

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's Second Request for Information

SITING BOARD DR 2-1:

Refer to Pine Grove Solar's response to Siting Board Staff's First Request for Information (Staff's First Request), Item 9. Provide a copy of the ground penetrating radar survey conducted for Hubbard Cemetery. Also provide any report from the cultural consultant.

Response: The Ground Penetrating Radar Study conducted for the Hubbard Cemetery is provided as Exhibit 2-1(a) "Hubbard Cemetery GPR Report." The Cultural Resources Records Review and Sensitivity Assessment Report for the Pine Grove Solar Project is included as Exhibit 2-1(b) "Cultural Resources Records Review and Sensitivity Assessment Report."

Witness: Madeleine Ray

TECHNICAL MEMORANDUM

GROUND PENETRATING RADAR SURVEY OF HUBBARD CEMETERY FOR THE PINE GROVE SOLAR PROJECT, MADISON COUNTY, KENTUCKY

CONSULTANT: SEARCH
8298 Bayberry Road, Suite 1
Jacksonville, Florida 32256

PRINCIPAL INVESTIGATOR: Timothy Parsons, PhD, RPA

PROJECT MANAGER: Lillian Azevedo, PhD

CLIENT: The AES Corporation

DATE: October 2022

SEARCH PROJECT #: E22203

SEARCH conducted a ground-penetrating radar (GPR) survey in October 2022 in support of AES Clean Energy Development, LLC. The purpose of the survey was to locate the Hubbard Cemetery for the Pine Grove Solar Project (Project) in Madison County, Kentucky, and to recommend an exclusionary buffer around the cemetery to prevent unintentional disturbance of graves or other cemetery-related features during Project activities. The Project area is approximately 8 mi (13 km) east of Richmond, Kentucky, in the central part of the state (**Figure 1**).

A previous high-level desktop review of known cultural resources in the area completed by Tetra Tech, Inc. identified the Hubbard Cemetery on modern and historic USGS quadrangle maps (Tetra Tech 2022). No headstones or other visual indications of a cemetery exist at the location labeled on the maps. SEARCH used the location of the cemetery indicated on these USGS maps and georeferenced the coordinates to historic and modern aerial images to establish a likely location. The survey area consisted of a 0.25-ac (0.10 ha) section of pasture within the Project area.

Samantha Serfontein, MA, completed the field survey and data analysis. Kate Pontbriand, MS, assisted with field survey. Timothy Parsons, PhD, RPA, and Samantha Serfontein, MA authored this technical memo.

ENVIRONMENTAL SETTING

The Project area is in central Kentucky within the Interior Plateau Level III Ecoregion (Ecoregion 71) and the Outer Bluegrass Level IV Ecoregion (Ecoregion 71d). This ecoregion is characterized by rolling and hilly uplands containing small sinkholes, springs, and ravines (Woods et al. 2002). The principal drainage in the region is the Kentucky River, which flows northwestward to its confluence with the Ohio River. Many streams in the region are intermediate or ephemeral and dissect the rolling hills of the region, with Muddy Creek and Drowning Creek as large tributaries frequently labeled on maps. The Hubbard Cemetery survey area is on a slightly elevated piece of ground between Butler Branch to the south and Drowning Creek to the north.

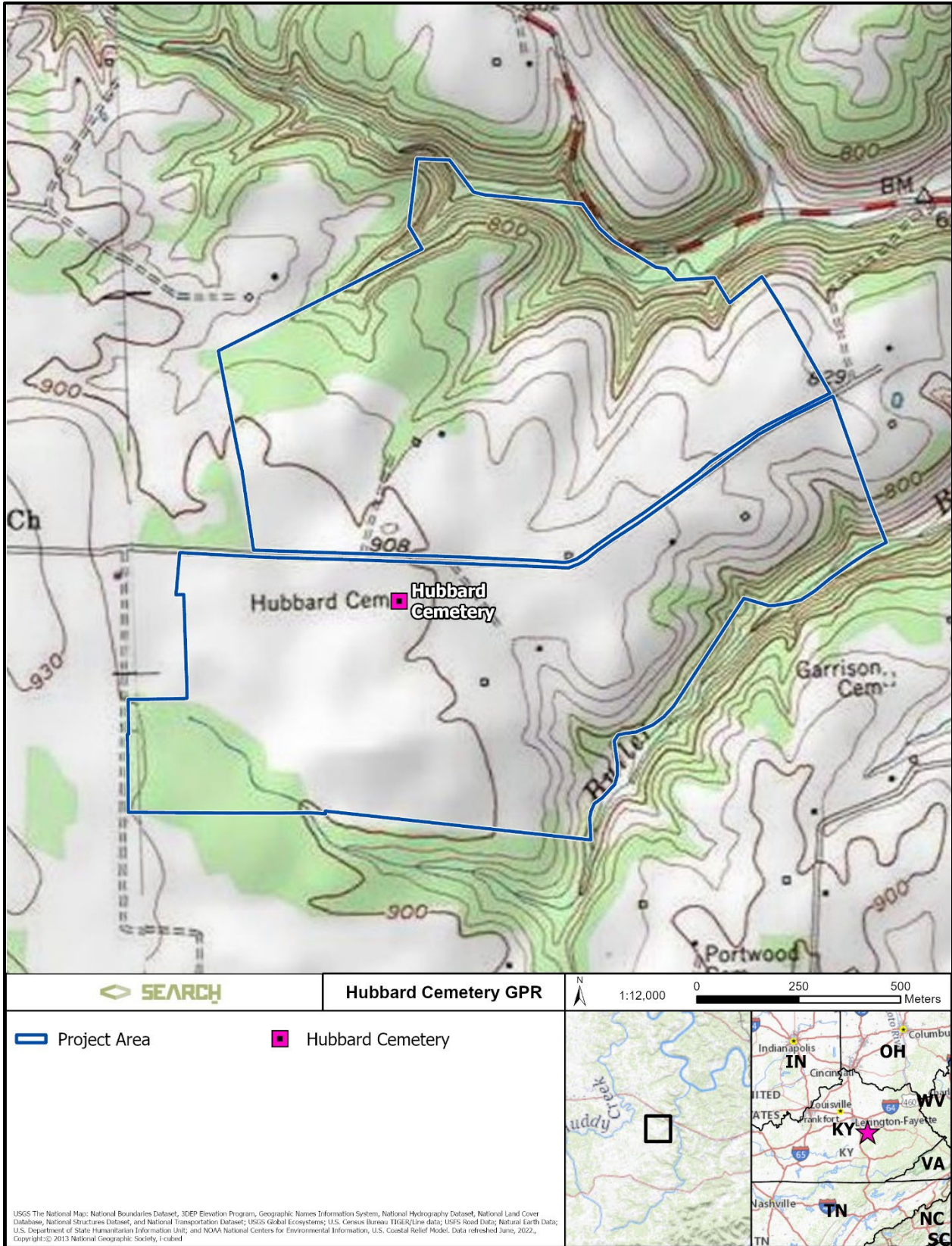


Figure 1. The location of the Pine Grove Solar Project in Madison County, Kentucky, with the Hubbard Cemetery labeled.

Historically, the region consisted of mostly oak-hickory forests, with some mixed forests containing various oak, ash, walnut, and buckeye species. Current land cover primarily includes cropland and pastureland, with some forest in areas dissected by streams. Common land uses include livestock production, dairy farming, and the agricultural production of hay, burley tobacco, corn, soybean, and small grains.

The GPR survey area within the Project area is entirely grassland pasture. Soils consist of Shelbyville silt loam, a deep, well-drained soil formed in loess and found in areas of relatively low slope (USDA NRCS 2022).

HISTORIC CONTEXT AND CARTOGRAPHIC AND AERIAL PHOTOGRAPHY REVIEW

No information was readily available on the history of the Hubbard Cemetery. It is possible that more detailed records on the establishment of the cemetery and the history of the Hubbard family could be identified through an intensive study of land, probate, and genealogy records in Madison County. Individuals with the Hubbard surname first appear on the tax lists for Madison County, Kentucky in 1795 (Selby and Selby 1981). Prior to the Civil War, this region of Kentucky was an important agricultural center, filled with farms, homesteads, and small towns (Tetra Tech 2022; Pollack 2008).

Based on an online review of available topographic maps, the Hubbard Cemetery was first labeled on a USGS quadrangle map in 1954 (**Figure 2**), but it was undoubtedly in use prior to this date. Much of Madison County remained agriculturally focused through the twentieth century, and small family cemeteries dot the landscape. It is reasonable to consider that this cemetery, along with many others in the area, was established during nineteenth century agricultural boom and remained in use for some decades after that.

SURVEY METHODS

The remote sensing survey consisted of ground penetrating radar (GPR), which detects differences in subsurface soil densities and subsurface variations (Kvamme 2008). GPR data were collected using a Geophysical Survey Systems UtilityScan survey instrument with a Zebra L10 data collector tablet, 350 megahertz (MHz) hyper-stacking digital antenna, and Model 656 four-wheel cart (**Figure 3**).

