

# **Foxglove Solar, LLC**

## **PERMIT BY RULE**

Small Renewable Energy Project (Solar) Permit By Rule



### **APPLICATION DOCUMENTS**

Date: February 2021

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# Foxglove Solar

## I. INTRODUCTION AND OVERVIEW

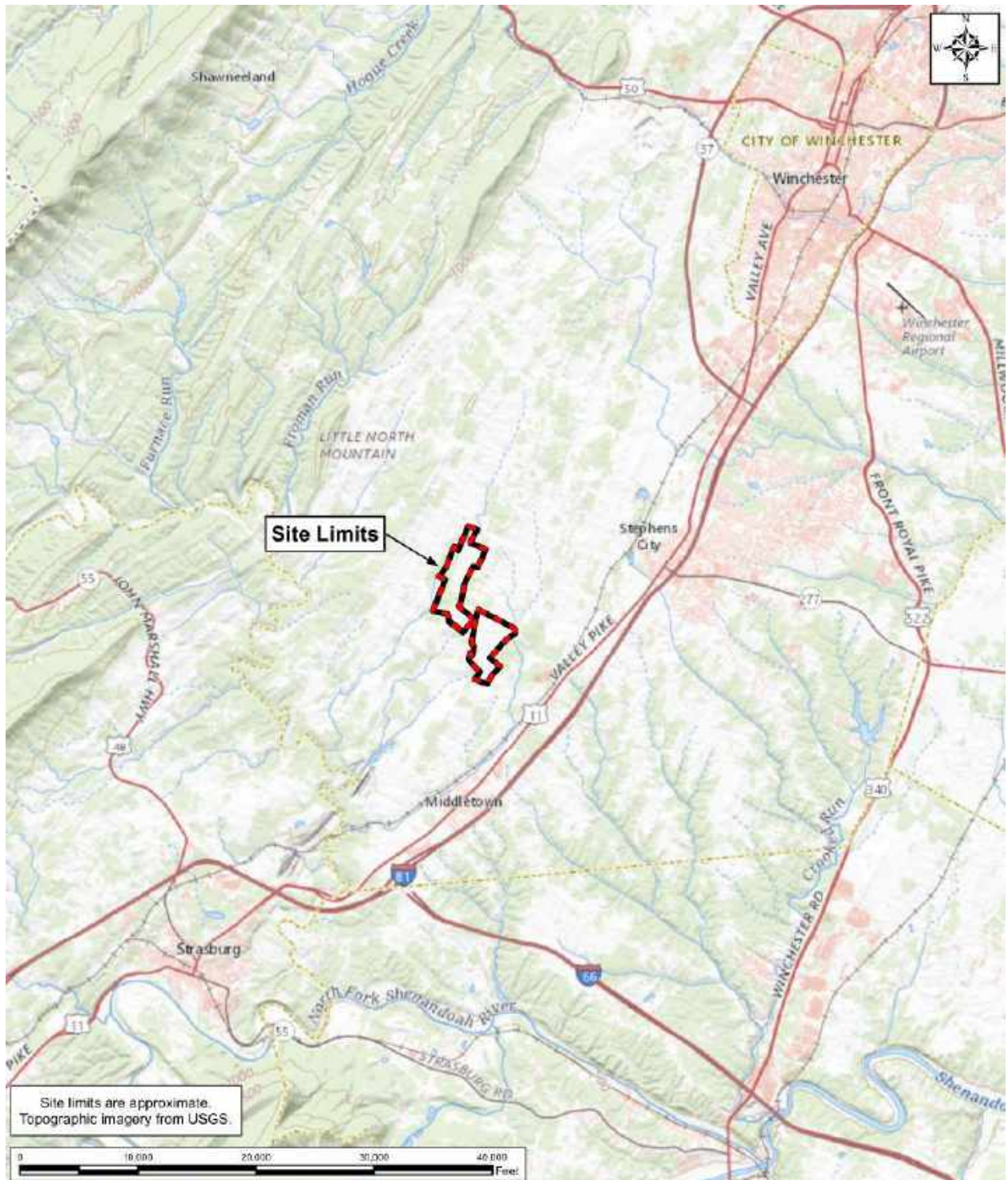
The Foxglove Solar project (“Project”) is a 75 MW solar facility proposed by Foxglove Solar, LLC. The proposed project is approximately 668 acres located south of Marlboro Road, north of Vacluse Road, and bisected by Hites View Road, and generally west of Stephens City in Frederick County.

The land is currently utilized for agricultural purposes and is proposed for development as a solar farm. The Project will utilize traditional photovoltaic solar modules to produce electricity which will interconnect through the utility infrastructure of First Energy. The proposed solar facility is comprised of solar panels that are attached to a single axis tracking system. Approximately 206,550 photovoltaic panels will be utilized. The solar facility has been designed to minimize land disturbance to the extent possible.

This application narrative and associated attachments included within comprise the Permit by Rule (“PBR”) application materials. This information is being submitted pursuant to 9 VAC15-60 in order to obtain authorization from the Virginia Department of Environmental Quality (VDEQ) for the construction of the proposed solar facility in accordance with the Solar PBR processing guidelines. Through the subsequent studies/surveys submitted and analysis of these requirements, we believe the Project will be found to meet the standards and requirements of the PBR regulations.

