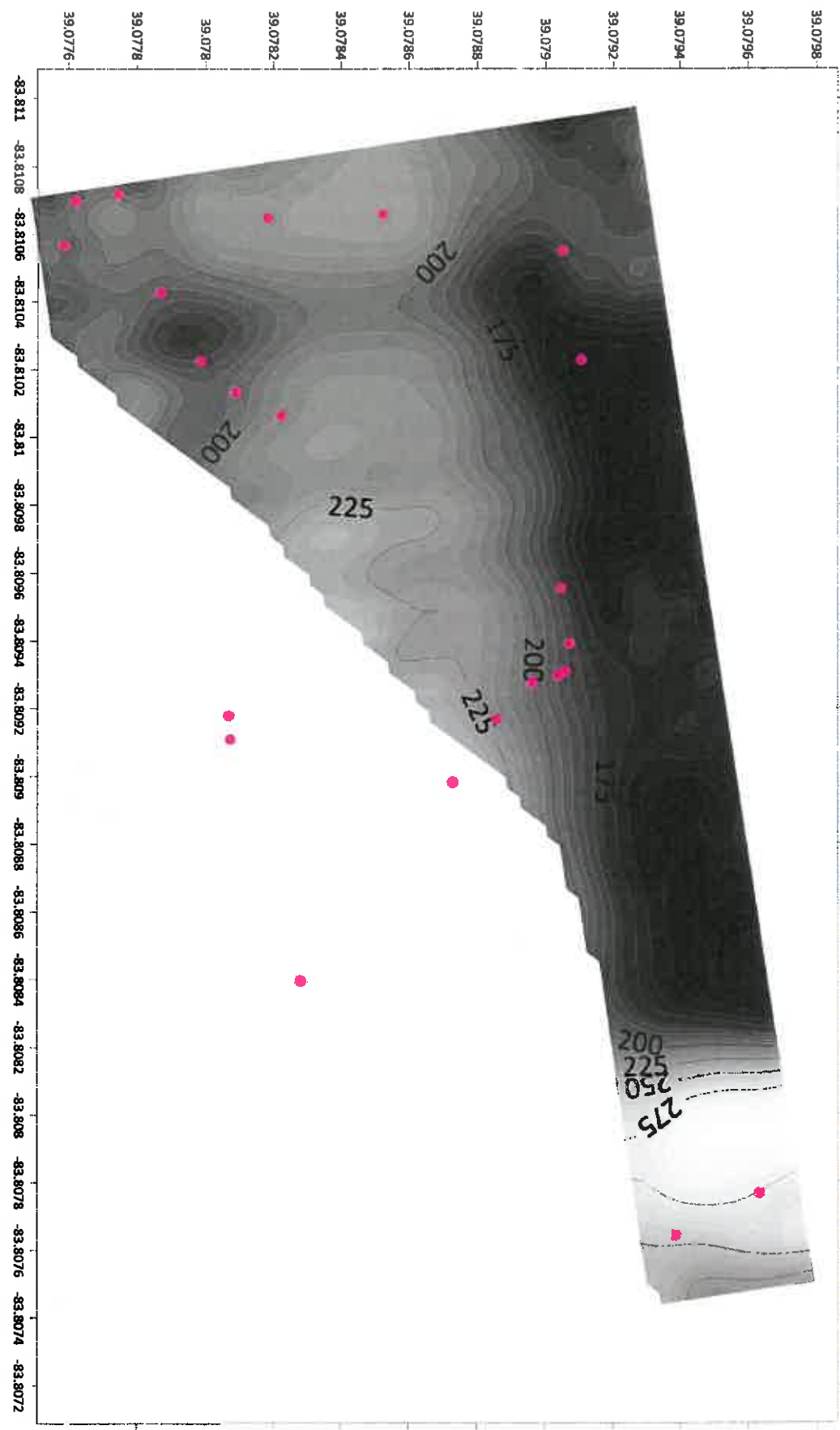
Mapdata 4: 2008 GENERAL LOCATION ONLY, JUNE 15
NOT FOR USED IN EXISTING PROJECTS (REV 002)

Project Manager:	KJS	Project No.:	N1105187
Owner:	KJS	Location:	As Shown
Geologist:	RSJ	File Name:	Geophysical
Appraiser:	RSJ	Date:	5/07/2019
Terracon Consulting Engineers & Architects 811 Linton Park Drive Cleveland, Ohio 44126			
EMI - Magnetic Susceptibility Plot			Figure
Highland Solar Clay Township, OH 45171			58

THIS IS A PRELIMINARY LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.