The GPR device consists of two antennae; one antenna emits a propagated Very High Frequency (VHF) pulse, and a second antenna records the pulse's wave reflections. The VHF pulses reflect on subsurface features, dependent on differences in density and other varying sub-surface properties. A 2D image of subsurface features is created based on the intensity and travel time of the reflection beam (Kvamme 2008). The images show anomalies as parabolas in the soil profile. When multiple transects are combined, a 3D image can be made.

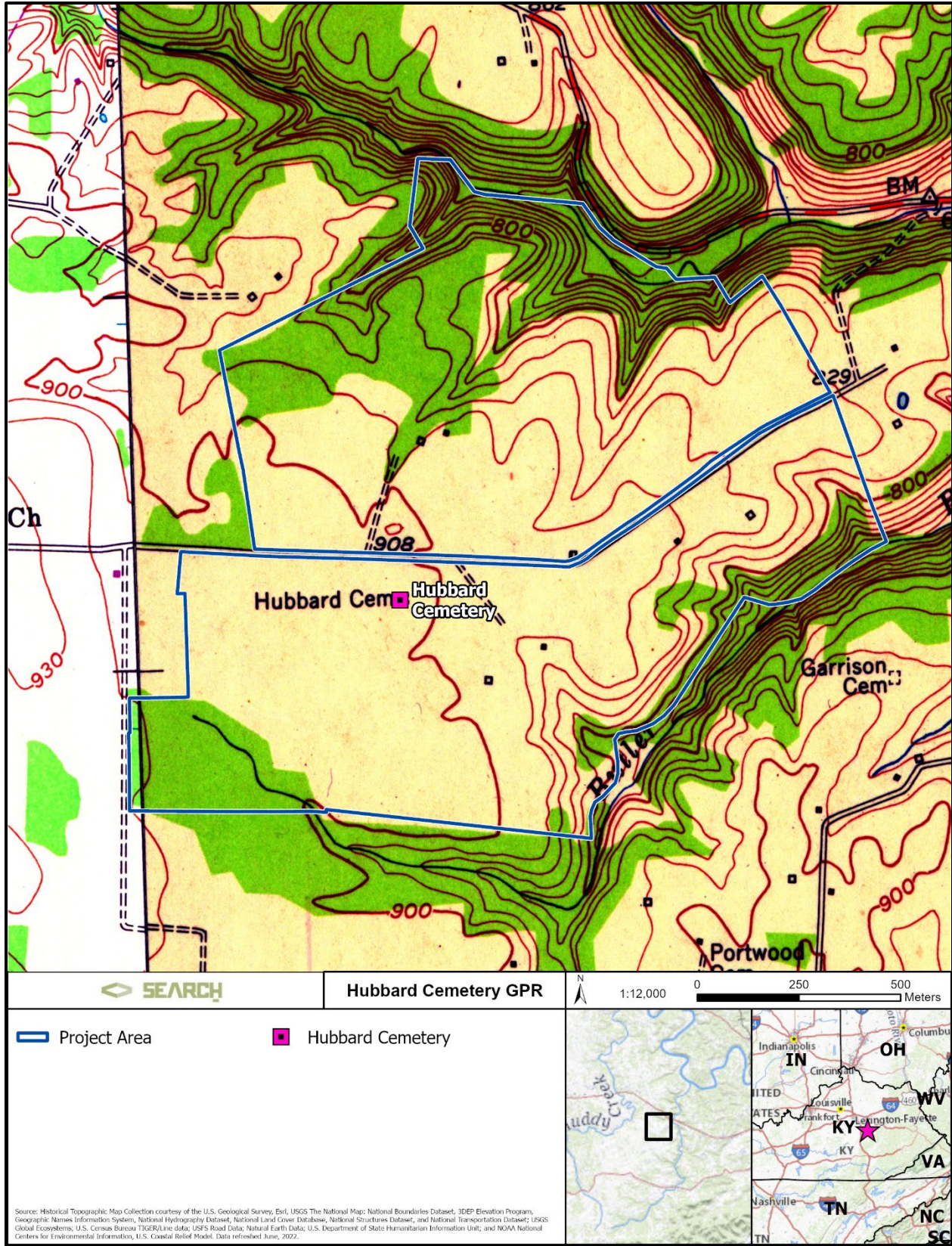


Figure 2. A 1957 topographic map of the Pine Grove Solar Project area in Madison County, Kentucky depicting the Hubbard Cemetery (USGS 1957).



Figure 3. Detail of GPR device during survey depicting environmental conditions and the present use of the cemetery area as pasture.

The survey wheel was calibrated to 10.0 meters (m) (32.8 feet [ft]). Data were collected with the ScanMax application set to high scan density (100 scans per m), normal sample density (512 samples per scan), and normal gain control with adaptive auto-gain function. The depth of data collection was set to 2.0 m (6.6 ft). Prior to data collection, some informal prospecting was performed within the GPR survey area to assess an appropriate dielectric permittivity value and to locate an area with no pronounced anomalies where the antenna could be auto calibrated for the survey area.

Soil conditions affect the efficacy of GPR, as pulses can be absorbed, conducted, or attenuated by different soil characteristics and types. For example, moisture can attenuate the radar signal, artificially limiting the pulse's depth and obscuring deeply buried anomalies. In contrast, anomalies are more easily detected in well-drained and dry soils as signals can reach deeper (Gater and Gaffney 2003). In addition to moisture, soil conductivity affects GPR results. Conductive soils, such as sediments with high iron and salt content, will disperse the radar signal, create indecipherable noise, and negatively affect data. A dielectric permittivity value of 22 was selected to account for the silty loam soils of the GPR survey area.

The GPR survey was completed in four adjacent grids, covering approximately 1,200 square meters (sq. m). Two large grids measuring 20 x 20 m (66 ft x 66 ft) were placed on the northern end of the GPR survey area. Directly south of these grids, two smaller, 10 x 20 m (33 ft x 66 ft) grids were placed. GPR data was collected unidirectionally from north to south. Signal attenuation varied between 1.0 m (3.3 ft) and 2.5 m (8.2 ft) below ground surface. The level ground of the pasture and few roots, rocks, and other obstructions was beneficial for GPR survey,

and there was no need to clear the ground prior to data collection. The thick, high grass hindered the speed at which data could be collected, but survey was completed in all four grid areas.

GPR data was collected in four separate project files. Field notes were recorded for each project file to denote the direction of data collection, the grid location and length of transects, and any surface obstructions that limited data collection. For both projects, the grid layout and directions of data collection are recorded as cardinal directions, but the grid orientations and data collection directions are slightly offset to conform to the angle of the fence on the east side of the pasture. For this reason, all instances of cardinal directions used when discussing grid orientations and transect directions technically refer to the grid direction rather than cardinal direction (i.e., grid north vs. magnetic north).

Following the completion of GPR data collection, GPS positions were collected at each grid corner to facilitate the integration of GPR data onto the project mapping through georeferencing. GPS data were collected using a BlueStar RTK GPS device, which typically provided sub-30.0-centimeter (cm) (11.8 inch [in]) precision.

Survey transects were spaced at 50 cm (1.6 ft) intervals. Data recorded during the survey was processed using RADAN 7 software. Data processing methods included a time-zero filter to remove the direct wave created by pulses that travel directly from the transmitter to the receiver and readjusted the dataset to ground surface. An exponential range-gain was manually applied and included an eight-point gain curve. This gain curve improved the data quality by reducing the signal for the highest amplitude reflections within the initial 20 cm (8.0 in) of depth and by increasing the signal as depth increased below ground surface to account for signal attenuation. Corrections were based on air space between the antenna and the ground surface, and a background removal tool filtered noise and horizontal banding that could have been caused by antenna or other nearby sources of interference.

RESULTS

After processing in RADAN 7, the data showed rectangular anomalies in all grids, with Grids 2 and 4 containing the highest concentration of anomalies. **Table 1** provides the characteristics of these anomalies, and **Figure 4** shows their location.

Table 1. GPR Grid Anomaly Data.

Grid Number	Grid Size	Anomaly Shape	Anomaly Interpretation	Count
1	20 x 20 m	Rectangular	Possible Grave	3
		Amorphous - small	Other Anomaly	20+
2	20 x 20 m	Rectangular	Possible Grave	6
		Amorphous - small	Other Anomaly	20+
3	10 x 20 m	Rectangular	Possible Grave	4
		Amorphous - small	Other Anomaly	20+
4	10 x 20 m	Rectangular	Possible Grave	15
		Amorphous - small	Other Anomaly	20+

Determining factors for flagging grave-like anomalies were size (approximately 1.5 m [5 ft] length), orientation (usually east to west), and depth at least 30 cmbs (11.8 in). At least 28 anomalies consistent with graves were identified (**Figure 5**). These grave-like anomalies occurred between approximately 30 to 125 cm below surface (cmbs) (1 ft to 4 ft). This depth measurement is the depth at which the anomalies were first identified, and not the limit of their depth. Approximately 80 smaller anomalies were also flagged. Although it is likely that many or most of these anomalies are subsurface rocks or roots, it is possible that some of them are child or infant graves. As anomalies were not ground-truthed, one cannot say for certain which anomalies are in fact graves and which are not. Additionally, many of the possible graves were on the edge of the eastern side of the GPR grid. This may indicate the center of the cemetery.