- Local Jurisdiction: Frederick County, VA
- Total generating capacity of project: 75 MW AC
- Timeframe of project: Anticipated construction time of 9 months
- Public comment period: March-April 2021

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U.S. Geological Survey, 2019. 7.5 Minute Series, Middletown, Virginia, Topographic Quadrangle Map, 1:24,000 scale.

Figure 1 – Vicinity Map

## II. PERMIT BY RULE COMPLIANCE ANALYSIS

Pursuant to 9 VAC15-60-30, in order to obtain authorization from VDEQ for the construction of the proposed solar facility, the Applicant has completed requirements to demonstrate compliance with the Solar PBR processing guidelines. Each of the fifteen (15) Solar PBR requirements, as well as a description of the associated compliance measures, are described in detail below.

### 1. NOTICE OF INTENT

**Requirement:** *In accordance with § 10.1-1197.6 B 1 of the Code of Virginia, and as early in the project development process as practicable, furnishes to the department a notice of intent, to be published in the Virginia Register, that he intends to submit the necessary documentation for a permit by rule for a small renewable energy project;*

A notice of intent was submitted to VDEQ on August 28, 2020, and was published in Volume 37, Issue 3 of the Virginia Register of Regulations. Both are included in Attachment A.

### 2. COMPLIANCE WITH LOCAL LAND USE ORDINANCES

**Requirement:** *In accordance with § 10.1-1197.6 B 2 of the Code of Virginia, furnishes to the department a certification by the governing body of the locality or localities wherein the small renewable energy project will be located that the project complies with all applicable land use ordinances;*

A copy of the Local Governing Body Certification Form, signed by the Zoning Administrator of Frederick County, is included in Attachment B.

A copy of the approved Conditional Use Permit Application, granted by Frederick County on July 8, 2020, is also included in Attachment B.

### 3. INTERCONNECTION STUDIES

**Requirement:** *In accordance with § 10.1-1197.6 B 3 of the Code of Virginia, furnishes to the department copies of all interconnection studies undertaken by the regional transmission organization or transmission owner, or both, on behalf of the small renewable energy project;*

The Project has been reviewed through PJM's standardized interconnection study process. Queue positions AD1-155 have been combined to represent the interconnection request for the Project.

The following studies have been completed for Queue Position AD1-155:

- Meadow Brook – Strasburg 138 kV Generation Interconnection Feasibility Study Report
- Meadow Brook - Strasburg 138 kV Generation Interconnection System Impact Study Report

These interconnection studies are included within Attachment C.

### 4. INTERCONNECTION AGREEMENTS

**Requirement:** *In accordance with § 10.1-1197.6 B 4 of the Code of Virginia, furnishes to the department a copy of the final interconnection agreement between the small renewable energy project and the regional transmission organization or transmission owner indicating that the connection of the small renewable energy project will not cause a reliability problem for the system. If the final agreement is not available, the most recent interconnection study shall be sufficient for the purposes of this section. When a*

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*final interconnection agreement is complete, it shall be provided to the department. The department shall forward a copy of the agreement or study to the State Corporation Commission;*

An Interconnection Agreement has not yet been executed. When it is available, it will be included within Attachment D.

### 5. MAXIMUM GENERATION CAPACITY CERTIFICATION

**Requirement:** *In accordance with § 10.1-1197.6 B 5 of the Code of Virginia, furnishes to the department a certification signed by a professional engineer licensed in Virginia that the maximum generation capacity of the small solar energy project, as designed, does not exceed 150 megawatts;*

The maximum generation capacity of this proposed facility does not exceed 150 MW. A copy of the Maximum Generation Capacity Certification is included as Attachment E.

### 6. ANALYSIS OF POTENTIAL IMPACT ON AIR QUALITY STANDARDS

**Requirement:** *In accordance with § 10.1-1197.6 B 6 of the Code of Virginia, furnishes to the department an analysis of potential environmental impacts of the small renewable energy project's operations on attainment of national ambient air quality standards;*

The proposed project will not cause significant negative impacts on the attainment of National Ambient Air Quality Standards (NAAQS), and its operation is expected to have a beneficial impact on the attainment of NAAQS, compared with fossil fuel-based energy generation. A comparison of energy production via the proposed solar project compared with fossil fuel-based generation results in the following reductions to the atmosphere:

- 107,120 tons of carbon dioxide
- 161,250 lbs of sulfur dioxide
- 106,230 lbs of nitrogen oxide
- 18,290 lbs of particulate matter 2.5 µm

The above calculations are estimates generated by the EPA Avoided Emissions and Generation Tool: <https://www.epa.gov/statelocalenergy/avoided-emissions-and-generation-tool-avert>. Mid-Atlantic regional data was utilized for the calculations based on the facility location, and reductions are based on an assumed generation of 75 MW of utility-scale solar.

### 7. ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES

**Requirement:** *In accordance with § 10.1-1197.6 B 7 of the Code of Virginia, furnishes to the department an analysis of the beneficial and adverse impacts of the proposed project on natural resources. The owner or operator shall perform the analyses prescribed in 9VAC15-60-40. For wildlife, that analysis shall be based on information on the presence, activity, and migratory behavior of wildlife to be collected at the site for a period of time dictated by the site conditions and biology of the wildlife being studied, not exceeding 12 months;*

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As prescribed in 9VAC15-60-40, the Applicant performed a benefits and adverse impacts analysis for the proposed project on natural resources. The analysis includes both desktop and field surveys for natural and cultural resources.

