

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

IN THE MATTER OF:

THE ELECTRONIC APPLICATION OF)	
WEIRS CREEK SOLAR, LLC FOR A)	
CERTIFICATE TO CONSTRUCT AN)	
APPROXIMATELY 150 MEGAWATT)	
MERCHANT SOLAR ELECTRIC)	CASE NO.
GENERATING FACILITY IN WEBSTER)	2024-00099
COUNTY AND HOPKINS COUNTY,)	
KENTUCKY PURSUANT TO KRS 278.700)	
ET SEQ. AND 807 KAR 5:110)	

**WEIRS CREEK SOLAR, LLC'S RESPONSES TO SITING BOARD STAFF'S SECOND
REQUEST FOR INFORMATION**

Comes now Weirs Creek Solar, LLC ("Weirs Creek"), by counsel, and does hereby tender its Verified Response to Siting Board Staff's Second Request for Information entered August 26, 2024.

Filed: September 9, 2024

COMMONWEALTH OF KENTUCKY

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

IN THE MATTER OF:

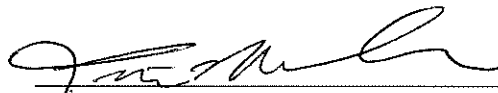
THE ELECTRONIC APPLICATION OF)	
WEIRS CREEK SOLAR, LLC FOR A)	
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NONREGULATED TRANSMISSION LINE)	
IN WEBSTER COUNTY AND HOPKINS)	
COUNTY, KENTUCKY PURSUANT)	
TO KRS 278.700 ET SEQ. AND 807 KAR 5:110)	

VERIFICATION OF LESTER MORALES

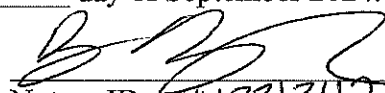
STATE OF FLORIDA)

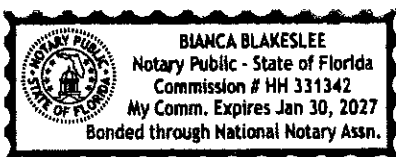
COUNTY OF PALM BEACH)

Comes now Lester Morales, Lead Project Manager of NextEra Energy Resources, Inc., being first duly sworn, and states that he has supervised the preparation of certain responses of Weirs Creek Solar, LLC to the Siting Board Staff's Second Request for Information in the above-referenced case, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.


Lester Morales

Subscribed and sworn to before me on this 06 day of September 2024.


Notary ID: HH 331342
Expires: 1-30-27



COMMONWEALTH OF KENTUCKY

BEFORE THE KENTUCKY STATE BOARD ON
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IN WEBSTER COUNTY AND HOPKINS)
COUNTY, KENTUCKY PURSUANT)
TO KRS 278.700 ET SEQ. AND 807 KAR 5:110)


CASE NO. 2024-00099

VERIFICATION OF ESTHER ATKINSON


STATE OF FLORIDA)

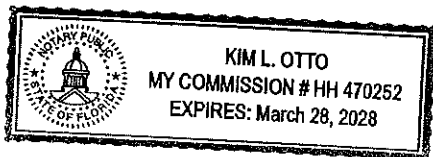
COUNTY OF PALM BEACH)

Comes now Esther Atkinson, Engineering and Construction Project Manager of NextEra Energy Resources, Inc., being first duly sworn, and states that she has supervised the preparation of certain responses of Weirs Creek Solar, LLC to the Siting Board Staff's Second Request for Information in the above-referenced case, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.


Esther Atkinson

Subscribed and sworn to before me on this 9th day of September 2024.


Notary ID: HH470252
Expires: 3-28-28



COMMONWEALTH OF KENTUCKY

BEFORE THE KENTUCKY STATE BOARD ON
ELECTRIC GENERATION AND TRANSMISSION SITING

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IN WEBSTER COUNTY AND HOPKINS)	
COUNTY, KENTUCKY PURSUANT)	
TO KRS 278.700 ET SEQ. AND 807 KAR 5:110)	

VERIFICATION OF BRIAN BARTELS

STATE OF FLORIDA)

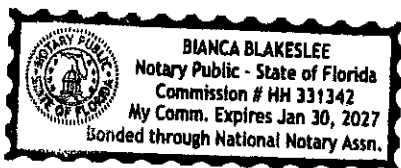
COUNTY OF PALM BEACH)

Comes now Brian Bartels, Senior Environmental Specialist of NextEra Energy Resources, Inc., being first duly sworn, and states that he has supervised the preparation of certain responses of Weirs Creek Solar, LLC to the Siting Board Staff's Second Request for Information in the above-referenced case, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Brian Bartels
Brian Bartels

Subscribed and sworn to before me on this 6th day of September 2024.

[Signature]
Notary ID: HH331342
Expires: 1-30-27



COMMONWEALTH OF KENTUCKY
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COUNTY, KENTUCKY PURSUANT)
TO KRS 278.700 ET SEQ. AND 807 KAR 5:110)

CASE NO. 2024-00099

VERIFICATION OF ELIZABETH WILBURN

STATE OF KENTUCKY)
COUNTY OF FAYETTE)

Comes now Elizabeth Wilburn of ECT, Consultant for Weirs Creek, LLC, being first duly sworn, and states that she has supervised the preparation of certain responses of Weirs Creek Solar, LLC to the Siting Board Staff's Second Request for Information in the above-referenced case, and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Elizabeth Wilburn
Elizabeth Wilburn

Subscribed and sworn to before me on this 9th day of September 2024.

Leigh Allyson Preece Honaker
Notary ID: KYNP76727
Expires: 8/2/27



Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 1: Provide a report of all existing roads expected to be used during construction. Include the following:

- a. The weight and width limits of the road.
- b. List project components and identify which components will be delivered on each road and the expected weight of those components.
- c. List which vehicles will use each road and the weight and width of capacity of those vehicles.

Response 1(a)-(c):

The Engineering, Procurement, and Construction Contractor (“EPC”) will identify the haul routes to be used during construction to determine viable routes for the expected weight and dimensions of vehicles. The haul route plan should be completed in the first quarter of 2025. Even though the haul routes are not known at this time, Weirs Creek will comply with all state and local requirements for road use and obtain any permits necessary.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 2: Should the weight or width capacity of any of the vehicles exceed the capacity of the roads they plan to use, provide alternative delivery plans.

Response 2:

The EPC Contractor will determine delivery routes per the road and bridge capacities when developing the haul routes. Weirs Creek Solar will ensure the EPC will work with state and local road departments if any oversized delivery vehicles will be used during construction to upgrade any roads necessary for oversized vehicles or repair any damage to local roads.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 3: Provide what improvements, if any, will be made to existing roads prior to the delivery phase of the project.

Response 3:

The EPC Contractor will identify the haul routes to determine if any roads will require improvements. If improvements are necessary, the EPC and Weirs Creek Solar will ensure any necessary state or local permits are secured.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 4: Describe whether Compton Cemetery is a private or public cemetery.

Response 4:

Compton Cemetery is a private cemetery.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 5: Explain whether access to Compton Cemetery will be restricted in any way during construction or operation of the proposed project.

Response 5:

Access to Compton Cemetery will not be restricted during construction or operation of the proposed project. Compton Cemetery is mapped in a development exclusion area associated with the residence and agricultural outbuilding in the area. This development exclusion area extends north to Donaldson Road, approximately 250 feet west, 350 feet south, 630 feet east-southeast, and 750 feet east. No project infrastructure will be constructed in this development exclusion area. The closest infrastructure is a fenced array that is mapped approximately 240 feet to the west across a large woodlot.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 6: Provide a copy of the Phase I Archaeological Report.

Response 6:

Please see the attached Phase I Archaeological Report.

ATTACHMENT 2-6

**PHASE I
ARCHAEOLOGICAL
REPORT**

**> Phase I Archaeological Survey
Weirs Creek Solar Project
Hopkins and Webster Counties, Kentucky**

May 2024

ECT No. 210152

Weirs Creek Solar, LLC
Juno Beach, Florida



161 E Aurora Road
Northfield, Ohio 44067
www.ectinc.com


Document Review

The dual signatory process is an integral part of Environmental Consulting & Technology, Inc.'s (ECT's) Document Review Policy. All ECT documents undergo technical/peer review prior to dispatching these documents to any outside entity.


This document has been authored and reviewed by the following employees:

Matthew M. Lockett
Author

James T. Marine
Peer Review



Signature



Signature

05/29/2024
Date

05/29/2024
Date

Phase I Archaeological Survey
Weirs Creek Solar Project
Hopkins and Webster Counties, Kentucky

Prepared For:

Weirs Creek Solar, LLC

Juno Beach, FL

Prepared by:

Environmental Consulting & Technologies, LLC

161 E Aurora Road
Northfield, Ohio 44067

Authors:

Matthew M. Lockett

James T. Marine

Principal Investigator:

James T. Marine

A handwritten signature in black ink that reads "James T. Marine". The signature is written in a cursive style with a large initial "J" and "M".

May 2024

Executive Summary

Environmental Consulting & Technology, Inc. (ECT), on behalf of Weirs Creek Solar, LLC (Weirs Creek Solar), conducted a Phase I archaeological survey for the proposed Weirs Creek Solar Project (Project) in Hopkins and Webster County, Kentucky. The Project Area encompasses approximately 2,287.7 acres of privately owned leased land (Project Area) in Hopkins and Webster Counties, Kentucky.

In anticipation of a federal permitting nexus through the United States Army Corps of Engineers (USACE), Weirs Creek Solar requested ECT conduct the Phase I archaeological survey within the USACE potentially jurisdictional areas (Survey Area). The USACE potentially jurisdictional areas were defined as areas within a 30.5-meter (m) (100.0-foot [ft]) buffer on either side all field delineated streams and areas within a 30.5-m (100.0-ft) buffer from the perimeter of field delineated wetlands and non-linear water bodies within the Project Area. In all, approximately 359.2 acres of USACE potentially jurisdictional areas (Survey Area) were identified and surveyed.

The Phase I archaeological survey was conducted in March 2024. Fieldwork consisted of systematic shovel testing, surface inspections, and pedestrian walkover survey. Shovel testing was conducted at 20-m and 30-m (65.6-ft and 98.4-ft) intervals, dependent upon surface visibility. Pedestrian survey and the excavation of 1,321 shovel test pits resulted in the identification of two precontact archaeological sites, 15HK404 and 15HK405, and two precontact isolated finds, E01 and F01. Isolated finds are typically not considered eligible for listing in the National Register of Historic Places (NRHP) due to their lack of research potential. As a result, no additional work is recommended for Isolated Finds E01 and F01.

Site 15HK404 is a non-diagnostic lithic scatter of unknown function located on the north side of a perennial unnamed tributary to Weirs Creek. No diagnostic artifacts or cultural features were identified. Given the limited size of the assemblage and lack of tools or diagnostic materials, the site does not exhibit the potential to retain significant information regarding the precontact history of the region. As a result, the site is recommended not eligible for listing in the National Register of Historic Places. No additional work is recommended.

Site 15HK405 is an extensive precontact lithic surface scatter extending across a north facing hilltop above the floodplain to Weirs Creek. Based on the distribution of artifacts across the landform, the site likely represents a series of overlapping occupations or activity areas though the relationship between these areas is not presently known. Communication with Weirs Creek Solar during the field investigation determined the site would not be impacted by the Project, therefore investigation of site 15HK405 was limited to recording the horizontal extent of the lithic scatter within the Project Area. Additional work would be needed at site 15HK405 to further refine the horizontal distribution of artifacts, evaluate the site's integrity, and, if possible, to isolate various occupation or activity areas and evaluate these locations for their NRHP-eligibility. Based on the current Project design, Weirs Creek Solar will avoid site 15HK405. As a result, no additional work is recommended for site 15HK405 based on this current design. Should future changes to the Project design result in potential impacts to site 15HK405, ECT recommends additional investigations be conducted.

Based on the results of this survey, no additional work is recommended for the USACE potentially jurisdictional areas in the Project Area.

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List of Acronyms and Abbreviations

ac	acre
BP	years before present
cm	centimeter
ECT	Environmental Consulting & Technology, Inc.
ft	foot
in	inch
KHC	Kentucky Heritage Council, aka SHPO
km	kilometer
m	meter
mi	mile
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSA	Office of State Archaeology
Project	Weirs Creek Solar Project
Project Area	2,287-acre area being considered for the Project
Weirs Creek Solar	Wiers Creek Solar, LLC
STP	Shovel Test Pit
SHPO	State Historic Preservation Office, aka KHC
Study Area	Project Area plus 2-kilometer buffer
Survey Area	359.2-acre area subject to Phase I Survey
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture

1.0 Introduction

Environmental Consulting & Technology, Inc. (ECT), on behalf of Weirs Creek Solar, LLC (Weirs Creek Solar), conducted a Phase I archaeological survey for the proposed Weirs Creek Solar Project (Project) in Hopkins and Webster County, Kentucky (**Appendix A, Figure 1, and Figure 2**). The Project encompasses approximately 2,287.7 acres of privately owned leased land (Project Area) in Hopkins and Webster Counties, Kentucky (**Appendix A, Figure 1, and Figure 2**).

In anticipation of a federal permitting nexus through the United States Army Corps of Engineers (USACE), Weirs Creek Solar requested ECT conduct a Phase I archaeological survey within the USACE potentially jurisdictional areas. The USACE potentially jurisdictional areas were defined as areas within a 30.5-meter (m) (100.0-foot [ft]) buffer on either side of field delineated streams and areas within a 30.5-m (100.0-ft) buffer from the perimeter of field delineated wetlands and non-linear water bodies within the Project Area. In all, approximately 359.2 acres of USACE potentially jurisdictional areas (Survey Area) were identified in the Project Area (**Appendix A, Figure 3**).

The purpose of the investigation was to identify any resources potentially eligible for the National Register of Historic Places (NRHP) that would be negatively impacted by construction activities within the Survey Area. All fieldwork was conducted according to guidelines provided by the Kentucky Heritage Council's (KHC) *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports, edition 2.5* (Sanders 2017).

The Phase I archaeological survey was conducted in March 2024. Fieldwork consisted of systematic shovel testing, surface inspections, and pedestrian walkover survey. Shovel testing was conducted at 20-m and 30-m (65.6-ft and 98.4-ft) intervals, dependent upon surface visibility. In all, 359.2 acres of potentially USACE jurisdictional areas within the Project were surveyed.

Two precontact archaeological sites, 15HK404 and 15HK405, and two precontact isolated finds, E01 and F01, were identified as a result of this survey. Site 15HK404 is a non-diagnostic lithic scatter of unknown function or temporal affiliation. This site is recommended not eligible for listing in the NRHP. Site 15HK405 is a large lithic surface scatter that extends across approximately 8.5 acres of the Project Area. The NRHP eligibility of site 15HK405 is undetermined and is recommended for avoidance or further investigation to evaluate its NRHP eligibility. Based on the current Project design, Weirs Creek Solar will avoid site 15HK405. Isolated finds are typically not considered eligible for listing in the NRHP due to their lack of research potential. As a result, no additional work is recommended for Isolated Finds E01 and F01.

Site specific environmental data reviewed for this Project is included in **Section 2.0** while an overview of the pertinent cultural history of the Project Area and site file research is detailed in **Section 3.0**. Methods utilized to complete the Phase I survey are provided in **Section 4.0** followed by a description of the survey results in **Section 5.0**. A summary of the Phase I archaeological survey and recommendations for the appropriate treatment of the identified sites are discussed in **Section 6.0**. Finally, references to works cited throughout the report are provided in **Section 7.0**.

2.0 Environmental Context

2.1 Physiography and Geology

The Project Area is located within the Western Coal Field Region (Newell 2001). This region is characterized as a hilly upland area composed of a system of cuestas and fault blocks. Relief within the region ranges from low to moderate as the uplands are dissected by wide, poorly drained stream valleys. The Project Area is underlain by Pleistocene to Holocene aged Alluvium through the approximate center of the Project Area with bedrock ascribable to the Strugis Formation present under the northern and southern portions of the Project Area (Noger 1988). The Pleistocene to Holocene aged alluvium consists of glacio-fluvial deposits composed of unconsolidated coarse sand and fine silt deposited along the Ohio River and its tributaries (Noger 1988). The Sturgis formation consists of Upper Pennsylvania-aged interbedded sandstone, siltstone, shale, limestone, and coal. The formation is capped by loess, alluvium, and colluvium with minimal outcroppings (Kehn 1973).

2.2 Soils

The United States Department of Agriculture-Natural Resource Conservation Service (USDA-NRCS) Web Soil Survey shows 10 soil types mapped in the Survey Area (**Appendix A, Figure 4** [USDA-NRCS 2024]; **Table 1**). The primary soil type within the Survey Area is Belknap silt loam, 0 to 2 percent slopes, occasionally flooded (uBelA) which encompass approximately 194.9 acres (54.3 percent) of the Survey Area). Belknap soils are deep, poorly drained soils formed in Pleistocene to Holocene aged alluvium present in the valley bottoms. Similar soils associated with the Belknap Series found in the Survey Area, though less frequently, are Bonnie silt loam, 0 to 2 percent slopes, occasionally flooded (uBonA) and Sharon silt loam, 0 to 2 percent slopes, occasionally flooded (uShaA). Both soil types similarly developed in alluvium though the Bonnie Series tends to be located lower in the floodplain and is more poorly drained than soils in the Sharon Series. These soils are conducive to row crop agriculture if properly drained and typically contain field drains or drain tile when used for agricultural purposes.

The uplands surrounding the valley bottoms are predominantly mapped as Robbs silt loam, 0 to 2 slopes (uRobA) with soils from the Hosmer Series (uHosB, uHosB2, uHosC2, and uHosC3) mapped in the intermediate slopes between the hill tops and the valley bottoms (USDA-NRCS 2024).

Table 1: Soils Mapped in the Project Area

Map Symbol	Soil Unit Name	Parent Material	Acres of Survey Area	Percent of Survey Area
uBelA	Belknap silt loam, 0 to 2 percent slopes, occasionally flooded	Alluvium	194.9	54.3
uHosC3	Robbs silt loam, 0 to 2 percent slopes	Loess	50.0	13.9
MI	Bonnie silt loam, 0 to 2 percent slopes, occasionally flooded	Alluvium	36.8	10.2
uShaA	Sharon silt loam, 0 to 2 percent slopes, occasionally flooded	Alluvium	29.6	8.3
uHosB	Hosmer silt loam, 2 to 6 percent slopes	Loess	27.6	7.7

Map Symbol	Soil Unit Name	Parent Material	Acres of Survey Area	Percent of Survey Area
uAlfB	Hosmer silt loam, 6 to 12 percent slopes, severely eroded	Loess	8.2	2.3
uHosC2	Frondorf-Lenberg silt loams, 12 to 30 percent slopes	Loess	4.2	1.2
MhB2	Hosmer silt loam, 2 to 6 percent slopes, eroded	Loess	3.4	0.9
uHosB2	Zanesville silt loam, 6 to 12 percent slopes, severely eroded	Loess	2.8	0.8
uHosC2	Hosmer silt loam, 6 to 12 percent slopes, eroded	Loess	1.0	0.3
W	Water	N/A	0.7	0.2
Total			359.2	100.0

2.3 Watershed

The Survey Area lies in the Green and Tradewater River Basin whose waters flow into the Ohio River. This basin covers upwards of 11,500 square miles, draining nearly 25 percent of the state of Kentucky (Carey 2009). Agricultural drainage ditches and early order streams drain much of the Project Area into Weirs Creek (**Appendix A, Figure 2**). Weirs Creek in turn continues to the southwest before flowing into Clear Creek which eventually forms a confluence with the Tradewater River near the intersection of Webster, Hopkins, and Caldwell Counties.

3.0 Cultural Context

The Project is in Kentucky's Green River Archaeological Management Area (Area 2; [Pollack 2008]). The Green River Management Area encompasses 32 counties in the western and central portions of the state. This Management Area is bounded to the north by the Ohio River though mostly drains into the Green River and its tributaries. The Management Area is subdivided into four sections, Ohio River II, Western Coalfield, Pennyroyal, and Upper Green River, with the Project Area situated within the Western Coalfield section.

The KHC initiated a robust overview of the Commonwealth's cultural history in 1990, since revised, that serves as the basis of this cultural context (Pollack 2008). The context presented herein is not intended to be an exhaustive review of all cultural manifestations documented across the Commonwealth. Instead, this context presents general trends with a focus on resources most likely to be encountered during fieldwork.

3.1 Precontact Overview

The Precontact period of Kentucky is typically separated into the following temporal stages: Paleoindian; the Archaic, the Woodland, and the Mississippi or Fort Ancient Periods (Pollack 2008). Further chronological subdivisions and cultural chronologies for the region have been developed, modified, and debated with slight differences in expression throughout the differing archaeological Management Areas.

3.1.1 Paleoindian

It is generally accepted that humans migrated across the Bering Strait from Asia into North America during the Late Pleistocene when a large amount of the world's water was locked in glacial ice and sea level was much lower than today (Goebel et al. 2008). However, the date and exact methods of entry of the first humans into the Americas is the subject of continuing debate (Buchanan and Collard 2008). A leading theory regarding the peopling of the western hemisphere posits a migration by maritime-adapted groups traveling across the strait by boat and then moving southward along the coasts of Alaska, British Columbia, and Washington before moving eastward into the interior of the United States or continuing southward into Central and South America.

There is compelling evidence from sites such as the Meadowcroft Rockshelter (36WH297) in Pennsylvania (Adovasio et al. 1999) and Cactus Hill (44SX202) in Virginia (McAvoy and McAvoy 1997) of human presence in North America as early as 16,000 years before present (BP). Deposits from the Topper site (38AL23) in South Carolina (Goodyear 1999) along with the Gault (41BL232) and Debra L. Friedken (41BL1239) sites in central Texas (Jennings and Waters 2014) indirectly suggest the presence of humans in North America prior to 15,000 BP. Data from Monte Verde in Chile suggest occupation of South America prior to 12,500 BP (Dillehay et al. 2008) and recent excavations in White Sands National Park in New Mexico identified human footprints dating to 23,000 to 21,000 BP (Bennett et al. 2021). The sparse evidence for early occupation likely stems from both the limited number of sites produced by a pioneering population and rising sea levels inundating large swaths of coastal land following the Pleistocene Epoch (Faught 2008).

Across Kentucky, the Paleoindian Period (11,500 to 10,000 BP) is characterized by distinctive cultural adaptations focused on the environmental setting that characterized the late Pleistocene and early Holocene climatic periods. The Paleoindian occupants of the area would have co-inhabited the region with a rich array of fauna. The mammoth, oriented to more open habitats, disappeared from the area prior to the arrival of humans. A few forest mastodons may have been contemporaries of the earliest Paleoindians. Therefore, the image of early humans as hunters of megafauna requires substantial revision throughout the eastern United States (Custer 1994; Meltzer 1993). Deer and probably caribou would have been common inhabitants of the Early Holocene forests, as well as a range of smaller fauna. The proximity of stream and riverine habitats would have supported aquatic resources, both animal and plant in nature. Therefore, the subsistence settlement base of these groups appears to have focused on foraging with a hunting emphasis. They followed herd animals, such as elk, and made seasonal rounds throughout a wide, but limited, geographic range, exploiting a variety of natural resources along the way (Dragoo 1976).

A strong component of the settlement and exploitative system was the preference for a restricted range of microcrystalline lithics (e.g., chert and flint), a formal tool kit, which included scrapers, graters, utilized flakes, and the curation of this tool kit. The dominance of higher-quality cryptocrystalline lithic materials in Paleoindian lithic assemblages has long been noted and reflected on by Gardner et al. (1974) and Goodyear (1979) as to the technological needs of mobile populations.

As of 2008, the Green River Management Area contained the highest number of Paleoindian sites recorded in Kentucky. Paleoindian sites have typically been recorded on dissected uplands and floodplains and are often associated with springs, sinkholes, and grikes (Maggard and Stackelbeck 2008). Thirty open habitation Paleoindian sites have been recorded in the Western Coalfield section since 2008 though no Paleoindian sites have been identified within 2-kilometers (km) (1.2 miles [mi]) of the Project.

3.1.2 Archaic

The division between the Paleoindian Period and Archaic (10,000 to 3,000 BP) is defined by the climatic shift from the cooler, wetter Pleistocene to the warmer, drier climate of the Holocene and the corresponding disappearance megafauna in North America. Like the Paleoindian period, the Archaic was originally interpreted as a homogenous adaptation that persisted for several millennia. However, further investigation has led researchers to separate the Archaic into Early, Middle, and Late periods based on various technological, social, subsistence and settlement criteria (Griffin 1967; Wiley 1966).

Early Archaic (10,000-8,000 BP) projectile point assemblages exhibit a distinctive innovation in lithic technology not found in the earlier Paleoindian periods, the notching of projectile points. Key projectile points that mark the onset of the Early Archaic period include the classic corner-notched Palmer and Kirk points and their cognate forms (Chapman 1985; Coe 1964; Gardner et al. 1974). At the outset of the Early Archaic period, lithic technology saw the continued emphasis on the selection of high quality lithic raw materials employed during the Paleoindian period. Early Archaic settlement was likely timed to the distribution of faunal and floral resources that were being procured, and thus was distributed across a wider range of environmental zones than had been exploited previously when climatic conditions were different.

The Middle Archaic (8,000-5,000 BP) exhibits an increase in the regionalization of cultures best reflected in an increasing development in distinctive regional projectile point styles, though these subdivisions are not well understood in Kentucky (Jefferies 2008). Outside of projectile points, the Middle Archaic also exhibits an increased diversity in tool kits that included groundstone grooved axes, bannerstones, bell-shaped pestles, and pendants; a decline in unifacially worked tools; and a shift in subsistence strategy to a heavier reliance on shellfish collecting along major drainages (Griffin 1967; Mayer-Oakes 1955).

The Late Archaic (5,000-3,000 BP) saw the advent of modern mixed deciduous forest communities throughout the eastern United States. A hunting, fishing, and gathering economy developed around a seasonal schedule of resource procurement focused on white-tailed deer, nuts, waterfowl, fish, and mussels. Other economic functions and patterns also coincided with the scheduling of resources; bands or tribes settled either in seasonal base camps or in one semi-sedentary settlement with several satellite procurement stations distributed radially around them (Brose and Lee 1985; DeRegnaucourt 1983). Late Archaic tool kits included a variety of flaked stone, ground stone, antler and bone tools (Jefferies 2008). Projectile points in the Late Archaic include an array of large straight, expanding, and contracting stem points in addition to smaller stemmed and side-notched points. A continued diversity of regional projectile point styles may represent decreased mobility and social interaction during this period (Jefferies 2008).

Insights into the social organization of Late Archaic populations in the Green River Management Area have been derived from analysis of burials recovered from large shell middens located along the Green River. Variability in burial treatment suggests social differentiation had begun to manifest itself when compared to earlier periods (Jefferies 2008). Grave goods composed of exotic, non-local materials such as copper and marine shell indicate a long-distance trade network had begun to develop by the Late Archaic.

As of 2006, over 1,440 Archaic components had been recorded in the Green River Management Area representing the highest density of Archaic period sites across the state. Of these components, 411 were recorded in the Western Coalfield section across 309 individual sites. Most sites are recorded as open habitation sites without mounds. Archaic sites are typically located on level terrain such as floodplains and terraces or in dissected or undissected uplands. Limited numbers of Archaic sites have been identified on hillsides or unique locations areas like rockshelters or caves.

3.1.3 Woodland

Like the Archaic, the Woodland Period (3,000-1,000 BP) in Kentucky is split into three phases, Early, Middle, and Late (Griffin 1967). Despite this classification, there is variation across the state on which cultural traits distinguish each phase and the approximate beginning and end dates of each phase. The Early Woodland (3,000-2,200 BP) in Kentucky, generally uses the adoption of pottery to distinguish this period from the early Archaic traditions. As this technological adoption took place at different rates across the state, there are both pottery bearing Late Archaic sites and pre-ceramic Early Woodland sites in the state (Applegate 2008).

Subsistence patterns in the Early Woodland differed little from the Late Archaic with a subsistence strategy focused on hunting and gathering and supplemented with an increasing reliance on plant husbandry. Aspects of the Eastern Agricultural Complex have been identified during this period but

are not widespread. Likewise, traits associated with the Adena culture did not extend beyond the Falls of the Ohio into western Kentucky. Projectile points of Early Woodland Kentucky are mostly notched and stemmed forms including Merom, Ledbetter, Saratoga/Cave Run, Savannah River, Cotaco Creek, and Motely. A shift from grooved axes to ungrooved celts and from stone scrapers to bone scrapers are also notable technological changes associated with the Early Woodland (Applegate 2008). Early Woodland sites tended to be situated in the upland, ridge tops, floodplains, and rockshelters. The use of social or ritual sites located away from domestic habitation sites is another characteristic displayed in Early Woodland sites in Kentucky.

The Middle Woodland (2,200-1,500 BP) in Kentucky is typically split into Early (2,200-1,750 BP) and Late (1,750-1,500 BP) subperiods though local variations have been proposed across the different Management Areas (deNeeve 2004; Gremillion 1993). While these periods are typically associated with the Hopewell, this influence is not very well documented and is not considered widespread in Kentucky. Traits associated with the Hopewell cultural tradition have been identified across the state (Applegate 2008) though the extent of any Hopewellian influence in the Green River Management Area is potentially limited.

The Early Middle Woodland subperiod is associated with conoidal, barrel-shaped, or flower-pot shaped jars. Surface treatments in the Green River Management Area may exhibit cord-marking, cord-wrapping, and dowel or fabric impressions but are typically lacking surface treatments in other Management Areas (Applegate 2008). By the Late Middle Woodland, ceramic vessels are typically subconoidal or subglobular with outflaring, recurved, or direct rims and with plain or cord-marked surfaces. Settlement patterns in the Middle Woodland typically exhibit a shift to floodplains and riverine settings. The distribution of middens and clustering of feature types at habitation sites suggest defined activity areas across sites during the Middle Woodland period (Applegate 2008).

Some Early Woodland projectile points such as the Robbins, Morely, and Adena Stemmed continue in use during the Middle Archaic but new styles also appear. Expanding stemmed or shallow side notched points such as Steuben, Bakers Creek, Lowe and Chesser are considered diagnostic to the Middle Woodland though much of the tool kit is consistent with earlier periods. The use of exotic materials such as copper and mica are notable during the period (Applegate 2008).

Like the Early and Middle Woodland, the Late Woodland (1,500-1,000 BP) is better defined as a process of gradual change than an acutely defined period. Ceramics dating to the Late Woodland in Kentucky are typically sub-conoidal and sub-globular cord-marked jars. The lithic tool kit of the Late Woodland is similar to earlier periods. Jacks Reef, Racoon, Hamilton, and Levanna projectile point are considered diagnostic of this period. Subsistence strategies remained generally consistent from the Middle Woodland. Maize cultivation is present during this period but has been primarily located in western portions of Kentucky (Applegate 2008).

The Woodland Period is well documented in the Green River Management Area. As of 2008, a total of 748 Woodland period sites have been identified in the Green River Management Area. This is the highest count in Kentucky representing just over 25 percent of all known Woodland sites in the state. The Western Coalfield section retained the lowest percentage of Woodland sites in the management area and the lowest diversity of site types with Woodland components. Many of the sites with Woodland components are associated with better known Archaic shell mounds. The majority of Woodland sites are composed of open habitation sites and most frequently attributed to the Early

and Middle Woodland periods with Late Woodland sites occurring with much less frequency. Due to their prominence on the landscape, numerous mound sites have been excavated as early as the nineteenth century. Some of the earliest archaeological projects in Kentucky, such as that at Mammoth Cave (15ED1) and of the shell middens along the Green River also retained prominent Woodland components.

3.1.4 Mississippian

The Late Precontact in Kentucky is generally defined by the Mississippian and Fort Ancient cultural traditions. Fort Ancient is a term used to describe the period from 1,000-250 BP where populations in the middle Ohio River valley adopted a sedentary, agriculturally based subsistence system (Mills 1906). The Fort Ancient culture is typically limited to the eastern third of Kentucky as well as portions of Ohio and West Virginia with the westward extent of its influence restricted to the Falls of Ohio. In western Kentucky, the Late Precontact is defined by the Mississippian tradition and further discussion on the Late Precontact will focus on this period.

The Mississippian population across the southeast was supported by an intensive agricultural economy based on maize, squash, and native plants. Notable to the Mississippian period is the hierarchical settlement system that was based around a large administrative center containing plazas and mounds. These centers were surrounded by both large and small villages, hamlets, farmsteads, and cemeteries (Pollack 2008). Two phases of the Mississippian period have been defined within the Ohio River II subsection: Angel Phase (1,000-600 BP) and Caborn-Welborn (600-300 BP).

The social instability of Mississippian chiefdoms in Kentucky led to a cyclic collapse of competing regional centers of socio-economic power by 600 BP. Described as the “Vacant Quarter” (Pollack 2008c), Western Kentucky entered into a period of decentralized populations and disruptions of previous trade relationships. The Angel and Caborn-Welborn phases represent the final manifestations of Mississippian culture in Western Kentucky.

The Angel Phase describes the beginning of the Mississippian influence in Kentucky and extends through the collapse of the chiefdoms throughout the lower Ohio River Valley. The phase is based on the Angel site (12VG1) in Vanderburgh and Warrick counties, Indiana (Black 1967) and the bulk of the Angel population is believed to have lived near the Angel site. Sedentary agriculture, established and extensive residential and religious sites, and high-status ideological and ideo-technic artifacts typify Angel culture. A decaying social hierarchy in the Angel chiefdom led to its gradual demise (Clay 1997). In Kentucky, few Angel phase farmsteads have been excavated. Settlements are believed to be limited in geographic range, typically along the floodplains, levees, and bluffs adjacent to the Ohio River between the mouth of the Anderson River near Tell City, Indiana and the mouth of the Wabash River near Uniontown, Kentucky.

The Caborn-Welborn Phase represents a shift in power and status from the Green River base of the Angel chiefdom southwest to the mouth of the Wabash (Pollack 2008). Documented Caborn-Welborn sites occur most frequently in Henderson and Union Counties, to the north of the Project Area, as well as neighboring areas of Kentucky, Indiana, and Illinois. During this phase, European artifacts appear in the record as a testament to changes in trade relationships and new frontier social dynamics, which ultimately coincide with the demise of this phase (Pollack 2008).