Anomaly Location



Project Manager:	KJS	Project No.	N1185167
Drawn by:	KJS	Scale:	As Shown
Checked by:	RSL	Date:	09/07/2019
Approved by:	RSL		

Terracon
Consulting Engineers & Scientists
611 Lumber Park Drive
Channahon, IL 61023

Fluxgate Magnetometer Plot
Highland Solar
Clay Township, OH 45171

plotted. The data on the south side of the creek was field interpreted but not recorded for plotting as this was not where the berm was located and the data north of the creek did not show anything of note. The gradiometer instrument is very sensitive to magnetic targets to a depth of approximately five feet, including different soil types and buried objects. A 50-x-50-foot area around each flagged anomaly was surveyed using GPR in an attempt to locate buried objects or disturbed soils. If a potential target was located, a flag would be placed directly above the target. The geophysical investigations identified 23 possible anomalies indicative of changes in soil properties or buried objects. Based on the results from the three survey methods, the located anomalies most likely represented areas of relative differences in moisture content, metallic debris, or rock boulders/cobbles.

On May 5 and 6, additional archaeological investigations were conducted that consisted of excavating 50-x-50-cm shovel tests at each of the 23 anomalies identified during the geophysical survey. Shovel testing revealed poorly drained Clermont silt loam soils with profiles consisting of approximately 22 cm of brown (10YR 5/3) loamy clay (Ap horizon), overlying 10+ cm of either grayish brown (10YR 5/2) and yellowish red (5YR 5/6) (Figure 60) or gray (10YR 6/1) and brownish yellow (10YR 6/8) mottled clay subsoil (Eg horizon). No artifacts or other indications of archaeological remains such as features were found during the investigation.



Figure 60. Shovel Test SM-1 near earthen berm

Cultural Resource Investigations

Highland Solar Farm ■ Highland Co, Ohio

August 2019 ■ Terracon Project No. 73187213



As a result of the investigations, it is Terracon's opinion that the earthen berm is not a prehistoric effigy mound or any other type of prehistoric archaeological feature. Our reasons are as follows:

1. After extensive archaeological investigations, including close-interval pedestrian survey and targeted shovel testing as noted above, no artifacts were found anywhere near the berm within the project area.
2. Earthworks typically are built on prominent, easily visible locations. This berm is in a non-descript area.
3. The area surrounding the berm contains poorly drained soils that come saturated after heavy rains. Archaeological sites are mostly located on well drained soils.
4. There is no evidence for collecting or pothunting. If this were truly a prehistoric effigy mound, there would almost certainly be signs of looting.
5. There is no record of the mound prior to 1955, including the 1914 Ohio Archaeological Atlas and Squire and Davis's *Ancient Monuments of the Mississippi Valley* (1848). The lack of knowledge of this mound would be highly unusual as there has been a tremendous amount of interest in the earthworks of Ohio since the early nineteenth century.
6. *Highland Pioneer Sketches and Family Genealogies* (Elsie Johnson Ayers 1971) states that the mound was "mapped some years ago by the government. State geologists and archaeologists checked it again in 1967, but they were unable to determine for what purpose it was intended." The fact that the state knew about the embankment but never recorded it as an archaeological site suggests that it is not a prehistoric construction.
7. Most effigy mounds, including Alligator Mound, Serpent Mound, and those of the Late Woodland Effigy Mound culture area of southern Wisconsin, northeastern Iowa, northern Illinois, and southeastern Minnesota, have stone fireplaces or "altars" near the head or heart areas of the mound (Lepper and Frolking 2003:152). Nothing was observed near the head area of the reported "serpent" and to our knowledge nothing has been reported near the southern portion of the berm outside of the project area.

5.2 ARCHITECTURAL SURVEY RESULTS

An architectural survey was conducted to record structures more than 50 years old within an approximate 0.5-mile radius of the project, based on LiDAR visual analysis of the project area. Based on the architectural survey, 11 historic-age resources were recorded within the project area, while an additional 73 historic-age resources were recorded within the 0.5-mile visual effects APE (Figures 1b–1h and 2b–2h, Table 1). Properties identified within the project area and APE ranged from ca. 1850s to modern day construction. The majority of properties are late nineteenth to early twentieth century single-family houses and early to mid-twentieth century farmsteads, including various types of agricultural barns and outbuildings.

5.2.1 Resource ID No. HIG0034113

Resource ID No. HIG0034113 is a one-story single-family dwelling located at 2635 SR 138. Constructed in 1953, this Minimal Traditional residence is rectangular in massing, sits on a concrete block foundation, and is covered by a side-gabled roof with asphalt shingles (Figures 61 and 62). A red brick chimney rises from the peak of the gable. The property is clad in narrow horizontal siding and a perma-stone water table, punctuated by rectangular fenestration openings on all visible elevations. At the front elevation, the main entry is articulated by a flat-roof porch extension supported by thin metal posts, above a porch projection composed of two rows of concrete block and surrounded by a metal railing. Three window openings light the front elevation, two with paired aluminum sash and one with a single aluminum sash, and are covered in angled, scalloped awnings. At the end of the building, opposite the front entry, is a single-car garage with a multi-pane garage door, visually incorporated into the massing of the house itself and under the same gabled roof. The rear elevation is lit by various rectangular windows, with aluminum and vinyl replacement sash and frames. A small addition continues from the original eave line and may be an enclosed rear patio.