### **A. Wildlife Analysis**

#### **Threatened and Endangered Species**

A state threatened and endangered species review was completed (Attachment F). The following agencies and associated databases were contacted and reviewed:

- Virginia Department of Conservation and Recreation (VDCR)
- Virginia Department of Wildlife Resources (VDWR) – Wildlife Environmental Review Map Services (WERMS)

Information provided by VDCR does not detail any threatened or endangered plant or insect species on or within a 100' buffer of the project boundary.

The WERMS map indicates the potential presence of three threatened or endangered species within two miles of the project, detailed below.

Little Brown Bat – a total of seven observations of the state endangered Little Brown bat (*Myotis lucifugus*) were noted within the two-mile search buffer around the project. These observations were recorded in 2008. A review of VDWR's Tri-colored and Little Brown Bat Winter Habitat & Roosts Application documents the nearest hibernaculum buffer at approximately 70 miles southwest of the Project. Utilizing the VDWR Guidance Document Best Management Practices for Conservation of Little Brown Bats and Tri-Colored Bats, approved February 16, 2016, information contained within §4VAC15-20-130, and VDWR's Time of Year Restrictions and Other Guidance document, dated August 19, 2020, no direct or incidental take is planned or expected.

Potomac/Appalachian Springsnail – The Potomac (Appalachian) springsnail (*Fontigens bottimeri*) is a freshwater aquatic gastropod that is known to exist in/near caves and springs. Buffalo Marsh Run originates north of the Project, crosses the northernmost portion of the Site near Marlboro Road, then continues to form a partial western boundary of the Site. Buffalo Marsh Run is designated by VDWR as a Threatened and Endangered Species Water for the Potomac springsnail, meaning that the species has been documented therein and agency biologists have determined that the species may be within those waters.

According to known research<sup>1</sup>, the Potomac springsnail is known to exist only in certain locations, including portions of Frederick County, Virginia. The species requires specific conditions to survive, including acidic waters with high calcium concentration to assist in the development of its exoskeleton.

Wood Turtle – Meadow Brook, situated east of the Project, has been designated by VDWR as a Threatened/Endangered Species Waters for the state threatened Wood Turtle (*Glyptemys insculpta*). The Wood Turtle is known to roam in upland areas adjacent to streams, and in Frederick County, known to occur near seeps/bogs along smaller streams. It is terrestrial in the warmer portion of the year (April-October) and aquatic in the cooler months and during hibernation.

#### Expected beneficial and adverse impacts

Little Brown Bat – As the Project is located approximately 70 miles from the nearest known hibernaculum, no adverse impacts are anticipated for the species. No direct or incidental take is planned or

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<sup>1</sup> [https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.112673/Fontigens\\_bottimeri](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.112673/Fontigens_bottimeri)

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expected. Tree clearing will occur, but mostly within fields previously used as orchards. No structures are planned to be demolished within the Project limits.

Potomac/Appalachian Springsnail - The Project proposes to minimize any potential impacts to the springsnail through avoiding disturbance to the aquatic habitat, and, where practicable, with a ~200 foot buffer between ground-disturbing activities and Buffalo Marsh Run. Additionally, the Applicant will adhere to all applicable erosion and sediment control/stormwater management regulations.

Wood Turtle – The portion of the Project directly adjacent to Meadow Brook is not proposed for development. The closest area of planned ground-disturbing activities is approximately 0.25 miles (1304 feet) from the stream. Given the distance between the stream and the Project, minimal adverse impacts are anticipated.

### **Coastal Avian Protection Zone**

Project limits were compared to Coastal Avian Protection Zone (CAPZ) data from the Virginia Coastal Zone Management Program, provided by VDEQ's Coastal GEMS geospatial data system. A map showing the project boundary relative to CAPZ is included as Attachment G. Project limits do not fall in part or in whole within one or more CAPZ.

#### Expected beneficial and adverse impacts

Impact analysis does not apply as the Project does not fall in part or in whole within one or more CAPZ. Therefore, the Project will not negatively impact coastal avian wildlife.

### **B. Historical/Cultural Resource Analysis**

The Applicant conducted a Phase I Cultural Resource Survey, dated October 2020 of the archaeological and architectural features of the Project. VDHR provided comments on the survey on December 18, 2020, which prompted a response dated January 26, 2021, to address the VDHR comments. VDHR provided subsequent comments on February 1, 2021. All documentation is included as Attachment H.

All research, fieldwork, and recording conducted as part of these investigations will conform to the guidelines specified in the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (Federal Register 48:44716-44742, September 29, 1983), the Virginia Department of Historic Resources' (VHDR) *Guidelines for Conducting Historic Resources Survey in Virginia* (rev. 2017) and VDEQ's *Solar Permit by Rule Guidance* (2012) for complying with the provisions of §10.1-1197.6 B 7 of the Code of Virginia. The assessment was conducted through desktop and field review by a professional meeting the qualification standards of the Secretary of the Interior's Standards for Archeology and Historic Preservation (9VAC15-60-120 B 2) in the appropriate discipline.

#### Archaeological Survey

A total of 487 shovel tests were conducted across the Project area, resulting in two newly identified archaeological sites (44FK1010, 44FK1011). Site 44FK1010, which includes architectural resources 034-0254 and 034-5085, is recommended as potentially eligible for inclusion in the National Register of Historic Places (NRHP).

VDHR comments were received on December 18, 2020, concurring with the findings of the Phase I Cultural Resource Survey archaeological survey.