3.2 Historic Period Overview

Like the Precontact Era, the Historic Era is temporally divided based on settlement, economic changes, or significant events. In Kentucky, McBride and McBride (2008) separate the Historic Era of Kentucky into six periods: Pre-Settlement Exploration, Early Settlement, Antebellum, Civil War, Postbellum: Readjustment and Industrialization, and the Industrial and Commercial Consolidation. The duration and trends that define each period are expressed in various ways across the state. This context will focus on the people, places, and events that can be associated with the Green River Management Area.

3.2.1 Pre-Settlement Exploration-1775

It is hypothesized that the earliest European explorations into Kentucky were those by Hernando De Soto or Moscoso de Alvarado in the early sixteenth century, but these early accounts cannot be definitively proven. By the seventeenth century, a European presence in the region was being advanced by the French along the Mississippi River and by the British from across the Appalachian Mountains in the east (McBride and McBride 2008). As French traders established trading posts in the region in the late seventeenth, large Native American settlements along the Ohio River Valley had been largely abandoned. Localized bands of Native groups continued to settle in the region but as the Iroquois had taken domain over these lands, many of the Native peoples migrated closer to the northeastern heart of the Iroquois cultural sphere or further west to evade colonial encroachment (McBride and McBride 2008).

By the early eighteenth century, Native peoples, including the Shawnee and Delaware, began to resettle in the Ohio River valley to take advantage of the growing trade opportunities with the colonial Europeans. Small European trading houses were established in Native villages to facilitate this growing trade. In 1744, the Iroquois ceded their claim to lands south of the Ohio River in the Treaty of Lancaster, signed with the British colonies of Pennsylvania, Maryland, and Virginia (Adamson 2010). A result of this treaty was a new influx of exploration in Kentucky (Rice 1975).

The latter half of the eighteenth century was marked by conflict as rival European powers, colonies, and Native peoples all tried to establish themselves in and around Kentucky. Following the end of the French and Indian War in 1763, the Treaty of Paris ceded all lands east of the Mississippi River to the British. As a result, early land speculation began in the region in the 1760s. Though settlement was banned by the Proclamation of 1763, subsequent amendments and treaties with Native groups began to slowly open up settlements in Kentucky.

3.2.2 Early Settlement 1775-1820

European or Euro-American settlement into Kentucky began in earnest following the Treaty of Pittsburgh in 1775 after the Ohio River was agreed upon as the boundary between Native and European occupied lands. Entry into the state was generally via the Ohio River or through the Cumberland Gap. By 1780, the area around Lexington on the north side of the Kentucky River and along the southern fork of the Licking River became one of three main settlement clusters in Kentucky. Continued conflict with Native peoples and the outbreak of the Revolutionary War slowed early settlement in Kentucky. This trend would be reversed with the resolution of the Revolutionary War and a decreased threat of Native and settlement across Kentucky grew rapidly toward to the close of the eighteenth century.

Statehood was granted to Kentucky in 1792. Frankfurt was established as the state capitol though, at the turn of the nineteenth century, Lexington was the largest city in Kentucky boasting a population of 1,795 people, including 461 African Americans and an increasingly diverse local industry. Richard Henderson, a land speculator, purchased what would become Henderson County from the Cherokee in 1776. By 1797 Henderson succeeded in establishing the settlement of Red Banks (Arnett et al. 1974; Dannheiser and Hazelwood 1980). Hopkins County was then annexed from portions of Henderson County in 1806 with the county seat established in Madisonville in 1807.

The early nineteenth century was a period of economic growth for the region around the Project Area. Large farms began to commercialize, especially those utilizing slave labor, expanding on trends established earlier out of the Bluegrass area in central Kentucky. The main slave counties in the region were typically located either in the Pennyryle Plain area encircling the southside of the Western Coalfields or in the Ohio River valley. This was also a period of town speculation in Western Kentucky and along the Ohio River where early land speculators sought to locate the next boom town. While many of these locations never got beyond initial planning or early settlement, some eventually flourished such as Owensboro in nearby Daviess County.

3.2.3 Antebellum 1820-1861

After 1820, consistent steamboat traffic along the Ohio River connected Kentucky with the rest of the world. While the Early Settlement period is marked by land settlement and the establishment of local economies and industries, the Antebellum period is generally when the structures and organizations of modern society begin to take hold. Transportation improvements, particularly along the major water routes like the Kentucky River and Ohio River provided, are now able to reliably connect the local markets of Kentucky to the rest of the world via the Mississippi and Ohio River trading routes. Investments in rail travel began in the state (McBride and McBride 2008).

The first commercial coal operations began in the Western Coalfields in the 1820s. In addition, grain and tobacco were the major crops grown in the region. To support this agricultural economy, slave labor continued in use throughout Kentucky peaking in the 1830s when enslaved peoples made up approximately 25 percent of the overall population in Kentucky. Unlike other plantation economies of the deep south, slave holders in Kentucky were more likely to retain relatively smaller slave holdings.

3.2.4 Civil War 1861-1865

At the outset of the Civil War, Kentucky found itself in an incongruous situation as the state retained a slave-based economy, a pro-Union legislature, and divided populace. At first, the governor of Kentucky attempted to take a neutral stance and requested both the Union and Confederacy to respect the states neutrality and to keep any military forces out of the state. This tenuous situation did not last as both Union and Confederate armies took positions within the state. While Kentucky never officially seceded, a Confederate shadow government was formed that attempted to operate in support of the Confederate cause. As a result, the Union ended up controlling much of the northern portion of the state and Confederacy the southern portion (Harrison 1975).

With early Confederate losses in the western part of Kentucky and in Tennessee, Kentucky was largely held by Union forces for much of the engagement. Few major battles in the state occurred and the physical destruction of the land and towns seen in other portions of the Confederacy was largely

avoided. Despite this, Confederate troops burned down the courthouse in Madisonville as they passed through western Kentucky in 1864. Union occupied Kentucky was strategically significant to the Unions efforts in the south. The Union army was able to develop and sustain regional supply routes as well as tap into a new population base to recruit soldiers for the Union Army, including African Americans (Harrison 1975; McBride and McBride 2008).

3.2.5 Postbellum: Readjustment and Industrialization 1865-1914

The Postbellum period is notable for increased urbanization, an end of a slave based agricultural economy, and a shift and reorganization of transportation routes towards a rail-based system with less reliance on river routes. Growth rates of urban centers across Kentucky typically reach double digit percentages for much of the latter half of the nineteenth century feeding the growth of small satellite cities and suburban style communities (Ellis 1981). Rural populations increased as well, but at significantly lower rates. As African American slaves were emancipated across the state, many chose to move out of the south. Of those who stayed, many moved to urban centers looking for work outside the plantation system. Though this population was now free, African Americans continued to be subject to systemic discriminated and outright violence after emancipation (Lucas 1992).

While coal mining began during the 1820's, the postbellum period saw a rise in the commercial development of coal mining for export. Large firms, often based out of Pennsylvania or West Virginia, typically owned multiple mines across the Western Coalfields and Appalachian Mountain regions, though small, locally owned mines called wagon mines, maintained a presence in the Western Coalfield. Upwards of 90 percent of the coal extracted from Kentucky was exported. As mining operations peaked at the turn of the twentieth century, small coal towns began to dot the landscape in the Western Coalfields region. Existing cities in coal rich regions such as Madisonville saw their populations more than double between 1890 and 1910 (McBride and McBride). Mining towns typically saw an influx of African Americans from further south or from European immigrants looking for work in the mines. This contrasts with non-mining area which typically saw a reduction in the African American and foreign-born immigrant populations.

3.2.6 Industrial and Commercial Consolidation 1915-1945

This period, between the start of World War I and the end of World War II, saw many of the trends established in the earlier period in Kentucky continue during this time. Significant mechanical advances in agricultural that, with New Deal policies rewarding taking farmland out of cultivation, led to a consolidation of farmland into large farms and a marked decrease in small farms and farming as a general way of life. The former rural populations can be seen shifting to urban manufacturing and industrial centers where wage labor was becoming more prevalent (McBride and McBride 2008). An influx of migrants hoping to work in the mines of the Western Coalfield region during the great depression stressed an already depleted agricultural system in the region and attempts to farm marginal or depleted soils helped create conditions of severe poverty.

With their proximity to coal fields for fuel and access to transportation routes on both river and rail, the cities of Owensboro and to a lesser extent Henderson, developed strong manufacturing economies. Other smaller towns within the Western Coalfields were not able to grow at the same rate suggesting much of the region had reached its economic capacity. New development in large scale strip mining allowed for more mines to be opened, mining more coal, but with lower labor demands. As the development of paved roads and automobiles accompanied this industrial development,

surface mining was able to expand across portions of the Western Coalfield that were previously inaccessible or not economically viable.

A review of available historical mapping indicates the Project Area was sparsely settled at the turn of the 20th century (USGS 1907). The Project Area generally contained a patchwork of small residential farmsteads with structures typically located along major transportation routes. Strip mining has occurred in the extreme northwestern and southeastern portions of the Project Area. The remaining sections of the Project Area appear to have remained in agricultural use through the 20th and 21st centuries and presently consist of adjoining agricultural fields separated by narrow tree lines or public roads.

3.3 Site File Search

3.3.1 Previous Archaeological Surveys

Data provided by the KHC, and the Office of State Archaeology (OSA) showed 10 previously completed archaeological surveys within 2-km (1.2 mi) of the Project Area (Study Area), one of which (014-005) intersects the Project Area (**Table 2; Appendix A, Figure 5.**). Survey 014-005 was part of a large Phase I investigation that extended across the southern part of the Study Area and Project Area, and outside the DSA to the west. This survey was completed in 1979 and no archaeological sites were recorded by this survey within the Project Area. Given the age of the survey and the lack of information regarding past survey methods within the Project Area, the presence of this survey is not considered a reliable accounting of the presence or absence of archaeological resources in the Project Area.

Table 2: Previously Conducted Cultural Resource Surveys within the Study Area

Survey ID	Date	Author(s)	Report Title	Project Type	Within Project Area?
014-005	1979	Cynthia E. Jobe, Roger C. Allen and Richard A. Boisvert	An Archaeological Reconnaissance and Assessment of a Proposed Transmission Line, Railroad Spur, and New Plant Site in Western Kentucky	Phase I	Yes
117-004	1975	Schock, Jack M. and Gary S. Foster	An Archaeological Survey of the Proposed Providence By-Pass, Kentucky Highway 120, Providence, Kentucky	Phase I	No
117-008	1984	Janzen, Donald E.	An Archaeological Survey of Three Borrow Sites for the Slover and Bull Creeks Bridge Projects, Webster County, Kentucky	Phase I	No
054-066	1991	Foster, A. Lee	An Investigation of Cultural Resources in a Surface Mining Permit Area within the Weirs Creek Drainage, Hopkins County, Kentucky	Phase I	No
117-028	1994	Smith, Harold E.	A Phase I Cultural Resource Reconnaissance Survey of a Coal	Phase I	No

Survey ID	Date	Author(s)	Report Title	Project Type	Within Project Area?
			Mining Support Area Near the Community of Stanhope, Webster County, Kentucky		
054-089	1994	Smith, Harold E.	A Phase I Reconnaissance Archaeological Survey of a Surface Mining Coal Extraction Area within the Rose Creek Drainage, Hopkins County, Kentucky	Phase I	No
117-029	1995	Smith, Harold E.	A Phase I Cultural Resource Reconnaissance Survey of a Coal Mining Support Area Along Corinth Church Road, Webster County, Kentucky	Phase I	No
054-120	2001	Hand, Robert B.	A Cultural Resource Survey of a Proposed Coal Mine Operation in Hopkins county, Kentucky	Phase I	No
054-138	2005	Arnold, George C.	An Archaeological Survey of a Proposed Coal Mine Operation Near the Community of Nebo in Hopkins County, Kentucky	Phase I	No
117-051	2008	Crider, Andrea	Abbreviated Phase I Archaeology Report for the Lisman Cellular Tower in Webster County, Kentucky	Phase I	No

3.3.2 Archaeological Sites

No previously recorded archaeological sites were identified in the Project Area. A review of the data provided by the OSA identified five previously recorded archaeological sites within the Study Area but outside the Project Area (**Table 3; Appendix A, Figure 5**). Four sites are confirmed archaeological sites that have been recorded with the OSA. These four sites consist of two open habitation precontact sites of unknown function (15Hk45 and 15Hk249), one mound complex site (15Hk33), and one multi-component site with an indeterminate precontact component and a late 19th century farmstead component (15Hk172). Site 15Hk172 has been determined not eligible for listing in the NHRP while the remaining three confirmed archaeological sites have not been evaluated for NRHP eligibility. The OSA also provided two potential site locations for an unconfirmed archaeological site, 11700000 (Table 3; Appendix A, Figure 4). These locations may retain a precontact archaeological site that has not been evaluated for listing in the NRHP.

Table 3: Previously Recorded Archaeological Sites within the Study Area

Site ID	Cultural Period	Site Type	NRHP Determination	Within Project Area
15Hk33	Precontact	Mound Complex	Unevaluated	No
15Hk45	Precontact	Open Habitation	Unevaluated	No

15Hk172	Precontact and Historic	Historic Farm / Residence	Not Eligible	No
15Hk249	Precontact	Open Habitation	Unevaluated	No
11700000	Precontact	Unconfirmed Site Area	Unevaluated	No

3.3.3 Cemeteries

ECT’s review of data provided by the OSA and KHC did not identify any previously recorded cemeteries within the Survey Area. However, a review of the U.S. Geographic Names Information System for cemeteries (USGS 2024) identified six previously recorded cemeteries within the Study Area (**Table 4; Appendix A, Figure 5**). One cemetery, the Compton Cemetery, is located within the Project Area adjacent to an existing farmstead south of Donaldson Road. A second cemetery, the Corinth Baptist Church Cemetery Union Civil (sic) is located outside, but in close proximity to the Project Area. None of these cemeteries have been evaluated for NRHP eligibility. The Project will avoid Compton Cemetery and the Corinth Baptist Church Cemetery Union Civil; with avoidance of the cemeteries, the proposed Project will have no impacts on cemeteries.

Table 4: Previously Recorded Cemeteries within the Study Area

Site ID	Historic Name	Time Period	Within Project Area	Distance from Project Area
N/A	Compton Cemetery	Unknown to 1957	Yes	N/A
N/A	Corinth Baptist Church Cemetery Union Civil	1893-present	No	12 meters (m)/ 40 feet (ft)
N/A	Harralson Cemetery	1829-1920	No	890 m/ 2,920 ft
N/A	Ramsey Cemetery	Unknown	No	1,169 m/ 3,835 ft
N/A	Crowe Cemetery	1843-present	No	1,460 m/ 4,790 ft
N/A	Hayes Chapel Cemetery	1899 -present	No	1,658 m/ 5,440 ft

3.3.4 Aboveground Historic Resources

ECT’s search of the NRHP identified one property listed in the NRHP within the Study Area but outside the Project Area (**Appendix A, Figure 5**). The John Cox House/Sarahlawn Farm (NRHP ID 88002715, KHC ID Hk-9) was a late-19th century two story brick I-Plan house located in the city of Nebo, Hopkins County that was listed in the NRHP but has since been demolished. The list of National Historic Landmarks (NHLs) by state maintained by the NPS shows no NHLs in the Project Area or Study Area (NPS 2020).

ECT’s review of data provided by the KHC identified 12 previously recorded aboveground resources within the Study Area but outside of the Project Area (**Table 5; Appendix A, Figure 5**). As noted in the previous paragraph, one resource, the John Cox House/Sarahlawn Farm (NRHP ID 88002715, KHC ID Hk-9), was located within the Study Area but has since been demolished. A second resource, Hk-14, is

recorded as a mid-19th century residential structure and barn that is not individually eligible for the NRHP but may be contributing to a historic district, though no historic districts have been proposed within the Study Area. The remaining 10 resources have not been evaluated for NRHP eligibility.

The KHC also provided the locations for a class of resources recorded as KHC Coded Properties. These resources are point locations recorded by past avocational survey and submitted to the KHC without survey forms. As a result, the KHC retains little, if any, information regarding each Coded Property and they have not been subject to evaluation for NRHP eligibility. A total of 15 KHC Coded Properties are located within the Study Area, one of which (5400467) is located within the Project Area (**Table 5; Appendix A, Figure 5**). The Project will avoid KHC Coded Property 5400467 and with avoidance, the Project will have no physical impacts on previously recorded aboveground resources.

Table 5. Previously Recorded Aboveground Historical Resources in the Study Area

Property ID	Historic Name	Year Range	Style	NRHP Determination	Within Project Area?
5400467	No Data	No Data	No Data	Unevaluated	Yes
HK-9 (NR #88002715)	John Cox House (Sarahlawn Farm)	1850-1874	Federal	Listed (Demolished)	No
HK-14	House & Barn	1850-1874	Vernacular-Victorian	Contributing	No
5400475	No Data	No Data	No Data	Unevaluated	No
5400469	No Data	No Data	No Data	Unevaluated	No
5400468	No Data	No Data	No Data	Unevaluated	No
5400466	No Data	No Data	No Data	Unevaluated	No
5400474	No Data	No Data	No Data	Unevaluated	No
5400472	No Data	No Data	No Data	Unevaluated	No
5400473	No Data	No Data	No Data	Unevaluated	No
5400470	No Data	No Data	No Data	Unevaluated	No
5400471	No Data	No Data	No Data	Unevaluated	No
5400465	No Data	No Data	No Data	Unevaluated	No
5400476	No Data	No Data	No Data	Unevaluated	No
WE-81	House	1925-1949	No Data	Unevaluated	No
5400477	No Data	No Data	No Data	Unevaluated	No
WE-80	House	1925-1949	Craftsman	Unevaluated	No

Property ID	Historic Name	Year Range	Style	NRHP Determination	Within Project Area?
WE-77	House	1925-1949	No Data	Unevaluated	No
WE-79	Multi-Purpose Barn	1900-1924	No Data	Unevaluated	No
HK-8	Head House	1850-1874	Federal	Unevaluated	No
WE-78	House	1925-1949	No Data	Unevaluated	No
HK-7	Citizens Bank	1875-1899	Commercial-Victorian	Unevaluated	No
HK-12	House	1850-1874	Italianate	Unevaluated	No
5400480	No Data	No Data	No Data	Unevaluated	No
HK-11	Hobgood House	1850-1874	Federal	Unevaluated	No
HK-13	Cox House	1875-1899	Vernacular-Toc	Unevaluated	No
5400479	No Data	No Data	No Data	Unevaluated	No

4.0 Methods

4.1 **Background Research Methods**

4.2 **Field Methods**

Fieldwork consisted of pedestrian reconnaissance of the entire Survey Area and the excavation of STPs. Methodologies adhered to the *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports, Edition 2.5*. Surface collection was conducted in areas with 50 percent or more surface visibility utilizing intervals of no greater than 15 m (49.2 ft). Areas with less than 50 percent surface visibility were shovel tested using 20 m (65.6 ft) intervals.

The majority of alluvial soils present within the Survey Area are Belknap series soils with lesser amounts of either Bonnie or Sharon series soils. These soils are developed in Pleistocene to Holocene aged alluvium that extend across the broad valley bottoms within the Project Area. Streams within the Project are incised into this alluvium and are typically lower order streams or agricultural field drainages that do not carry sufficient sediments to deeply bury archaeological deposits. To account for the limited possibility that deeply buried archaeological deposits may be present in the alluvial sediments, pedestrian survey conducted in areas mapped as alluvial soils was supplemented with shovel testing utilizing a 30 m (98.4 ft) interval.

Each STP measured at a minimum of 35 centimeters (cm) (11.8 inches [in]) in diameter and was excavated at least 10 cm (3.9 in) into culturally sterile subsoil. All excavated soils were sifted through 0.64-cm (0.25-in) mesh hardware cloth. When feasible, STPs were excavated by stratigraphic level and, if recovered, artifacts were collected separately and placed in appropriately labeled containers. A description of each STP was recorded in the field, including the local terrain; the Munsell color, texture, composition, and thickness of soil strata; the presence or absence of cultural materials; and a description of any signs of previous soil disturbance. After excavation and recordation STPs were backfilled.

When artifacts were recovered, radial STPs were placed in cardinal directions at 5-m (16.4-ft) intervals surrounding the positive STP. Excavation of radial STPs continued until identifying two (2) consecutive negative STPs, disturbance, or the boundary of the Project Area. The location of each STP and supporting field documentation was collected utilizing a handheld tablet running ESRI's Field Maps application attached to a global navigation satellite system receiver antenna providing submeter accuracy.

4.3 **Laboratory Methods**

Artifacts recovered from shovel testing and pedestrian survey were cleaned, analyzed, and inventoried in ECT's archaeology laboratory in Lombard, Ohio. Artifacts were classified by major chronological period (prehistoric versus historic) and functional contexts. Following analysis, all artifacts were placed in clean, archival-quality re-closable polyethylene bags and tagged with relevant provenience information.

Prehistoric lithics were classified according to type and material that included a variety of micro-crystalline quartz types. Hafted bifaces were classified, when possible, using standard typologies. Artifacts in other categories, such as cores, ground stone tool fragments, and tools, were identified by function. Debitage was identified by raw material and tabulated according to lithic reduction stage.

All recovered artifacts are slated to be returned to the landowner of the archaeological property at the completion of the cultural resources review process. Until final deposition, all artifacts are housed temporarily at ECT's Archaeology Laboratory in Lombard, Ohio. Field documentation will be curated with the William S. Webb Museum of Anthropology at the University of Kentucky.

5.0 Results of Investigation

The Phase I archaeological survey was conducted over two mobilizations in March 2024. Pedestrian survey and the excavation of 1,321 STPs resulted in the identification of two precontact archaeological sites, 15HK404 and 15HK405, and two precontact isolated finds, E01 and F01. The Phase I archaeological fieldwork was split into six Survey Blocks based on parcel boundaries and the locations of the USACE potentially jurisdictional areas (**Appendix B; Table 6**). The following sections document the existing conditions, results of survey, and description of any archaeological resources identified in each of the Survey Blocks.

Table 6. Results of Phase I Archaeological Survey

Survey Block	USACE Potentially Jurisdictional Area (Acres)	Survey Methodology	Number of STPs	Resources Identified
A	7.5	Pedestrian Survey	0	None
B	46.6	Pedestrian Survey and Shovel Testing at 20 m (65.6 ft) intervals	124	None
C	41.9	Pedestrian Survey and Shovel Testing at 20 m (65.6 ft) intervals	223	None
D	47.7	Pedestrian Survey and Shovel Testing at 30 m (65.6 and 98.4 ft) intervals	48	None
E	191.5	Pedestrian Survey and Shovel Testing at 20 and 30 m (65.6 and 98.4 ft) intervals	856	Isolated Find E01, Sites 15HK404 and 15HK405,
F	24.2	Pedestrian Survey and Shovel Testing at 20 and 30 m (65.6 and 98.4 ft) intervals	70	Isolated Find F01
Totals	359.2		1,321	

5.1 Survey Block A

Survey Block A encompassed the approximately 19-acre boundary for the proposed substation and a 91.4 m (300 ft) wide transmission line corridor extending approximately 1,204 m (3,950 ft) connecting the substation to the array (**Appendix B 2**). Two USACE potentially jurisdictional areas were identified in Survey Block A extending across a combined 7.5 acres around an ephemeral stream within the substation boundary and perennial stream paralleling Corinth Church Road in the transmission line corridor. Surface visibility exceeded 50 percent (**Appendix C, Photo 1**) and pedestrian survey was conducted across all 7.5 acres. The area mapped as alluvial soils within the transmission line corridor intersected a marked buried utility that also paralleled Corinth Church Road and no subsurface testing

was attempted as a result (**Appendix C, Photo 2**). No cultural resources were identified in Survey Block A.

5.2 Survey Block B

Survey Block B encompasses approximately 46.6 acres of USACE potentially jurisdictional area surrounding a number of intermittent and perennial unnamed tributaries and field drainages that flow north to south through an open agricultural field (**Appendix B**). The streams follow along the eastern and western bottom of a slight upland rise centrally located within the field. The streams eventually drain into Weirs Creek or into a series of large wetlands at the southern end of Survey Block B that extend southward towards, and into, Survey Block E.

Approximately 11.3 acres of Survey Block B was outside of areas mapped as alluvial soil and exhibited surface visibility exceeding 50 percent (**Appendix B; Appendix C, Photo 3**). These 11.3 acres were pedestrian surveyed with no cultural resources observed. The remainder of Survey Block B was situated in harvested cornfield or fallow portions of agricultural fields covered in grasses that lacked 50 percent surface visibility (**Appendix C, Photo 4**). These areas were shovel tested utilizing a 20 m (65.6 ft) interval between STPs (**Appendix B**). Soil profiles exhibited in Survey Block B were generally consistent across the Survey Area with a dark brown (10YR 3/3) silt loam plowzone overlying either a yellowish brown to brown (10YR 5/4 to 10YR 5/4) Bw-horizon followed by a dark grayish brown to light brownish gray (2.5Y 4/2 to 2.5Y 6/2) silt clay loam Bg-horizon that exhibited mineralization and redox staining or exhibited a plowzone directly overlying the Bg-horizon (**Appendix D, Figure 1**). No cultural material was recovered from the STPs in Survey Block B. No cultural resources were identified in Survey Block B.

5.3 Survey Block C

Survey Block C extends across approximately 41.9 acres of USACE potentially jurisdictional area across a series of open agricultural fields (**Appendix B**). The fields are drained by an unnamed tributary to Weirs Creek that runs north to south through the fields before the stream crosses under Donaldson Road and into Survey Block B to the south. This perennial stream is fed by a number of other smaller perennial or intermittent streams that flow roughly downslope from Hocket Nebo Road along the northern boundary of Survey Block C. An approximately 1-acre area surrounding an isolated wetland exhibited surface visibility exceeding 50 percent. This approximately 1 acre area was pedestrian surveyed with no cultural resources observed. The remainder Survey Block C consisted of fields that were covered in corn chaff, dead grasses, and debris with surface visibility typically less than 50 percent (**Appendix C, Photo 5**). These areas were shovel tested utilizing a 20 m (65.6 ft) interval between STPs (**Appendix B**). Soil profiles in Survey Block C were generally consistent and comparable with those found in Survey Block B. The typical soil profiles exhibited in STPs across Survey Block C contained a dark brown (10YR 3/3) silt loam plowzone overlying either a dark yellowish brown to yellowish brown (10YR 4/4 to 5/4) Bw-horizon followed by a grayish brown to light gray (10YR 5/2 to 2.5Y 7/2) silt clay loam Bg-horizon that exhibited redox and mineralization staining or exhibited a plowzone directly overlying the Bg-horizon (**Appendix D, Figure 2**). No cultural material was recovered from the STPs in Survey Block C. No cultural resources were identified in Survey Block C.

5.4 Survey Block D

Survey Block D encompasses approximately 47.7 acres of USACE potentially jurisdictional area in the northeastern portion of the Project Area and includes areas with the highest elevation within the Survey Area (**Appendix B**). A number of intermittent and ephemeral streams were identified in the southwesterly trending swales and depressions between the upland hill tops, of which 11.3 acres of Survey Block was mapped as present in alluvial soils. The Survey Block consisted of open agricultural fields that had been disked prior to survey and thus retained at least 90 percent surface visibility (**Appendix C, Photo 6**). As a result, pedestrian survey was conducted across the entire Survey Block and shovel testing was completed using 30 m (98.4 ft) intervals between STPs in areas mapped as alluvial soils (**Appendix B**). Soil profiles in Survey Block D were generally consistent and comparable with those found in Survey Block B and C. The typical soil profiles exhibited a dark brown (10YR 3/3) silt loam plowzone overlying either a dark yellowish brown to yellowish brown (10YR 4/4 to 5/4) Bw-horizon followed by a grayish brown to light brownish gray (10YR 5/2 to 2.5Y 6/2) silt clay loam Bg-horizon that exhibited mineralization staining or exhibited a plowzone directly overlying the Bg-horizon (**Appendix D, Figure 3**). No cultural material was identified in Survey Block D.

5.5 Survey Block E

Survey Block E encompassed approximately 191.5 acres of USACE potentially jurisdictional areas (**Appendix A, Figure 5**). Survey Block E extends across a patchwork of agricultural fields bordering Weirs Creek and dissected by perennial and intermittent streams and agricultural field drainages that flow directly into Weirs Creek (**Appendix B**). Much of the Survey Block was covered in corn chaff and debris and surface visibility ranged between 20 and 75 percent (**Appendix C, Photos 7 and 8**).

Weirs Creek flows roughly northeast to southwest through the Project Area and serves as the lowest point in the Project Area. Numerous large berms and levees were noted bounding Weirs Creek and extensive wetland areas that served to control water flow into and out the agricultural fields in and around the Project Area (**Appendix C, Photo 9**). Approximately 34.2 acres of Survey Block E did not intersect with alluvial soils and were pedestrian surveyed or, when surface visibility did not meet 50 percent, shovel tested utilizing a 20 m (65.6 ft) interval. The locations with soils not derived from alluvium were typically located along the upper portions of early order streams and field drainages away from Weirs Creek. The remainder of the Survey Block was mapped as alluvium and shovel tested utilizing a 20 or 30 m (65.6 or 98.2 ft) interval between STPs depending on the surface visibility.

The portions of Survey Block E north of Weirs Creek were situated in a broad, generally flat to slightly southward sloping agricultural field (**Appendix C, Photo 8**). A perennial stream bisected this field flowing north to south and draining into Weirs Creek. The southwestern portion of this field bordering Weirs Creek contained an extensive wetland that, based on a review of historical aerial imagery, has been dredged and modified in the later half of the twentieth and early twenty-first centuries (Nationwide Environmental Title Research, LLC 2024). South of Weirs Creek, the Survey Area surrounds a number of perennial and intermittent streams that drain down from the hillsides topped by Donaldson Road and Nebo Road that descend towards Weirs Creek and from modified agricultural drainages that dissect the floodplain of Weirs Creek (**Appendix C, Photo 10**). Areas mapped with soils not derived from alluvium were typically situated south of Weirs Creek along the upper portions of tributaries and field drainages where they intersect the residual hillside slopes. Shovel testing in these areas was conducted at 20 or 30 m (65.6 and 98.4 ft) intervals between STPs based on the surface visibility conditions.

Soil profiles exhibited in the STPs along the large wetland areas and the early order tributaries and field drainages flowing into Weirs Creek were generally typical of the area, consisting of a dark brown (10YR 3/3) silt loam plowzone overlying either a brown (10YR 4/3) Bw-horizon followed by a grayish brown (10YR 5/2) silt clay loam Bg-horizon that exhibited redox and mineralization staining or the plowzone was directly overlying the Bg-horizon (**Appendix D, Figure 4**). Closer to and paralleling Weirs Creek, STPs often exhibited an additional Bw-horizon with a typical sequence containing a dark brown (10YR 3/3) silt loam plowzone overlying a yellowish brown (10YR 5/4) Bw1-horizon followed by a brown (10YR 4/3) silt clay loam Bw2-horizon before reaching a grayish brown (2.5Y 5/2) silt clay loam Bg-horizon with redox and mineralization staining (**Appendix D, Figure 5**). No portions of Survey Block E exhibited the potential to contain deeply buried archaeological deposits.

Two precontact archaeological sites, 15HK404 and 15HK405, and one isolated find, E01, were recovered from Survey Block E. Site descriptions and recommendations for precontact sites 15HK404 and 15HK405 are documented in the following sections. The isolated find, E01, consisted of a gray chert biface fragment recovered from the plowzone of STP E75. The findspot is located on the north side of Weirs Creek at the edge of an open agricultural field (**Appendix B, Page 10**). A total of eight radials STPs excavated at 5 m (16.4 ft) in cardinal directions were negative, bounding the isolated find in all directions with two negative STPs. Isolated finds are not typically considered eligible for listing in the NRHP due to their lack of research potential. As a result, no additional work is recommended for Isolated Find E01.

5.5.1 Site 15HK404

Site 15HK404 is a non-diagnostic lithic scatter of unknown function located on the north side of a perennial unnamed tributary to Weirs Creek (**Appendix B**). The site was identified at the terminal end of a northeast to southwest trending ridge line that extends between the site and Donaldson Road (**Appendix C, Photo 11**). Based on the distribution of positive STPs and surface finds, the site measures approximately 883 m² (9,504 ft²) in area (**Appendix A, Figure 6**). At the time of the investigation, the site was covered in corn chaff and debris limiting surface visibility to 50 percent. The site is presently bounded to the north, east, and west by two consecutive negative STPs and to the south by a single line of negative STPs that parallel the edge of the perennial stream.

The site was initially identified in two consecutive primary STPs, E360 and E361, containing precontact cultural material. A total of 80 radial STPs were excavated at 5 m (16.4 ft) intervals around each of the primary STPs resulting in the recovery of precontact artifacts from 22 radial STPs and two surface finds (**Appendix A, Figure 6**). Soil profiles exhibited in the STPs was consistent with the Belknap soil series mapped within the site area. A dark brown (10YR 3/3) silt loam plowzone was overlying a dark yellowish brown (10YR 4/4) silt clay loam Bw-horizon which in turn overlay a dark yellowish brown (10YR 4/6) silt clay loam Bg-horizon that exhibited significant redox staining and mineralization (**Appendix D, Figure 6**). A field drain was discovered in the northwestern portion of the site at approximately 70 cm (27.6 in) below surface (**Appendix C, Photo 12**). The field drain ran roughly east to west and was identified in STPs excavated in the radial transect 10 m (32.8 ft) north of STP E360. Soil profiles exhibited in these STPs showed a homogenous layer of disturbed soil from the surface to the top of the field drain. Field drainpipes were also noted along the stream bank to the south of the site running perpendicular to the stream and buried approximately 1 m (3.28 ft) below surface.

A total of 65 artifacts were recovered from the site (**Table 7; Appendix C, Photo 13**). The assemblage was primarily recovered from plowzone contexts (n=54) with the remainder recovered from the Bw-horizon (n=4) or from the disturbed backfill in STPs overlying the field drain (n=5). The majority of the assemblage was composed of flake fragments (n=30) and secondary flakes (n=20) with limited quantities of shatter (n=10) and primary flakes (n=3). One tertiary flake and one biface fragment completed the assemblage. The variety of lithic material types was also limited and predominately included gray chert (n=31) and a light gray/tan chert(n=28) with a low density of olive tan chert (n=5) and jasper (n=1). No diagnostic artifacts were recovered from the site.