In addition to the GPR anomalies, SEARCH identified a small surface scatter of precontact lithic material (chipped stone) during a pre-survey surface inspection of the area surrounding the cemetery (**Figure 6**). The scatter was located just to the east and southeast of the GPR grid, was observed on the surface, and not collected. The exclusionary buffer includes the area where this material was located, but a systematic collection was not conducted, and a discrete site boundary was not established.



Figure 4. RADAN 7 time slice results showing anomalies between 30 to 125 cmbs (1 to 4 ftbs).



Figure 5. RADAN 7 time slice results with anomalies consistent with graves indicated.



Figure 6. An example of a chipped stone (lithic) precontact artifact found on the surface of the Hubbard Cemetery site.

CONCLUSIONS AND RECOMMENDATIONS

GPR survey conducted at the site of the Hubbard Cemetery in the Project area was successful in identifying anomalies consistent with graves. Over 100 anomalies were identified in the survey area, with at least 28 of those anomalies interpreted as possible graves. Most of the anomalies are oriented east-west, and fit the size, orientation, and depth commonly observed in North American cemeteries following Judeo-Christian burial traditions.

At least 80 smaller anomalies are consistent with the expected dimensions of infant or child graves, but without ground truthing the anomalies for definitive signs of soil disturbance or other physical evidence of graves, it is not possible to determine with certainty that the anomalies represent human interments. These anomalies could also be related to subsurface rocks and/or roots.

SEARCH recommends establishing and following the exclusionary buffer indicated in **Figure 7**. The buffer is approximately 80 m x 55 m (260 ft x 180 ft) and was established based on the presence of grave-like anomalies identified using GPR, along with a buffer to the east of the grid to account for any potential graves to the east of the cluster of potential graves at the eastern edge of the grid. The buffer also includes the area where precontact surface finds were located during pre-survey surface inspection. To avoid potential damage to the cemetery, Project

activities should not take place within the recommended buffer. Additional work and coordination will be needed if avoidance of the cemetery is not possible.

SEARCH also recommends a Phase I cultural resources survey of the Project area, since the presence of precontact Native American activity has been preliminarily established by the discovery of the surface scatter near the Hubbard Cemetery. The purpose of this investigation is to attempt to locate all archaeological sites within the Project area, describe them, and provide recommendations concerning eligibility for the National Register of Historic Places. This survey should include background research on identified cultural resources within one mile of the Project area, an inventory of previous cultural resources surveys in the vicinity, the creation of a precontact and historic archaeological site sensitivity model, and systematic shovel testing informed by the sensitivity model.

The survey should follow the *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports* issued by the Kentucky Heritage Council/State Historic Preservation Office (1991). A completed report consistent with these requirements will inform future consultation and requirements pursuant to Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108), the Kentucky Antiquity Act (KRS 164.705 through 164.735), and the Kentucky Heritage Commission enabling legislation (KRS 171.3801 through 171.384).

PROCEDURE TO DEAL WITH UNEXPECTED DISCOVERIES

Every reasonable effort has been made during this investigation to identify and establish an exclusionary boundary for the Hubbard Cemetery. However, in the unlikely event that human skeletal remains or associated burial artifacts are encountered in the Project area, all work in the area of the discovery should stop and local law enforcement should be notified. Numerous Kentucky statutes and regulations relate to burials and cemeteries, with the most important in this context including *Evidence of Dedication or Use of Land as Burying Ground*, which designates unmarked cemeteries as “set aside and used for burial purposes” (Kentucky Revised Statutes 381.710), and *Desecration of Venerated Objects, First Degree*, which designates as a Class C felony the intentional excavation or disinterment of human remains (Kentucky Revised Statutes 525.105).

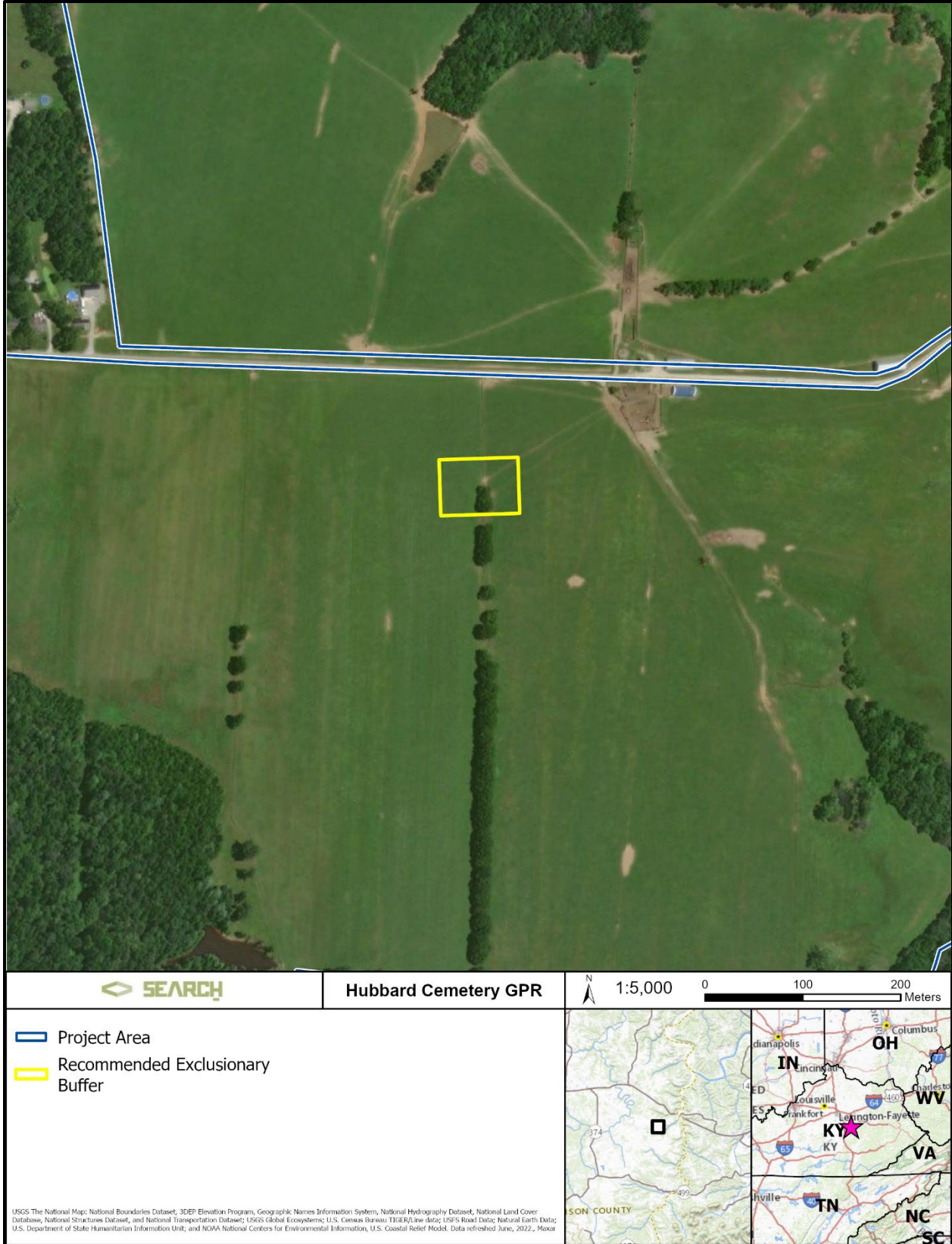


Figure 7. The recommended exclusionary buffer for the Hubbard Cemetery.

REFERENCES CITED

Gater, John and Chris Gaffney

2003 *Revealing the Buried Past: Geophysics for Archaeologists*. Tempus Publishing Ltd. Stroud, Gloucestershire.

Kentucky Heritage Council/State Historic Preservation Office

1991 *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports*. Revised 2001, 2006, 2017. Electronic document, <https://heritage.ky.gov/Documents/FieldworkCRspecs.pdf>, accessed October 19, 2022.

Kentucky Revised Statutes

2022 381.710 Evidence of dedication or use of land as a burying ground. Electronic document, <https://apps.legislature.ky.gov/law/statutes/>, accessed October 19, 2022.

2022 525.105 Desecration of venerated objects, first degree. Electronic document, <https://apps.legislature.ky.gov/law/statutes/>, accessed October 19, 2022.

Kvamme, Kenneth L.

2008 Remote Sensing Approaches to Archaeological Reasoning: Physical Principles and Pattern Recognition. In *Archaeological Concepts for the Study of the Cultural Past*, edited by A. P. Sullivan, III. University of Utah Press, Salt Lake City, Utah.

Pollack, David (ed.).

2008 The Archaeology of Kentucky: An Update. Volume Two. Kentucky 2008 Heritage Council, State Historic Preservation Comprehensive Plan Report No.3. Frankfort, KY.

Selby, R.E. and P.J. Selby

1981 Madison County, Kentucky Marriage Record 1787-1843. Kokomo, Indiana. Electronic document, https://openlibrary.org/books/OL3847643M/Madison_County_Kentucky_marriage_records_1787-1843, accessed October 19, 2022.