#### Architectural Survey



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A total of 37 architectural resources greater than 50 years of age were located within the one-half mile survey area, five of which are located within the Project area. Twenty-seven of the resources were previously recorded, and seven of the surveyed resources are considered potentially eligible for listing in the NRHP as they are considered good examples of regional forms and styles or for their representation of intact agricultural complexes. The seven potentially eligible resources were assessed for potential project impacts in the Phase I Cultural Survey, as noted in the table below.

Table of NRHP-eligible architectural resources with recommendations of project impacts

VDHR ID#	Resource Name/Address	Year Built	NRHP Eligibility	Project Impacts
034-0076	Ash House, 6124 Middle Road	1891	Potentially Eligible	Minimal Impact
034-0138	Vaucluse, 515 Vaucluse Spring Road	c.1810	Eligible	Minimal Impact
034-0139	Valerie Hill, 1687 Marlboro Road	1807	Potentially Eligible	Moderate Impact
034-0140	Buffalo Marsh, 697 Clark Road	1827	Eligible	Minimal Impact
034-0264	Shiley Farm, 856 Hites Road	c.1870	Potentially Eligible	Moderate Impact
034-0303	Cedar Creek Battlefield	1864	Eligible	Moderate Impact
034-5075	Woodbine Farm, 829 Vaucluse Road	1900	Potentially Eligible	Moderate Impact

Source: Phase I Cultural Resource Survey of the ±255 Hectare (±630 Acre) Foxglove Solar Project Area, Dutton + Associates, October 2020, page ii.

Further information regarding the Projects impacts were detailed in the January 26, 2021 response letter, and in a letter dated February 1, 2021, VDHR concurred that there will be no more than a minimal impact to resources 034-0076, 034-0139, 034-0220, and 034-5075. Further, VDHR concurred that there is no more than a moderate impact to resource 034-0303 and 034-0264.

### Expected beneficial and adverse impacts

Site 44FK1010, which includes architectural resources 034-0254 and 034-5085, is recommended as potentially eligible for inclusion in the NRHP and will be avoided. The remainder of the archeological resources are not considered eligible for listing in the NRHP.

Seven NRHP-eligible architectural resources were assessed for impacts from the Project through the inspection of existing conditions and viewshed analysis. The Project impacts on these resources range from minimal to moderate, which VDHR concurred with in a letter dated February 1, 2021.

### **C. Additional Natural Resource Analysis**

#### **Natural Heritage Resources**

VDCR recommends the development of an invasive species management plan and the planting of native pollinator plants along facility buffer areas that will bloom throughout the spring and summer.

### Expected beneficial and adverse impacts

The Applicant proposes to install native plants within select areas of the project boundary.

#### **Wetland Delineation**

A wetland delineation has been conducted for the entire Project, using the methodology outlined in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual, the Regional Supplement to the USACE Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0), and the subsequently

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issued USACE regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features.

The delineations identified the following:

- 2.01 acres of wetlands and
- 1,610 linear feet of streams and channels

The U.S. Army Corps of Engineers issued a Preliminary Jurisdictional Determination (PJD) for the Project area on January 12, 2021. Relevant materials are included as Attachment I.

### Expected beneficial and adverse impacts

No wetland impacts are indicated on the site plan (section 11), so no adverse impacts are anticipated as a result of the Project. However, if impacts become necessary during the development phase of the project, all required federal and state water protection permits will be obtained.

## 8. MITIGATION PLAN

Requirement (Summarized by Applicant): *In accordance with § 10.1-1197.6 B 8 of the Code of Virginia, if the Department determines that...significant adverse impacts to wildlife or historic resources are likely, the submission of a mitigation plan detailing reasonable actions to be taken by the owner or operator to avoid, minimize, or otherwise mitigate such impacts, and to measure the efficacy of those actions;*

### **Threatened and Endangered Species**

There are three species identified to be potentially present within the vicinity of the Project: Little Brown Bat, Potomac/Appalachian Springsnail, and Wood Turtle.

Little Brown Bat – As the Project is located approximately 70 miles from the nearest known hibernaculum, no adverse impacts are anticipated for the species. No direct or incidental take is planned or expected. Tree clearing will occur, but mostly within fields previously used as orchards, and woodlands are noted to be retained within the Project limits that will minimize ground-disturbing activities (see Attachment J - Mitigation Plan). No structures are planned to be demolished within the Project limits.

Potomac/Appalachian Springsnail - The Project proposes to minimize any potential impacts to the springsnail through avoiding disturbance to the aquatic habitat, and, where practicable, with a ~200 foot buffer between ground-disturbing activities and Buffalo Marsh Run (see Attachment J - Mitigation Plan). Additionally, the Applicant will adhere to all applicable erosion and sediment control/stormwater management regulations.

Wood Turtle – The portion of the Project directly adjacent to Meadow Brook is not proposed for development. The closest area of planned ground-disturbing activities is approximately 0.25 miles (1304 feet) from the stream (see Attachment J - Mitigation Plan). Given the distance between the stream and the Project, minimal adverse impacts are anticipated.

### **Cultural Resources**

Site 44FK1010, which includes architectural resources 034-0254 and 034-5085, is recommended as potentially eligible for inclusion in the NRHP and will be avoided. The remainder of the archeological resources are not considered eligible for listing in the NRHP.

Seven NRHP-eligible architectural resources were assessed for impacts from the Project through the inspection of existing conditions and viewshed analysis. The Project impacts on these resources range from minimal to

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moderate. The Applicant plans to utilize landscaping buffers to minimize impacts. Additionally, the Project is planned to completely avoid resource 034-5075 as a means of mitigating potential effects to that resource.