This structure appears to remain on its original site, and retains its rural setting, feeling, and association. However, it appears that many of the original materials and workmanship have been erased, and the design is not original or distinctive.

In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – This resource has no known association with events that have made a significant contribution to the broad patterns of American history

Criterion B – This resource has no known association with the lives of significant persons in our past.

Criterion C – This property is a Minimal Traditional, vernacular farmhouse with significant alterations to its original materials, and does not embody the distinctive characteristics of

a type, period, or method of construction, nor does it represent the work of a master or possess high artistic value.

Criterion D – This resource is unlikely to yield significant information about the history of Clay Township.

This property displays no distinctive architectural features or characteristics and lacks significance through aesthetic features or association with an important person or historic context. Based on this evaluation, Resource ID No. HIG0034113 is recommended ineligible for inclusion in the NRHP.

5.2.2 Resource ID No. HIG0034213

Resource ID No. HIG0034213 is a collection of farmstead buildings with no academic style located at 2661 SR 138. Recorded by the Assessor as constructed in 1861, this resource includes a main residence, a small brick outbuilding, a three-car garage, and a barn. The residence is composed of two gabled volumes oriented perpendicular to each other, both one-and-a-half stories, and one larger than the other (Figure 63). Both volumes are clad in gray, narrow horizontal vinyl siding, and both gabled roofs are clad in modern composite shingles. The smaller volume is wrapped on two sides with a shed-roof porch supported by modern turned porch posts and lit towards the rear of the roof by rectangular fenestration openings with one-over-one vinyl sash windows. One brick chimney rises from the peak of the gable. The larger volume includes a concrete porch over its main entry, but it only spans a partial length of the front elevation, though it is supported by the same turned wood posts. Fenestration patterns reflect the small volume and are filled with vinyl windows and doors. Three chimneys rise from the slopes of the large volume gabled roof, two at the front and one at the rear.

The small brick outbuilding is also gabled, but this roof is composed of standing-seam metal and terminates in metal eaves and gutters (Figure 64). The brick cladding is red and decorated with dark brick quoins and subtle diapering in the gable end. Four one-over-one vinyl windows light the building, and a small brick chimney rises from the gable's slope at the rear of the roof.

The rectangular three-car garage is a modern structure, possibly constructed out of prefabricated metal. It is covered in a shallow gable, below which are three roll-up one-car garage doors. The property's one-and-a-half story barn is covered in a gambrel roof and includes a saltbox-style addition to its rear elevation. Though the barn itself may be historic, its roof and facades have been clad in standing-seam metal, and its windows replaced with multi-lite vinyl. Two metal sliding doors provide access at the front elevation, one full-height, and the other standard.

Though reported to be constructed in 1861, the resources at this farmstead no longer read as such, and it is not possible to discern from the right-of-way, which structures, if any, date to that period of construction. Overall, integrity is at a major loss.



Figure 61. Resource ID No. HIG0034113



Figure 62. Resource ID No. HIG0034113



Figure 63. Resource ID No. HIG0034213



Figure 64. Resource ID No. HIG0034213

In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – This resource has no known association with events that have made a significant contribution to the broad patterns of American history.

Criterion B – This resource has no known association with the lives of significant persons in our past.

Criterion C – This farmstead is a collection of modern and historic-age resources and does not embody the distinctive characteristics of a type, period, or method of construction, nor does it represent the work of a master or possess high artistic value.

Criterion D – This resource is unlikely to yield significant information about the history of Clay Township.

This property displays no distinctive architectural features or characteristics and lacks significance through aesthetic features or association with an important person or historic context. Based on this evaluation, Resource ID No. HIG0034213 is recommended ineligible for inclusion in the NRHP.

5.2.3 Resource ID No. HIG0034313

Located at 2696 SR 138, Resource ID No. HIG0034313 is a Craftsman-style vernacular residence features a rectangular massing, horizontal vinyl siding, a front gabled roof, and replacement one-over-one vinyl windows (Figure 65). The symmetrical front elevation includes a gabled front entry porch, below the main gabled roof structure, supported by tapered square porch posts with Craftsman detailing, sitting on brick piers. A brick chimney rises from the peak of the roof gable, towards the rear of the house.

A one-car front gabled garage sits adjacent to the residence (Figure 66). It is clad in vertical board siding and is dominated by a barn-style garage door. At the rear of the main residence, an additional long, gabled, rectangular one-car garage sits on a concrete foundation and is clad in standing seam metal siding.

This 1948 dwelling displays typical massing of the Craftsman-style, bungalow-type houses of the era, though its original materials, and workmanship have been largely lost. The adjacent garage is the most intact component, and the garage door itself appears to be original to the date of construction. Overall, the property retains integrity of association, location, and feeling.

In regard to the National Register Criteria for Evaluation (National Register Bulletin 15):

Criterion A – This resource has no known association with events that have made a

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in

Case No(s). 19-1822-EL-BLN

Summary: Letter of Notification Part 1 of 5 electronically filed by Carrie Inman on behalf of
The Dayton Power and Light Company