Tetra Tech

2022 Cultural Resources Records Review and Sensitivity Assessment Report for the Pine Grove Solar Project, Madison County, Kentucky. Prepared for AES Pine Grove Solar, LLC. On file, SEARCH.

US Department of Agriculture Natural Resources Conservation Service (USDA-NRCS)

2022 Soil Survey Geographic Database [SSURGO]. Electronic document, <https://websoilsurvey.sc.egov.usda.gov/>, accessed October 18, 2022.

US Geological Survey (USGS)

1957 Topographic Map of Lake City East, FL. Electronic document,
<https://ngmdb.usgs.gov/topoview/>, accessed October 19, 2022.

Woods, Alan J., J.M. Omernik, W.H. Martin, G.J. Pond, W.M. Andrews, S.M. Call, J.A. Comstock,
and D.D. Taylor.

2002 Ecoregions of Kentucky. Reston, VA., U.S. Geological Survey. Electronic document,
<https://www.epa.gov/eco-research/ecoregion-download-files-state-region-4>, accessed
October 18, 2022

Cultural Resources Records Review and Sensitivity Assessment Report for the Pine Grove Solar Project

Madison County, Kentucky

May 2022

Prepared for:



Pine Grove Solar, LLC.

Prepared by:



Tetra Tech, Inc.

4101 Cox Road, Suite 120

Glen Allen, VA 23060

EXECUTIVE SUMMARY

Tetra Tech, Inc. (Tetra Tech), under contract to AES Clean Energy Development LLC, has conducted a high-level desktop review of known cultural resources and an assessment of cultural resources sensitivity for the proposed Pine Grove Solar Project (Project) in Madison County, Kentucky. A review of site files maintained by the Kentucky Office of State Archaeology identified no previously recorded archaeological sites located within the Project area or within a 30-meter buffer. No prior archaeological surveys have been conducted within the Project area. A review of historic resources maintained on file by the Kentucky Heritage Council (KHC) identified no recorded historic resources within the Project area and four recorded historic resources within 1 mile of the Project area (Study Area). Historic cartographic sources reveal the presence of four cemeteries within the Study Area, one (Hubbard Cemetery) of which occurs within the Project area.

Precontact period archaeological sensitivity is assessed to be low within the Project area. Historic period archaeological sensitivity is assessed to be generally low, except within approximately 325 feet (100 meters) of three non-extant dwellings that are depicted on historic topographic quadrangle maps; the archaeological sensitivity of the 325-foot (100-meter) buffers around these three former dwellings is evaluated to be moderate.

A review of historic topographic maps reveals the presence of eight map-documented structures (MDS) within the Project area and 135 MDSs within the 1-mile buffer. If extant, these structures would be 50 years old or older, the age threshold triggering potential eligibility for listing on the National Register of Historic Places.

While there are no federally recognized Native American tribes in Kentucky, three tribes (Cherokee Nation, Eastern Band of Cherokee Indians, and the Eastern Shawnee Tribe of Oklahoma) recognize historic and cultural ties to Madison County. If a federal permit(s) is required for the Project, consultation between the lead federal agency and the interested tribes should be undertaken early in the permitting process.

If a federal permit(s) is required, the KHC, which functions as the State Historic Preservation Office, may require archaeological and historic architectural surveys of the Project area. Consultation with KHC is recommended to occur early in the permitting process.

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 ENVIRONMENTAL SETTING	1
3.0 CULTURAL CONTEXTS	2
3.1 Precontact Context.....	2
3.2 Historic Context.....	3
4.0 PREVIOUS INVESTIGATIONS AND KNOWN RESOURCES.....	4
5.0 ASSESSMENT OF RESOURCE POTENTIAL	5
6.0 TRIBAL CONSULTATION	6
7.0 SUMMARY AND RECOMMENDATIONS.....	6
7.1 Summary	6
7.2 Recommendations	6
8.0 REFERENCES	7

LIST OF TABLES

Table 1 Recorded Cultural Resources within Project area and 1-Mile Buffer

LIST OF FIGURES

Figure 1 Project Location

APPENDICES

Appendix A Mapped Soil Units

ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
AES	AES Clean Energy Development LLC
amsl	above mean sea level
HUD	U.S. Department of Housing and Urban Development
KHC	Kentucky Heritage Council
KOSA	Kentucky Office of State Archaeology
MDS	map-documented structure
NRHP	National Register of Historic Places
Project	Pine Grove Solar Project
Tetra Tech	Tetra Tech, Inc.
USGS	U.S. Geological Survey

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) is under contract to AES Clean Energy Development, LLC (AES) to provide environmental and permitting services for the proposed 50-megawatt Pine Grove Solar Project (Project), located in Madison County, Kentucky (Figure 1). The Project consists of roughly 472 acres of undeveloped and agricultural land. This report presents the results of site file and literature reviews of key environmental and cultural resource data. Tetra Tech performed desktop reviews of historic cartography, soil maps, and other available environmental data. In addition, site file searches were conducted by the Kentucky Heritage Council (KHC) for aboveground historic and architectural properties within the Project area and a 1-mile buffer (Study Area), and by the Kentucky Office of State Archaeology (KOSA) for recorded archaeological sites and previously conducted surveys within the Project area.

Utilizing the assembled datasets and map analyses, Tetra Tech has prepared an assessment of Project impacts to potential historic properties within the Project area and Study Area and presents management recommendations for further investigations in the event that a federal permit(s) is required.

2.0 ENVIRONMENTAL SETTING

The Project area is located at the junction of two physiographic provinces: the Knobs region, and the Outer Bluegrass region. The Knobs physiographic province is a narrow, arc-shaped region south and east of the Bluegrass lowland province, and west of the mountainous Cumberland Plateau province. The term “the Knobs” refers to the many cone-shaped hills that are erosional remnants of the Pottsville Escarpment that separates this physiographic province from the Cumberland Plateau. The hills, or knobs, are formed from Silurian-age shale or siltstone and are capped by more resistant limestone or sandstone of the lower Pennsylvanian period. Gently sloping near their base, the knobs acquire steeper slopes in proximity to the resistant capstones. Much of the Knobs region remains forested. The Outer Bluegrass province is a region of rolling and somewhat hilly terrain, underlain by late Ordovician to Silurian-age limestone with shales and dolomites. Land use in the Outer Bluegrass province is dominated by productive cropland and pastureland (Newell 1986; Woods et al. 2002).

The principal drainage in the Project vicinity is the Kentucky River, which arises in the Cumberland Plateau and flows northwestward through the Outer and Inner Bluegrass regions to its confluence with the Ohio River north of Frankfort. The strongly meandering Kentucky River is deeply incised through the Project region, flowing as much as 200 feet below the surrounding uplands. Important local tributaries include Muddy Creek and Drowning Creek.

Relief within the Study Area ranges from approximately 600 feet above mean sea level (amsl) on the Drowning Creek floodplain to 930 feet amsl near Pine Grove Church. Soils throughout the Project area are moderately well-drained to well-drained silt loams with minor mapped units of silty clay (Appendix A). The Project area is largely cleared for crops and pasture. Wood lots line the deeply incised Butler Branch along the southeastern and southern margins of the Project area and an unnamed tributary along the northern margin of the Project area. Topographic relief from the stream banks to the relatively flat central portion of the Project area ranges from 150 to 200 feet.

3.0 CULTURAL CONTEXTS

3.1 PRECONTACT CONTEXT

Kentucky contains archaeological resources dating from the Paleoindian period through the Historic period, a span of some 10,000 years. A synopsis of each period is provided here. There is potential for resources within the Project area representing any of these time periods.

Paleoindian Period (ca. 9500-8000 BC)

The discovery of fluted projectile points in association with extinct bison at Clovis, New Mexico, and at other sites in the Great Plains, provided direct evidence of big game hunting as a Paleoindian subsistence stratagem and the reason behind the name, *Clovis*, given to the early Paleoindian culture that produced these artifacts. It was long assumed that eastern Clovis groups also practiced a specialized hunting adaptation to megafauna or herd animals, despite the absence of identified kill sites or large mammal faunal remains at eastern sites (Ritchie 1980:3). However, it is now generally conceded that Clovis and other Paleoindian groups resident in eastern North America relied on a broad range of subsistence resources, including fruiting seeds, fish, and small animals, as well as herd game (Dent 2007:127-129).

A notable characteristic of the Paleoindian lithic toolkit was the preference for high-quality stone, often traceable to sources great distances from its use. This consumer choice reveals two important implications for Paleoindian social organization and technology. First, Paleoindians operated within small, highly mobile bands employing a foraging strategy, moving frequently across large territories to exploit known or potential resources (Binford 1980). Movements were scheduled to exploit seasonally available resources across a wide spectrum of environment zones. And second, the preference for quality stone and the requisite skills to work it was probably related to their highly mobile lifestyle, ensuring that the life span and utility of tools was optimized while groups were far removed from new stone sources (Anderson 2013:918).