### **Additional Resources**

Wetlands and streams on the Project have been delineated and will be avoided during preliminary site design. In the event wetland impacts are proposed, they will adhere to all applicable permit and regulatory requirements.

### **9. CERTIFICATION OF DESIGN INCORPORATING MITIGATION PLAN**

Requirement: *In accordance with § 10.1-1197.6 B 9 of the Code of Virginia, furnishes to the department a certification signed by a professional engineer licensed in Virginia that the project is designed in accordance with 9VAC15-60-80;*

The Applicant has certified that the Project is designed in accordance with 9VAC15-60-80, and the Certification of Design form is attached as Attachment K.

### **10. OPERATION PLAN INCORPORATING MITIGATION PLAN**

Requirement: *In accordance with § 10.1-1197.6 B 10 of the Code of Virginia, furnishes to the department an operating plan that includes a description of how the project will be operated in compliance with its mitigation plan, if such a mitigation plan is required pursuant to 9VAC15-60-50;*

An operating plan, including a description of how the project will be operated in conjunction with its mitigation plan, is included in Attachment L.

### **11. SITE PLAN & CONTEXT MAP**

Requirement: *In accordance with § 10.1-1197.6 B 11 of the Code of Virginia, furnishes to the department a detailed site plan meeting the requirements of 9VAC15-60-70;*

A site plan and context map have been provided in accordance with 9VAC15-60-70 as **Figures 2** and **3** below, and are included as Attachment M.

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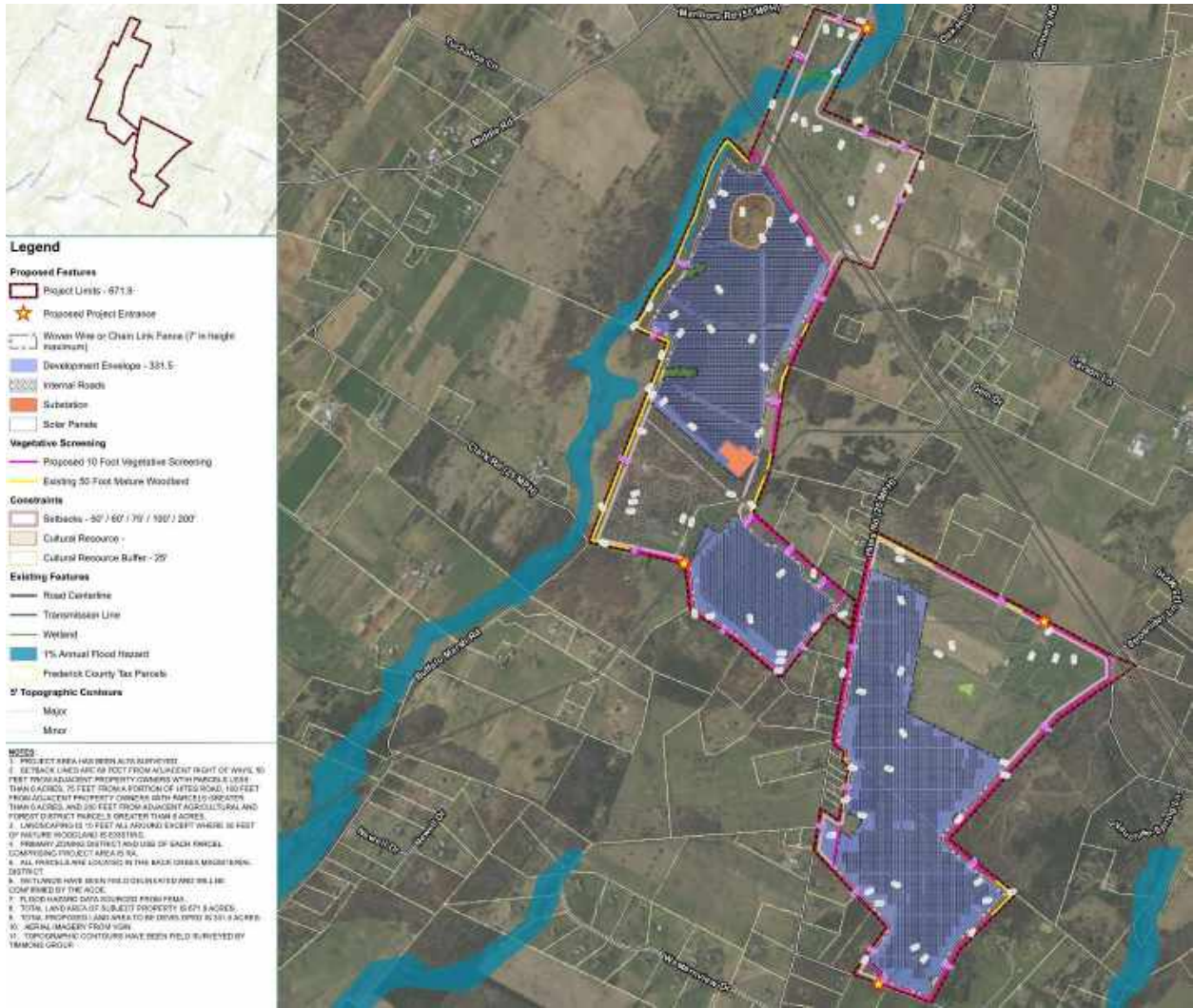