Table 7. Artifacts Recovered from Site 15HK404 by Type and Material

Artifact Type	Material Type				Total
	Chert, Gray	Chert, Light Gray/Tan	Chert, Olive Tan	Jasper	
Flake fragment	15	11	3	1	30
Secondary flake	7	12	1	-	20
Shatter	8	2	-	-	10
Primary flake	1	1	1	-	3
Biface fragment	-	1	-	-	1
Tertiary flake	-	1	-	-	1
Total	31	28	5	1	65

Based on the results of this investigation, site 15HK404 is interpreted as a non-diagnostic precontact lithic scatter of unknown function. Based on the location of the site at the end of a descending ridge line near the confluence of a perennial stream and Weirs Creek, the site potentially served as a short-term encampment utilized while traversing the region or during periods of natural resource extraction. No diagnostic artifacts or cultural features were identified. Given the limited size of the assemblage and lack of tools or diagnostic materials, the site does not exhibit the potential to retain significant information regarding the precontact history of the region. As a result, the site is recommended not eligible for listing in the NRHP. No additional work is recommended.

5.5.2 Site 15HK405

Site 15HK405 is an extensive precontact lithic surface scatter extending for approximately 34,471 m² (371,043ft²) along a north facing hilltop above the floodplain to Weirs Creek (**Appendix B**). The hilltop is dissected by three south to north running swales creating a series of four parallel terminal ridges overlooking the floodplain (**Appendix A, Figure 7**). The majority of the site is situated outside the USACE potentially jurisdictional area; however, the site is bordered to the west, north, and east by an intermittent stream that drains the surrounding agricultural fields into Weirs Creek (**Appendix A, Figure 7**).

The western extant of the site was first identified within the Survey Area in STP E639 on March 22, 2024 (**Appendix A, Figure 7**). This STP was located at the western edge of the agricultural field, just above a forested wetland and contained two flake fragments. Two radial STPs placed 5 m (16.4 ft) east and north of the primary positive contained an additional two flake fragments and a secondary flake.

Pedestrian survey initiated during excavation of the initial radials STPs determined the site extended well beyond the initial positive STP E639 and no additional radial STPs were excavated.

Surface visibility across the landform was at least 50 percent (**Appendix C, Photo 14**) and pedestrian survey was conducted at 5 m (16.4 ft) intervals paralleling the woodline bounding the west side of the field. This initial pedestrian survey extended along a descending ridge line that extended from the southern boundary of the Project towards the floodplain of Weirs Creek. The ridge line is bounded to the west by the forested wetland and to the east by a shallow swale (**Appendix C, Photo 15**). While artifact concentrations were centered on the ridge line, a low-density scatter was noted continuing eastward into and opposite the swale that marked the eastern boundary of the ridge line.

To better evaluate the integrity of the landform, a single judgmentally placed STP, E640, was placed within an artifact concentration within this western most terminal ridge. The soil profile exhibited in this STP consisted of a dark yellowish brown (10YR 3/4) silt loam plowzone overlying a brown (7.5YR 4/4) silt loam Bw-horizon. Below the Bw-horizon a brown (7.5YR 5/4) silt clay loam Bt1-horizon was followed by a yellowish red (5YR 4/6) sandy clay Bt2-horizon and a dark reddish brown (5YR 3/4) Cr-Horizon composed of decomposing sandstone interbedded with sandy clay (**Appendix D, Figure 7**). Eight precontact artifacts were recovered from the plowzone of STP E640.

Informal evaluation of the Project Area noted the lithic scatter extended across a large portion of the hilltop east of the initial artifact concentration. At this point, pedestrian survey was suspended to evaluate the potential Project impacts to this part of the Project Area. The resulting communication with Weirs Creek Solar determined the site would not be impacted by the current Project design. As a result, ECT resumed pedestrian survey of the landform on March 26 to document the horizontal extent of surface finds within the Project Area to identify the boundaries of the site. As the site will not be impacted by the Project, artifacts noted in the field during this portion of pedestrian survey were left *in situ* to preserve the data present at the site for future research. The location of each surface find was flagged in the field and a surface find point was recorded documenting the type of artifact identified to understand the general distribution of artifacts across the landform. Tools were photographed to potentially identify diagnostic materials.

Artifacts recovered from the four STPs and the pedestrian survey conducted on March 22nd were collected for analysis and surface points were recorded to note the general distribution of cultural material across the site. This collection unit was recorded as Locus 1. A total of 90 artifacts were collected from Locus 1 (**Table 8; Appendix C, Photos 16-18**). The recovered assemblage consists of flake fragments (n=35), secondary flakes (n=27), biface or biface fragments (n=10), shatter (n=8) side scrapers (n=2), cores (n=2), and individual examples of a knife, a projectile point preform, a retouched flake, a ground/pecked sandstone cobble, a retouched flake, and a primary flake. The lithic tools and debitage were produced from a gray chert (n=58) or a light gray to tan chert (n=29) though all of the tools collected were made from the gray type of chert. No diagnostic cultural material was recovered from Locus 1.

Table 8. Artifacts Collected from Locus 1 at Site 15HK405.

Artifact Type	Material Type				Grand Total
	Chert, Gray	Chert, Light Gray/Tan	Sandstone	Siltstone	
Flake fragment	22	12	-	1	35

Artifact Type	Material Type				Grand Total
	Chert, Gray	Chert, Light Gray/Tan	Sandstone	Siltstone	
Secondary flake	10	17	-	-	27
Shatter	8	-	-	-	8
Biface fragment	7	-	-	-	7
Biface, late stage	2	-	-	-	2
Side scraper	2	-	-	-	2
Biface, middle stage	1	-	-	-	1
Core, major reduction	1	-	-	-	1
Fire-cracked rock		-	1	-	1
Knife	1	-	-	-	1
Other ground & pecked stone tools	-	-	1	-	1
Point preform	1	-	-	-	1
Primary flake	1	-	-	-	1
Retouched flake	1	-	-	-	1
Wasted core	1	-	-	-	1
Grand Total	58	29	2	1	90

The pedestrian survey resumed on March 26, 2024, continuing the initial 5 m (16.4 ft) interval pedestrian survey grid. Based on the results of this second pedestrian survey, the site extended across the upland portions of the field with notably higher concentrations of artifacts at the eastern and western (Locus 1) reaches of the site (**Appendix A, Figure 7; Appendix C, Photo 19**). While the concentrations appear situated on the hill tops, modern plowing and erosion has diffused the scatter across the landform and down the swales obscuring and overlapping the boundaries of any specific artifact concentration. As a result, one site boundary was drawn based on the distribution of surface finds across the entire landform. Locus 1 is included only to note the location where artifacts were collected for analysis. Additional work would be needed to evaluate the intra-site relationship, if any, between Locus 1 and the remainder of the site.

The resumed pedestrian survey effort resulted in the recording of an additional 112 surface collection points, for a total of 188 artifacts recorded for the site. The surface find assemblage includes 177 pieces of lithic debitage, four lithic cores, 3 projectile points/fragments, 3 biface fragments, and a nutting stone. **Appendix A, Figure 7** depicts the general distribution of artifacts across the landform and the location of any tools as identified in the field. Lithic material types were consistent across the landform consisting of both a gray chert and a lighter gray to tan chert.

The projectile point fragments consist of a triangular body fragment (**Appendix C, Photo 20**), a distal tip (**Appendix C, Photo 21**), and a corner-notched projectile point (**Appendix C, Photo 22**). These point fragments are not considered diagnostic in their current state. The corner-notched point base retains morphology such as a rounded convex base and a notch extending diagonally inward from the basal corner similar to a Merom Cluster or a Snyders Cluster type though definitive assignment based on the current condition is tentative. The nutting stone consists of a tabular piece of water rounded sandstone that exhibited a centrally located depression on both flat faces of the stone (**Appendix C, Photo 23**).

Based on the results of this investigation, site 15HK405 is interpreted as a large lithic scatter of unknown function or definitive temporal affiliation. Based on the distribution of artifacts across the landform, the site likely represents a series of overlapping occupations or activity areas though the relationship between these areas is not presently known. Given the relatively high number of bifacial tools and lack of early stage debitage, the curation and maintenance of a lithic tool kit was one activity occurring within the site. The presence of a nutting stone also suggests the processing of mast resources occurred on site. Given the limited extent of the current investigation, additional work would be needed at site 15HK405 to further refine the horizontal distribution of artifacts and, if possible, to isolate various occupation or activity areas and evaluate these locations for their NRHP-eligibility. Based on the current Project design, Weirs Creek Solar will avoid site 15HK405. As a result, no additional work is recommended for site 15HK405 based on this current design (**Appendix A, Figure 8**). Should future changes to the Project design result in potential impacts to site 15HK405, ECT recommends additional investigations be conducted.

5.6 Survey Block F

Survey Block F encompasses approximately 24.2 acres of USACE potentially jurisdictional area surrounding a number of intermittent and perennial unnamed tributaries and large wetlands (**Appendix B**). The streams flow roughly south to north emptying into a large wetland complex surrounding Weirs Creek (**Appendix C, Photo 24**). Approximately 6.2 acres of Survey Block F was outside of areas mapped as alluvial soil and exhibited surface visibility exceeding 50 percent (**Appendix C, Photo 25**). These 6.2 acres were pedestrian surveyed with a single isolated find, F01, recovered from the ground surface (**Appendix B, Page 6**).

Isolated find F01 consists of a secondary chert flake composed of a gray chert that shows evidence of retouching. The find was located near the head of an ephemeral stream that slopes gently to the north-northeast. No additional cultural material was identified at this find spot. Isolated finds are not typically considered eligible for listing in the NRHP due to their lack of research potential. As a result, no additional work is recommended for Isolated Find F01.

The remaining 18 acres of Survey Block F was shovel tested utilizing either a 20 or 30 m (65.6 or 98.4ft) interval between STPs depending on the level of surface visibility (**Appendix B**). No cultural material was recovered from the STPs in Survey Block F. Soil profiles exhibited in Survey Block F were generally consistent across the Survey Area with a brown (10YR 4/3) silt loam plowzone overlying either a light olive brown (2.5Y 5/4) Bw-horizon followed by a light brownish gray (2.5Y 6/2) silt clay loam Bg-horizon that exhibited mineralization and redox staining (**Appendix D, Figure 8**).

6.0 Summary and Recommendations

ECT, on behalf of Weirs Creek Solar, LLC conducted a Phase I archaeological survey of the USACE potentially jurisdictional areas within the boundaries of the approximately 2,287.7 Project Area in Hopkins and Webster Counties, Kentucky.

The Phase I archaeological survey was conducted in March 2024. The purpose of the investigation was to identify any resources potentially eligible for the NRHP that would be negatively impacted by construction activities within the Survey Area. All fieldwork was conducted according to guidelines provided by the KHC's *Specifications for Conducting Fieldwork and Preparing Cultural Resource Assessment Reports, edition 2.5* (Sanders 2017).

Fieldwork consisted of systematic shovel testing, surface inspections, and pedestrian walkover survey. Shovel testing was conducted at 20.0-m and 30.0-m (65.6-ft and 98.4-ft) intervals, dependent upon surface visibility. In all, 359.2 acres of potentially USACE jurisdictional areas within the Project was surveyed during this investigation. Pedestrian survey and the excavation of 1,321 STPs resulted in the identification of two precontact archaeological sites, 15HK404 and 15HK405, and two precontact isolated finds, E01 and F01. Isolated finds are not typically considered eligible for listing in the NRHP due to their lack of research potential. As a result, no additional work is recommended for Isolated Find E01 or F01.

Site 15HK404 is interpreted as a non-diagnostic precontact lithic scatter of unknown function. Based on the location of the site at the end of a descending ridge line near the confluence of a perennial stream and Weirs Creek, the site potentially served as a short-term encampment utilized while traversing the region or during periods of natural resource extraction. No diagnostic artifacts or cultural features were identified. Given the limited size of the assemblage and lack of tools or diagnostic materials, the site does not exhibit the potential to retain significant information regarding the precontact history of the region. As a result, the site is recommended not eligible for listing in the NRHP, and no additional work is recommended.

Site 15HK405 is interpreted as a large lithic scatter of unknown function or definitive temporal affiliation. Based on the distribution of artifacts across the landform, the site likely represents a series of overlapping occupations or activity areas though the relationship between these areas is not presently known. Given the relatively high number of bifacial tools and lack of early stage debitage, the curation and maintenance of a lithic tool kit was one activity occurring within the site. The presence of a nutting stone also suggests the processing of mast resources occurred on site. Given the limited extent of the current investigation, additional work would be needed at site 15HK405 to further refine the horizontal distribution of artifacts and, if possible, to isolate various occupation or activity areas and evaluate these locations for their NRHP-eligibility. Based on the current Project design, Weirs Creek Solar will avoid site 15HK405. As a result, no additional work is recommended for site 15HK405 based on this current design (**Appendix A, Figure 8**). Should future changes to the Project design result in potential impacts to site 15HK405, ECT recommends additional investigations be conducted.

Based on the results of this survey, no additional work is recommended for the USACE potentially jurisdictional areas on the Project Area.

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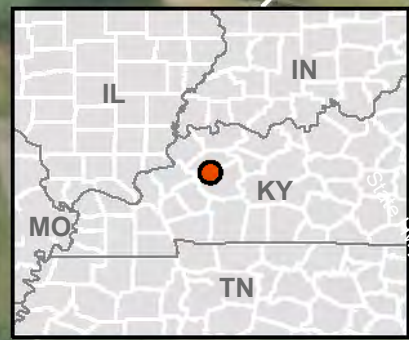
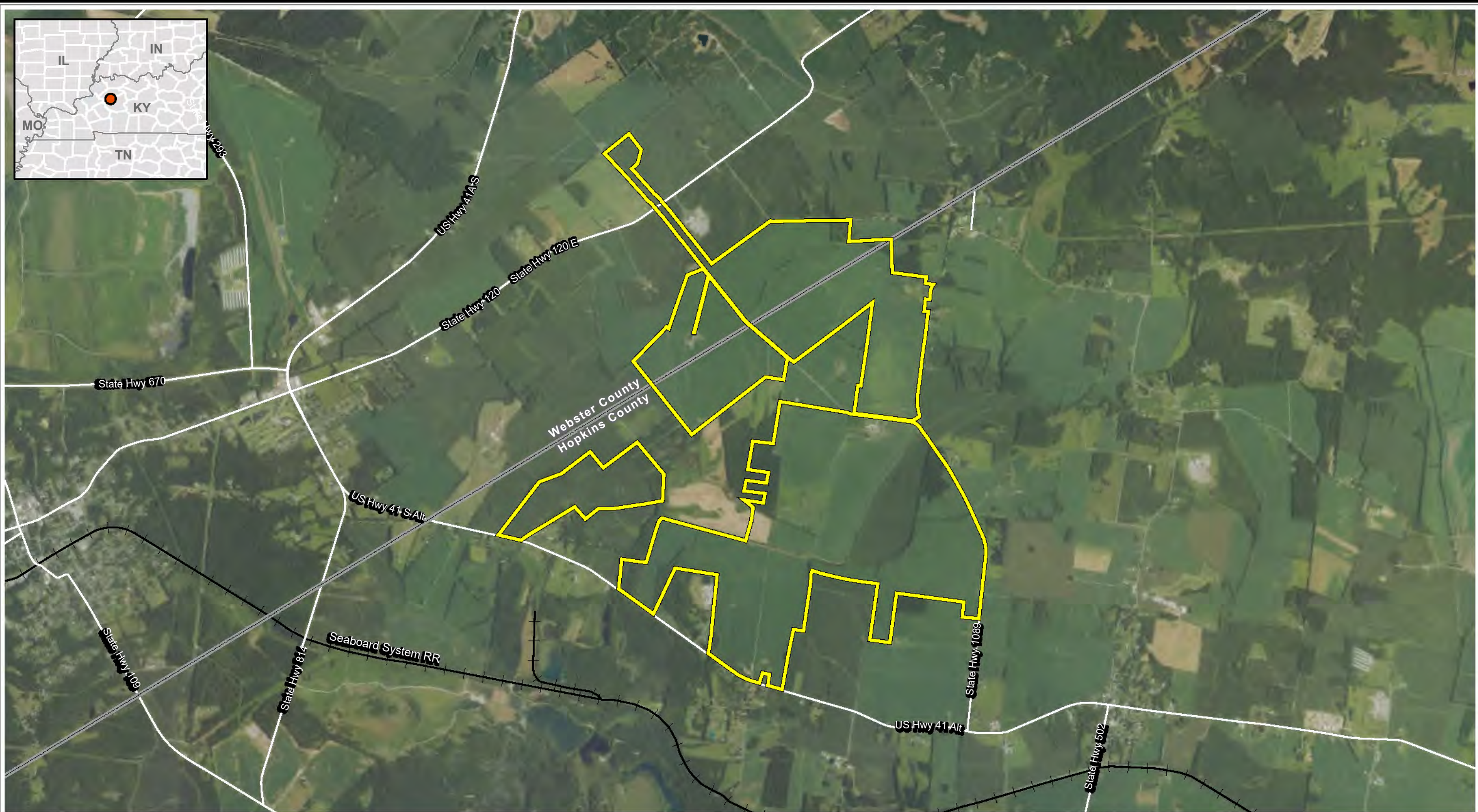
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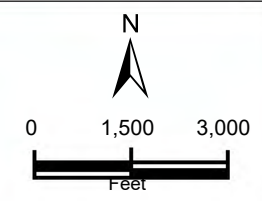
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Appendix A Background Figures



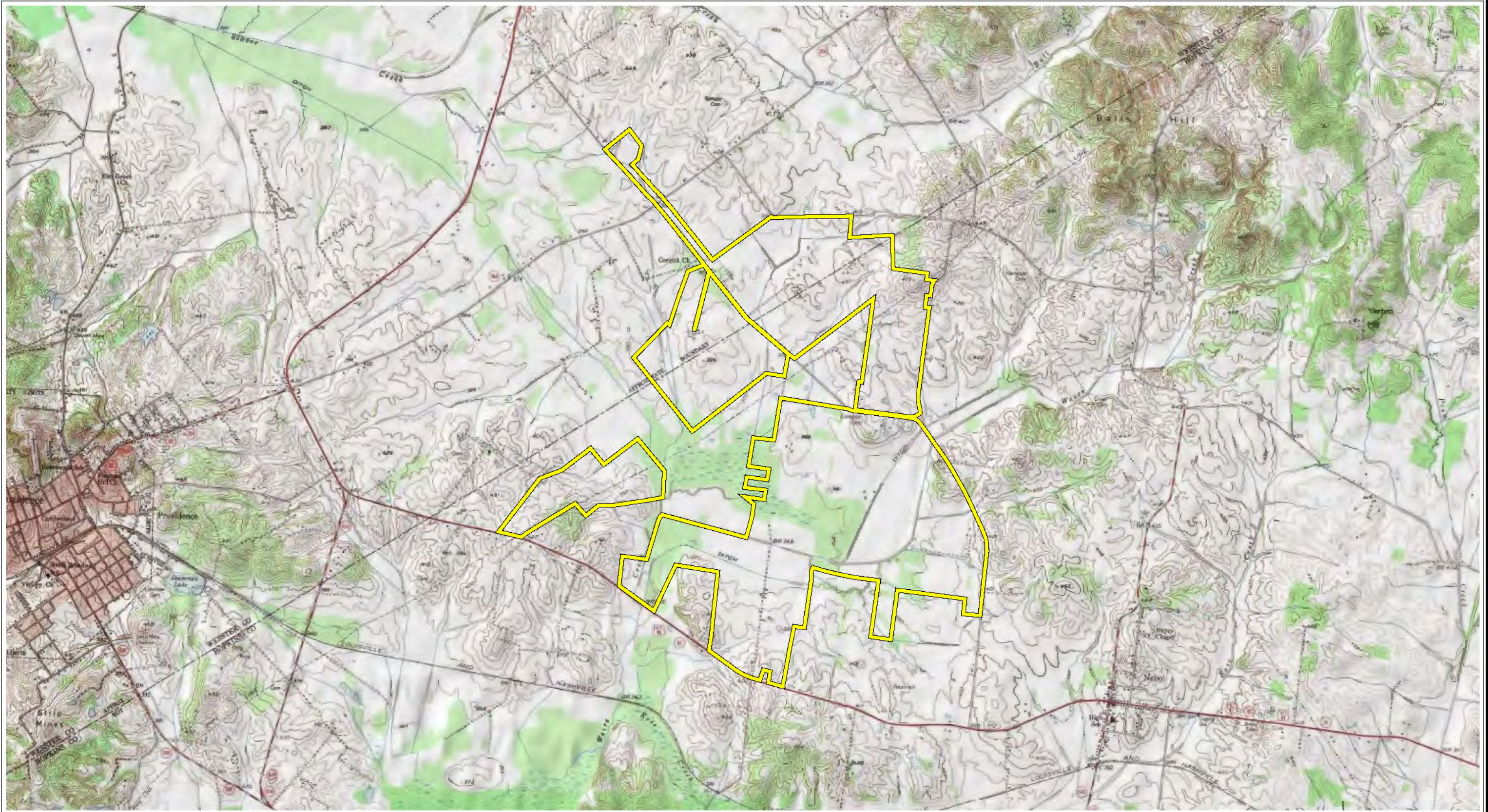
- Project Area (± 2,287.71 Ac.)
- County Boundary



Base Layer: USDA NAIP 2021

Figure 1
Project Location Map
 Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky
 Date: 5/2/2024





 Project Area (± 2,287.71 Ac.)

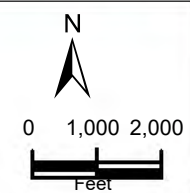


Figure 2
USGS Topographic Map

Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/2/2024

Base Layer: USGS Topographic Quad Nebo, KY 1958



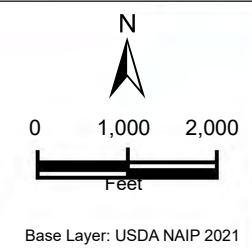
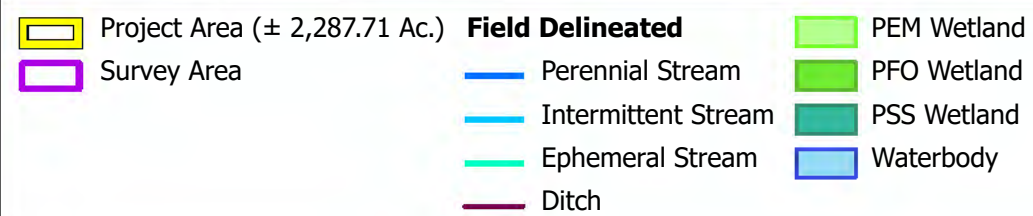
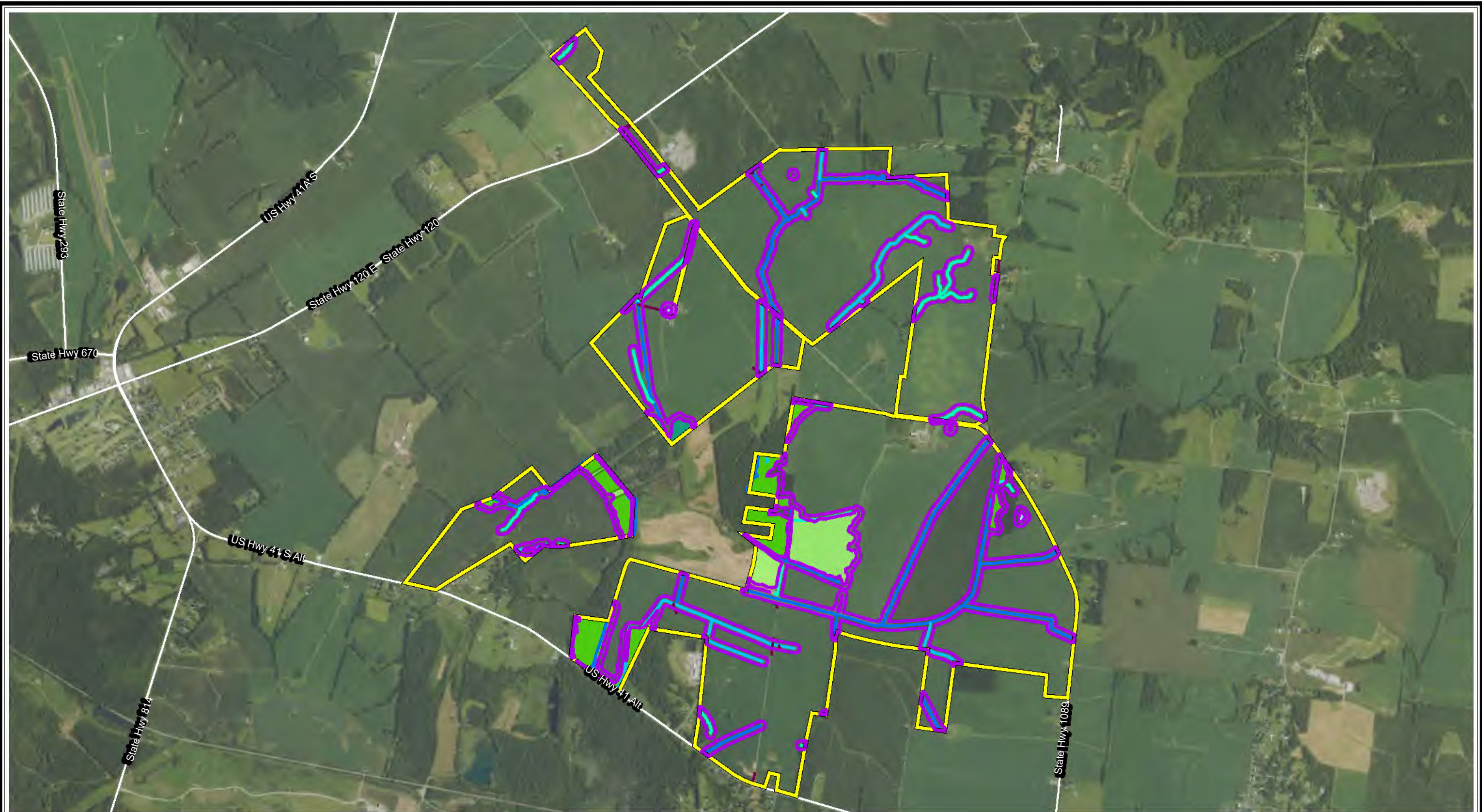
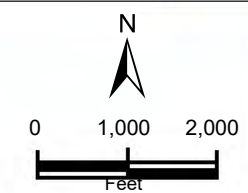
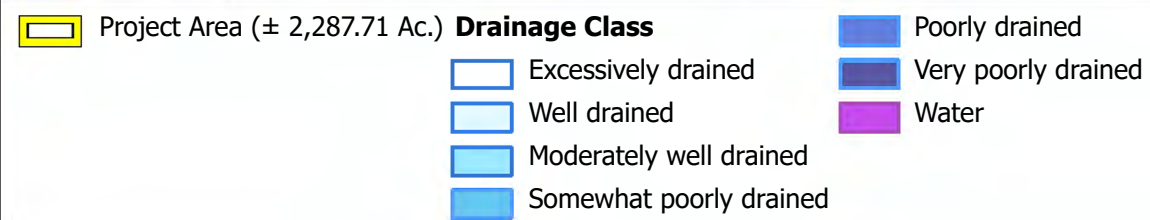
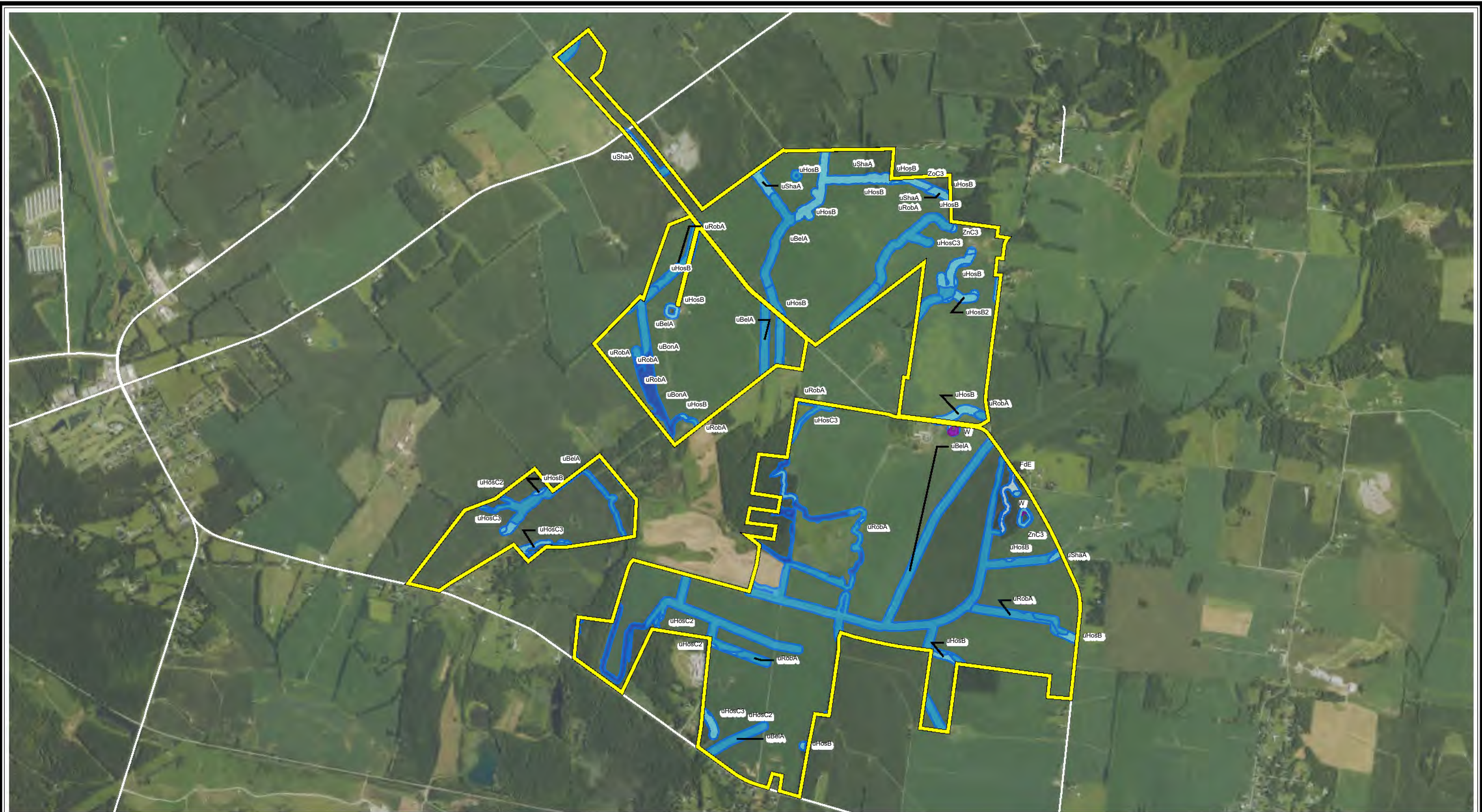


Figure 3
Survey Area Map
Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky
Date: 5/2/2024





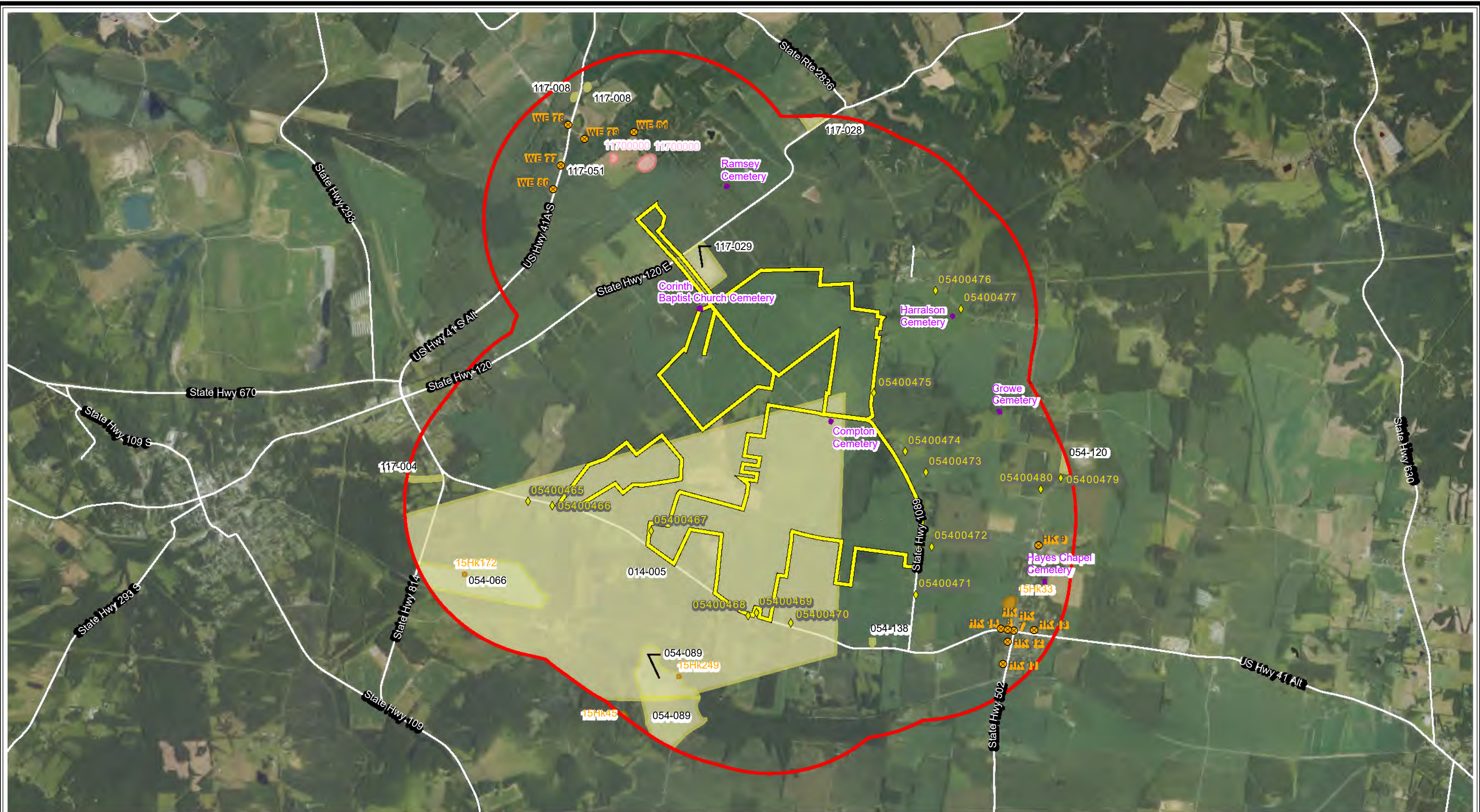
Base Layer: USDA NAIP 2021

**Figure 4
NRCS Soils**

Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/2/2024





- Project Area (± 2,287.71 Ac.)
- 2 km Buffer
- Cemetery
- Archaeological Areas
- Unconfirmed Archaeological Areas
- Archaeological Surveys
- KHC Coded Property
- KHC Historic Resource