Clovis-period (9500-9000 BC) sites are found in all regions of Kentucky, and tend to cluster in specific topographic settings, including terraces along major stream confluences, around sinkholes, and near outcrops of high-quality tool-stone. However, few sites in Kentucky have contained intact Clovis-period deposits, and thus, subsistence data from this time is scarce. During the subsequent 500-year episode, or Middle Paleoindian period (9000-8500 BC), hunter-gatherer groups relied on a wider range of lithic raw material including lower-quality local stone. Projectile points of this period are represented by fluted Cumberland and Gainey point types; the typical Middle Paleoindian toolkit began to include a wider variety of tool types than earlier Paleoindian assemblages. The final sequence of this period, Late Paleoindian (8500-8000 BC), is characterized by non-fluted projectile points, greater reliance on local tool-stone, and increased curation, or re-sharpening, of point blades. Subsistence data indicates a trajectory of broad-spectrum hunting and gathering (Pollack 2008a).

In sum, the Central Bluegrass area contains a high number of Paleoindian sites relative to other regions in the state. Paleoindian sites tend to cluster on terraces along the Kentucky River.

Archaic Period (8000-1000 BC)

The broad timescale of the Archaic period encompasses a variety of environmental episodes, technological innovations, social adaptations, and cultural forms, and is generally subdivided into Early,

Middle, and Late subperiods. The Early Archaic period (8000-6000 BC) represented an environmental adjustment from the previous colder and drier Paleoindian period, with gradual in-filling of the landscape by new and diverse plants and animals, followed by small groups of human hunter-gatherers. People were “settling in” to these new environmental niches, discovering sources of tool and food resources, and beginning to exhibit regional differentiation (Sassaman 2010). Human populations in central Kentucky were small during the Early Archaic, and there were few sites dating to this period. The Middle Archaic period (5500-3000 BC) occurred during a warming episode, the Hypsithermal, with site locations shifting to river bottoms. Diagnostic markers of this period include large, contracting-stemmed Morrow Mountain points, and side-notched Big Sandy and Matanzas points. The Late Archaic period (3000-500 BC) was characterized by the establishment of long-distance trade networks, the introduction of clay pottery, mound building, and incipient domestication of such plants as gourds, maygrass, sunflower, knotweed, and chenopodium (Bense 1994). Significant population growth during the Late Archaic period is implied by the large increase in site numbers attributable to this period. Within the Bluegrass area of Kentucky, the Late Archaic period accounts for 53 percent of sites with ascribed Archaic dates (Pollack 2008a:214).

Woodland Period (1000 BC-AD 1000)

The traits that marked the Late Archaic, the adoption of pottery, mound building, trade networks, and plant domestication, peaked during the Woodland period. The period is divided into the Early Woodland (1000-200 BC), the Middle Woodland (200 BC-AD 500), and the Late Woodland (AD 500-1000). During this period, residential sedentism, exchange, and elaborate mortuary ceremonialism were combined in the creation of flat-topped and ramped mounds that served as the ceremonial and administrative centers of towns. The Late Woodland was characterized by population growth, increased numbers of identified archaeological sites, and evidence of increased competition and conflict. Continuity and change in pottery are apparent from wares with surface treatments shifting from fabric and cord-marking to incising and stamping, and tempers changing from fiber and sand to shell or grog (Bense 1994). At the end of the Woodland period, the bow and arrow were adopted as a new weapon/hunting system, replacing the spear thrower (atlatl).

Mississippian Period (AD 1000-1700)

The Mississippian period was characterized by the rise of rank-oriented societies and establishment of chiefdoms; the florescence of maize agriculture as the principal economic pursuit and of maize as the main food source supplemented by squash, other cultigens, and wild foods; and the spread of the Southeastern Ceremonial Complex as the principal belief system. Much of the task activities and trading was in the service of providing elites with provisions and non-local high status finished goods. In the Southeast, there emerged a three-tiered settlement system comprising a small number of large ceremonial and trading centers at the apex, many village and single-mound sites proximal to the main centers, and numerous small farmsteads of extended families in outlying districts. By the late Mississippian period (AD 1400-1550), competition, warfare, and apparent environmental degradation led to the abandonment of many mound sites and the decline, though not demise, of Mississippian culture (Pollack 2008b).

3.2 HISTORIC CONTEXT

In the early eighteenth century, European settlement of Kentucky pitted French interests against British, with entry into the territory via various water routes: from the Mississippi River eastward, from the Ohio

River southward via the Kentucky and Licking rivers, and from the Tennessee River to the north. Overland access into central Kentucky was achieved in the mid-1700s by way of the Cumberland Gap and Wilderness Road. Settlement into Kentucky was hindered by competing claims between the imperial powers and the onset of conflict during the French and Indian War (1754-1763). The Treaty of Paris terminated French claims in North America, quelling much of the uncertainty about sovereignty of the trans-Appalachian lands. Unchallenged Euro-American settlement was, for a time, slowed by the Proclamation of 1763 that attempted to halt settlement west of the Appalachians in an effort to maintain Native American allegiance to the British. However, under pressure from monied interests, the Proclamation Line was moved westward multiple times and, in any event, could never be strictly enforced. The American Revolution paused further settlement until after conclusion of the war, and by the 1790s, the American settlement of Kentucky had begun in earnest (Pollack 2008b).

Madison County was carved from Lincoln County in 1787. With productive soils, Madison County had become an important agricultural center in the decades prior to the Civil War, principally producing tobacco, livestock, and grain. Prosperity was based also on the ability to transport produce and goods to markets. Among the earliest roads through Madison County was the Wilderness Road, blazed by Daniel Boone and others in the 1770s. Between 1780 and 1810, some 300,000 settlers followed the Wilderness Road to the Bluegrass Region of Kentucky and elsewhere. Ferry service across the Kentucky River in Madison County was established in 1779 and continued well into the twentieth century. Railroads were rather late in connecting the county, with the Louisville and Nashville Railroad providing access to Cincinnati and Atlanta in the 1870s (EKU 2022). Economic growth of the Madison County region has been spurred in the twentieth century by the expansion of Eastern Kentucky University and the establishment of the U.S. Army's Blue Grass Army Depot, both located in Richmond, Kentucky.

4.0 PREVIOUS INVESTIGATIONS AND KNOWN RESOURCES

A search of the site files maintained by KOSA identified no recorded archaeological sites within the Project area. No archaeological surveys have been undertaken previously within the Project area.

A review of historic resources maintained on file by the KHC identified four recorded historic resources within the Study Area. Historic cartographic sources reveal the presence of four cemeteries and three map-documented non-extant dwellings within the Study Area. Table 1 presents information on these cultural resources.

Table 1. Recorded and Map-Documented Cultural Resources within the Study Area

KHC Site #	Name	Latitude	Longitude	NRHP Status	Within Project area
MA 63	Pine Grove Church	37.711894	-84.132691	Undetermined	No
MA 64	House	37.699544	-84.135207	Undetermined	No
MA 65	House	37.694667	-84.109480	Undetermined	No
MA 66	House	37.695226	-84.099585	Undetermined	No
-	Garrison Cemetery	37.707802	-84.104023	Unknown	No
-	Hubbard Cemetery	37.709849	-84.117614	Unknown	Yes
-	Portwood Cemetery	37.700955	-84.108425	Unknown	No
-	Blanton Cemetery	37.697662	-84.110779	Unknown	No
-	MDS dwelling	37.713514	-84.116187	Unknown	Yes
-	MDS dwelling	37.708668	-84.113676	Unknown	Yes
-	MDS dwelling	37.713483	-84.116221	Unknown	Yes

A review of historic topographic maps (USGS 1952a,b) reveals the presence of eight map-documented structures (MDS) within the Project area and 135 MDSs within the 1-mile buffer. If extant, these structures would be 50 years old or older, the age threshold triggering potential eligibility for listing on the National Register of Historic Places (NRHP).

5.0 ASSESSMENT OF RESOURCE POTENTIAL

The Project area comprises a plateau-like promontory with steep slopes to the north, east, and southeast, overlooking deeply incised tributaries of Drowning Creek, which flows into the Kentucky River 2.6 miles (4.2 kilometers) northeast of the Project area. The distance to water from the generally level central portion of the Project area is in excess of 820 feet (250 meters) and includes slopes exceeding 15 percent grade, factors that typically indicate low sensitivity for the presence of undocumented precontact period archaeological resources.

The earliest topographic quadrangle that depicts residences within the Project area (USGS 1952b) reveals three residential structures that are currently non-extant. Portions of the Project area within approximately 325 feet (100 meters) of these non-extant structures should be considered to possess moderate sensitivity for the presence of historic period archaeological deposits. Five other MDSs within the Project area are concluded to be farm-related outbuildings.

6.0 TRIBAL CONSULTATION

There are no federally recognized Native American tribes in Kentucky. Three tribes possess historical or traditional associations to Madison County (HUD 2022):

- Cherokee Nation
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma

If the Project should require a federal permit, consultation with the tribes should be undertaken as early as possible in the permitting process.

7.0 SUMMARY AND RECOMMENDATIONS

7.1 SUMMARY

A search of the site files maintained by KOSA identified no recorded archaeological sites within the Project area. No archaeological surveys have been undertaken previously within the Project area. Based on environmental parameters, the sensitivity for the presence of undocumented precontact period archaeological resources is concluded to be low within the Project area. Sensitivity for the presence of undocumented historic period archaeological resources is concluded to be generally low, except within 100-meter buffers around three non-extant residential structures.