Figure 2 – Site Plan

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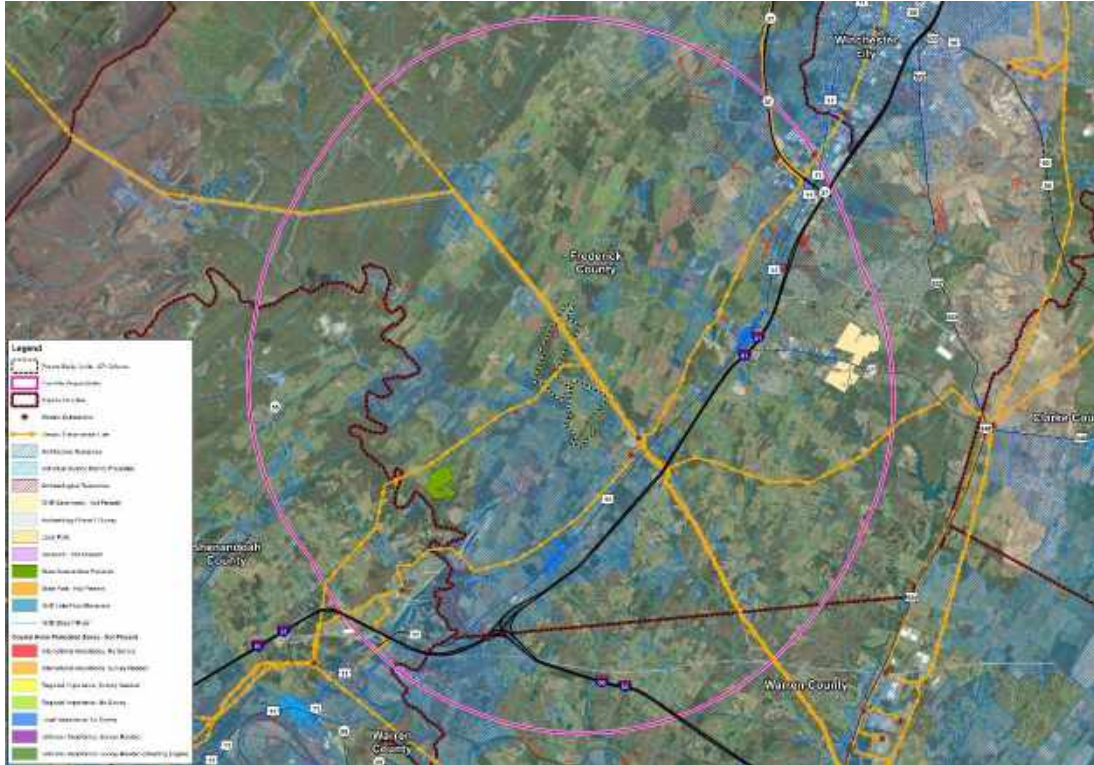


Figure 3 – Context Map

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### 12. CERTIFICATION OF APPLICATION FOR ENVIRONMENTAL PERMITS

**Requirement:** *In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, furnishes to the department a certification signed by the applicant that the small solar energy project has applied for or obtained all necessary environmental permits;*

The Applicant has identified and has or will obtain all necessary environmental permits as certified in the Environmental Permit Certification Form (Attachment N).

### 13. NON-UTILITY CERTIFICATION

**Requirement:** *In accordance with § 10.1-1197.6 H and I of the Code of Virginia, furnishes to the department a certification signed by the applicant that the small solar energy project is being proposed, developed, constructed, or purchased by a person that is not a utility regulated pursuant to Title 56 of the Code of Virginia or provides certification that (i) the project's costs are not recovered from Virginia jurisdictional customers under base rates, a fuel factor charge, or a rate adjustment clause, or (ii) the applicant is a utility aggregation cooperative formed under Article 2 (§ 56-231.38 et seq.) of Chapter 9.1 of Title 56 of the Code of Virginia;*

The applicant has certified that the project is proposed, developed, constructed, or purchased by a person that is not a utility regulated pursuant to Title 56 of the Code of Virginia. The Non-Utility Certification Form is included as Attachment O.

### 14. PUBLIC REVIEW

**Requirement:** *Prior to authorization of the project and in accordance with § 10.1-1197.6 B 13 and B 14 of the Code of Virginia, conducts a 30-day public review and comment period and holds a public meeting pursuant to 9VAC15-60-90. The public meeting shall be held in the locality or, if the project is located in more than one locality, in a place proximate to the location of the proposed project. Following the public meeting and public comment period, the applicant shall prepare a report summarizing the issues raised by the public and include any written comments received and the applicant's response to those comments. The report shall be provided to the department as part of this application;*

A public review and comment period will occur in March-April 2021. In accordance with § 10.1-1197.6 B 13 and 14 of the Code of Virginia, there will be a 30-day public review and comment period from March 12-April 11, 2021. The public review and comment period was announced by publication in the Winchester Star once a week for two consecutive weeks on February 26 and March 5, 2021. Materials will be available for viewing during the review period electronically on the following website: (<http://www.urbangridsolar.com/news>).

A public meeting will be held in accordance with 9VAC15-60-90 C and Executive Order 72 on March 30, 2021 at 6:00 PM until 7:30 PM at Valerie Hill Winery, located at 1687 Marlboro Road, Stephens City, VA 22655. Information will be presented on poster boards in a space that will allow for social distancing. Individuals may be required to wait in their cars if capacity of the space is exceeded. Face coverings will be required. Questions and comments will be addressed and documented by Foxglove Solar, LLC representatives while maintaining required social distancing practices.