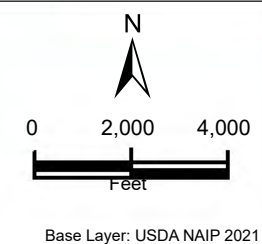


Figure 4
Previously Recorded Cultural Resources

Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky
 Date: 5/2/2024



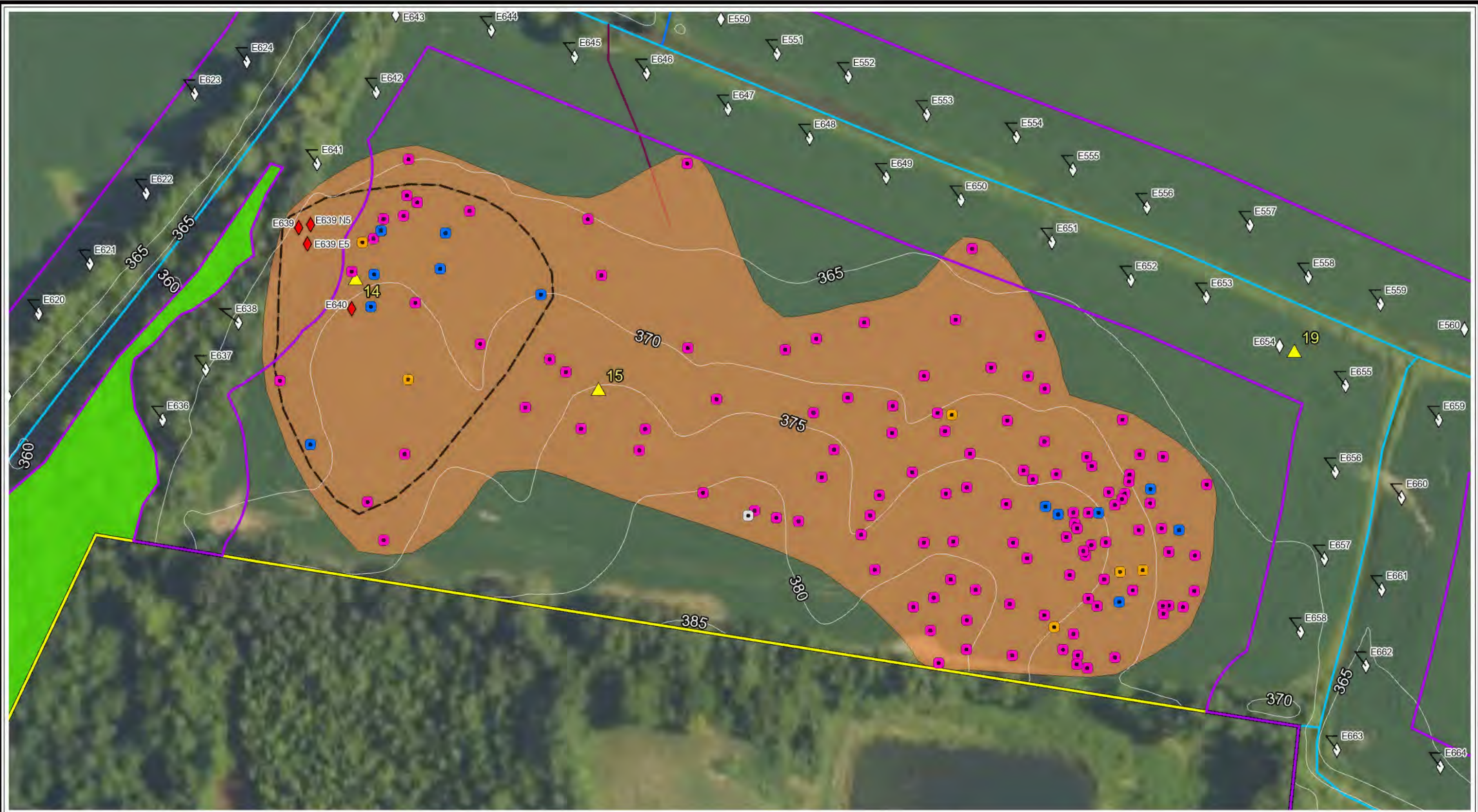


Project Area (\pm 2,287.71 Ac.)	Field Delineated	Photo Location	Shovel Test
Survey Area	Perennial Stream	Precontact Surface Find	Inundated
Site Boundary			Negative
5ft Contour			Precontact

Base Layer: USDA NAIP 2021

Figure 6
Testing Results at 15Hk404
 Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky
 Date: 5/15/2024





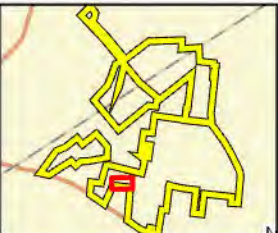
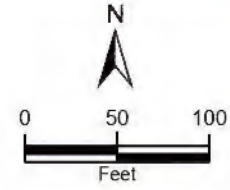
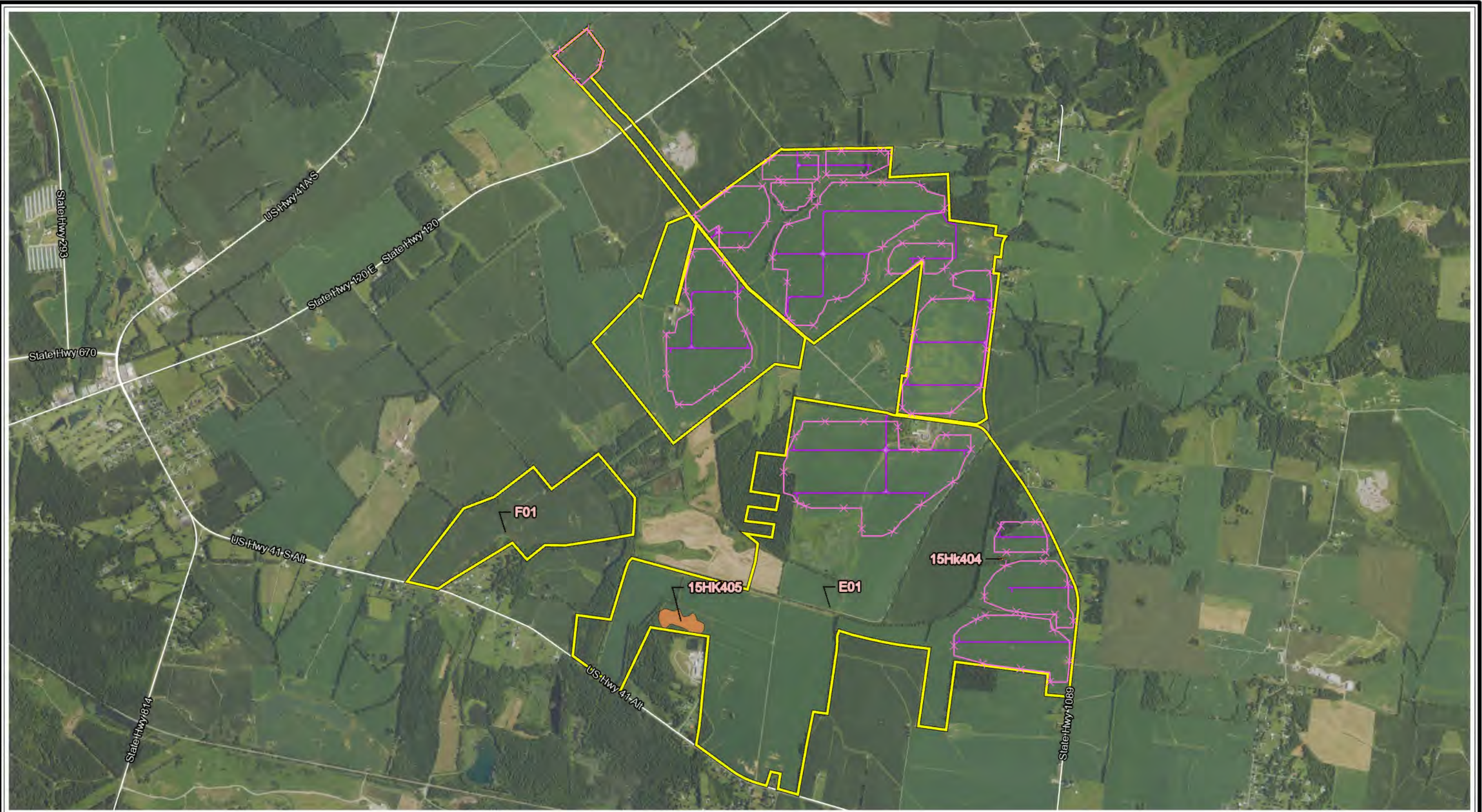
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Figure 7
Testing Results at Site 15Hk405

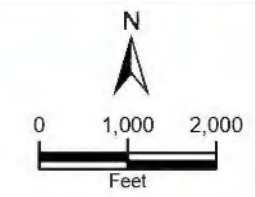
Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky

Date: 5/15/2024





- Project Area (± 2,287.71 Ac.)
- Site Boundary
- Fenceline
- Access Road
- Zone Boundary



Base Layer: USDA NAIP 2021

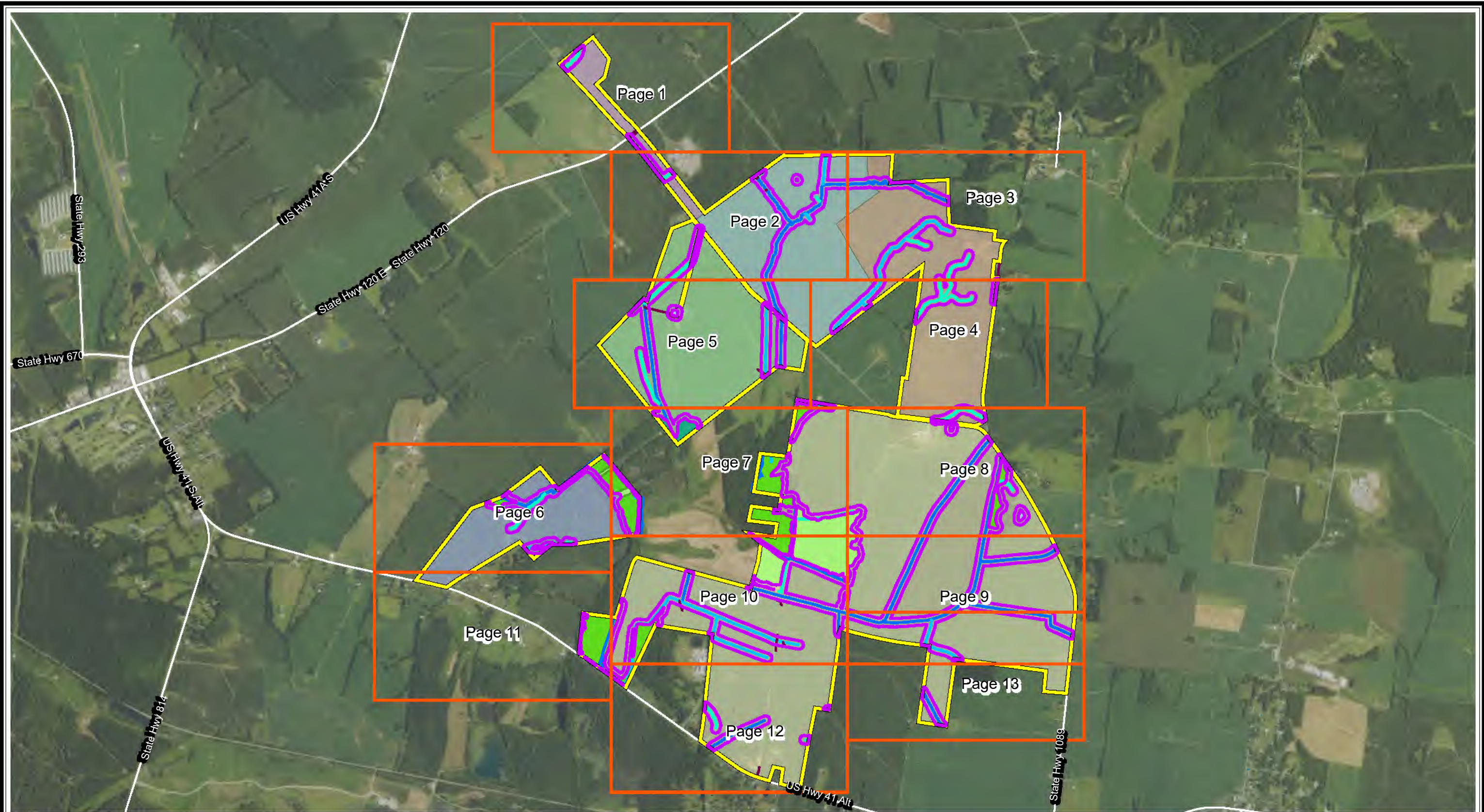
Figure 8
Preliminary Project Layout with Sites

Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky

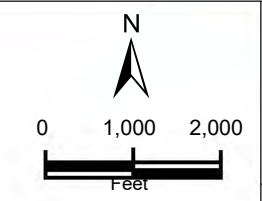
Date: 5/15/2024



Appendix B Testing Results Mapbook



Project Area (± 2,287.71 Ac.)	Survey Block A-F	Field Delineated	Waterbody
Viewport	A	Perennial Stream	PEM Wetland
Survey Area	B	Intermittent Stream	PFO Wetland
	C	Ephemeral Stream	PSS Wetland
	D	Ditch	
	E		
	F		



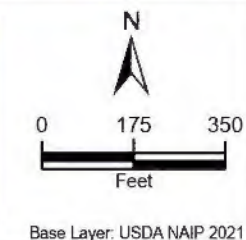
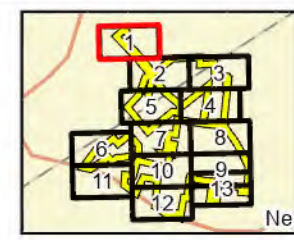
Base Layer: USDA NAIP 2021

Appendix B
Testing Results Index
 Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky
 Date: 5/3/2024





- Project Area (\pm 2,287.71 Ac.)
- Survey Area
- Pedestrian Surveyed
- Survey Block A-F**
- A
- 5ft Contour
- ▲ Photo Location
- Field Delineated**
- Perennial Stream
- Ephemeral Stream
- Ditch

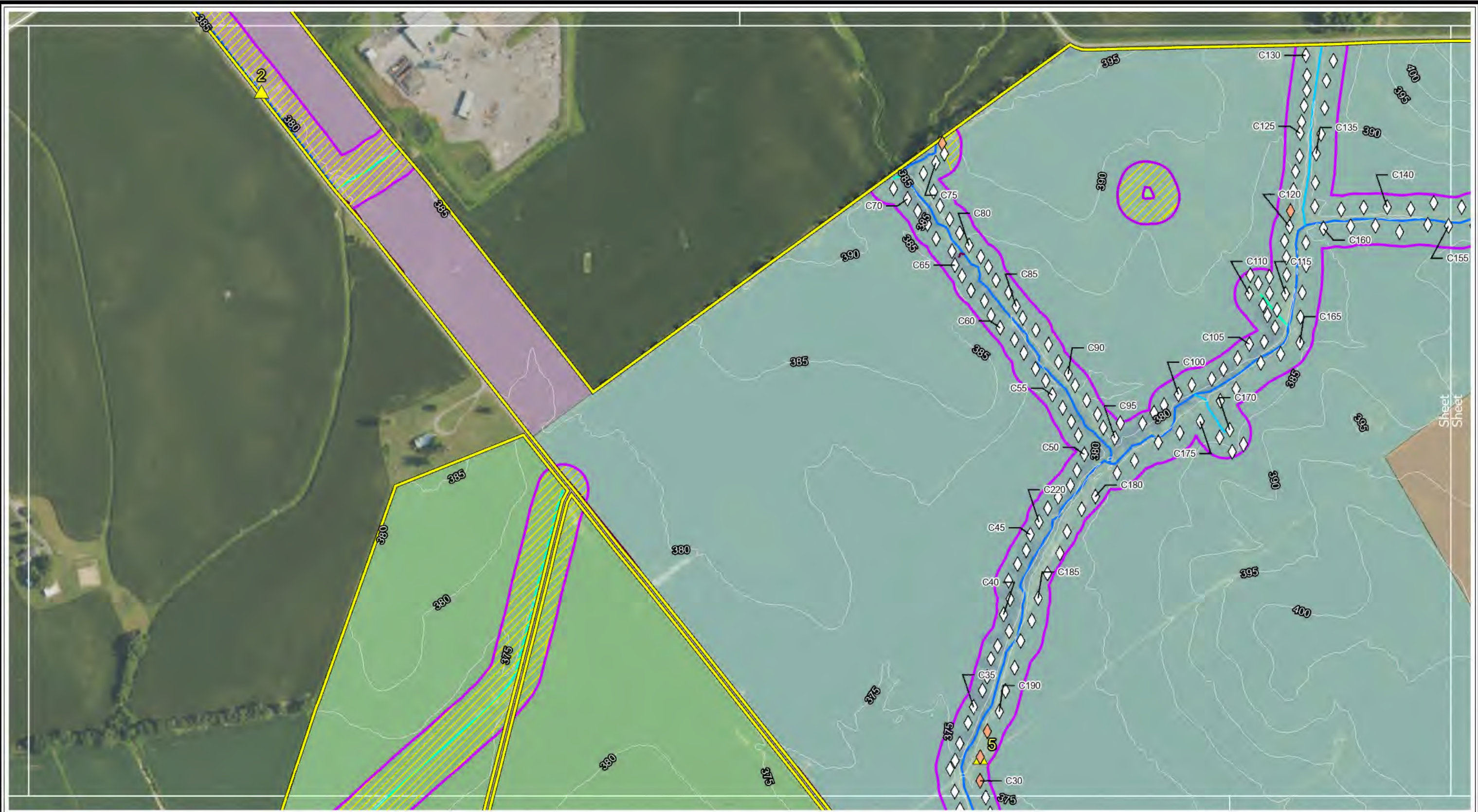


**Appendix B - Page 1 of 13
Testing Results Mapbook**

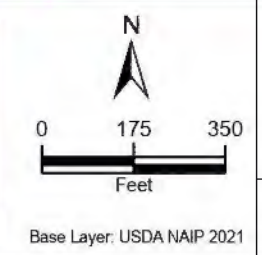
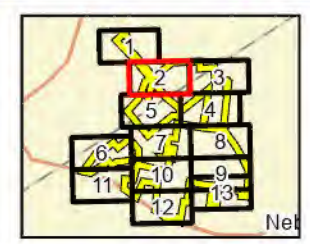
Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/15/2024





Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Photo Location	Field Delineated	PEM Wetland
Survey Area	A	Shovel Test	Disturbed	Perennial Stream	
Pedestrian Surveyed	B	Negative	Intermittent Stream	Ephemeral Stream	
	C		Ditch		
	D				



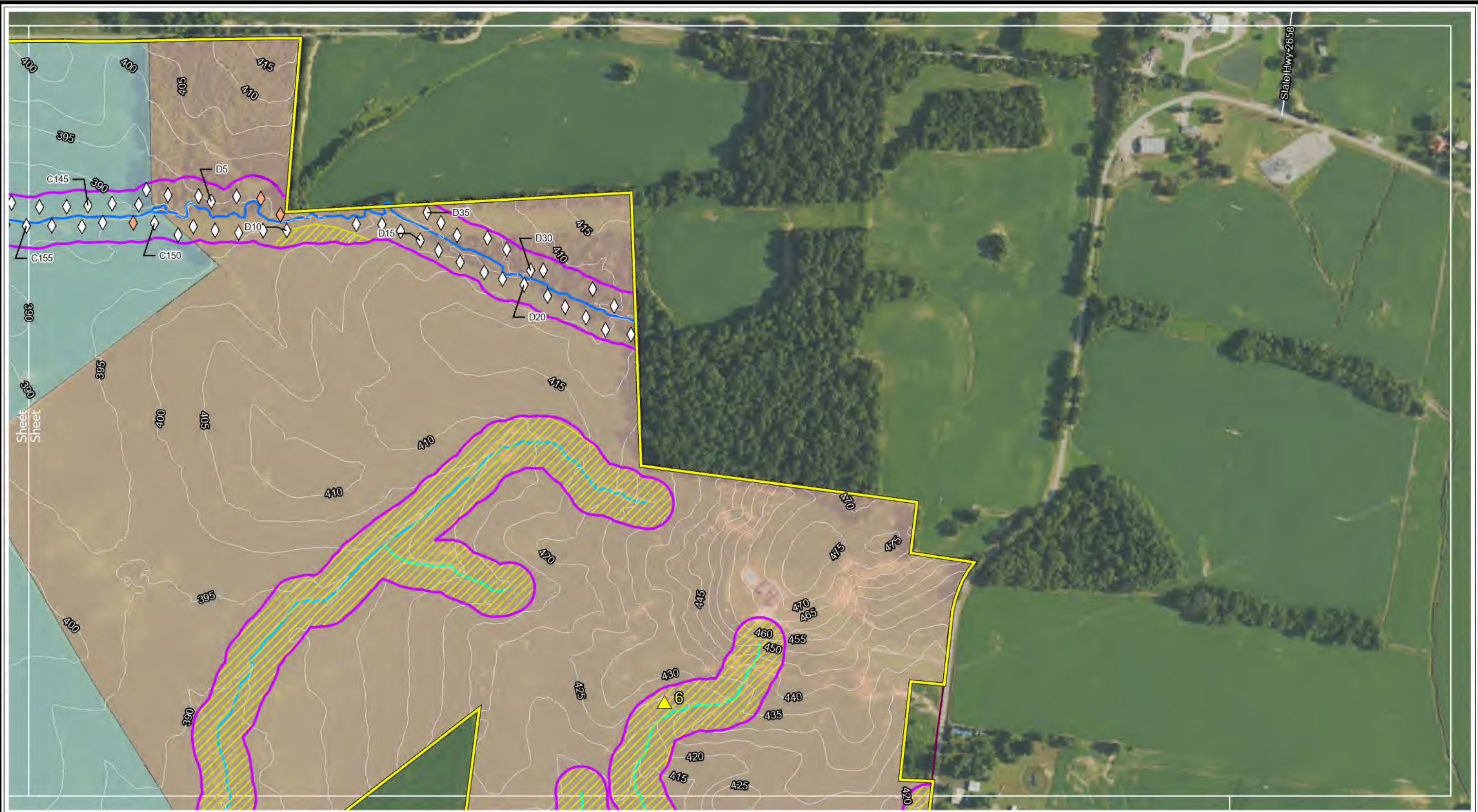
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Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky

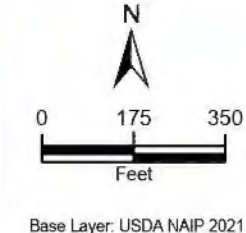
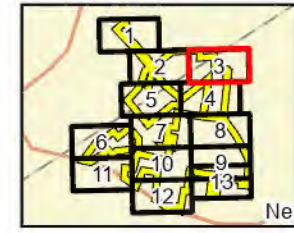
Date: 5/15/2024



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Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Photo Location	Field Delineated
Survey Area	C	Shovel Test	Perennial Stream	Intermittent Stream
Pedestrian Surveyed	D	Disturbed	Ephemeral Stream	Ditch
		Negative		



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Testing Results Mapbook**

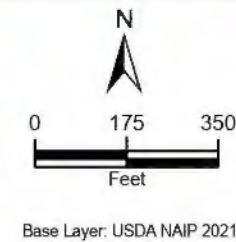
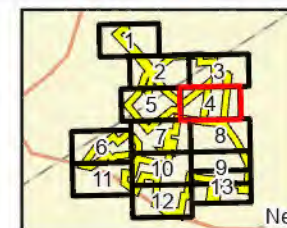
Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/15/2024





- Project Area (\pm 2,287.71 Ac.)
 - Survey Area
 - Inundated
 - Pedestrian Surveyed
- | | | | |
|---|---|---|--|
| <p>Survey Block A-F</p> <ul style="list-style-type: none"> B C D E | <p>5ft Contour</p> <p>Shovel Test</p> <ul style="list-style-type: none"> Negative | <p>Field Delineated</p> <ul style="list-style-type: none"> Intermittent Stream Ephemeral Stream Ditch | <p> PFO Wetland</p> |
|---|---|---|--|

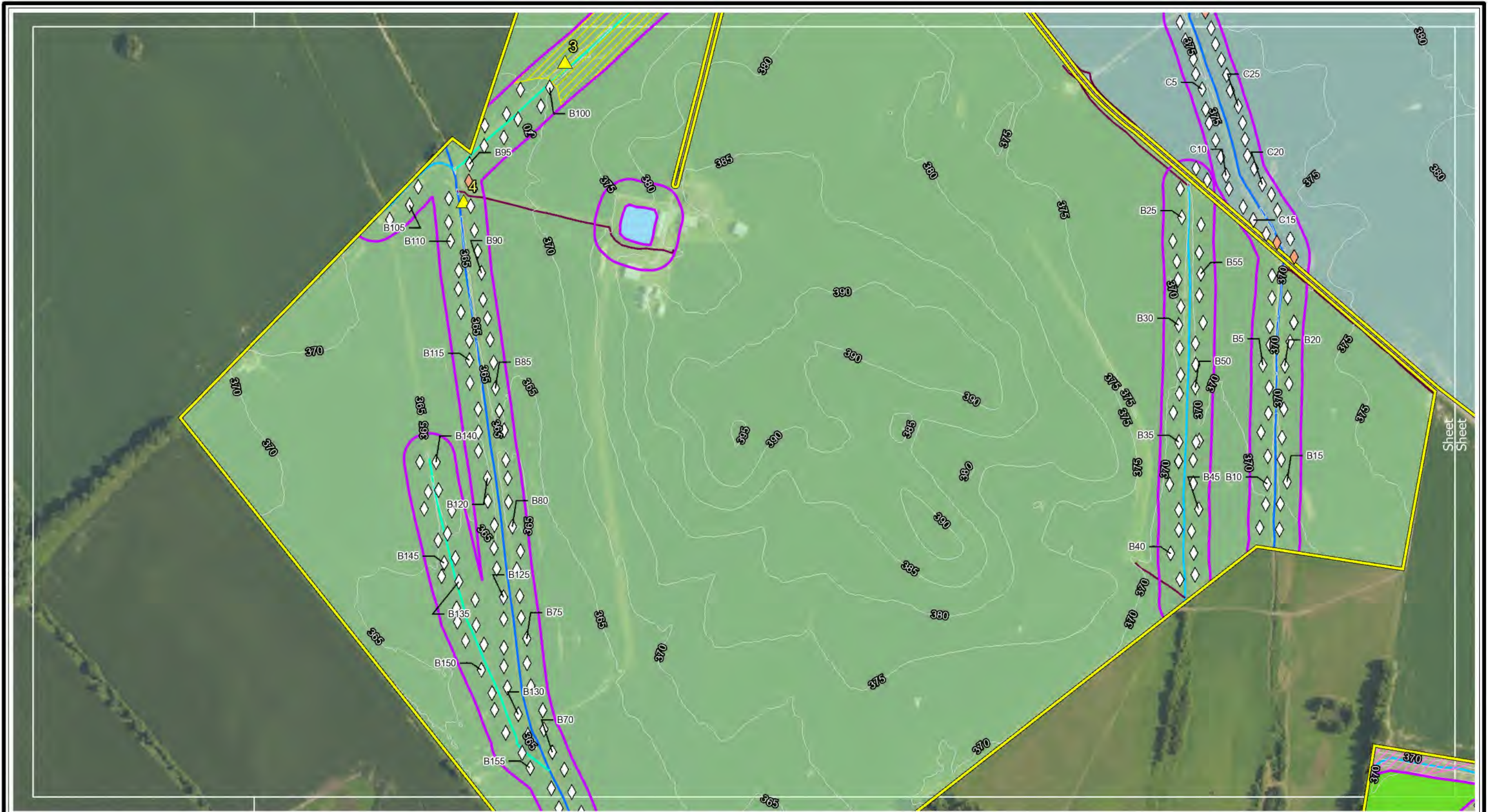


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Testing Results Mapbook**

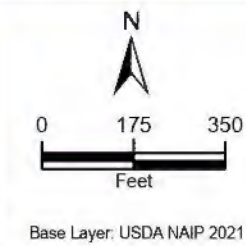
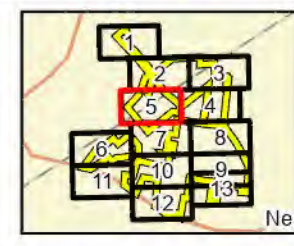
Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/15/2024





Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Photo Location	Field Delineated	Waterbody
Survey Area	B	Shovel Test	Disturbed	Perennial Stream	PFO Wetland
Inundated	C	Negative		Intermittent Stream	
Pedestrian Surveyed	E			Ephemeral Stream	
				Ditch	



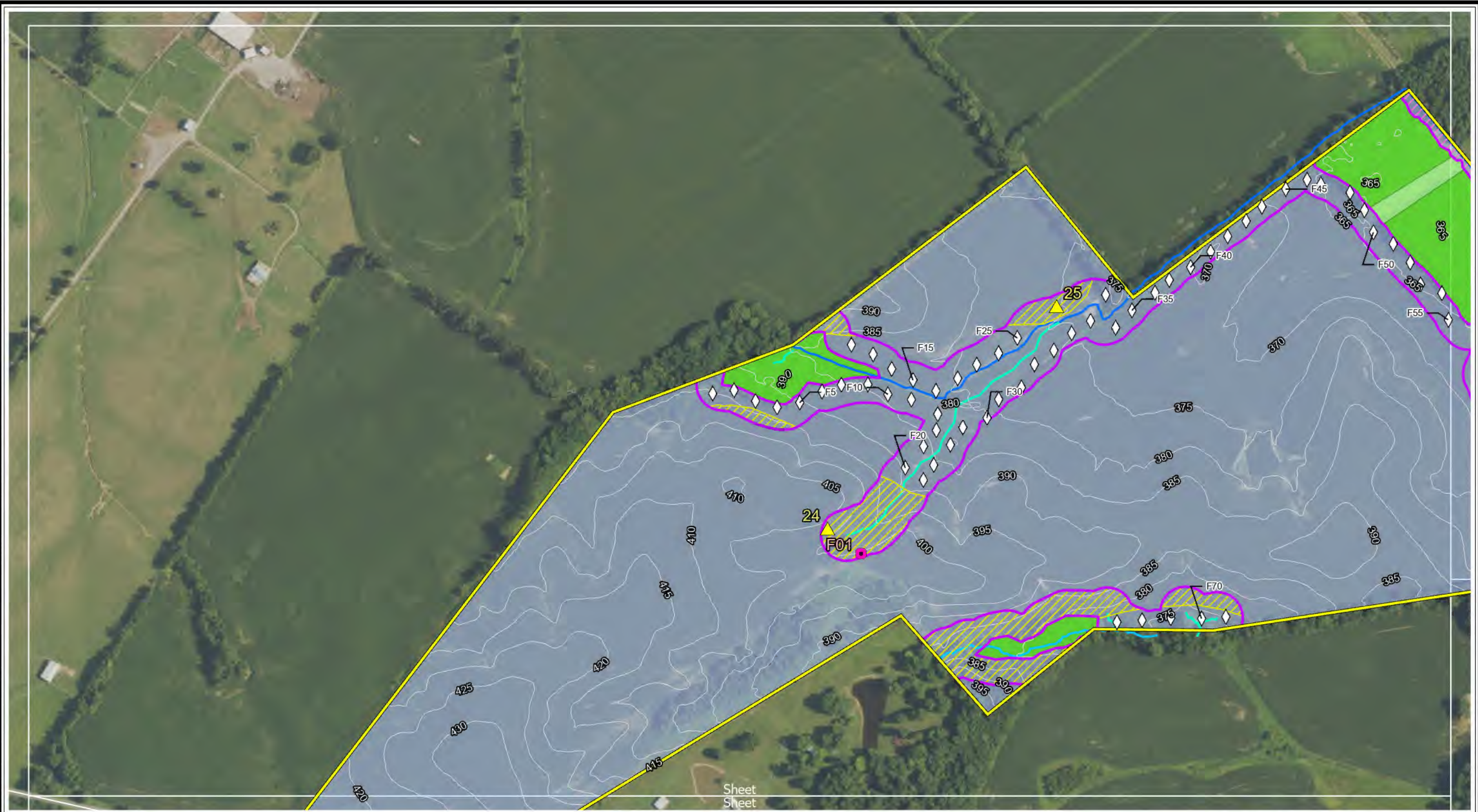
Appendix B - Page 5 of 13
Testing Results Mapbook

Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky

Date: 5/15/2024



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 Sheet



Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Photo Location	Field Delineated	PEM Wetland
Survey Area	F	Shovel Test	Surface Find	Perennial Stream	PFO Wetland
Inundated	Negative	Debitage		Intermittent Stream	Site Boundary
Pedestrian Surveyed				Ephemeral Stream	