A review of historic resources maintained on file by the KHC identified four recorded historic resources within the Study Area. Historic cartographic sources reveal the presence of four cemeteries within the Study Area. There are no NRHP-listed or eligible historic properties within the Project area or the Study Area.

Three non-resident Native American tribes (Cherokee Nation, Eastern Band of Cherokee Indians, and Eastern Shawnee Tribe of Oklahoma) may have historical and cultural ties to the region within which the Project area is situated.

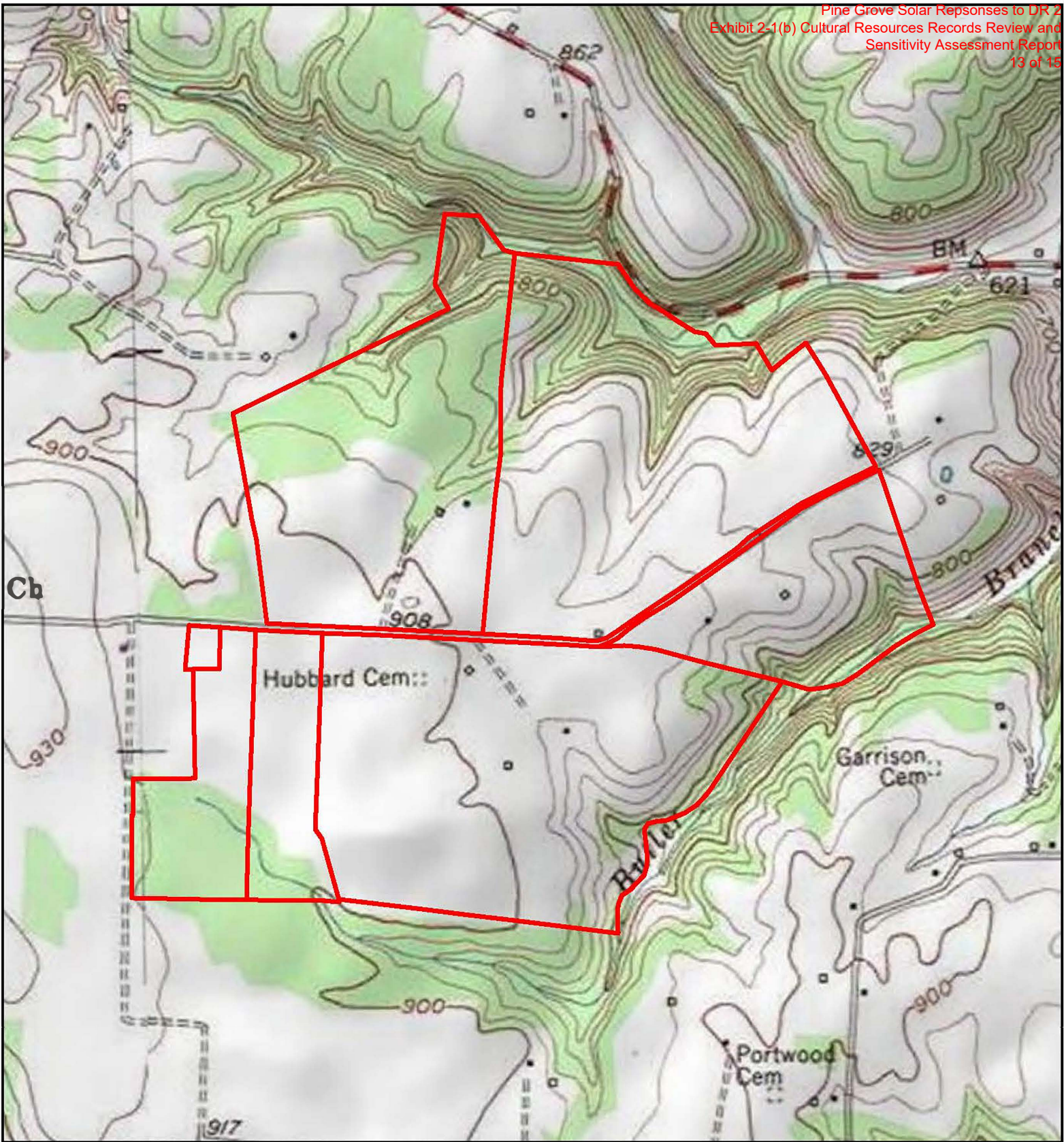
7.2 RECOMMENDATIONS

Tetra Tech recommends that if a federal permit(s) is required by the Project, AES should initiate consultation with the KHC to solicit any comments and concerns regarding potential Project impacts to cultural resources that might be eligible for listing on the NRHP. In addition, if a federal permit(s) is required, Tetra Tech recommends that the lead federal agency initiate consultation with the interested tribes.

8.0 REFERENCES

- Anderson, David G. 2013. Paleoindian and Archaic Periods in North America. In *The Cambridge World Prehistory*, edited by Paul Bahn and Colin Renfrew, pp. 913-932, Cambridge University Press.
- Bense, Judith A. 2016 [1994]. *Archaeology of the Southeastern United States*. Routledge, New York.
- Binford, Lewis R. 1980. Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity* 45:4-20.
- Dent, Richard J. 2007. Seed Collecting and Fishing at the Shawnee Minisink Paleoindian Site: Everyday Life in the Late Pleistocene, In *Foragers of the Terminal Pleistocene in North America*, edited by Renee B. Walker and Boyce N. Driskell, pp. 116-131. University of Nebraska Press, Lincoln.
- EKU (Eastern Kentucky University). 2022. Historical Overview of Madison County. Digital Collections. Online at: <https://digitalcollections.eku.edu/exhibits/show/rediscovered/hisoverview>, accessed March 20, 2022.
- HUD (U.S. Department of Housing and Urban Development). 2022. National Directory of Tribes and TDHES by ONAP Regions. Online at https://www.hud.gov/program_offices/public_indian_housing/ih/codetalk/onap/map/nationalmap accessed February 11, 2022.
- Newell, Wayne L. 1986. Physiography, in Contributions to the Geology of Kentucky, ed. By Robert C. McDonald. USGS Professional Paper 1151-H. Online at <https://pubs.usgs.gov/pp/p1151h/physiography.html>, accessed January 31, 2022.
- NRCS (Natural Resources Conservation Service). 2022. Web Soil Survey. Online at <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>, accessed January 31, 2022.
- Pollack, David (ed.). 2008a. *The Archaeology of Kentucky: An Update. Volume One*. Kentucky Heritage Council, State Historic Preservation Comprehensive Plan Report No.3. Frankfort, KY.
- _____. 2008b. *The Archaeology of Kentucky: An Update. Volume Two*. Kentucky Heritage Council, State Historic Preservation Comprehensive Plan Report No.3. Frankfort, KY.
- Ritchie, William A. 1980. *The Archaeology of New York State* (revised edition). Natural History Press, Garden City, NY.
- Sassaman, Kenneth E. 2010. *The Eastern Archaic, Historicized*. Rowman & Littlefield, Lanham, MD.
- U.S. Geologic Survey. 1952a. *Moberley, KY*. 7.5-minute quadrangle. Washington, D.C.
- _____. 1952b. *Panola, KY*. 7.5-minute quadrangle. Washington, D.C.
- Woods, A.J., Omernik, J.M., Martin W.H., Pond, G.J., Andrews, W.M., Call, S.M., Comstock, J.A., and Taylor, D.D. 2002. *Ecoregions of Kentucky* (color poster with map, descriptive text, summary tables, and photographs): Reston, VA. USGS (map scale 1:1,000,000).