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A digital public hearing will be held via RingCentral Meeting teleconferencing service and in compliance with Item 4-0.01 g of Chapter 1283 of the 2020 Acts of Assembly. The virtual presentation will be accessible fifteen minutes prior to the start of the live presentation, at 5:45 PM on March 30, 2021 until 7:30 PM.

All materials in support of the public review process are included in Attachment P.

### 15. PERMIT FEE

Requirement: *In accordance with 9VAC15-60-110, furnishes to the department the appropriate fee.*

In accordance with 9VAC15-60-110, a payment of \$12,000 is provided with this application as stipulated by the PBR.

## **Attachments**

Attachment A – Notice of Intent

Attachment B – Local Governing Body Certification Form, Conditional Use Permit

Attachment C – Interconnection Studies

Attachment D – Interconnection Agreement

Attachment E – Maximum Generation Capacity Certification

Attachment F – State threatened and endangered species review

Attachment G – CAPZ

Attachment H – Cultural Resource Analysis

Attachment I – Preliminary Jurisdictional Determination

Attachment J – Mitigation Plan

Attachment K – Certification of Design

Attachment L – Operating Plan

Attachment M – Site Plan, Context Map

Attachment N – Environmental Permit Certification Form

Attachment O – Non-Utility Certification Form

Attachment P – Public Review Documents



Attachment A – Notice of Intent



Notice of Intent for Solar Energy Project – Foxglove Solar, LLC

August 28, 2020  
Ms. Mary E. Major  
Department of Environmental Quality  
P. O. Box 1105  
629 East Main Street Richmond, VA 23218  
[mary.major@deq.virginia.gov](mailto:mary.major@deq.virginia.gov)

Dear Ms. Major:

On behalf of Foxglove Solar, LLC, I am providing notice to the Department of Environmental Quality of our intention to submit the necessary documentation for a permit by rule for a small renewable energy project (solar) in Frederick County, Virginia, pursuant to Virginia Regulation 9VAC15-60.

The proposed project is approximately 668 acres located south of Marlboro Road, north of Vacluse Road, and bisected by Hites View Road, and is generally west of Stephens City in Frederick County. The project will have a maximum generating capacity of 75 megawatts alternating current (AC) and consist of approximately 206,550 photovoltaic panels. The project will connect to the grid through transmission lines that bisect the property.

If the Department has questions regarding this project, please contact Rob Propes at [robert.propes@urbangridco.com](mailto:robert.propes@urbangridco.com) or (443) 642-1280.

Sincerely,

Robert Propes  
Project Developer



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## General Notices/Errata

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Commission (WCC). Terrorism exclusions have not been approved by the WCC. Any questions pertaining to workers' compensation insurance coverage forms should be directed to the WCC.

- For property insurance policies that are subject to the provisions of Virginia's standard fire policy, as set forth in § 38.2-2105 of the Code, coverage for ensuing fire losses is required. If, however, the insured does not purchase fire coverage for certified acts of terrorism, the provisions of § 38.2-2102 B of the Code apply, and the insurer would be allowed to exclude the ensuing fire loss from certified acts of terrorism.

### Rates, Loss Cost Multipliers – Other than Workers' Compensation

Rate and loss cost multiplier filings will be accepted on a file-and-use basis, in accordance with § 38.2-1906 of the Code. If an insurer relies on an RSO for advisory loss costs and to file supplementary rate information on its behalf, no filing is required unless an insurer plans to use a different loss cost multiplier than is currently on file for coverage for certified losses. It is important to note that for lines or sub-classifications of insurance exempted from rate filing requirements by Virginia statutes or administrative orders, the rates related to terrorism coverage for those lines or sub-classifications of insurance are also exempt from filing requirements. The requirements of the Act are not affected by such exemptions and continue to apply.

### Rates, Loss Cost Multipliers – Workers' Compensation

If an insurer relies on an RSO to file workers' compensation loss costs and related rating systems on its behalf, no filing is required unless the insurer plans to use a different loss cost multiplier than is currently on file. Refer to Administrative Letter 2010-05 for additional details regarding filing loss cost multipliers. Insurers electing to file independent workers' compensation rates for terrorism exposures that do not rely upon the approved loss costs filed on their behalf by the National Council on Compensation Insurance are subject to the 60-day prior filing requirements of § 38.2-1912 of the Code and must include full actuarial support for their proposed rates.

### Disclosure Notices – Filing Not Required

Insurers should not submit the federally required disclosure notices to the Bureau for review or approval. The federally required disclosure notices do not contain terms or conditions of coverage and are, therefore, not subject to form filing requirements.

Please feel free to contact the Property and Casualty Division of the Bureau of Insurance at (804) 371-9965 with your questions about Administrative Letter 2020-07.

/s/ Scott A. White  
Commissioner of Insurance

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### Foxglove Solar LLC Notice of Intent for Small Renewable Energy Project (Solar) - Frederick County

Foxglove Solar LLC has provided the Department of Environmental Quality a notice of intent to submit the necessary documentation for a permit by rule for a small renewable energy project (solar) in Frederick County. The proposed project is approximately 668 acres located south of Marlboro Road, north of Vacluse Road, and bisected by Hites View Road and is generally west of Stephens City in Frederick County. The project will have a maximum generating capacity of 75 megawatts alternating current and consist of approximately 206,550 photovoltaic panels. The project will connect to the grid through transmission lines that bisect the property.