0 175 350
Feet

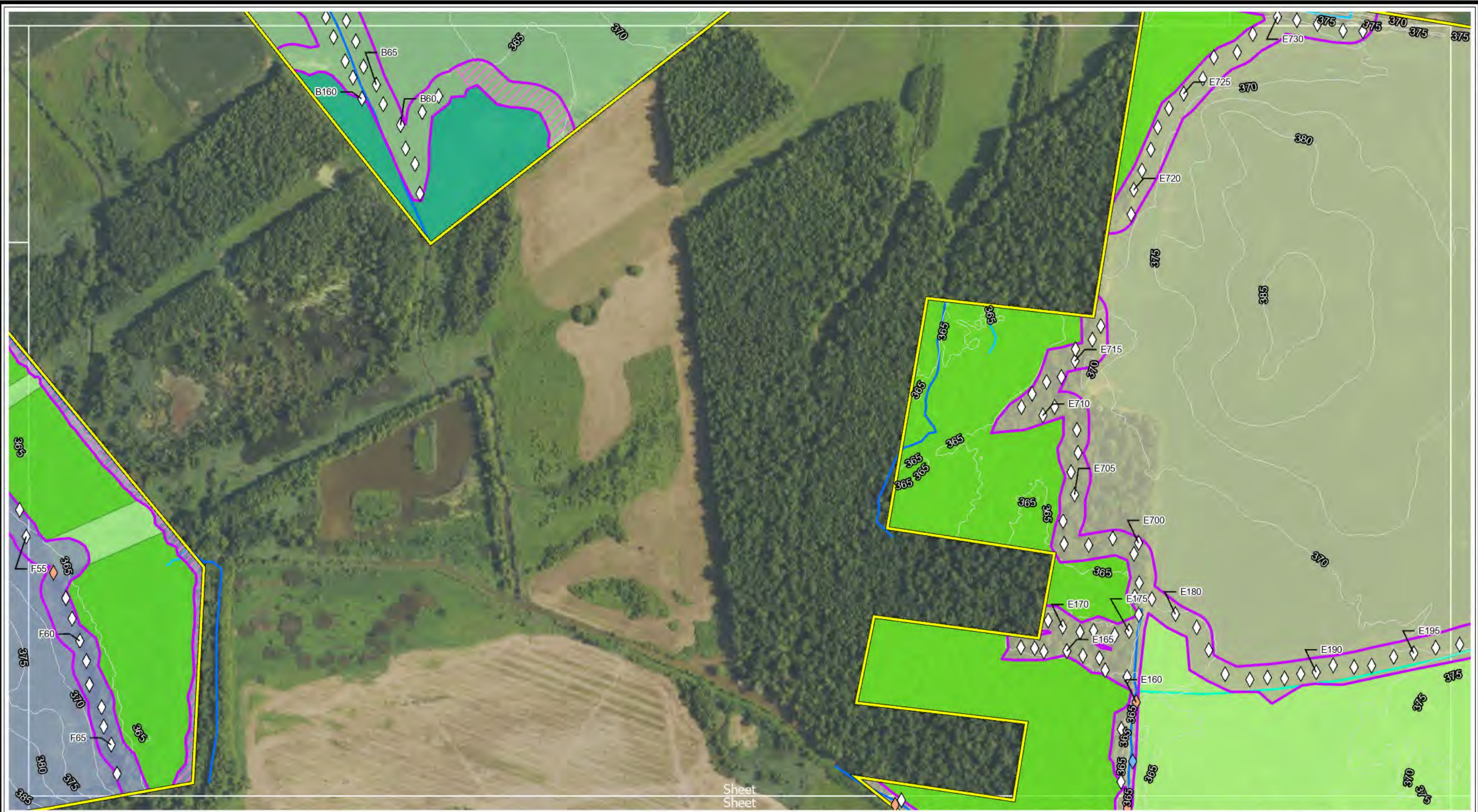
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Testing Results Mapbook**

Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

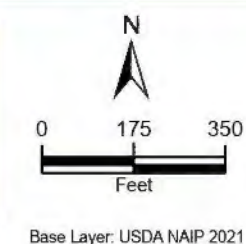
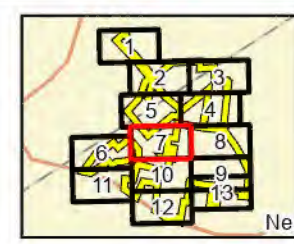
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Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Field Delineated	PEM Wetland
Survey Area	B	Shovel Test	Perennial Stream	PFO Wetland
Inundated	E	Disturbed	Intermittent Stream	PSS Wetland
	F	Inundated	Ephemeral Stream	
		Negative		



**Appendix B - Page 7 of 13
Testing Results Mapbook**

Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

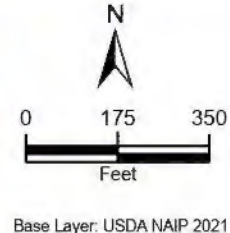
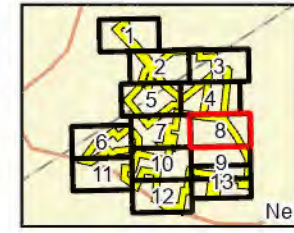
Date: 5/15/2024





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Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Photo Location	Field Delineated	Waterbody
Survey Area	D	Shovel Test	Negative	Perennial Stream	PEM Wetland
Inundated	E			Ephemeral Stream	PFO Wetland
Pedestrian Surveyed				Ditch	
Slope					



**Appendix B - Page 8 of 13
Testing Results Mapbook**

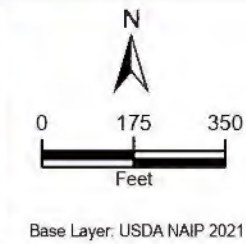
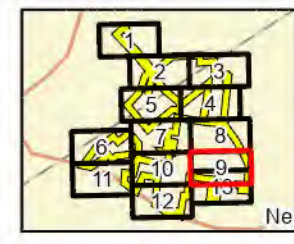
Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/15/2024





Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Precontact	Field Delineated	PEM Wetland
Survey Area	E	Shovel Test	Photo Location	Perennial Stream	Site Boundary
Inundated		Disturbed	Surface Find	Intermittent Stream	
Pedestrian Surveyed		Inundated	Debitage	Ditch	
		Negative			

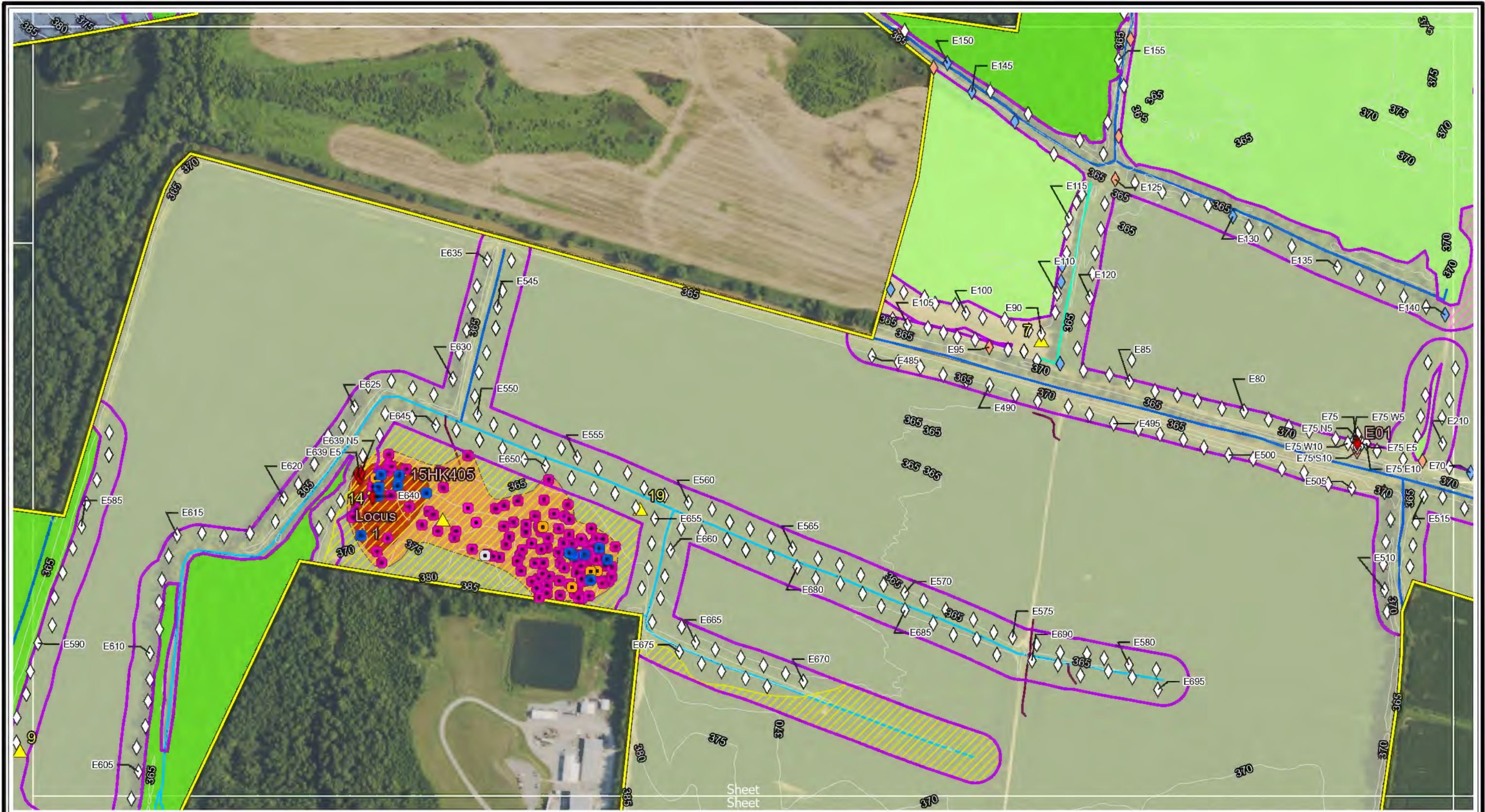


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Testing Results Mapbook**

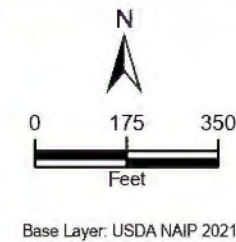
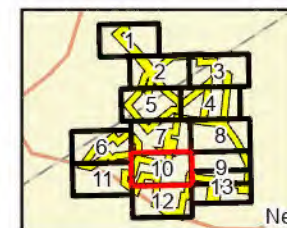
Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/15/2024





- | | | | | | |
|-------------------------------|-------------------------|--------------------|---------------------|-------------------------|---------------|
| Project Area (± 2,287.71 Ac.) | Survey Block A-F | 5ft Contour | Precontact | Nutting Stone | PEM Wetland |
| Survey Area | E | Shovel Test | Photo Location | Field Delineated | PFO Wetland |
| Inundated | F | Disturbed | Surface Find | Perennial Stream | Site Boundary |
| Pedestrian Surveyed | | Inundated | Debitage | Intermittent Stream | |
| | | Negative | Lithic Core | Ephemeral Stream | |
| | | | Lithic Tool | Ditch | |



Appendix B - Page 10 of 13
Testing Results Mapbook

Weirs Creek Solar Project
 Webster and Hopkins Counties, Kentucky

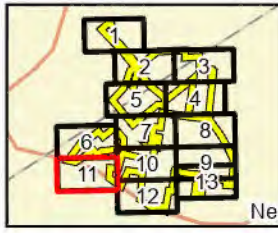
Date: 5/15/2024




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Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Photo Location	Field Delineated	PFO Wetland
Survey Area	E	Shovel Test	Perennial Stream	Intermittent Stream	
Inundated	F	Negative	Ditch		





0 175 350
Feet

Base Layer: USDA NAIP 2021

**Appendix B - Page 11 of 13
Testing Results Mapbook**

Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/15/2024





Project Area (± 2,287.71 Ac.)	Survey Block A-F	5ft Contour	Field Delineated	PFO Wetland
Survey Area	E	Shovel Test	Perennial Stream	
Inundated		Negative	Intermittent Stream	
Pedestrian Surveyed			Ephemeral Stream	
			Ditch	

N

0 175 350
Feet

Base Layer: USDA NAIP 2021

**Appendix B - Page 12 of 13
Testing Results Mapbook**

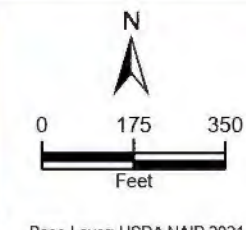
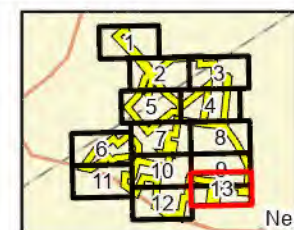
Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/15/2024





- | | | | | |
|-------------------------------|-------------------------|--------------------|----------------|-------------------------|
| Project Area (± 2,287.71 Ac.) | Survey Block A-F | 5ft Contour | Photo Location | Field Delineated |
| Survey Area | E | Shovel Test | | Perennial Stream |
| Pedestrian Surveyed | | Disturbed | | Intermittent Stream |
| | | Inundated | | Ditch |
| | | Negative | | |



**Appendix B - Page 13 of 13
Testing Results Mapbook**

Weirs Creek Solar Project
Webster and Hopkins Counties, Kentucky

Date: 5/15/2024



Appendix C Photographs



Photo 1. Representative Surface Visibility in Survey Block A Pedestrian Survey Areas.



Photo 2. Subsurface Utility Marker within Survey Block A Transmission Corridor, Facing Northeast.



Photo 3. Representative Surface Visibility in Survey Block B Pedestrian Survey Areas.



Photo 4. General Overview of Survey Block B, Facing South.



Photo 5. General Overview of Survey Block C, Facing North.



Photo 6. General Overview of Survey Block D, Facing South.



Photo 7. Facing East, Showing overview of Survey Block E North of Weirs Creek with 20 Percent Surface Visibility.



Photo 8. Facing Northeast, Showing overview of Survey Block E North of Weirs Creek with 50 Percent Surface Visibility.



Photo 9. Facing Northwest with Artificial Levee Bordering Weirs Creek in Survey Block E.



Photo 10. Facing North towards Weirs Creek from Donaldson Road Showing Overview of Survey Block E South of Weirs Creek.



Photo 11. Facing Southeast, Overview of Site 15Hk404.



Photo 12. Field Drain at Base of STP 360 W10N10.



Photo 13. Representative Sample of Artifacts Recovered from Site 15HK404.



Photo 14. Typical Surface Visibility within Site 15HK405.



Photo 15. Overview of Western Portion of Site 15HK405, Facing West Across Swale.



Photo 16. Representative Sample of Lithic Debitage from Locus 1 in Site 15HK405.



Photo 17. Bifaces and Biface Fragments Recovered from Locus 1 in Site 15HK405.



Photo 18. Reform and Lithic Cores Recovered from Locus 1 in Site 15HK405.



Photo 19. Overview of Eastern Portion of Site 15HK405, Facing Southwest.



Photo 20. Damaged Projectile Point Fragment at Site 15HK405.



Photo 21. Projectile Point Tip Fragment at Site 15HK405.



Photo 22. Corner-notched Projectile Point Fragment at Site 15HK405.



Photo 23. Nutting Stone Identified at Site 15HK405.



Photo 24. Overview of Survey Block F, Facing East-Southeast.



Photo 25. Typical Surface Visibility in Survey Block F.

Appendix D Soil Profiles

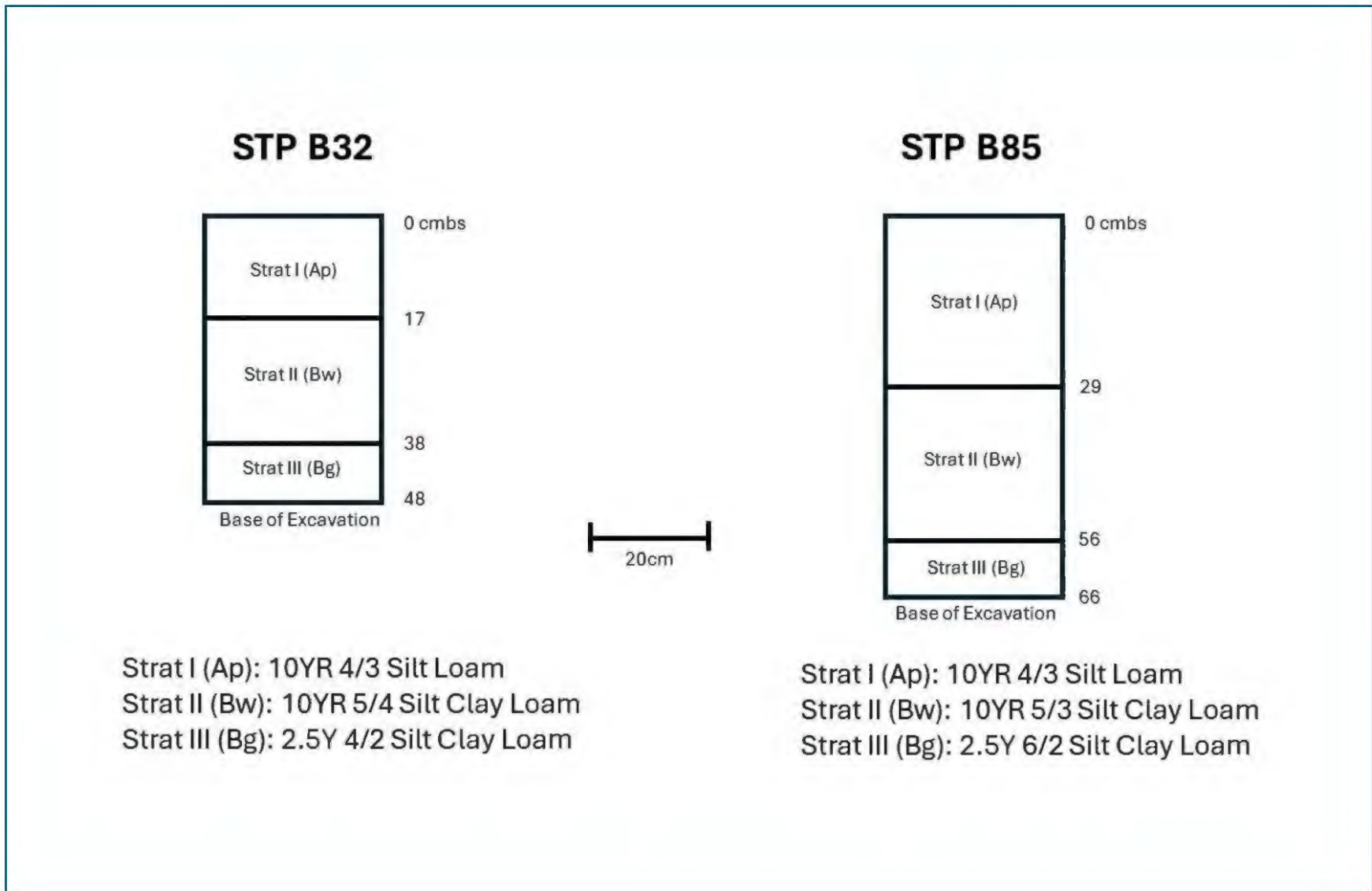


Figure 1. Representative STP Profiles from Survey Block B.

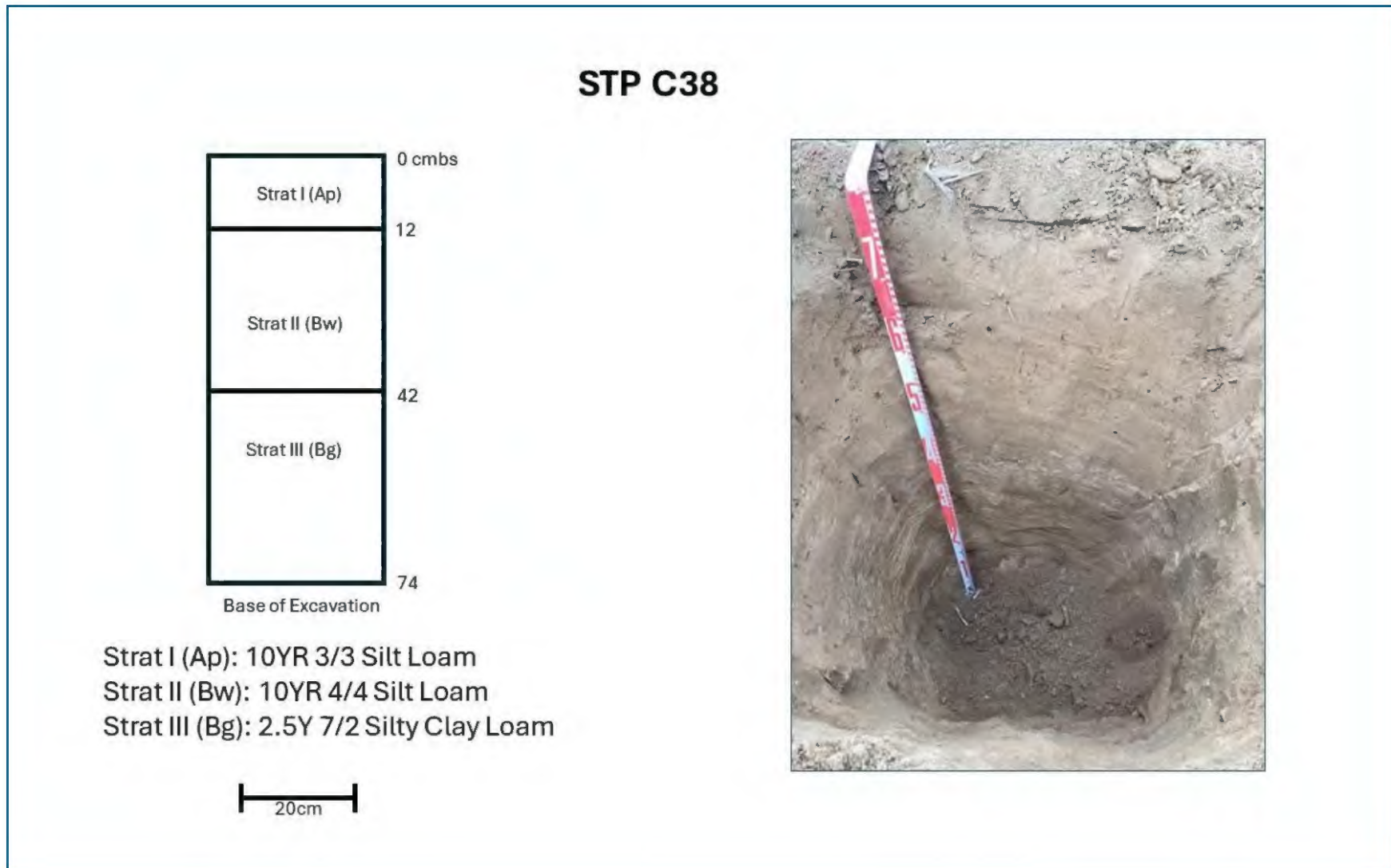


Figure 2. Representative STP Profile from Survey Block C.

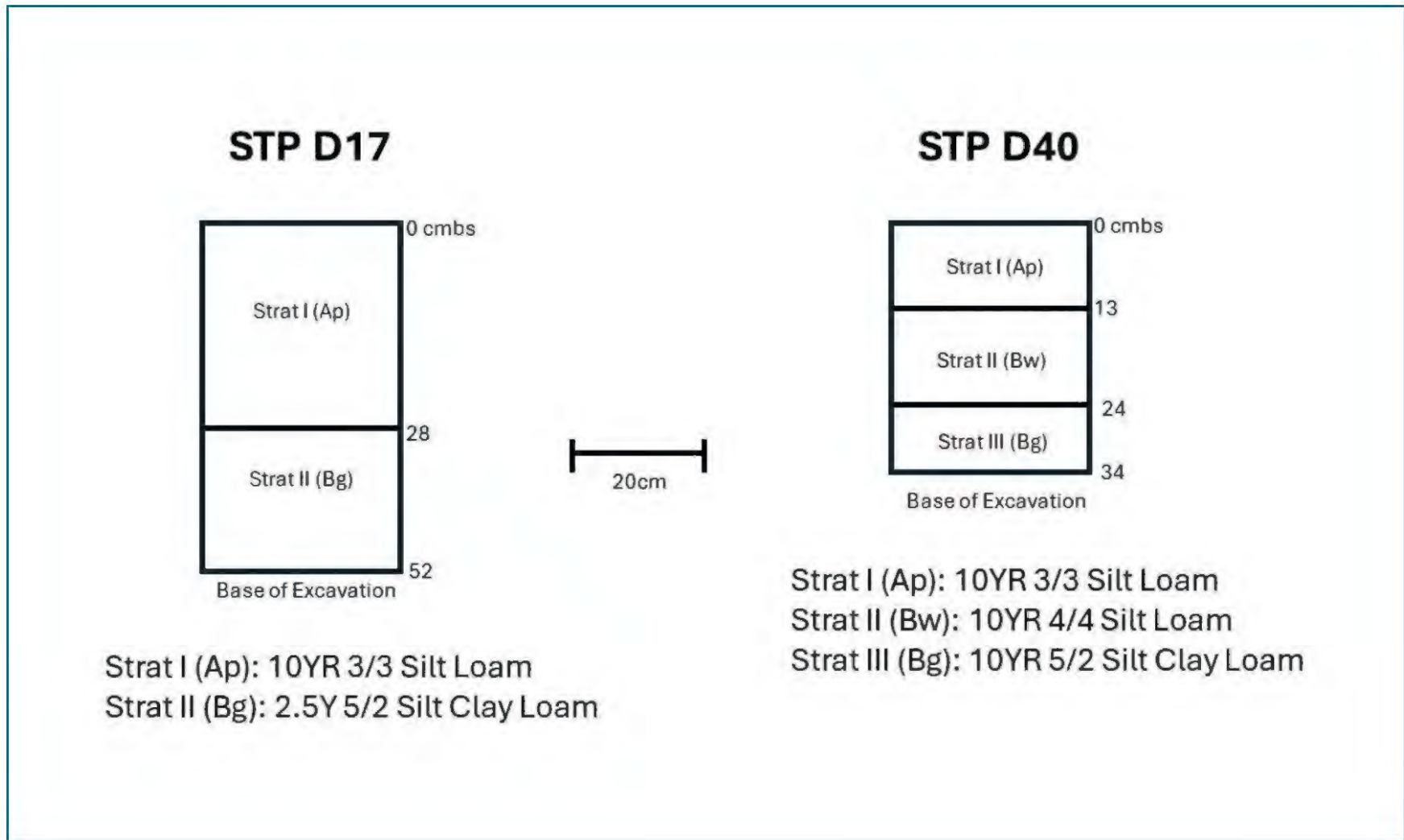


Figure 3. Representative STP Profiles from Survey Block D.

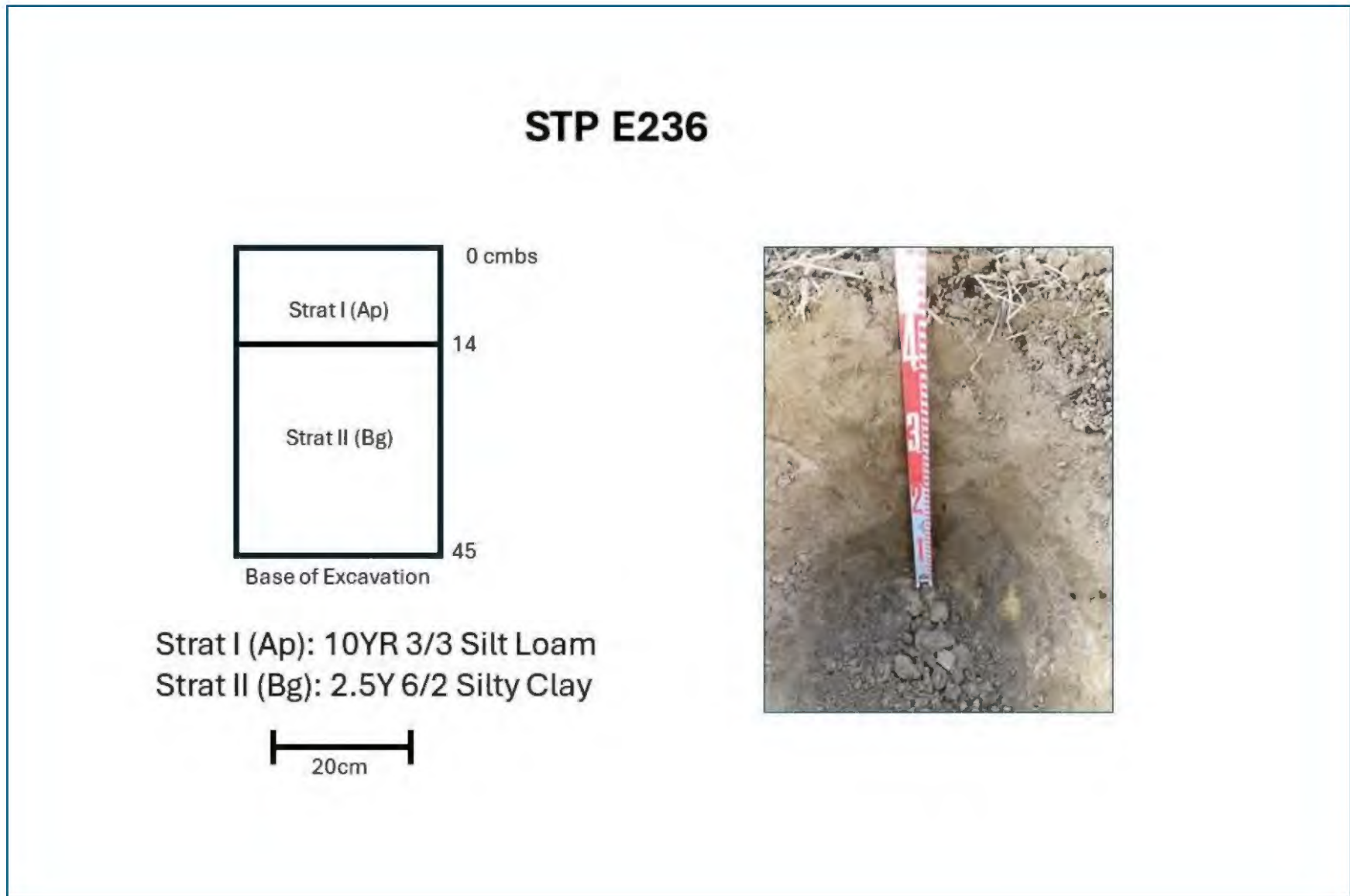


Figure 4. Representative Soil Profile from STP E236 in Survey Block E.

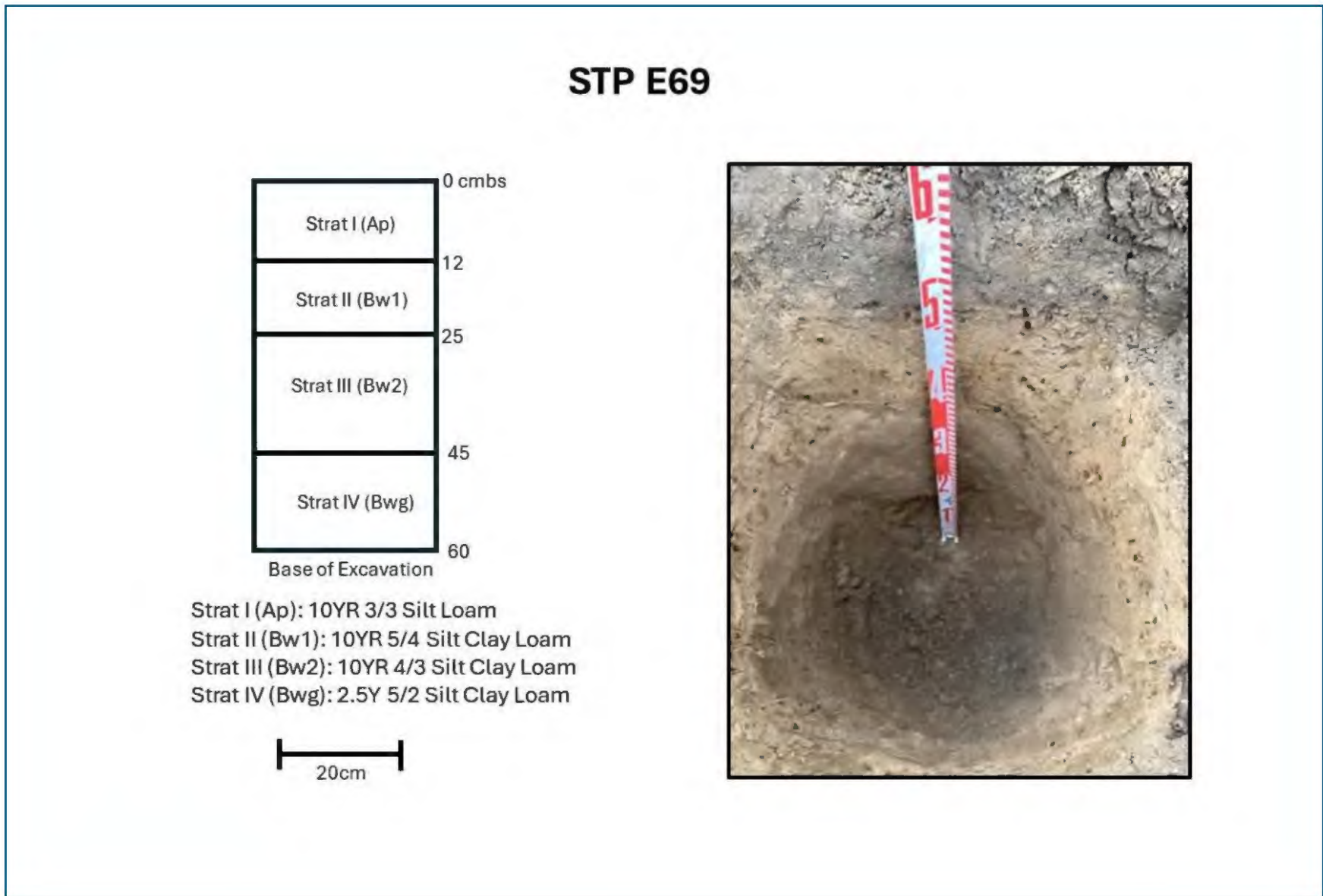


Figure 5. Representative Soil Profile from STP E69 in Survey Block E.