FIGURE 1: PROJECT LOCATION MAP



 Project Area

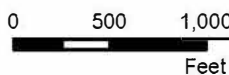
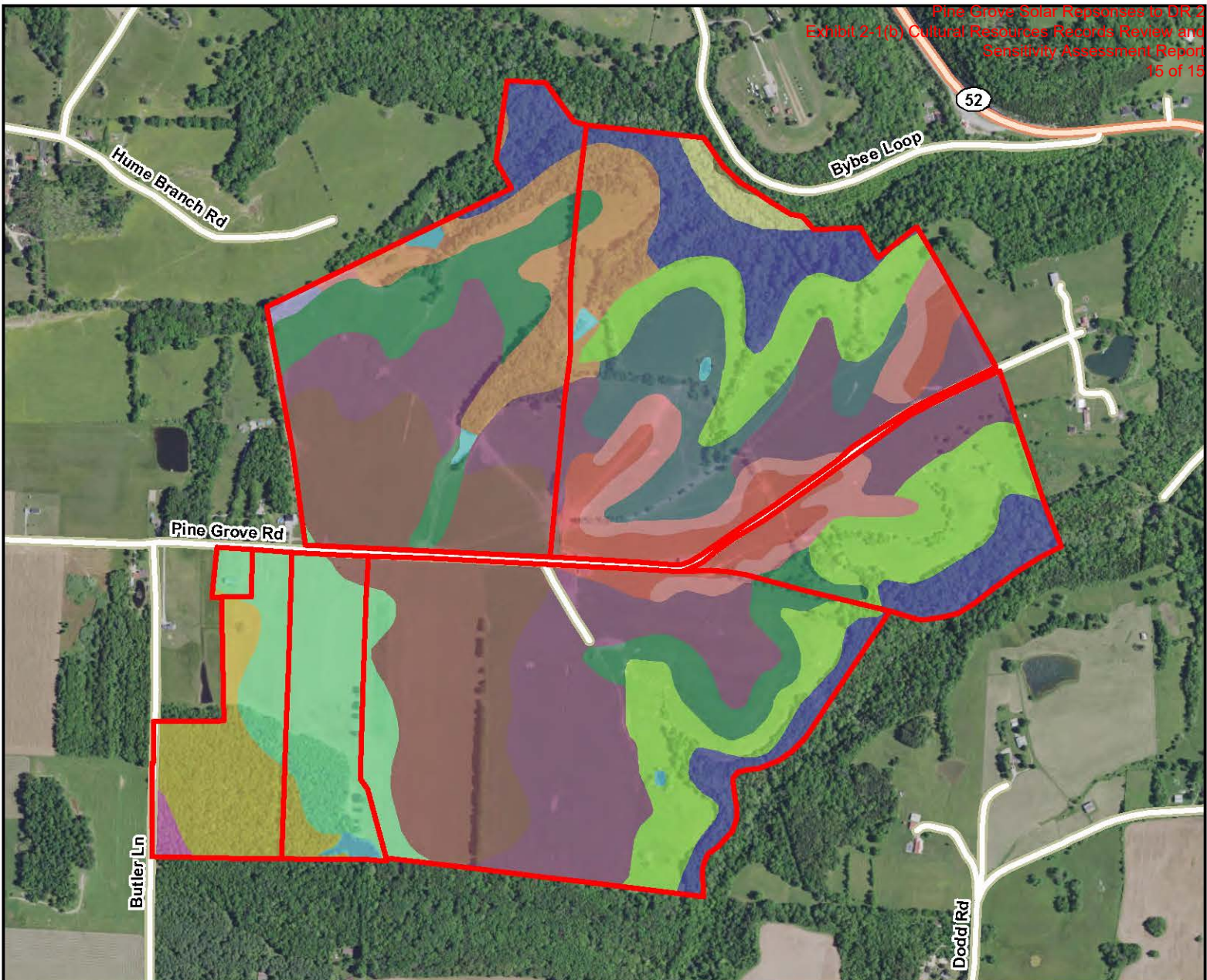


Figure 1
Project Location Map

Pine Grove Solar Project
Madison County, Kentucky

Source: USGS (2020)

APPENDIX A: MAPPED SOIL UNITS



Soil Unit: Soil Name	
BaD: Beasley silt loam, 12 to 20 percent slopes	MuA: Mercer silt loam, 0 to 2 percent slopes
CoF: Colyer shaly silt loam, 12 to 50 percent slopes	OtE: Otway silty clay, 12 to 30 percent slopes (shrouts)
CyE: Cynthiana-Rock outcrop complex, 12 to 30 percent slopes	OtF: Otway silty clay, 30 to 50 percent slopes (shrouts)
HaB: Hagerstown silt loam, 2 to 6 percent slopes	Rb: Robertsville silt loam, 0 to 2 percent slopes
HaC: Hagerstown silt loam, 6 to 12 percent slopes	ShA: Shelbyville silt loam, 0 to 2 percent slopes
Hu: Huntington silt loam, 0 to 4 percent slopes, occasionally flooded	TrB: Trappist silt loam, 2 to 6 percent slopes
Lc: Lawrence silt loam	TrC: Trappist silt loam, 6 to 12 percent slopes
MnC: McAfee silt loam, 6 to 12 percent slopes	W: Water



Project Area

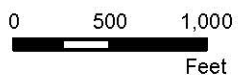


Figure 2
 NRCS Soils Map

Pine Grove Solar Project
 Madison County, Kentucky

Source: NRCS (2021)

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's Second Request for Information

SITING BOARD DR 2-2:

Refer to Pine Grove Solar's response to Staff's First Request Attachment 127, Table A, Item 27 and the A-1, page 18. Noise Sensitive Receptors (NSR) 17, 18, 19, and 20 are within 200 feet of the project boundary. NSR 17 and 20 are within 100 feet of the project boundaries. Explain how these distances are consistent with the setbacks required in Condition 2 of the Certification of Land Use Restriction from Madison County.

Response: The "distance to project" identified in Table A-1, page 18 of the Updated Acoustic Analysis Report is the distance of the Noise Sensitive Receptor (NSR) to the property line, not to the boundary of the project. In conformance with Condition 2 of the Certification of Land Use Restriction from Madison County, the project fence line and equipment will be set back 200 feet from any adjacent property which contains a residence. Therefore, Pine Grove Solar's fence and equipment will be a minimum of 200 feet from the property line, and 200 feet or more from NSRs 17, 18, 19, and 20.

Witness: David Stimson

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's Second Request for Information

SITING BOARD DR 2-3:

Explain safe access and egress construction and operation phases protocols for the project during the including the design of perimeter safety fencing for the substation; access for workers on site during construction and operation; and access for emergency services throughout the life of the project.

Response: Pine Grove Solar prioritizes the safety of the site personnel and the public, and follows this typical construction sequence to ensure safety:

1. Stormwater Best Management Practice (BMP) installation
2. Site entrance road installation
3. Site grading/stabilization
4. Perimeter fencing installation, including separate substation fencing
5. Construction installation

Pine Grove Solar will install safe access into the site at the beginning of the project and will maintain it for the life of the project. The site will have site security for the duration of the project, including strictly controlled gates with locks. Pine Grove Solar will not energize any electrical components until it has installed full perimeter fencing, including gates, and has met all applicable Lock Out Tag Out (LOTO) safety procedures for electrical equipment and met all applicable Madison County Planning Department and Madison County Fire and Rescue standards. The Pine Grove Solar Operations Team will ensure site access for emergency services throughout the life of the project by providing an onsite Knoxbox and will maintain compliance with Madison County Fire and Rescue required methods.

Witness: Joshua O'Connor

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's Second Request for Information

SITING BOARD DR 2-4:

Provide where employees will park during construction of the project. Also, provide where deliveries will be made on the site.

Response: After Pine Grove Solar has completed the installation of site ingress, it will install an onsite temporary laydown yard which will contain construction trailers, material storage, and onsite parking. All personnel vehicles will park at this location during construction. The vast majority of deliveries will be taken at the location of installation to reduce the amount of double handling of material. Special materials (such as electrical, communication, and various structural components) will be housed at designated locations within the laydown yard.

Witness: Joshua O'Connor

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's Second Request for Information

SITING BOARD DR 2-5:

Explain what modification will be necessary at the intersection of Brassfield Road and Pine Grove Road to accommodate deliveries of heavy equipment, supplies, and materials to the site during construction. Include in the response the weight limits for Brassfield Road and Pine Grove Road from the Kentucky Department of Transportation.

Response: Additional study, including a swept path analysis, of the existing roadway geometry will be required to determine if the intersection of Brassfield Road and Pine Grove Road is adequate to accommodate the turning movements of the anticipated construction and delivery vehicles. Pine Grove Solar expects that shoulder stabilization and/or road widening may be necessary along the westerly edge of Brassfield Road to accommodate these delivery vehicles. Pine Grove Solar will include this additional study and analysis in the next phase of project development and will coordinate with the Madison County Road Department and Planning Department for approval of the design of these potential mitigation measures.

Pine Grove Solar will develop a detailed Maintenance and Protection of Traffic Plan (M&PT) to facilitate safe access to the site during these deliveries. This plan will include signage and demarcation and may require flaggers and short-term closures if the width of the anticipated vehicles exceeds the available service width of the existing road. Pine Grove Solar anticipates that these measures will be applied short-term and intermittently. The M&PT plan will be shared with the Madison County Road Department and Madison County Planning and Development Office for review and approval prior to the commencement of construction activities.

Pine Grove Solar engaged in extensive discussions with the Kentucky Transportation Cabinet and the Madison County Road Department to determine if the state or county authority would set the weight limit of Brassfield Road and Pine Grove Road. See Exhibit 2-5(a) "Pine

Case No. 2022-00262
Pine Grove Solar, LLC
Responses to Siting Board Staff's Second Request for Information

Grove Solar Correspondence with Kentucky Transportation Cabinet.” Ultimately, both the Kentucky Transportation Cabinet and the Madison County Road Department determined that the Madison County Road Department is responsible for the weight limits of these roads since they are county roads. Madison County does not have a weight limit ordinance for county roads. See Exhibit 2-5(b) “Pine Grove Solar Correspondence with Madison County Road Department.”

Madison County requires projects that use heavy trucks on county roads to post a blanket bond for damages prior to the start of construction. Prior to the start of construction and any road modifications, Condition 13 of the Certification of the Land Use Restriction from Madison County requires Pine Grove Solar to conduct a road survey and provide it to Madison County. This survey will map and log the conditions of the county roads that will be used during the construction of the project, including Brassfield Road and Pine Grove Road. At the conclusion of construction, Pine Grove Solar is required to return all roads to their pre-construction condition or better. As part of this survey, Pine Grove Solar is required to post a blanket bond with the Madison County Fiscal Court in an amount the Madison County Road Supervisor determines to be sufficient to guarantee any and all necessary repair or maintenance work.