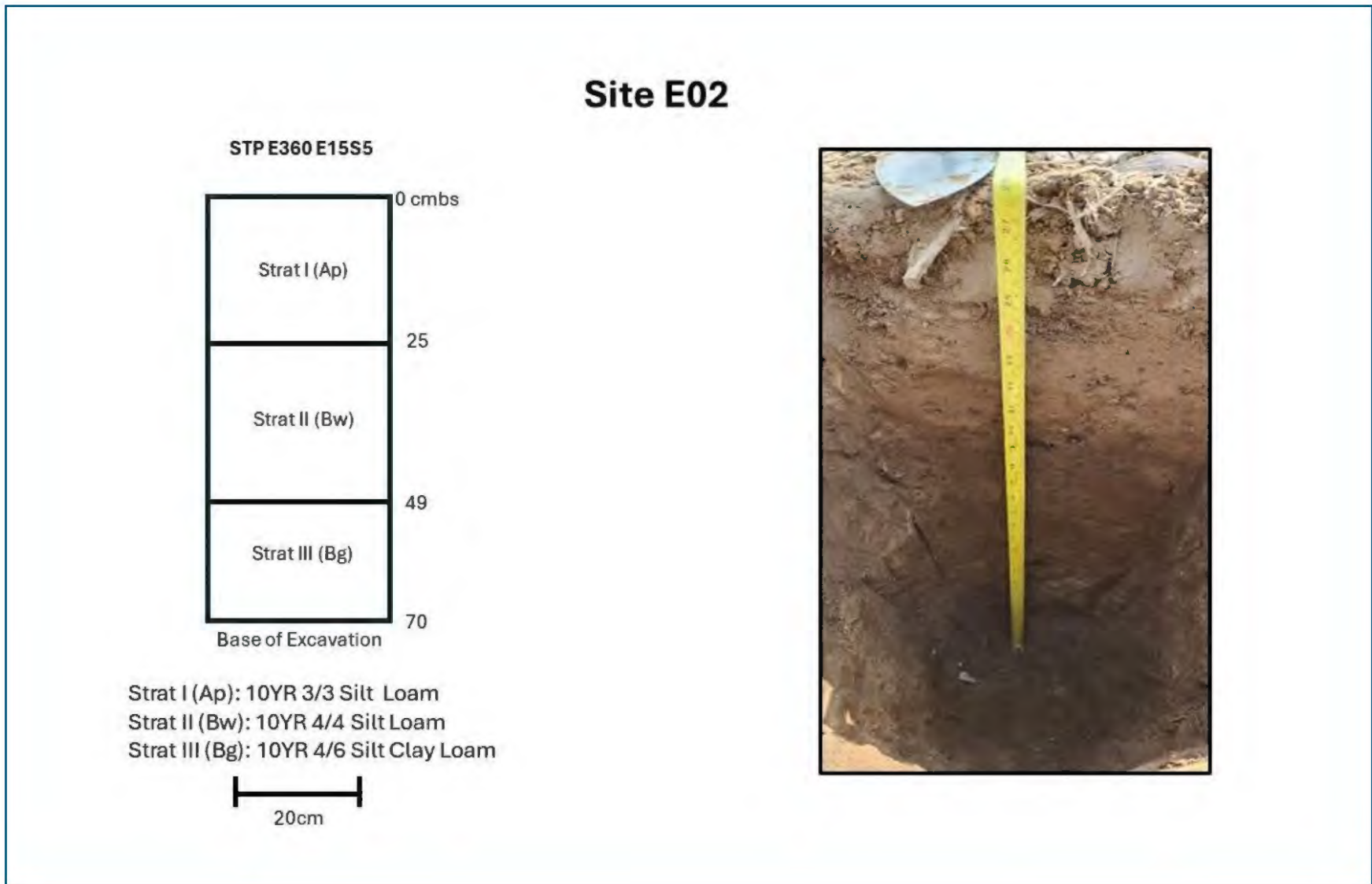


Figure 6. Representative Soil Profile from Site 15HK404 in Survey Block E.

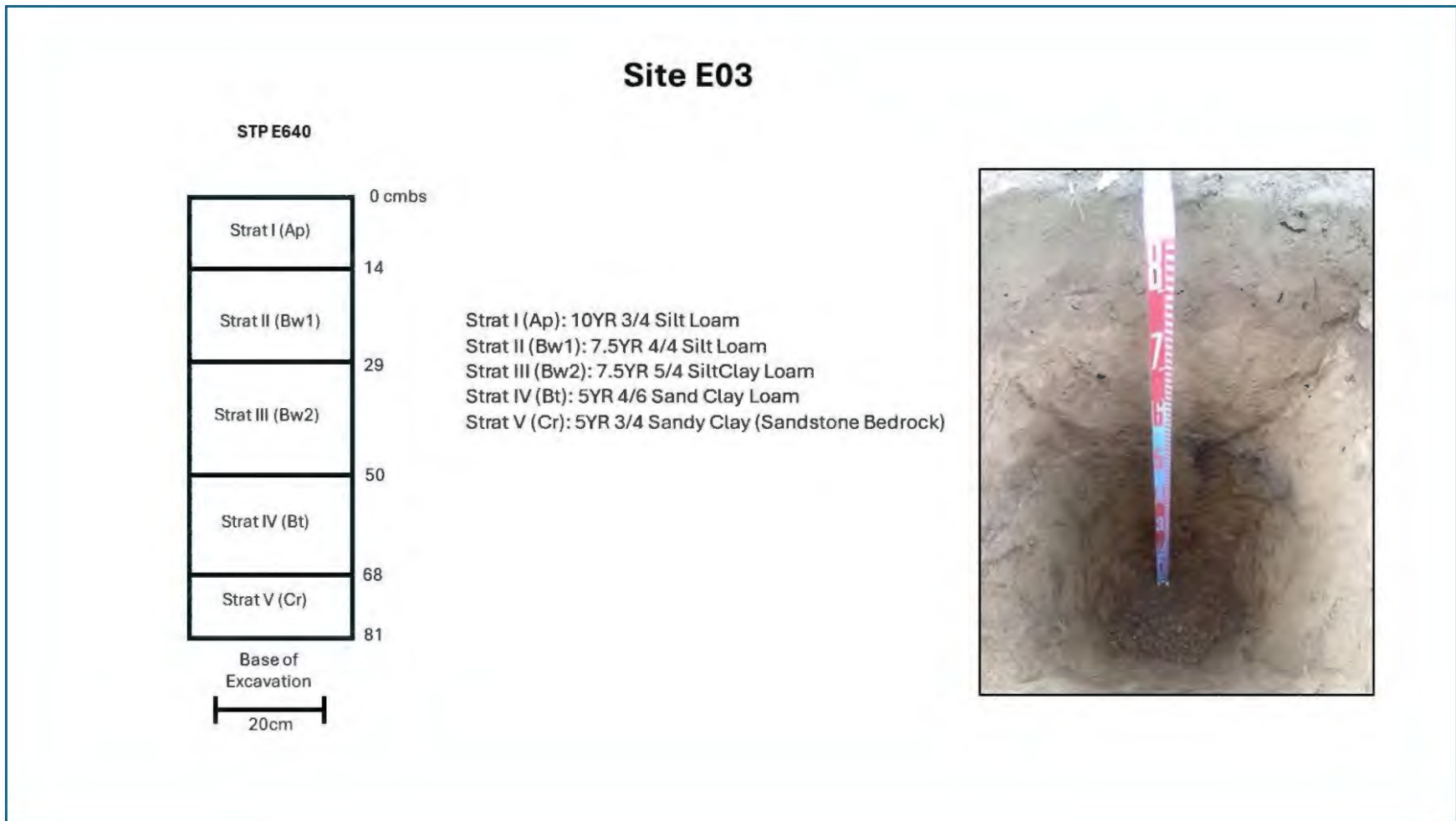


Figure 7. Representative Soil Profile from Site 15HK405 in Survey Block E.

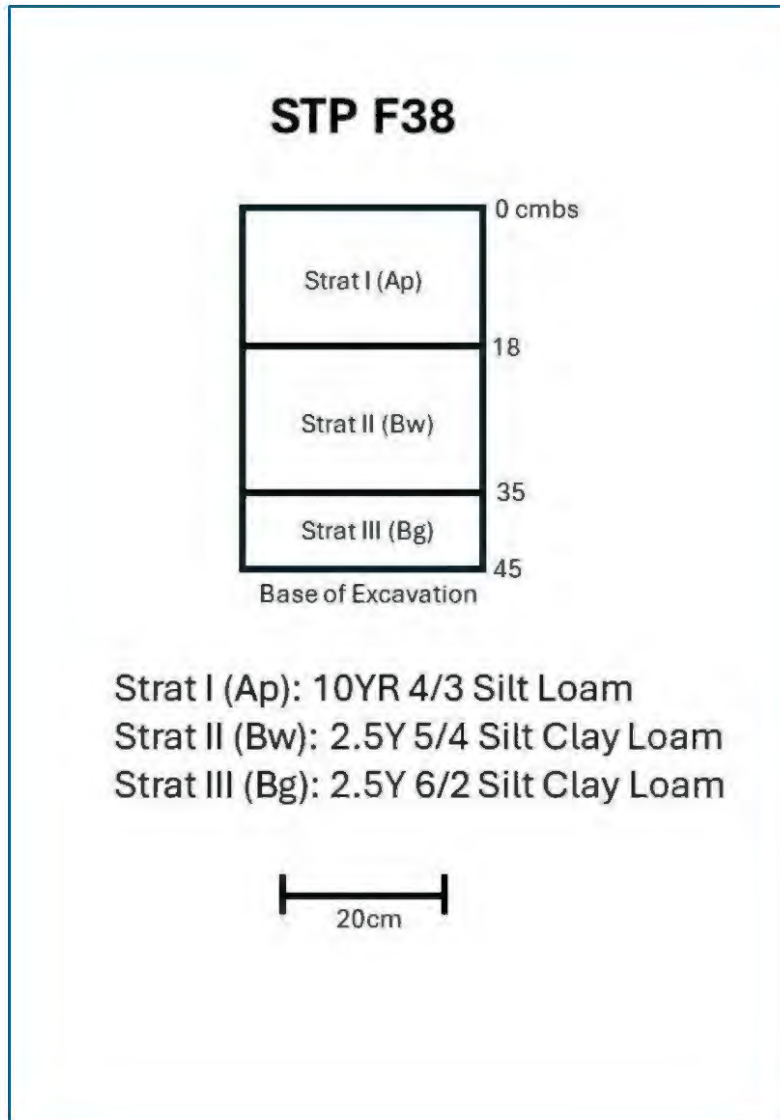


Figure 8. Representative Soil Profile from Survey Block F.

Appendix E Artifact Inventory

Site Number	Field ID	FS #	Surface/STP	Depth (cmbs)	Stratum	Artifact Description	Material Type	Quantity
15Hk404	E02	2:01	SF E02	0-0	Ap	Flake fragment	Chert, light gray/tan semi-translucent	1
15Hk404	E02	2:02	SF E02	0-0	Ap	Secondary flake	Chert, gray	1
15Hk404	E02	3:01	E360 E5	0-10	Ap	Primary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	3:02	E360 E5	0-10	Ap	Primary flake	Chert, gray	1
15Hk404	E02	3:03	E360 E5	0-10	Ap	Shatter	Chert, gray	2
15Hk404	E02	3:04	E360 E5	0-10	Ap	Shatter	Chert, gray	1
15Hk404	E02	3:05	E360 E5	0-10	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	4:01	E360 E5N5	0-18	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	4:02	E360 E5N5	0-18	Ap	Flake fragment	Chert, light gray/tan semi-translucent	1
15Hk404	E02	4:03	E360 E5N5	0-18	Ap	Shatter	Chert, gray	1
15Hk404	E02	5:01	E360 E10N5	0-22	Ap	Shatter	Chert, light gray/tan semi-translucent	1
15Hk404	E02	5:02	E360 E10N5	0-22	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	6:01	E360 E5S5	0-18	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	6:02	E360 E5S5	0-18	Ap	Flake fragment	Chert, light gray/tan semi-translucent	2
15Hk404	E02	7:01	E360 E10S5	37-50	Bw	Flake fragment	Chert, gray	1
15Hk404	E02	8:01	E360 E15S5	0-25	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	8:02	E360 E15S5	0-25	Ap	Flake fragment	Chert, light gray/tan semi-translucent	1
15Hk404	E02	8:03	E360 E15S5	0-25	Ap	Flake fragment	Chert, olive tan	2
15Hk404	E02	9:01	E360 E15S5	25-49	Bw	Flake fragment	Chert, gray	1
15Hk404	E02	9:02	E360 E15S5	25-49	Bw	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	9:03	E360 E15S5	25-49	Bw	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	10:01	E360 W5S5	0-24	Ap	Flake fragment	Jasper	1
15Hk404	E02	11:01	E360 W10S10	0-34	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	12:01	E360 W10	0-10	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	13:01	E360 E10	0-9	Ap	Flake fragment	Chert, light gray/tan semi-translucent	3
15Hk404	E02	13:02	E360 E10	0-9	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	13:03	E360 E10	0-9	Ap	Flake fragment	Chert, gray	2
15Hk404	E02	14:01	E360 S10	0-15	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	15:01	E360 5ES10	0-20	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	16:01	E360 E10S10	30-40	Ap	Primary flake	Chert, olive tan	1
15Hk404	E02	17:01	E360 W10N05	40-45	Ap	Flake fragment	Chert, olive tan	1
15Hk404	E02	17:02	E360 W10N05	40-45	Ap	Secondary flake	Chert, gray	1
15Hk404	E02	17:03	E360 W10N05	40-45	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	17:04	E360 W10N05	40-45	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	17:05	E360 W10N05	40-45	Ap	Flake fragment	Chert, light gray/tan semi-translucent	2
15Hk404	E02	18:01	E360 W10N10	0-70	FILL	Flake fragment	Chert, gray	2
15Hk404	E02	18:02	E360 W10N10	0-70	FILL	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	18:03	E360 W10N10	0-70	FILL	Biface fragment	Chert, light gray/tan semi-translucent	1
15Hk404	E02	19:01	E360 E15	0-14	Ap	Tertiary flake	Chert, light gray/tan semi-translucent	1

Site Number	Field ID	FS #	Surface/STP	Depth (cmbs)	Stratum	Artifact Description	Material Type	Quantity
15Hk404	E02	19:02	E360 E15	0-14	Ap	Shatter	Chert, gray	1
15Hk404	E02	19:03	E360 E15	0-14	Ap	Secondary flake	Chert, gray	1
15Hk404	E02	20:01	E360 W15N10	0-70	FILL	Secondary flake	Chert, gray	1
15Hk404	E02	21:01	E360 W15N15	30-40	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	22:01	E360	0-12	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	23:01	E360 S05	0-12	Ap	Secondary flake	Chert, gray	1
15Hk404	E02	23:02	E360 S05	0-12	Ap	Shatter	Chert, gray	3
15Hk404	E02	23:03	E360 S05	0-12	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	23:04	E360 S05	0-12	Ap	Flake fragment	Chert, gray	1
15Hk404	E02	23:05	E360 S05	0-12	Ap	Flake fragment	Chert, light gray/tan semi-translucent	1
15Hk404	E02	23:06	E360 S05	0-12	Ap	Shatter	Chert, light gray/tan semi-translucent	1
15Hk404	E02	24:01	E361	10-20	Ap	Secondary flake	Chert, gray	1
15Hk404	E02	25:01	E361 S5	0-28	Ap	Secondary flake	Chert, olive tan	1
15Hk404	E02	26:01	E361 E5S5	0-25	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	27:01	E361 E10S5	0-25	Ap	Secondary flake	Chert, light gray/tan semi-translucent	1
15Hk404	E02	27:02	E361 E10S5	0-25	Ap	Secondary flake	Chert, gray	1
15HK405	E03	28:01	STP E640	0-14	Ap	Other ground & pecked stone tools	Sandstone	1
15HK405	E03	28:02	STP E640	0-14	Ap	Secondary flake	Chert, light gray/tan semi-translucent	4
15HK405	E03	28:03	STP E640	0-14	Ap	Flake fragment	Chert, gray	1
15HK405	E03	28:04	STP E640	0-14	Ap	Flake fragment	Chert, light gray/tan semi-translucent	1
15HK405	E03	28:05	STP E640	0-14	Ap	Retouched flake	Chert, gray	1
15HK405	E03	29:01	STP E639	45-55	B	Flake fragment	Chert, gray	1
15HK405	E03	29:02	STP E639	45-55	B	Flake fragment	Chert, light gray/tan semi-translucent	1
15HK405	E03	30:01	STP E639 E5	10-15	Ap	Secondary flake	Chert, gray	1
15HK405	E03	30:02	STP E639 E5	10-15	Ap	Flake fragment	Chert, gray	1
15HK405	E03	31:01	STP E639 N5	0-34	Ap	Flake fragment	Chert, light gray/tan semi-translucent	1
15HK405	E03	32:01	Surface	0-0	Surface	Shatter	Chert, gray	1
15HK405	E03	33:01	Surface	0-0	Surface	Flake fragment	Chert, light gray/tan semi-translucent	1
15HK405	E03	34:01	Surface	0-0	Surface	Flake fragment	Chert, gray	1
15HK405	E03	34:02	Surface	0-0	Surface	Biface, late stage	Chert, gray	1
15HK405	E03	35:01	Surface	0-0	Surface	Flake fragment	Chert, light gray/tan semi-translucent	1
15HK405	E03	36:01	Surface	0-0	Surface	Secondary flake	Chert, light gray/tan semi-translucent	1
15HK405	E03	37:01	Surface	0-0	Surface	Flake fragment	Chert, gray	1
15HK405	E03	38:01	Surface	0-0	Surface	Flake fragment	Chert, light gray/tan semi-translucent	1
15HK405	E03	39:01	Surface	0-0	Surface	Secondary flake	Chert, light gray/tan semi-translucent	1
15HK405	E03	39:02	Surface	0-0	Surface	Flake fragment	Silstone	1
15HK405	E03	40:01	Surface	0-0	Surface	Biface fragment	Chert, gray	1
15HK405	E03	41:01	Surface	0-0	Surface	Flake fragment	Chert, light gray/tan semi-translucent	1

Site Number	Field ID	FS #	Surface/STP	Depth (cmbs)	Stratum	Artifact Description	Material Type	Quantity
15HK405	E03	42:01	Surface	0-0	Surface	Flake fragment	Chert, gray	1
15HK405	E03	43:01	Surface	0-0	Surface	Secondary flake	Chert, gray	1
15HK405	E03	44:01	Surface	0-0	Surface	Biface fragment	Chert, gray	1
15HK405	E03	45:01	Surface	0-0	Surface	Primary flake	Chert, gray	1
15HK405	E03	46:01	Surface	0-0	Surface	Secondary flake	Chert, light gray/tan semi-translucent	1
15HK405	E03	46:02	Surface	0-0	Surface	Flake fragment	Chert, light gray/tan semi-translucent	1
15HK405	E03	47:01	Surface	0-0	Surface	Shatter	Chert, gray	1
15HK405	E03	48:01	Surface	0-0	Surface	Shatter	Chert, gray	2
15HK405	E03	49:01	Surface	0-0	Surface	Biface, late stage	Chert, gray	1
15HK405	E03	50:01	Surface	0-0	Surface	Biface, middle stage	Chert, gray	1
15HK405	E03	51:01	Surface	0-0	Surface	Secondary flake	Chert, gray	1
15HK405	E03	52:01	Surface	0-0	Surface	Side scraper	Chert, gray	1
15HK405	E03	53:01	Surface	0-0	Surface	Secondary flake	Chert, light gray/tan semi-translucent	1
15HK405	E03	53:02	Surface	0-0	Surface	Wasted core	Chert, gray	1
15HK405	E03	54:01	Surface	0-0	Surface	Point preform	Chert, gray	1
15HK405	E03	55:01	Surface	0-0	Surface	Secondary flake	Chert, gray	1
15HK405	E03	56:01	Surface	0-0	Surface	Core, major reduction	Chert, gray	1
15HK405	E03	58:01	Surface	0-0	Surface	Knife	Chert, gray	1
15HK405	E03	58:02	Surface	0-0	Surface	Biface fragment	Chert, gray	1
15HK405	E03	58:03	Surface	0-0	Surface	Biface fragment	Chert, gray	1
15HK405	E03	58:04	Surface	0-0	Surface	Side scraper	Chert, gray	1
15HK405	E03	58:05	Surface	0-0	Surface	Biface fragment	Chert, gray	1
15HK405	E03	58:06	Surface	0-0	Surface	Biface fragment	Chert, gray	1
15HK405	E03	58:07	Surface	0-0	Surface	Shatter	Chert, gray	3
15HK405	E03	58:08	Surface	0-0	Surface	Shatter	Chert, gray	1
15HK405	E03	58:09	Surface	0-0	Surface	Secondary flake	Chert, gray	2
15HK405	E03	58:10	Surface	0-0	Surface	Secondary flake	Chert, gray	2
15HK405	E03	58:11	Surface	0-0	Surface	Secondary flake	Chert, gray	2
15HK405	E03	58:12	Surface	0-0	Surface	Secondary flake	Chert, light gray/tan semi-translucent	9
15HK405	E03	58:13	Surface	0-0	Surface	Flake fragment	Chert, gray	16
15HK405	E03	58:14	Surface	0-0	Surface	Flake fragment	Chert, light gray/tan semi-translucent	4
15HK405	E03	58:15	Surface	0-0	Surface	Biface fragment	Chert, gray	1
15HK405	E03	58:16	Surface	0-0	Surface	Fire-cracked rock	Sandstone	1
N/A	E01	1:01	STP E75	0-14	Ap	Biface Fragment	Chert, gray	1
N/A	F01	59.01	Surface	0-0	Surface	Retouched flake	Chert, gray	1

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 7: Provide the following information regarding the battery storage system:

- a. Safety data sheets for the energy storage system.
- b. The environmental impact of the battery storage system.
- c. Expected life of the batteries.
- d. Explain how the battery storage system installation will comply with National Fire

Protection Association Standard 855.

Response 7(a):

Weirs Creek Solar has not selected the battery energy storage system (“BESS”). When the product is selected, Weirs Creek Solar will update this response with the safety data sheets.

Response 7(b):

The battery storage system is located in the Project footprint of the solar array facility. The environmental desktop studies, Threatened and Endangered Species (“TES”) agency requests, aquatic resources delineation, and cultural resources field survey conducted for the Project all cover the area where the battery storage system will be located. No aquatic resources, cultural resources, FEMA floodplain, potential bat habitat or other TES habitat, or oil and gas or water wells are mapped in the area where the battery storage system is anticipated to be located.

Response 7(c):

The expected life of the batteries is 20 years.

Response 7(d):

The Project will be designed and constructed in accordance with the National Fire Protection Association (“NFPA”) 855 standard. The EPC and Weirs Creek Solar will ensure the construction meets the requirements in this standard.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 8: Provide decommissioning plans for the battery storage system. Given that the batteries contain hazardous materials, explain how they will be disposed of during decommissioning and how the project will follow U.S. Environmental Protection Agency (EPA) rules.

Response 8:

At the end of the Project's operational life, it will be decommissioned so the land may be returned to prior use in a substantially similar state as it was prior to construction. The batteries will be disposed of at an EPA approved facility or recycled. Metal and scrap equipment that do not have free flowing oil could be used for salvage.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 9: Describe the hazard detection systems that will be used for the battery energy storage system (BESS) facility.

Response **9:**

Each lithium-ion battery container will be equipped with fire prevention and detection systems that comply with applicable National Fire Protection Association (“NFPA”) standards. The Project will comply with Federal Energy Regulatory Commission (“FERC”) interconnection standards. All components of the Project have been designed to comply with the National Electric Safety Code (“NESC”), National Electric Code, and/or Institute of Electrical and Electronics Engineers (“IEEE”) standards or guidelines. The Project design includes engineering and safety controls to prevent fire and explosion. Control measures include battery management systems (BMS) and gas detection systems which monitor and shut down batteries before a hazard. Weirs Creek requires cooling and safety systems be integrated into battery containers. The Project will also be equipped with its own thermal management system to ensure it operates within a prescribed temperature range. A battery management system will monitor voltage, temperature, and current for the reliable and efficient transfer of energy. The Weirs Creek Solar battery systems will connect to a central monitoring facility in Palm Beach Gardens, Florida. All monitoring and performance information is fed back to the Renewable Operations Control Center 24 hours a day, 7 days a week. The BESS will automatically shut off if the batteries are operating outside of the predefined parameters.

Notification will be provided to the local fire department prior to construction so that the Fire Department can visit the Project during construction to obtain an on-the-ground understanding of the Project layout and access points, and protocols in place. During this visit, training will be provided to the local fire department regarding BESS facility safety standards and emergency operations protocol.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 10: Document the different components of the proposed BESS facility.

Response 10:

Battery Technology. The Project will use lithium-ion or similar battery technology. In lithium-ion batteries, lithium ions move from the negative electrode through an electrolyte to the positive electrode during discharge and back when charging. Lithium-ion batteries use a lithium compound as the material at the positive electrode and typically use graphite at the negative electrode. A lithium-ion battery storage system would be composed of battery cells assembled in a series of battery modules. The battery modules would be installed in self-supporting racks electrically connected either in a series or parallel to each other.

Enclosure Units and Controllers. The Project would include BESS enclosures and Power Conversion System ("PCS") enclosures, which would be divided into blocks on the Project site. The BESS enclosures would be made of steel, or aluminum or a similar material, and would house the batteries, storage system controllers (i.e., inverters and transformers), heating, ventilation, air conditioning (HVAC) units or liquid cooling system, and fire detection systems. The BESS enclosures would also include a battery management system which monitors battery voltage, current, temperature, security, fault diagnosis and management in real-time. There would be no internal open space available for entry or occupation and all battery racking would be fully accessible from the exterior of the container via external doors. Power for the cooling system, lighting, and other electrical systems would be provided through a connection to the on-site station

service transformer with connection lines installed above and/or below ground. BESS enclosures would be placed on steel piles, drilled concrete piers, concrete slabs, or similar foundation. Typical BESS enclosures would be approximately 20 feet long, 9 feet wide, and 10 feet high.

Typical PCS enclosures would be approximately 22 feet long, 7 feet wide, and 10 feet tall. Each PCS enclosure would include an inverter, protection equipment, DC and AC circuit breakers, filter equipment, equipment terminals, a transformer, and a connection cabling system.

Batteries operate with DC electricity that must be converted to AC for compatibility with the existing electric grid. The PCS enclosures would house inverters to convert between AC and DC and would be located outside the BESS enclosures along with transformers that would step up the voltage. Controllers ensure that the BESS effectively responds to grid emergency conditions and provides a secondary safety system designed to safely shut down the facility.

Project Collector Substation. The Project collector substation would be the termination point of the collection system of alternating current electricity. The power to and from the PCS units would be passed through a final interconnection step-up transformer to convert it between 34.5 kV and 161 kV.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 11: Explain how the BESS facility will be secured and provide any safety plans that will be implemented to prevent or mitigate identified safety concerns.

Response 11:

The Project will be secured via a fence and monitored 24/7 by the remote operations control center. Weirs Creek Solar will create an Emergency Response Plan and that plan will be provided to local fire districts and first responders for any emergencies that could occur.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 12: Explain who will ensure all project components and protection systems are adequate and effective before the start of operations.

Response 12:

Extensive commissioning and testing procedures are implemented by the EPC to ensure the site will be fully operational prior to energization in accordance with quality assurance, quality control, and safety standards.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 13: Provide any updated Haul Route plans. If plans have not been finalized, provide when they will be final.

Response 13:

Haul routes for the project will be identified once the EPC contractor is onboarded. It is anticipated the haul routes will be finalized in the first quarter of 2025.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 14: Provide documentation, if any, of communications with the Providence Webster County Airport or the Federal Aviation Administration (FAA) regarding the project since Weirs Creek Solar's responses to Commission Staff's First Request for Information.

Response 14:

Weirs Creek Solar is working with Capitol Airspace Group to determine and obtain any permits necessary from the Federal Aviation Administration (FAA) and local airports. It is estimated the process to receive a determination from the FAA will take approximately four months. Once the FAA issues a determination, it is valid for eighteen months. Weirs Creek Solar will submit the information requested to the FAA in the fourth quarter of 2024. Please see Attachment 2-14 for the preliminary information provided to the FAA.

ATTACHMENT 2-14



July 11, 2024

NextEra Energy Resources, LLC
700 Universe Blvd
Juno Beach, FL 33408

Re: Weir's Creek Solar Project

Dear Lester Morales,

Capitol Airspace assessed the proposed Weir's Creek Solar project located in Hopkins and Webster Counties, Kentucky to determine if proposed structures and temporary construction equipment would exceed notice criteria defined by 14 CFR Part 77.9. These notice criteria have been established by the Federal Aviation Administration (FAA) to ensure that structures that exceed certain heights or are near airports are reviewed by the FAA to determine if they would pose a hazard to air navigation.

The criteria states that structures with a planned height greater than 200 feet above ground level (AGL) must be submitted to the FAA for aeronautical study. In addition, structures that exceed a 100:1 (run:rise) slope within 20,000 feet of a public use airport runway (longest runway greater than 3,200 feet in length), 50:1 slope within 10,000 feet of a public use airport runway (longest runway less than 3,200 feet in length), or 25:1 slope within 5,000 feet of a public use heliport landing area must also be submitted to the FAA for aeronautical study.

In addition to 14 CFR Part 77.9 notification criteria, Capitol Airspace also evaluated "instrument approach areas" incorporated by reference in FAA Order 7400.2P. Proposed structures that exceed 14 CFR Part 77.9 notification criteria or instrument approach areas must be submitted to the FAA for aeronautical study.

Based on the location information provided by NextEra Energy Resources, LLC, the Weir's Creek Solar project is located within the Providence-Webster County (8M9) §77.9(b) notification surface (blue outline, [Figure 1](#), [Figure 2](#), & [Figure 3](#)). United States Geological Survey (USGS) indicates that 125-foot AGL temporary construction equipment could exceed this surface in the western and northeastern sections of the solar array boundary (yellow areas, [Figure 1](#)). Additionally, USGS indicates that 130-foot AGL transmission line structures could exceed this surface in the northwestern section of the transmission line boundary (orange area, [Figure 2](#)). Finally, 200-foot AGL temporary construction equipment could also exceed this surface throughout the entire transmission line boundary (orange and yellow areas, [Figure 2](#)) and substation boundary (yellow area, [Figure 3](#)).

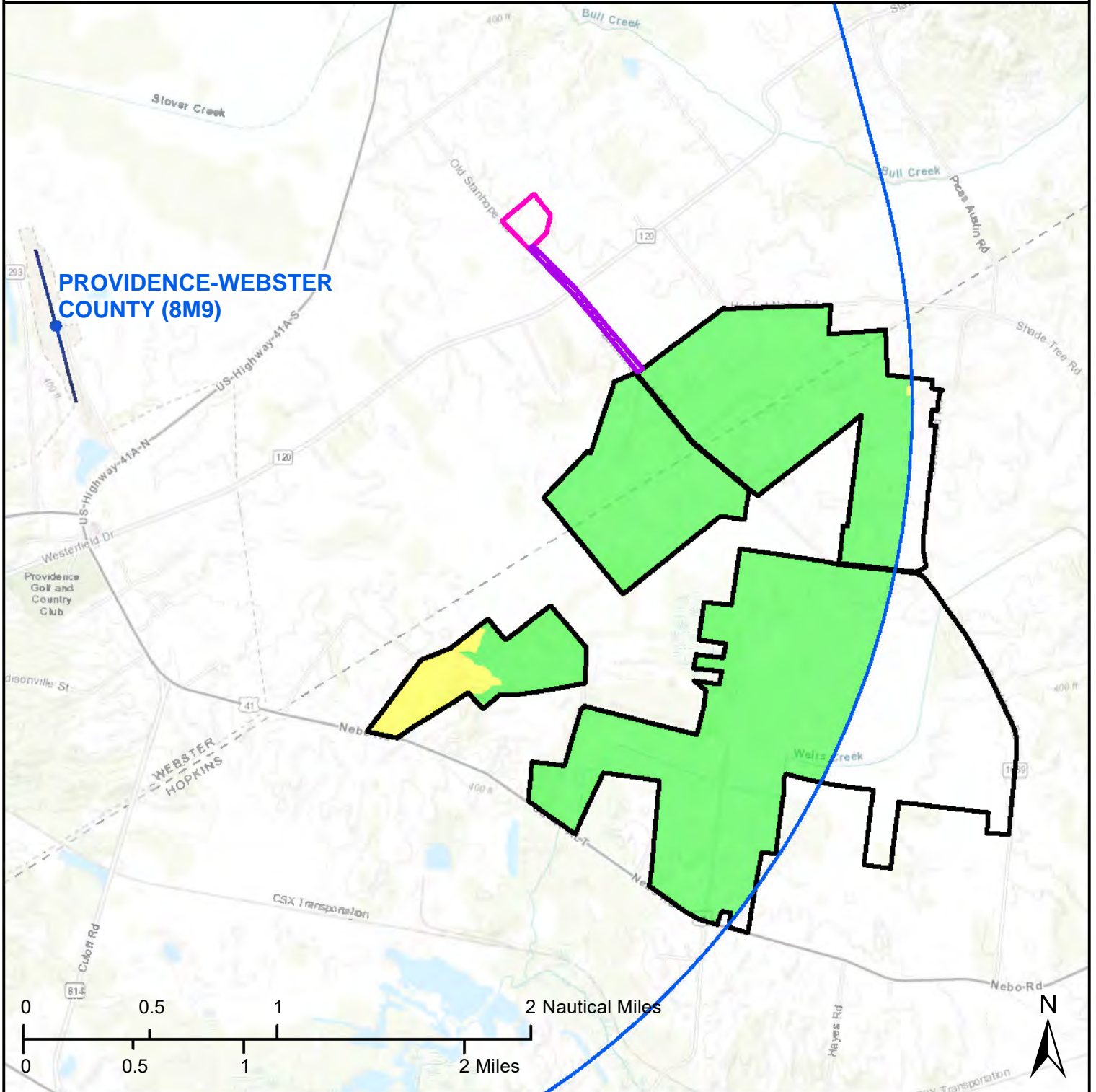
As a result, depending on placement, 130-foot AGL transmission line structures could require filing. Additionally, depending on placement 125-foot AGL temporary construction equipment could require filing. Finally, 200-foot AGL temporary construction equipment would require filing.

Please direct any questions regarding the findings of this analysis to [Dan Underwood](#) or [Nick Lee](#) at (703) 256-2485.

Best Regards,

Nick Lee
Senior Airspace/GIS Specialist
Capitol Airspace Group
6350 Walker Lane, Suite 450
Alexandria, VA 22310

The USGS 1/3 Arc Second Digital Elevation Model (DEM) data used to create this map has a vertical accuracy of 1.89 meters RMSE. This map should only be used for general planning purposes and not exact structure siting.



PROVIDENCE-WEBSTER COUNTY (8M9)

Clearance

Height - AGL Feet

< 12

≥ 12 < 125

≥ 125

14 CFR Part 77.9(b) Notification Surface



Solar Array Boundary

Transmission Line Boundary

Substation Boundary

Weir's Creek Solar Project

Solar Array Notice Criteria Map

Plot Date:
11 July 2024

Coordinate System:
NAD 1983 UTM Zone 16N

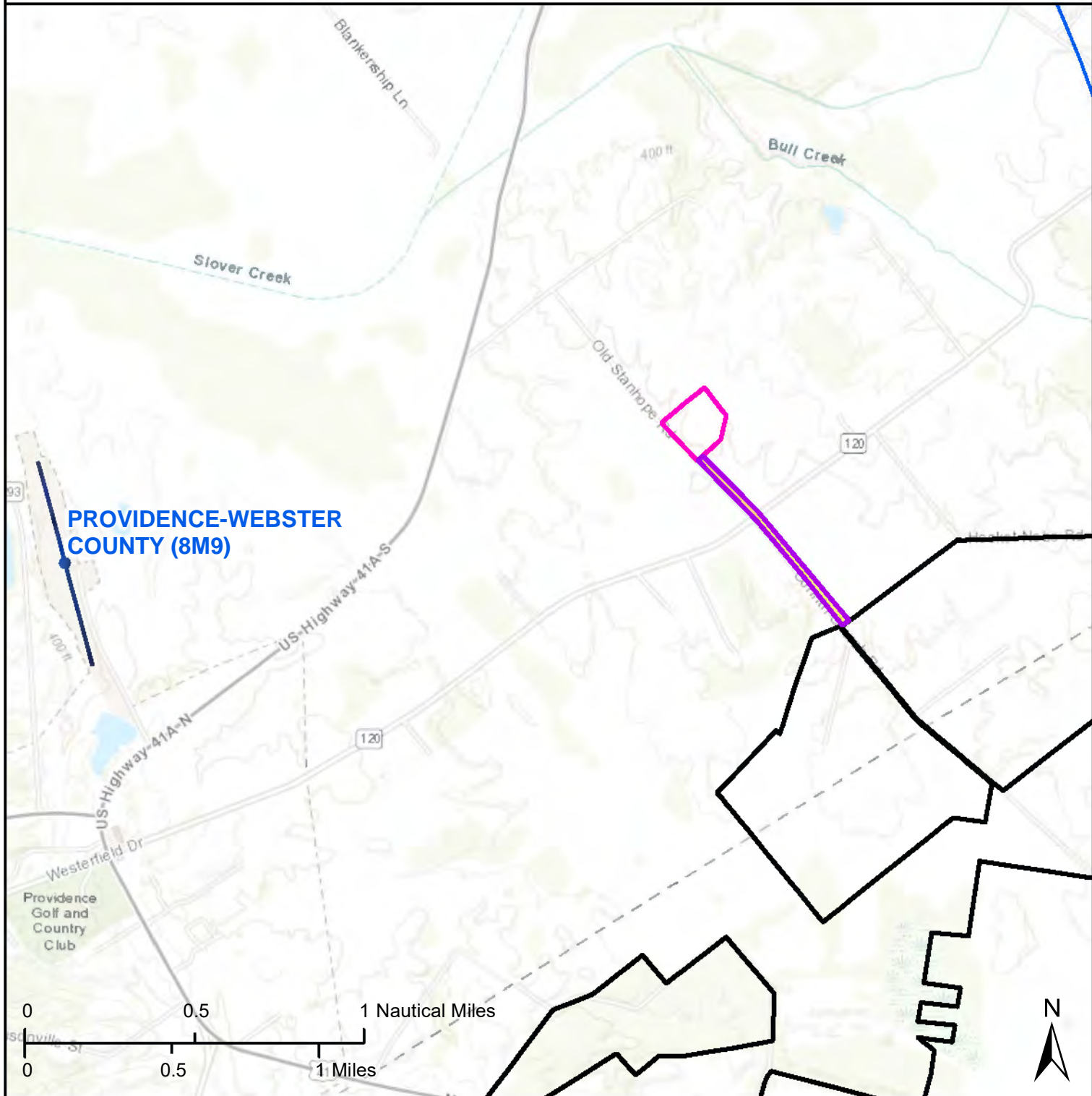
Nick Lee

Figure 1



Capitol Airspace Group


The USGS 1/3 Arc Second Digital Elevation Model (DEM) data used to create this map has a vertical accuracy of 1.89 meters RMSE. This map should only be used for general planning purposes and not exact structure siting.




Clearance

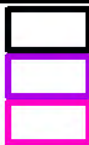
Height - AGL Feet

 < 130

 ≥ 130 < 200

 ≥ 200

 14 CFR Part 77.9(b) Notification Surface



Solar Array Boundary

Transmission Line Boundary

Substation Boundary

Weir's Creek Solar Project
Transmission Line Notice Criteria Map

Plot Date:
11 July 2024

Coordinate System:
NAD 1983 UTM Zone 16N

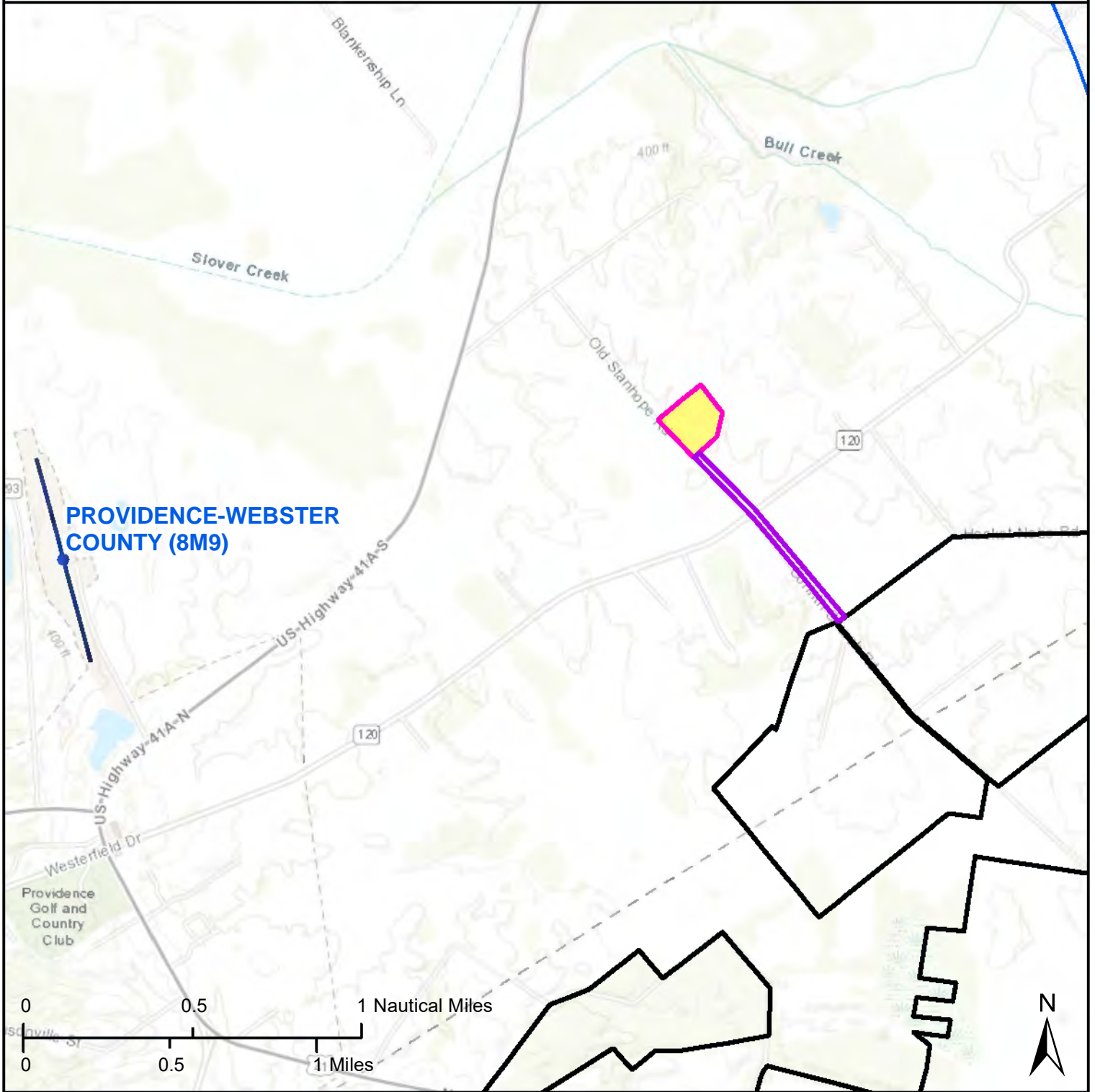
Nick Lee

Figure 2



Capitol Airspace Group

The USGS 1/3 Arc Second Digital Elevation Model (DEM) data used to create this map has a vertical accuracy of 1.89 meters RMSE. This map should only be used for general planning purposes and not exact structure siting.



PROVIDENCE-WEBSTER COUNTY (8M9)

Clearance	Solar Array Boundary
Height - AGL Feet	Transmission Line Boundary
< 70	Substation Boundary
≥ 70 < 200	
≥ 200	
14 CFR Part 77.9(b) Notification Surface	

Weir's Creek Solar Project
Substation Notice Criteria Map

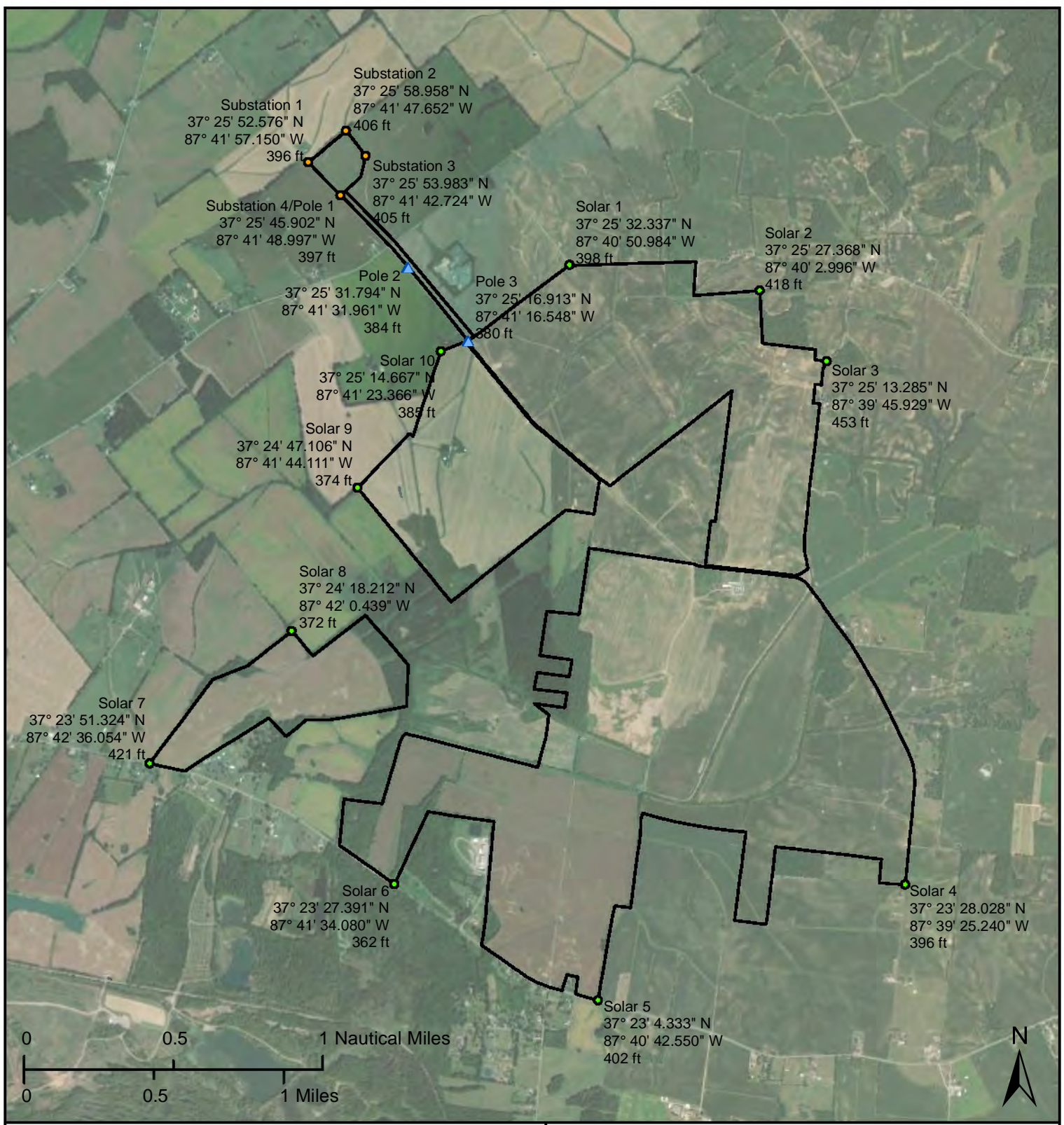
Plot Date:
11 July 2024

Coordinate System:
NAD 1983 UTM Zone 16N

Nick Lee

Figure 3

Capitol Airspace Group



- Solar Array - Notice Criteria Assessment
- ▲ Transmission Line - Notice Criteria Assessment
- Substation - Notice Criteria Assessment


Weir's Creek Solar Project
Notice Criteria Assessment Overview

Plot Date:
11 July 2024

Coordinate System:
NAD 1983 UTM Zone 16N

Nick Lee

Figure 1


Capitol Airspace Group



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type: SOLAR | Solar Panel ▼
Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 32.34 S N ▼

Longitude: 87 Deg 40 M 50.98 S W ▼

Horizontal Datum: NAD83 ▼

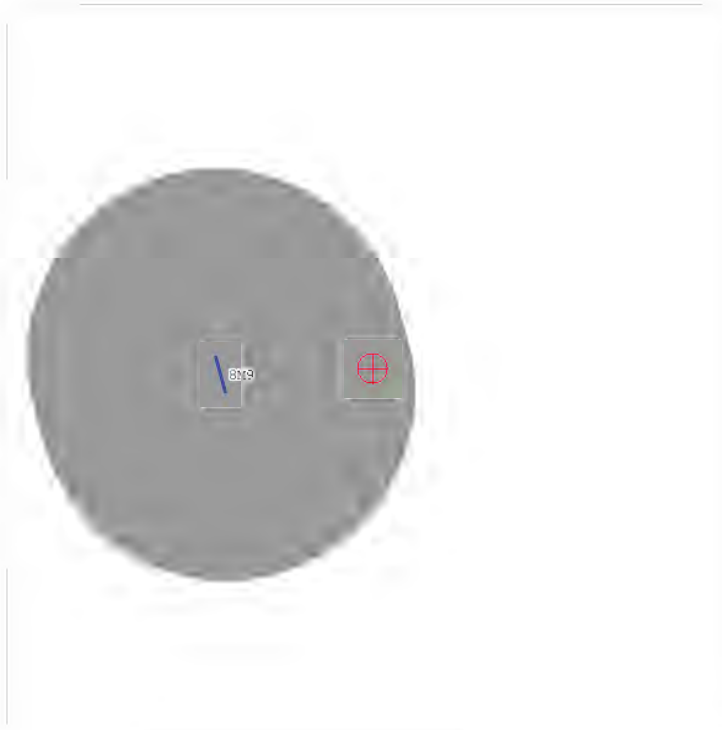
Site Elevation (SE): 398 (nearest foot)

Structure Height : 125 (nearest foot)

Is structure on airport: No Yes

Results

You do not exceed Notice Criteria.





Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type: SOLAR | Solar Panel ▼
Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 27.37 S N ▼

Longitude: 87 Deg 40 M 2.996 S W ▼

Horizontal Datum: NAD83 ▼

Site Elevation (SE): 418 (nearest foot)

Structure Height : 125 (nearest foot)

Is structure on airport: No Yes

Results

You do not exceed Notice Criteria.



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

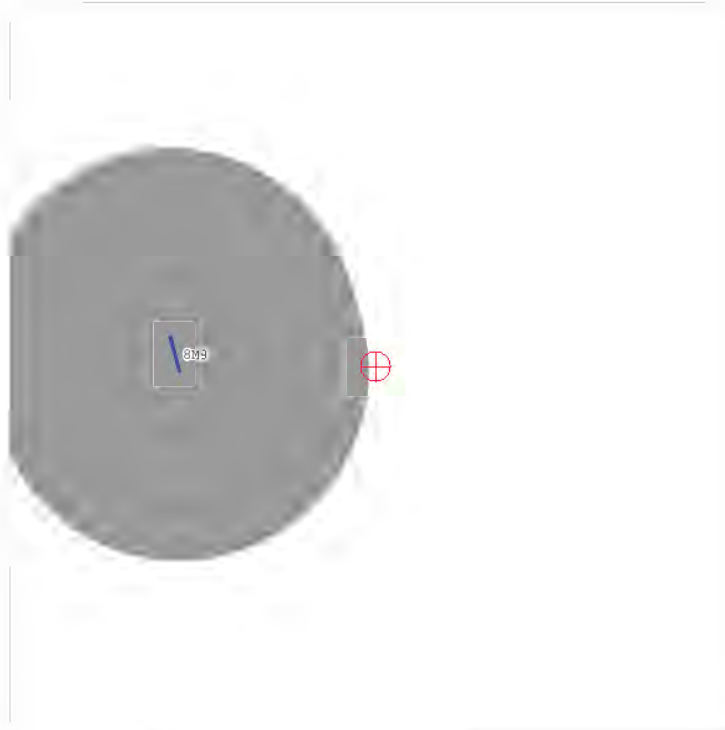
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type:	SOLAR Solar Panel			
	Please select structure type and complete location point information.			
Latitude:	37	Deg	25	M 13.29 S N
Longitude:	87	Deg	39	M 45.93 S W
Horizontal Datum:	NAD83			
Site Elevation (SE):	453	(nearest foot)		
Structure Height :	125	(nearest foot)		
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes			

Results

You do not exceed Notice Criteria.





Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type: SOLAR | Solar Panel

Please select structure type and complete location point information.

Latitude: 37 Deg 23 M 28.03 S N

Longitude: 87 Deg 39 M 25.24 S W

Horizontal Datum: NAD83

Site Elevation (SE): 396 (nearest foot)

Structure Height : 125 (nearest foot)

Is structure on airport: No Yes

Results

You do not exceed Notice Criteria.



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

*** Structure Type:** SOLAR | Solar Panel

Please select structure type and complete location point information.

Latitude: 37 Deg 23 M 4.333 S N

Longitude: 87 Deg 40 M 42.55 S W

Horizontal Datum: NAD83

Site Elevation (SE): 402 (nearest foot)

Structure Height : 125 (nearest foot)

Is structure on airport: No Yes

Results

You do not exceed Notice Criteria.





Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type: SOLAR | Solar Panel

Please select structure type and complete location point information.

Latitude: 37 Deg 23 M 27.39 S N

Longitude: 87 Deg 41 M 34.08 S W

Horizontal Datum: NAD83

Site Elevation (SE): 362 (nearest foot)

Structure Height : 125 (nearest foot)

Is structure on airport: No Yes

Results

You do not exceed Notice Criteria.



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

*** Structure Type:** SOLAR | Solar Panel

Please select structure type and complete location point information.

Latitude: Deg M S

Longitude: Deg M S

Horizontal Datum:

Site Elevation (SE): (nearest foot)

Structure Height : (nearest foot)

Is structure on airport: No Yes

Results

You exceed the following Notice Criteria:

77.9(b) by 48 ft. The nearest airport is 8M9, and the nearest runway is 16/34.

The FAA requests that you file



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:** SOLAR | Solar Panel ▼
Please select structure type and complete location point information.

Latitude: 37 Deg 24 M 18.21 S N ▼

Longitude: 87 Deg 42 M 0.439 S W ▼

Horizontal Datum: NAD83 ▼

Site Elevation (SE): 372 (nearest foot)

Structure Height : 125 (nearest foot)

Is structure on airport: No Yes

Results

You do not exceed Notice Criteria.



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

*** Structure Type:** SOLAR | Solar Panel ▼
Please select structure type and complete location point information.

Latitude: 37 Deg 24 M 47.11 S N ▼

Longitude: 87 Deg 41 M 44.11 S W ▼

Horizontal Datum: NAD83 ▼

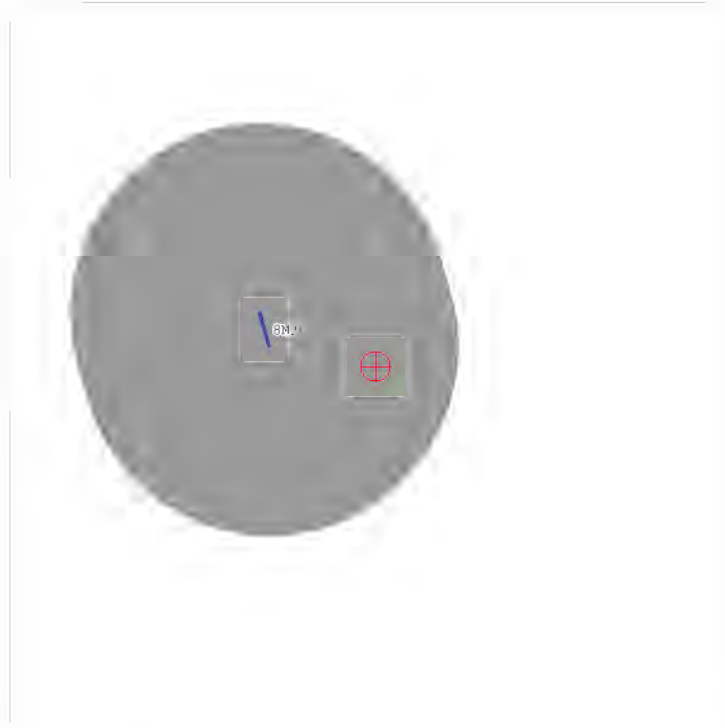
Site Elevation (SE): 374 (nearest foot)

Structure Height : 125 (nearest foot)

Is structure on airport: No Yes

Results

You do not exceed Notice Criteria.



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

*** Structure Type:** SOLAR | Solar Panel ▼
Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 14.67 S N ▼

Longitude: 87 Deg 41 M 23.37 S W ▼

Horizontal Datum: NAD83 ▼

Site Elevation (SE): 385 (nearest foot)

Structure Height : 125 (nearest foot)

Is structure on airport: No Yes

Results

You do not exceed Notice Criteria.



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

*** Structure Type:** POWER LINE | Transmission Line Tower

Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 45.90 S N

Longitude: 87 Deg 41 M 49.00 S W

Horizontal Datum: NAD83

Site Elevation (SE): 397 (nearest foot)

Structure Height : 200 (nearest foot)

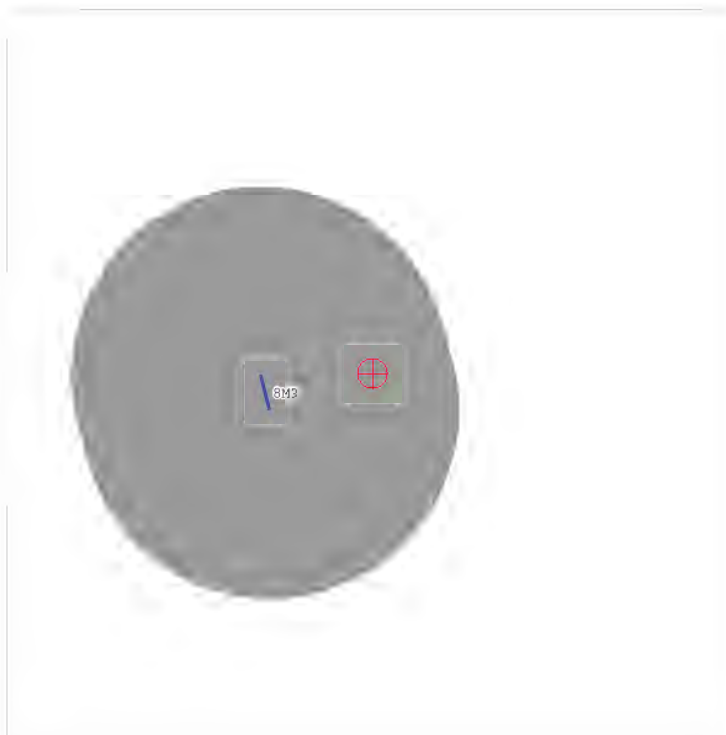
Is structure on airport: No Yes

Results

You exceed the following Notice Criteria:

77.9(b) by 94 ft. The nearest airport is 8M9, and the nearest runway is 16/34.

The FAA requests that you file



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

*** Structure Type:** POWER LINE | Transmission Line Tower
Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 31.79 S

Longitude: 87 Deg 41 M 31.96 S

Horizontal Datum: NAD83

Site Elevation (SE): 384 (nearest foot)

Structure Height : 200 (nearest foot)

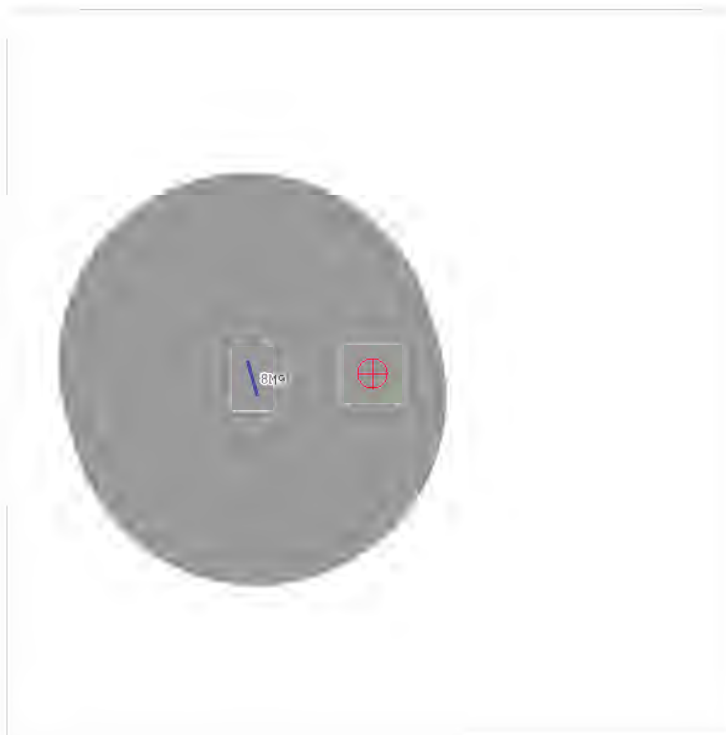
Is structure on airport: No Yes

Results

You exceed the following Notice Criteria:

77.9(b) by 68 ft. The nearest airport is 8M9, and the nearest runway is 16/34.

The FAA requests that you file



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

*** Structure Type:** POWER LINE | Transmission Line Tower

Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 16.91 S N

Longitude: 87 Deg 41 M 16.55 S W

Horizontal Datum: NAD83

Site Elevation (SE): 380 (nearest foot)

Structure Height : 200 (nearest foot)

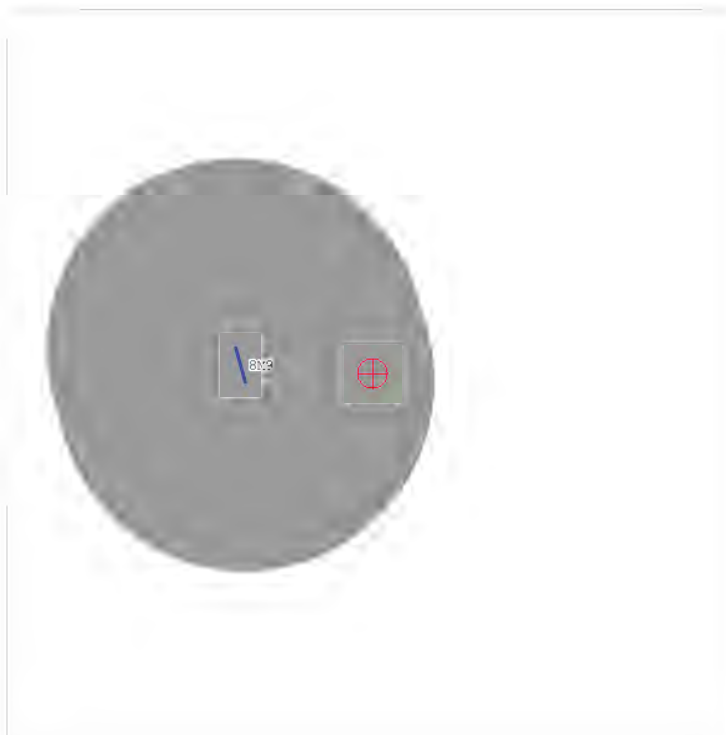
Is structure on airport: No Yes

Results

You exceed the following Notice Criteria:

77.9(b) by 53 ft. The nearest airport is 8M9, and the nearest runway is 16/34.

The FAA requests that you file





Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type: SOLAR | Solar Tower

Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 52.58 S N

Longitude: 87 Deg 41 M 57.15 S W

Horizontal Datum: NAD83

Site Elevation (SE): 396 (nearest foot)

Structure Height : 200 (nearest foot)

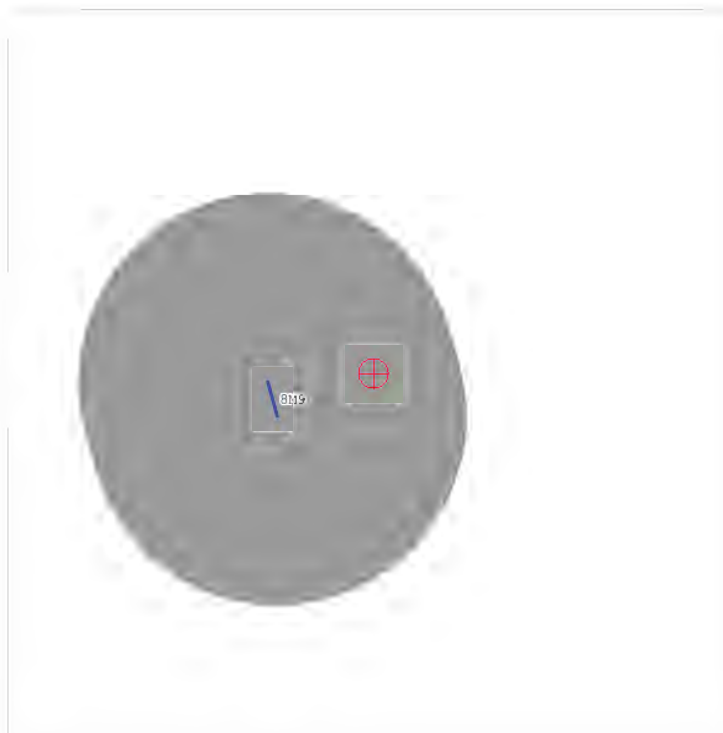
Is structure on airport: No Yes

Results

You exceed the following Notice Criteria:

77.9(b) by 101 ft. The nearest airport is 8M9, and the nearest runway is 16/34.

The FAA requests that you file





Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type: SOLAR | Solar Tower

Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 58.96 S N

Longitude: 87 Deg 41 M 47.65 S W

Horizontal Datum: NAD83

Site Elevation (SE): 406 (nearest foot)

Structure Height : 200 (nearest foot)

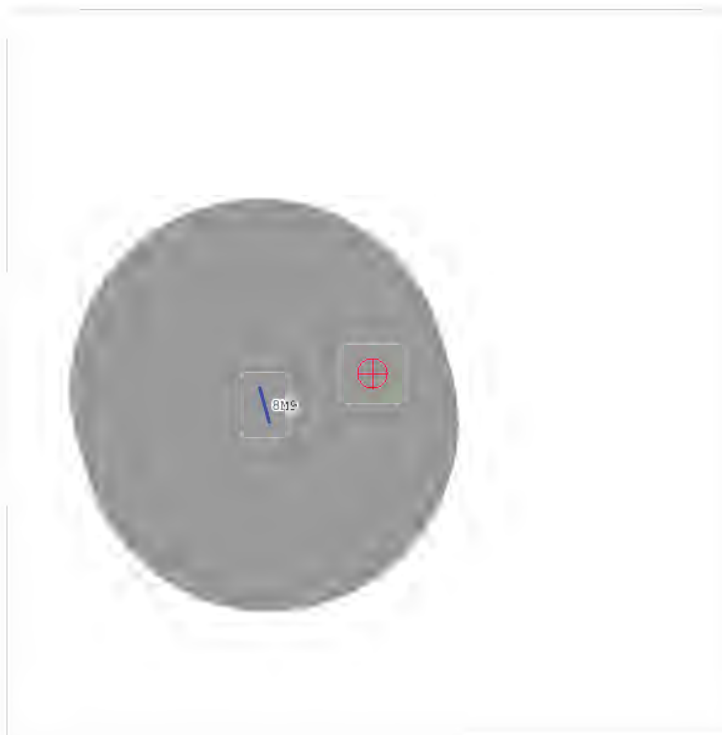
Is structure on airport: No Yes

Results

You exceed the following Notice Criteria:

77.9(b) by 104 ft. The nearest airport is 8M9, and the nearest runway is 16/34.

The FAA requests that you file



Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type:	SOLAR Solar Tower			
	Please select structure type and complete location point information.			
Latitude:	37	Deg	25	M 53.98 S N
Longitude:	87	Deg	41	M 42.72 S W
Horizontal Datum:	NAD83			
Site Elevation (SE):	405	(nearest foot)		
Structure Height :	200	(nearest foot)		
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes			

Results

You exceed the following Notice Criteria:

77.9(b) by 98 ft. The nearest airport is 8M9, and the nearest runway is 16/34.

The FAA requests that you file





Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* Structure Type: SOLAR | Solar Tower

Please select structure type and complete location point information.

Latitude: 37 Deg 25 M 45.90 S N

Longitude: 87 Deg 41 M 49.00 S W

Horizontal Datum: NAD83

Site Elevation (SE): 397 (nearest foot)

Structure Height : 200 (nearest foot)

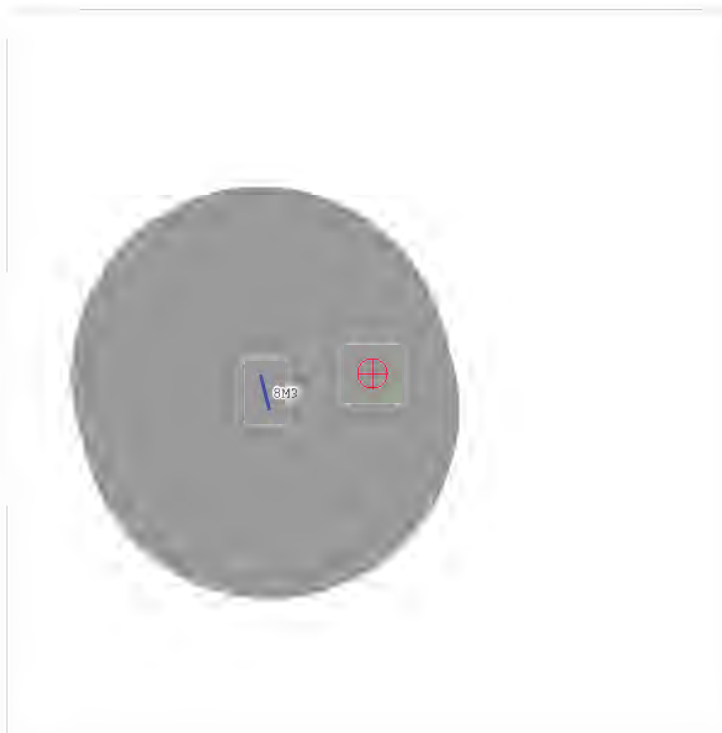
Is structure on airport: No Yes

Results

You exceed the following Notice Criteria:

77.9(b) by 94 ft. The nearest airport is 8M9, and the nearest runway is 16/34.