Witness: Joshua O'Connor

From: Willard, Kyle (KYTC) <kyle.willard@ky.gov>
Sent: Tuesday, March 7, 2023 1:25 PM
To: David Stimson
Cc: Madeleine Ray; Heath Haws; Joshua O'Connor; Baker, Robert A (KYTC-D07)
Subject: RE: Road Weight Limits - Madison County

Follow Up Flag: Follow up
Flag Status: Completed

CAUTION: This email originated from outside AES. Do not click links or open attachments unless you recognize the sender.

David,

You can check the weight limit classification for state-maintained routes in Kentucky at https://apps.transportation.ky.gov/HIS_Reports/TruckWeightLimitsParam.aspx.

According to the link above, KY 499 is a state-maintained roadway from US 25 to the Madison County line with Weight Class A (44,000lb max); KY 499 includes a portion of Brassfield Road between Gumbottom Road and Panola Road.

However, the specific section of Brassfield Road and all of Pine Grove Road that you identified are county-maintained roadways and you would need to verify the weight limits for those roads with the local (Madison County) road department, contact information for the Madison County Road Department is provided at <https://madisoncountky.us/index.php/25-departments/road-department>.

I'm sure you are already aware, but to be sure, the permitting requirements for Motor Carriers operating in Kentucky, including overweight/over-dimensional (OW/OD) permits, are handled separately by the Division of Motor Carriers; more information is available at <https://drive.ky.gov/Motor-Carriers/Pages/default.aspx>

I hope this helps.



[Kyle B Willard, P.E.](#)
Department of Highways
Division of Maintenance
Central Office - Permits Branch
Office: (502) 782-5627

From: David Stimson <david.stimson@aes.com>
Sent: Tuesday, March 7, 2023 12:07 PM
To: Baker, Robert A (KYTC-D07) <RobertA.Baker@ky.gov>

Cc: Willard, Kyle (KYTC) <kyle.willard@ky.gov>; Madeleine Ray <madeleine.ray@aes.com>; Heath Haws <heath.haws@aes.com>; Joshua O'Connor <joshua.oconnor@AES.COM>
Subject: Road Weight Limits - Madison County

Good Afternoon Robert,

Your contact info was given to me by Jim Gardner at Sturgill Turner. We are working with them on our Kentucky Siting Board permitting for a solar project in Madison County. To that end, the Siting Board has asked us to provide the weight limits of Brassfield Road (37.717851° , -84.132101°) and Pine Grove Road (37.711147° , -84.126699°) in Madison County. Is that something that you could help us with? Apologies if I'm barking up the wrong tree, if you know of someone who would be better suited for this request, please feel free to pass me along to them.

All The Best,

David Stimson

Development Manager, AES Clean Energy
4200 Innslake Drive, Suite 302 | Glen Allen, Virginia 23060
david.stimson@aes.com
Office: 804.533.6037
Mobile: 847.302.4126



From: Melissa Settle <Melissa.Settle@madisoncountky.us>
Sent: Wednesday, March 8, 2023 2:22 PM
To: David Stimson
Subject: RE: Road Weight Ordinance

CAUTION: This email originated from outside AES. Do not click links or open attachments unless you recognize the sender.

David,

Further to our telephone conversation, this will confirm that per Scott Shepherd, Madison County Road Supervisor, since Madison County does not have a weight limit ordinance for county roads, we will require a blanket bond for any road damage caused by vehicles used for the project. The Road Supervisor will evaluate the section of roads prior to the project to document the road condition and set an amount for the bond based on road length and width. Once the project is complete, he will evaluate the roads and provide a report of what will need to be repaired.

Please advise should you any additional questions or should our office be if further assistance.

Thanks,

Melissa Settle
Office Manager
Madison County Road Dept
325 N. Madison Avenue
Richmond, KY 40475
Ph: (859) 624-4739

From: David Stimson <david.stimson@aes.com>
Sent: Wednesday, March 8, 2023 11:55 AM
To: Melissa Settle <Melissa.Settle@madisoncountky.us>
Cc: Heath Haws <heath.haws@aes.com>
Subject: RE: Road Weight Ordinance

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Melissa,

Thank you for putting us in contact, and for all your help so far. I will wait to hear from Scott.

Best,

David Stimson

Development Manager, AES Clean Energy
4200 Innslake Drive, Suite 302 | Glen Allen, Virginia 23060
david.stimson@aes.com
Office: 804.533.6037
Mobile: 847.302.4126



From: Melissa Settle <Melissa.Settle@madisoncountyky.us>
Sent: Wednesday, March 8, 2023 11:51 AM
To: David Stimson <david.stimson@aes.com>
Subject: RE: Road Weight Ordinance

CAUTION: This email originated from outside AES. Do not click links or open attachments unless you recognize the sender.

I think that Scott would be the best person to talk to about this matter. I will give him your name and contact information so he can give you call to discuss.

Melissa Settle

Office Manager

Madison County Road Dept

325 N. Madison Avenue

Richmond, KY 40475

Ph: (859) 624-4739

From: David Stimson <david.stimson@aes.com>
Sent: Wednesday, March 8, 2023 10:51 AM
To: Melissa Settle <Melissa.Settle@madisoncountyky.us>
Cc: Heath Haws <heath.haws@aes.com>
Subject: RE: Road Weight Ordinance

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Melissa,

As part of our solar project, it will be necessary to have semitrailer and truck deliveries between the hours of 5am and 11:59pm (as the ordinance states). Our allowed working hours on site are 6am to 6pm daily, so we will need to have trucks arriving and leaving on Pine Grove Road and Brassfield Road during

that time. The concern is that we want to make sure that those two roads can support the types of trucks we are planning on using for our solar site. Is this conversation better to be had with Scott Shepherd or with the Madison County Planning Department?

Thank You,

David Stimson

Development Manager, AES Clean Energy
4200 Innslake Drive, Suite 302 | Glen Allen, Virginia 23060
david.stimson@aes.com
Office: ~~804.533.6037~~
Mobile: 847.302.4126



From: Melissa Settle <Melissa.Settle@madisoncountyky.us>
Sent: Wednesday, March 8, 2023 10:35 AM
To: David Stimson <david.stimson@aes.com>
Subject: RE: Road Weight Ordinance

CAUTION: This email originated from outside AES. Do not click links or open attachments unless you recognize the sender.

David,

We do not have anything specific to “weight limits” as the local law enforcement are not able to weigh a vehicle to determine it is overweight. Our ordinance prohibits the vehicles listed in accordance with KRS 189.010 so our local law enforcement agencies are able to enforce.

Hope that helps!

Melissa Settle

Office Manager

Madison County Road Dept

325 N. Madison Avenue

Richmond, KY 40475

Ph: (859) 624-4739

From: David Stimson <david.stimson@aes.com>
Sent: Wednesday, March 8, 2023 10:23 AM
To: Melissa Settle <Melissa.Settle@madisoncountyky.us>
Subject: RE: Road Weight Ordinance

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Melissa,

It was great talking to you yesterday, and thank you for sending these along. I took a look at the documents and I don't see anywhere that lists the weight limit of any of the County roads. Do you have something to that effect?

Best,



David Stimson

Development Manager, AES Clean Energy
4200 Innslake Drive, Suite 302 | Glen Allen, Virginia 23060
david.stimson@aes.com
Office: ~~804.533.6037~~
Mobile: 847.302.4126



From: Melissa Settle <Melissa.Settle@madisoncountyky.us>
Sent: Tuesday, March 7, 2023 2:54 PM
To: David Stimson <david.stimson@aes.com>
Subject: Road Weight Ordinance

CAUTION: This email originated from outside AES. Do not click links or open attachments unless you recognize the sender.

Mr. Stimson,

Please see the attached Weight Limit Ordinance and County Road list as described in the ordinance.

Please let us know if you have any questions.

Thanks,

Melissa Settle
Office Manager
Madison County Road Dept
325 N. Madison Avenue
Richmond, KY 40475
Ph: (859) 624-4739

**COMMONWEALTH OF KENTUCKY
BEFORE THE KENTUCKY STATE BOARD
ON ELECTRIC GENERATION AND TRANSMISSION SITING**

In the Matter of:

**Application of Pine Grove Solar, LLC for a Certificate
of Construction for an Approximately 50 Megawatt
Merchant Electric Solar Generating Facility in
Madison County, Kentucky, Pursuant to KRS 278.700
and 807 KAR 5:10**

)
)
)
)
)
)
)

Case No. 2022-00262

CERTIFICATION

This is to certify that I have supervised the preparation of the Pine Grove Solar's responses to the Kentucky Siting Board on Electric Generation and Transmission Siting's Second Request for Information and that the responses to the request are true and accurate to the best of my knowledge, information, and belief after reasonable inquiry.

Date: 3/17/2023



David Stimson
Development Manager
AES Clean Energy