The FAA requests that you file



Weir's Creek Solar Project

Project Overview Map

Plot Date: 19 July 2024

Coordinate System: NAD83 / UTM zone 16N



0

1 Nautical Miles

0

1 Miles

TL01 TL02

TL04 TL03

SA01A SA02A
SA04A SA03A

SA04B
SA03B
SA02B
SA05B
SA06B
SA07B
SA08B
SA01B SA09B

Structure Location (labeled with ID)

- Proposed - Transmission Line Filing Point [4]
- Proposed - Solar Area Filing Point [13]

- Transmission Line Filing Area
- Solar Filing Area



Capitol Airspace Group

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 15: Provide documentation of any communications between Weirs Creek Solar and with the following:

- a. United States Fish and Wildlife Service.
- b. United States Fish and Wildlife Service – Kentucky Field Office.
- c. Kentucky Office of Nature Preserves.
- d. Kentucky Department of Fish and Wildlife Resources.

Response 15:

- The Applicant has had the following communications regarding potential TES for the Project Area and 1-mile buffer: U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool in June 2024
- An email to the USFWS Kentucky Field Office (KFO) requesting available information on known occurrence of sensitive species within the Project Area in May 2024. A response was received on May 28, 2024.
- A letter to the Kentucky Office of Nature Preserves requesting information on known occurrence of sensitive species within the Project Area in February 2021. A response was received on February 24, 2021.
- A letter to the Kentucky Department of Fish and Wildlife Resources (KY DFWR) requesting available information on known occurrence records of State rare and

endangered plants and animal species in the Project Area in March 2021. A response was received on March 11, 2021.

Please see Attachment 2-15 for documentation of these communications.

ATTACHMENT 2-15

Beth Wilburn

From: Mason, Elizabeth (EEC) <elizabeth.mason@ky.gov>
Sent: Wednesday, February 24, 2021 3:36 PM
To: Amanda Mueller
Cc: Xiomara Gerlach
Subject: RE: Solar Project Information Request
Attachments: Deliverables.zip

Amanda -

I've attached your deliverables here. I've included one observation shapefile since there were no sensitive species observed in your project area. I will follow up with an invoice before the end of the week.

If there is anything else I can help you with let me know!

Liz

From: Amanda Mueller <amueller@ectinc.com>
Sent: Tuesday, February 23, 2021 11:44 AM
To: Mason, Elizabeth (EEC) <elizabeth.mason@ky.gov>
Cc: Xiomara Gerlach <xgerlach@ectinc.com>
Subject: RE: Solar Project Information Request

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

Hi Liz,

Thank you for the information! We would like to proceed - please find attached the signed data license agreement. Also, we do not include a buffer.

Let me know if you have questions or need anything else.

Thank you!

Amanda Sills Mueller
Cell: 703-906-2988

From: Mason, Elizabeth (EEC) <elizabeth.mason@ky.gov>
Sent: Tuesday, February 23, 2021 11:04 AM
To: Amanda Mueller <amueller@ectinc.com>
Cc: Xiomara Gerlach <xgerlach@ectinc.com>
Subject: RE: Solar Project Information Request

Hi Amanda,

Thanks for reaching out, and I apologize for my delay in getting back to you! After reviewing the shapefile for the KML you sent it, the price for this project will be \$500. For that price I can provide a PDF with T&E species and other habitat

information, one shapefile with T&E species, and a second shapefile with any sensitive T&E species generalized to the 7.5 Min USGS Quad.

I will just need two things from you:

1. What size buffer around the project area would you like data for? Since your provided shapefile is already buffered we can just do that shapefile with no buffer, or we can do 1, 2.5 or 5 miles.
2. I have attached a data agreement for you to sign if that sounds like something you want to move forward with. Once you return that to me I can send you the data, and an invoice email.

If you have any questions let me know!

Liz

From: Amanda Mueller <amueller@ectinc.com>
Sent: Friday, February 19, 2021 4:48 PM
To: Mason, Elizabeth (EEC) <elizabeth.mason@ky.gov>
Cc: Xiomara Gerlach <xgerlach@ectinc.com>
Subject: Solar Project Information Request

Good Evening Elizabeth,

I am emailing on behalf of a private client who is proposing the development of a commercial solar facility within portions of Webster and Hopkins Counties. While the evaluation area of our client's project exceeds 10,000 acres due to client confidentiality at this time, the actual project will be located within a smaller area. Can you provide a cost estimate for the attached KMZ showing the project's study area?

Please let me know if you have any questions or need additional information.

Thank you!

Amanda Sills Mueller
Senior Associate Scientist I
Environmental Consulting & Technology, Inc.
7208 Falls of Neuse Road, Suite 102 | Raleigh, NC 27615
703.906.2988 (Cell)
amueller@ectinc.com | www.ectinc.com

Complex Challenges Practical Solutions

Beth Wilburn

From: Slankard, Kate (KFW) <Kate.Slankard@ky.gov>
Sent: Thursday, March 11, 2021 3:59 PM
To: Amanda Mueller
Cc: Xiomara Gerlach
Subject: RE: Eagle Nest Location Inquiry - Webster and Hopkins Counties

Hi,

I'm sorry for the delayed response. We do not have any bald eagle nests recorded in this area or within ½ mile of it.

Kate Slankard

Avian Biologist
Nongame Branch
KY Department of Fish and Wildlife Resources
#1 Sportsman's Lane
Frankfort, KY 40601
Phone: 502-892-4474
Fax: 502-564-4519
kate.slankard@ky.gov



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From: Amanda Mueller <amueller@ectinc.com>
Sent: Thursday, February 25, 2021 4:13 PM
To: Slankard, Kate (KFW) <Kate.Slankard@ky.gov>
Cc: Xiomara Gerlach <xgerlach@ectinc.com>
Subject: RE: Eagle Nest Location Inquiry - Webster and Hopkins Counties

Hi Kate,

My apologies! I didn't realize there was a size limitation for your review. I have included a new shapefile here, which has refined the boundary down from the file in my previous email. Please let me know if the refined boundary would work for your review.

Best,

Amanda Sills Mueller
Cell: 703-906-2988

From: Slankard, Kate (KFW) <Kate.Slankard@ky.gov>
Sent: Thursday, February 25, 2021 10:37 AM
To: Amanda Mueller <amueller@ectinc.com>
Cc: Xiomara Gerlach <xgerlach@ectinc.com>
Subject: RE: Eagle Nest Location Inquiry - Webster and Hopkins Counties

Hi Amanda,

We cannot provide the locations of eagle nests in this large of an area without a formal data sharing agreement which requires review from legal staff. (This take a long time). When you narrow down the focus of this project, you could send the actual project footprint and we can let you know if there are any eagle nests that will be impacted by the smaller project footprint. I see you have copied Xiomara. She has recently gone through this process with us and should be familiar. We do have several nests in Hopkins and Webster County.

Thanks,

Kate Slankard

Avian Biologist
Nongame Branch
KY Department of Fish and Wildlife Resources
#1 Sportsman's Lane
Frankfort, KY 40601
Phone: 502-892-4474
Fax: 502-564-4519
kate.slankard@ky.gov



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[Join Kentucky Wild to help conserve the nearly 1,000 species that aren't hunted or fished for in the Commonwealth!](#)

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From: Amanda Mueller <amueller@ectinc.com>
Sent: Friday, February 19, 2021 5:02 PM
To: Slankard, Kate (KFW) <Kate.Slankard@ky.gov>
Cc: Xiomara Gerlach <xgerlach@ectinc.com>
Subject: Eagle Nest Location Inquiry - Webster and Hopkins Counties

Good Evening Kate,

I am emailing on behalf of a private client who is proposing the development of a solar facility within portions of Webster and Hopkins Counties. While the evaluation area of our client's project exceeds 10,000 acres due to client confidentiality at this time, the actual project will be located within a much smaller area. Can you provide the location of known eagle nests within the attached project vicinity? This information would be helpful for planning purposes.

Please let me know if you have any questions, need additional information, or would prefer data in a different format.

Thank you!

Amanda Sills Mueller
Senior Associate Scientist I
Environmental Consulting & Technology, Inc.
7208 Falls of Neuse Road, Suite 102 | Raleigh, NC 27615
703.906.2988 (Cell)
amueller@ectinc.com | www.ectinc.com

Complex Challenges Practical Solutions

Beth Wilburn

From: Jaffe, Karah R <karah_jaffe@fws.gov>
Sent: Thursday, May 30, 2024 10:54 AM
To: Beth Wilburn
Cc: Brian.Bartels@nexteraenergy.com; Katie Simon; KentuckyES, FW4
Subject: Re: [EXTERNAL] RE: Response; Weirs Creek Solar Known Occurrence Record Request for Bats

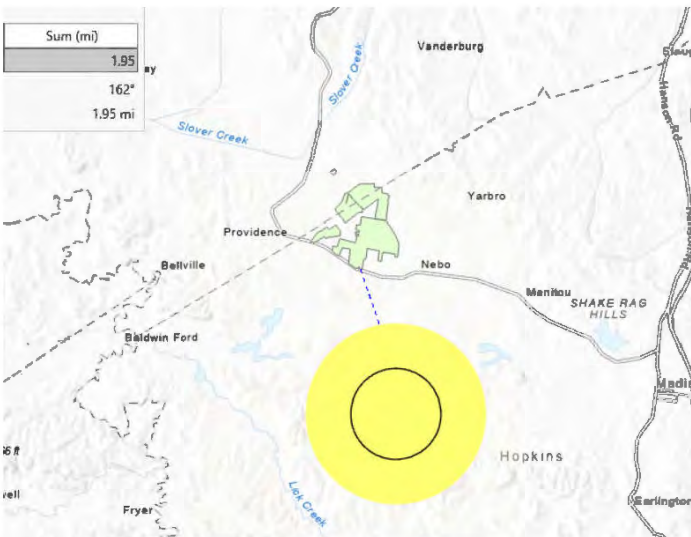
The southern NLEB record was detected in 2019. The farther NLEB record to the NW was detected in 2015. The tricolored bat (TCB) records were detected in 2019.

Additionally, we want to clarify that the distances mentioned in my previous email are from the nearest buffer to the project area, not from the actual capture or detection distance. The screenshots of the project area and referenced records are shown below. Should you require further clarification or have any other inquiries, please don't hesitate to reach out to us.

Indiana bat:



NLEB:



TCB:



Thank you,
Karah Jaffe (she/her)
Biologist
U.S. Fish and Wildlife Service
Ecological Services | Kentucky Field Office
330 W. Broadway, Room 265
Frankfort, KY 40601
Phone: +1 502-653-0550

From: Beth Wilburn <bwilburn@ectinc.com>
Sent: Wednesday, May 29, 2024 11:40 AM
To: Jaffe, Karah R <karah_jaffe@fws.gov>
Cc: Brian.Bartels@nexteraenergy.com <Brian.Bartels@nexteraenergy.com>; Katie Simon <ksimon@ectinc.com>; KentuckyES, FW4 <kentuckyes@fws.gov>
Subject: [EXTERNAL] RE: Response; Weirs Creek Solar Known Occurrence Record Request for Bats

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Thank you, Karah. Question – can you provide the dates of the occurrences listed in your email below?

Beth Wilburn
Associate Operations Manager
M: 513.313.0179



Please note that I am out of the office on Mondays from 2:30-5 PM (EST) and on Fridays 8AM-5PM (EST).

From: Jaffe, Karah R <karah_jaffe@fws.gov>
Sent: Tuesday, May 28, 2024 4:24 PM
To: Beth Wilburn <bwilburn@ectinc.com>

Cc: Brian.Bartels@nexteraenergy.com; Katie Simon <ksimon@ectinc.com>; KentuckyES, FW4 <kentuckyes@fws.gov>

Subject: Response; Weirs Creek Solar Known Occurrence Record Request for Bats

Hello,

Thank you for reaching out to us regarding the solar project development in Hopkins and Webster Counties, Kentucky.

We have reviewed the project area and would like to provide the following information on known bat occurrences:

- There is a northern long-eared bat summer occurrence situated 2 miles south of the project area and another ~15 miles northwest.
- There is one Indiana bat summer occurrence located approximately 15 miles northwest of the project area.
- Additionally, there are three tricolored bat summer acoustic detections located between 1.5 to 2 miles north and south of the project area. Please note that while the tricolored bat is currently proposed as endangered, these occurrences have been included in our response, and we recommend your consideration of this species in your project planning.

We hope this information is helpful for your project. Should you need any further details or have additional questions, please feel free to reach out to KentuckyES@fws.gov. We look forward to further coordination in the future.

Thank you,

Karah Jaffe (she/her)

Biologist

U.S. Fish and Wildlife Service

Ecological Services | Kentucky Field Office

330 W. Broadway, Room 265

Frankfort, KY 40601

Phone: +1 502-653-0550

Response to:

ECT is working with a client on the development of a solar project in Hopkins and Webster Counties in Kentucky.

I have attached a zipped ESRI shapefile of the Project Area.

Can you please provide us with any known occurrence records (IE. summer maternity roosts, winter hibernacula, mist netting captures, acoustic detections, etc.) for bat species that USFWS has for the Project Area and surrounding areas?

Note that this email serves as an informal data request and are not asking for a formal consultation or recommendations on the Project at this time.

We appreciate your input and look forward to further coordination in the future.

Thanks,



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0468 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To:

06/27/2024 16:41:13 UTC

Project code: 2024-0003283

Project Name: Weirs Creek Solar Project

Subject: Consistency letter for the project named 'Weirs Creek Solar Project' for the endangered Indiana bat and its critical habitat in the proposed project location, pursuant to the Indiana Bat Determination Key (DKey)

Dear Alyssa Dietz-Oergel:

The U.S. Fish and Wildlife Service (Service) received on **June 27, 2024** your effect determination(s) for the 'Weirs Creek Solar Project' using the Indiana Bat DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

You have agreed to the following conservation measures:

- The project proponent will implement best management practices associated with applicable federal and/or state permits during construction to minimize sedimentation in streams.

Based on your answers and the assistance of the Service's Indiana Bat DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	May affect

Consultation Status

May Affect Determinations: Species with May Affect determinations are those for which the DKey was unable to provide a conclusion or those for which you were either unsure about the determination or you chose to make a "may affect" determination. If the DKey was unable to provide a conclusion, this does not necessarily mean that the project is likely to adversely affect the species. If you think the project may affect the species or want additional technical

assistance, please follow the instructions in the "Additional Coordination" section below. If a federal action agency chooses to make a "no effect" determination for the species, there is no statutory requirement to request concurrence with that determination; however, the federal action agency should document the supporting information for this determination in their files. This documentation would typically demonstrate a lack of suitable habitat within the action area, show that no impacts to suitable habitat would occur, or provide information that the species is not reasonably certain to occur in the action area even though suitable habitat is present.

In addition to the Indiana bat, the following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Clubshell *Pleurobema clava* Endangered
- Fanshell *Cyprogenia stegaria* Endangered
- Gray Bat *Myotis grisescens* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Northern Riffleshell *Epioblasma rangiana* Endangered
- Pink Mucket (pearlymussel) *Lampsilis abrupta* Endangered
- Rabbitsfoot *Quadrula cylindrica cylindrica* Threatened
- Ring Pink (mussel) *Obovaria retusa* Endangered
- Rough Pigtoe *Pleurobema plenum* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

To address effects to other federally listed or proposed species and/or their designated critical habitat, you can request project-specific review by following the instructions in the "Next Steps" section of your species list letter, or you may use another determination key, if available.

Additional Coordination

To request additional technical assistance or consultation, please contact the Kentucky Ecological Services Field Office. When you contact the office, please provide all relevant site-specific information regarding the proposed Action. The Kentucky Ecological Services Field Office will respond within 30 to 60 days of your submittal.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Weirs Creek Solar Project

2. Description

The following description was provided for the project 'Weirs Creek Solar Project':

Proposed Solar Project

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.3971685,-87.67475242663893,14z>



QUALIFICATION INTERVIEW

1. Will the proposed action involve Federal funding, permitting, or authorization, or will it be carried out by a Federal Agency?

Yes

2. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) the lead Federal Agency for this action.

No

3. Are you the lead Federal Action Agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

No

4. [Semantic] Is the Action Area within 1/2-mile of a known Indiana bat hibernaculum?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact the Field Office listed in the letterhead of this letter.

Automatically answered

No

5. Will the proposed Action involve construction or operation of wind turbines?

No

6. Will the proposed Action involve blasting, other than a fireworks display?

No

7. Will the proposed Action involve a new point source discharge from a facility other than a water treatment plant or storm water system?

No

8. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

Note: For information regarding NSF/ANSI 60 please visit <https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects>

No

9. Will the proposed Action include the removal, replacement, repair and/or maintenance of an existing bridge?

No

10. Will the proposed Action involve perennial stream loss that would require an individual permit under 404 of the Clean Water Act?

No

11. Will the proposed Action involve discharge of sediment into a stream?

Yes

12. Will the project proponent implement all BMPs associated with applicable state and/or federal permits to minimize sedimentation in streams?

Yes

13. Does the Action Area contain any caves (including their associated sinkholes, fissures, or other karst features), rockshelters, underground quarries, or abandoned mine portals (including associated underground workings)?

No

14. Will the proposed project result in the removal of trees?

Yes

15. Did a **FWS-approved** habitat model applicable to the project site determine the project site to be of low probability for use by Indiana bats?

Note: This question will most commonly be answered "no." If the answer to this question is "yes", you will be required to upload your **Habitat Model Report**

No

16. Will the proposed project result in the removal of potentially suitable summer habitat for the Indiana bat? Suitable summer habitat for Indiana bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel. This includes forests and woodlots, linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree (live tree and/or snag ≥ 5 inches diameter at breast height (dbh) (12.7 centimeter) that has exfoliating bark, cracks, crevices, and/or hollows) and are located within 1,000 feet (305 meters) of other forested/wooded habitat. See the Indiana Bat Summer Survey Guidelines for addition description (<https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>).

Note: If "no" upload a document with photos representative of the forested habitat to be removed.

Yes

17. Will the proposed Action remove any suitable (primary or alternate) Indiana bat roost trees? *Suitable Indiana bat roost trees are live trees and/or snags ≥ 5 inches diameter at breast height (dbh) (12.7 centimeter) that have exfoliating bark, cracks, crevices, and/or hollows.*

Note: If "no" upload a document with photos representative of the forested habitat to be removed.

Yes

18. Will the proposed Action remove any suitable primary roost trees?

Suitable Indiana bat primary maternity roost tree refers to a dead tree or snag that is nine inches or greater in diameter at breast height and has loose or exfoliating bark, cracks, crevices, and/or hollows. A live tree may also qualify if it contains hollows or dead portions with loose or exfoliating bark, cracks, and/or crevices.

Note: If "no" upload a document with photos representative of the forested habitat to be removed.

Yes

19. If appropriate, would you like to conduct a voluntary emergence survey to determine if bats are using all of the suitable roost trees proposed for removal? *Emergence surveys require a surveyor to observe each suitable roost tree for the presence of bats. Surveys should follow the protocol in Appendix E in the USFWS' current Indiana Bat Summer Survey Guidelines at <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.*

No

20. Would you like to conduct a voluntary summer survey presence/absence survey (netting or acoustic) of the project area?

Note: If "yes" upload a survey proposal for the Field Office to review. Surveys should be conducted in accordance with the USFWS' current Indiana Bat Summer Survey Guidelines, found at <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>

No

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Alyssa Dietz-Oergel
Address: 161 East Aurora Road
City: Northfield
State: OH
Zip: 44067
Email: adietz-oergel@ectinc.com
Phone: 2165134893

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

TEST PROJECT ONLY



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0468 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To:

06/27/2024 16:45:29 UTC

Project code: 2024-0003283

Project Name: Weirs Creek Solar Project

Federal Nexus: yes

Federal Action Agency (if applicable): Army Corps of Engineers

Subject: Technical assistance for 'Weirs Creek Solar Project'

Dear Alyssa Dietz-Oergel:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on June 27, 2024, for 'Weirs Creek Solar Project' (here forward, Project). This project has been assigned Project Code 2024-0003283 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project. **Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey), invalidates this letter.**

Determination for the Northern Long-Eared Bat and Tricolored Bat

Based on your IPaC submission and a standing analysis completed by the Service, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	May affect
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	May affect
	Endangered	

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Clubshell *Pleurobema clava* Endangered
- Fanshell *Cyprogenia stegaria* Endangered
- Gray Bat *Myotis grisescens* Endangered
- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Northern Riffleshell *Epioblasma rangiana* Endangered
- Pink Mucket (pearlymussel) *Lampsilis abrupta* Endangered
- Rabbitsfoot *Quadrula cylindrica cylindrica* Threatened
- Ring Pink (mussel) *Obovaria retusa* Endangered
- Rough Pigtoe *Pleurobema plenum* Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may cause prohibited take of the species listed above.

Conclusion

Consultation with the Service is not complete. Further consultation or coordination with the Service is necessary for those species or designated critical habitats with a determination of “May Affect.” A “May Affect” determination in this key indicates that the project, as entered, is not consistent with the questions in the key. Not all projects that reach a “May Affect” determination are anticipated to result in adverse impacts to listed species. These projects may result in a “No Effect”, “May Affect, Not Likely to Adversely Affect”, or “May Affect, Likely to Adversely Affect” determination depending on the details of the project. Please contact our Kentucky Ecological Services Field Office to discuss methods to avoid or minimize potential adverse effects to those species or designated critical habitats

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Weirs Creek Solar Project

2. Description

The following description was provided for the project 'Weirs Creek Solar Project':

Proposed Solar Project

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.3971685,-87.67475242663893,14z>



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect” for a least one species covered by this determination key.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered

No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered

No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

No

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

No

10. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

11. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

No

12. Will the action cause effects to a bridge?

Note: Covered bridges should be considered as bridges in this question.

No

13. Will the action result in effects to a culvert or tunnel at any time of year?

No

14. Are trees present within 1000 feet of the action area?

Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Yes

15. Does the action include the intentional exclusion of bats from a building or structure?

Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

No

16. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

No

17. Will the action cause construction of one or more new roads open to the public?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

18. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic permanently or temporarily on one or more existing roads?

Note: For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

20. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

Note: For information regarding NSF/ANSI 60 please visit <https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects>

No

21. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

No

22. Will the proposed action involve blasting or drilling?

No

23. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

24. Will the proposed action involve the use of herbicides or other pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

No

25. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

26. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

27. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

Yes

28. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

No

29. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

Note: A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property.

No

30. Does the project intersect with the 0- 9.9% forest density category?

Automatically answered

No

31. Does the project intersect with the 10.0- 19.9% forest density category map?

Automatically answered

Yes

32. Does the project intersect with the 20.0- 29.9% forest density category map?

Automatically answered

Yes

33. Does the project intersect with the 30.0- 100% forest density category map?

Automatically answered

Yes

34. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 5 acres in total extent?

Yes

35. Does the action area intersect the northern long-eared bat species list area?

Automatically answered

Yes

36. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

Automatically answered

No

37. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?

If unsure, answer "Yes."

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Yes

38. Has a presence/probable absence summer bat survey targeting the northern long-eared bat following the Service's [Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#) been conducted within the project area?

No

39. Does the action area intersect the tricolored bat species list area?

Automatically answered

Yes

40. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

41. Has a presence/probable absence bat survey targeting the [tricolored bat and following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#) been conducted within the project area?

No

42. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?

(If unsure, answer ""Yes."")

Note: If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the [Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

Yes

43. Do you have any documents that you want to include with this submission?

No

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

10.9

TEST PROJECT ONLY

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Alyssa Dietz-Oergel
Address: 161 East Aurora Road
City: Northfield
State: OH
Zip: 44067
Email: adietz-oergel@ectinc.com
Phone: 2165134893

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

TEST PROJECT ONLY



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0468 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To:

06/27/2024 16:36:19 UTC

Project Code: 2024-0003283

Project Name: Weirs Creek Solar Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see [Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service \(fws.gov\)](#).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Kentucky Ecological Services Field Office

J C Watts Federal Building, Room 265

330 West Broadway

Frankfort, KY 40601-8670

(502) 695-0468

TEST PROJECT ONLY

PROJECT SUMMARY

Project Code: 2024-0003283
Project Name: Weirs Creek Solar Project
Project Type: Power Gen - Solar
Project Description: Proposed Solar Project
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.3971685,-87.67475242663893,14z>



Counties: Hopkins and Webster counties, Kentucky

TEST PROJECT ONLY

ENDANGERED SPECIES ACT SPECIES

There is a total of 13 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 8 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

TEST PROJECT ONLY

MAMMALS

NAME	STATUS
<p>Gray Bat <i>Myotis grisescens</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> The project area includes potential gray bat habitat. <p>Species profile: https://ecos.fws.gov/ecp/species/6329 General project design guidelines: https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/6422.pdf</p>	Endangered
<p>Indiana Bat <i>Myotis sodalis</i></p> <p>There is final critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species. <p>Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/6422.pdf</p>	Endangered
<p>Northern Long-eared Bat <i>Myotis septentrionalis</i></p> <p>No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/6422.pdf</p>	Endangered
<p>Tricolored Bat <i>Perimyotis subflavus</i></p> <p>No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515</p>	Proposed Endangered

BIRDS

NAME	STATUS
<p>Whooping Crane <i>Grus americana</i></p> <p>Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758</p>	Experimental Population, Non- Essential

CLAMS

NAME	STATUS
<p>Clubshell <i>Pleurobema clava</i></p> <p>Population: Wherever found; Except where listed as Experimental Populations No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p>	Endangered

NAME	STATUS
<ul style="list-style-type: none"> ▪ The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries. Species profile: https://ecos.fws.gov/ecp/species/3789 General project design guidelines: https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/5639.pdf	
<p>Fanshell <i>Cyprogenia stegaria</i> Endangered</p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries. Species profile: https://ecos.fws.gov/ecp/species/4822 General project design guidelines: https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/5639.pdf	
<p>Northern Riffleshell <i>Epioblasma rangiana</i> Endangered</p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries. Species profile: https://ecos.fws.gov/ecp/species/527 General project design guidelines: https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/5639.pdf	
<p>Pink Mucket (pearlymussel) <i>Lampsilis abrupta</i> Endangered</p> <p>No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7829 General project design guidelines: https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/5639.pdf </p>	
<p>Rabbitsfoot <i>Quadrula cylindrica cylindrica</i> Threatened</p> <p>There is final critical habitat for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries. Species profile: https://ecos.fws.gov/ecp/species/5165 General project design guidelines: https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/5639.pdf	
<p>Ring Pink (mussel) <i>Obovaria retusa</i> Endangered</p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries. Species profile: https://ecos.fws.gov/ecp/species/4128 General project design guidelines:	

NAME	STATUS
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<https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/5639.pdf>

Rough Pigtoe *Pleurobema plenum*

Endangered

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.

Species profile: <https://ecos.fws.gov/ecp/species/6894>

General project design guidelines:

<https://ipacb.ecosphere.fws.gov/project/LOBZXFHIQ5HEBNIH6Y2BPNLCRY/documents/generated/5639.pdf>

INSECTS

NAME	STATUS
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Monarch Butterfly *Danaus plexippus*

Candidate

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/9743>

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Alyssa Dietz-Oergel
Address: 161 East Aurora Road
City: Northfield
State: OH
Zip: 44067
Email: adietz-oergel@ectinc.com
Phone: 2165134893

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

TEST PROJECT ONLY

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area.

However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Hopkins and Webster counties, Kentucky



Local office

Kentucky Ecological Services Field Office

☎ (502) 695-0468

📠 (502) 695-1024

✉ kentuckyes@fws.gov

J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

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1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
<p>Gray Bat <i>Myotis grisescens</i> Wherever found</p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> The project area includes potential gray bat habitat. <p>No critical habitat has been designated for this species. https://ecos-beta.fws.gov/ecp/species/6329</p>	Endangered
<p>Indiana Bat <i>Myotis sodalis</i> Wherever found</p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species. <p>There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos-beta.fws.gov/ecp/species/5949</p>	Endangered
<p>Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found</p> <p>No critical habitat has been designated for this species. https://ecos-beta.fws.gov/ecp/species/9045</p>	Endangered
<p>Tricolored Bat <i>Perimyotis subflavus</i> Wherever found</p> <p>No critical habitat has been designated for this species. https://ecos-beta.fws.gov/ecp/species/10515</p>	Proposed Endangered

Birds

NAME	STATUS
<p>Whooping Crane <i>Grus americana</i></p> <p>No critical habitat has been designated for this species. https://ecos-beta.fws.gov/ecp/species/758</p>	EXPN

Clams

NAME	STATUS
<p>Clubshell <i>Pleurobema clava</i></p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries. <p>No critical habitat has been designated for this species. https://ecos-beta.fws.gov/ecp/species/3789</p>	Endangered
<p>Fanshell <i>Cyprogenia stegaria</i></p> <p>Wherever found</p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries. <p>No critical habitat has been designated for this species. https://ecos-beta.fws.gov/ecp/species/4822</p>	Endangered
<p>Northern Riffleshell <i>Epioblasma rangiana</i></p> <p>Wherever found</p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries. <p>No critical habitat has been designated for this species. https://ecos-beta.fws.gov/ecp/species/527</p>	Endangered
<p>Pink Mucket (pearlymussel) <i>Lampsilis abrupta</i></p> <p>Wherever found</p> <p>No critical habitat has been designated for this species. https://ecos-beta.fws.gov/ecp/species/7829</p>	Endangered

Rabbitsfoot *Quadrula cylindrica cylindrica***Threatened**

Wherever found

This species only needs to be considered if the following condition applies:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.

There is **final** critical habitat for this species.

<https://ecos-beta.fws.gov/ecp/species/5165>

Ring Pink (mussel) *Obovaria retusa***Endangered**

Wherever found

This species only needs to be considered if the following condition applies:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.

No critical habitat has been designated for this species.

<https://ecos-beta.fws.gov/ecp/species/4128>

Rough Pigtoe *Pleurobema plenum***Endangered**

Wherever found

This species only needs to be considered if the following condition applies:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.

No critical habitat has been designated for this species.

<https://ecos-beta.fws.gov/ecp/species/6894>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus***Candidate**

Wherever found

No critical habitat has been designated for this species.

<https://ecos-beta.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON

Chimney Swift *Chaetura pelagica*

Breeds Mar 15 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Field Sparrow *Spizella pusilla*

Breeds Mar 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Red-headed Woodpecker *Melanerpes erythrocephalus*

Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

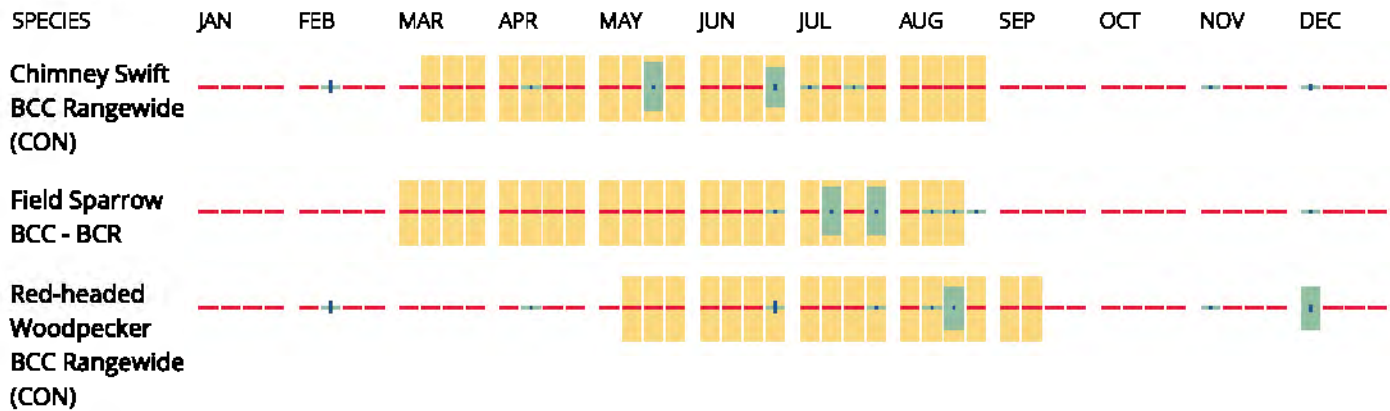
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort — no data



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 16: Refer to Weirs Creek Solar's Response to Commission Staff's First Request for Information, Item 45. Provide which utility will provide which services if services are necessary.

Response 16:

Electricity will be supplied by Kenergy and water by Webster County Water District.

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 17: Provide information on any geotechnical surveys to be conducted at the site, specifically for the areas of potential mine subsidence.

Response 17:

Please see the following attachments provided separately due to size.

Attachment 2-17(a) - Preliminary Geotechnical Engineering Report

Attachment 2-17(b) – Preliminary Mine Desktop Review Report

Attachment 2-17(c) – Subsidence Review

Weirs Creek Solar, LLC
Case No. 2024-00099
Siting Board Staff's Second Request for Information

Request 18: Explain why mist netting is not being deployed to determine the presence or absence of endangered bats at the site.

Response 18:

Weirs Creek Solar's course of action to TES species, specifically threatened or endangered bat species, is as follows:

1. Obtain and review known occurrence records of sensitive species from the pertinent USFWS field office during the initial stages of the project. This contact was made in May 2024. Please see Attachment 2-14 for further details on this contact.
2. Weirs Creek Solar then conducted a desktop study to identify any potential bat habitats. The identified areas on the desktop study were then evaluated during the fieldwork conducted in April 2023 and February 2024.
3. The timeline and schedule of construction was evaluated to determine the quantity of tree clearing required during construction, type of habitat to be disturbed, and time of year restrictions. Tree clearing will be limited to the USFWS tree clearing window from November 15 through March 31. Since the tree clearing will be done during this window, there is no need for mist netting to determine the presence or absence of endangered bats in the Project Area.