Contact Information: Mary E. Major, Department of Environmental Quality, 1111 East Main Street, Suite 1400, P.O. Box 1105, Richmond, VA 23218, telephone (804) 698-4423, FAX (804) 698-4178, or email [mary.major@deq.virginia.gov](mailto:mary.major@deq.virginia.gov).

## STATE WATER CONTROL BOARD

### Proposed Consent Order for the County of Culpeper

An enforcement action has been proposed for the County of Culpeper for violations of the State Water Control Law and regulations at the Culpeper County Industrial Airpark sewage treatment plant located in Culpeper, Virginia. The State Water Control Board proposes to issue a consent order to resolve violations associated with the Culpeper County Industrial Airpark sewage treatment plant. A description of the proposed action is available at the Department of Environmental Quality office listed or online at [www.deq.virginia.gov](http://www.deq.virginia.gov). Benjamin Holland will accept comments by email at [benjamin.holland@deq.virginia.gov](mailto:benjamin.holland@deq.virginia.gov) or by postal mail at Department of Environmental Quality, Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, from September 29, 2020, through October 29, 2020.

### Proposed Amendment for the Town of Edinburg

The State Water Control Board proposes to issue an amendment to the Town of Edinburg for the Edinburg sewage treatment plant, which includes injunctive relief for a proposed upgrade of the facility. A description of the proposed amendment is available at the Department of Environmental Quality office listed or online at [www.deq.virginia.gov](http://www.deq.virginia.gov). Eric Millard will accept comments by email at [eric.millard@deq.virginia.gov](mailto:eric.millard@deq.virginia.gov), FAX at (540) 574-7878, or postal mail at Department of Environmental Quality, Valley Regional Office, 4411 Early Road, P.O. Box 3000, Harrisonburg, VA 22801, from September 28, 2020, to October 28, 2020.

Attachment B – Local Governing Body Certification Form,  
Conditional Use Permit

**Virginia Department of Department of Environmental Quality  
Small Renewable Energy Projects (Solar)**

**Local Governing Body Certification Form**

Facility Name and Location: Foxglove Solar, LLC  
Frederick County, VA

Applicant's Name: Foxglove Solar, LLC

Applicant's Mailing Address:  
337 Log Canoe Circle  
Stevensville, MD 21666

Telephone Number and Email Address:  
(410)604-3603  
James.crawford@urbangridco.com

The applicant or his representative is submitting an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with §10.1-1197.6 B 2 of the Code of Virginia, before such permit application can be considered complete, the applicant must obtain a certification from the governing body of the locality or localities in which the small renewable energy project will be located that the project complies with all applicable use ordinances.

**The undersigned requests that an authorized representative of the local governing body sign the certification statement below. In addition, by signing below, the applicant affirms that he has also submitted this form to other localities, if any, in which the proposed project be located.**

Applicant's signature

*James A Crawford Jr*

Date:

08/18/2020

The undersigned local government representative certifies that the proposed small renewable energy project complies with all applicable land use ordinances, as follows:  
(Check one block)



The proposed facility **complies with** all applicable land use ordinances.



The proposed facility **does not comply** with all applicable land use ordinances.

Signature of authorized local government representative:

*Mark Cheran*

Date:

21 AUG 20

Type or print name:

MARK CHERAN

Title:

ZONING ADMINISTRATOR

County, City or Town:

FREDERICK



July 9, 2020

John H. Foote  
Walsh, Colucci, Lubeley & Walsh  
4310 Prince William Parkway  
Prince William, VA 22192

Re: **CUP #03-20 Foxglove Solar, LLC**  
**Property Identification Numbers 84-A-40, 84-A-40A, 84-A-50, 84-A-29, 73-A-21 & 84-A-39.**

Dear Mr. Foote:

This letter is to confirm action taken by the Frederick County Board of Supervisors at their meeting on July 8, 2020. Conditional Use Permit #03-20 was approved to construct a utility-scale solar power generating facility. Further conditions associated with the approval of the Conditional Use Permit include the following:

1. All review agency comments provided during the review of this application shall be complied with at all times.
2. An engineered site plan, in accordance with the requirements of Article VIII of the Frederick County Zoning Ordinance, shall be submitted to and subject to approval by Frederick County prior to the establishment of the use. The site plan shall address additional regulations for specific uses outlined in §165-204.26 of the Frederick County Zoning Ordinance and be in general conformance with the Preliminary Site Plans, included with the CUP application, prepared by Timmons Group, revised July 7, 2020.
3. Buffers and screening shall be provided around the perimeter of the project in general conformance with quantity of the proposed plantings depicted on Sheet 5 of the Preliminary Site Plan, "Landscaping/Vegetative Screening Detail," included with the CUP application, prepared by Timmons Group, revised July 7, 2020. Buffers and screening shall fulfill the landscape screening requirements of §165-203.02(B)(1) of the Frederick County Zoning Ordinance. The landscape buffer plantings shall be maintained in good health for the life of the project. Landscaping and buffering shall be installed along the property boundary on the east side of Hites Road (Route 635), along the property boundary adjoining PINs 84-1-1, 84-3-2, 84-1-3, 84-1-4, 84-1-5, 84-A-33, and 84-A-35, and along the property boundary on the north side of Klines Mill Road (Route 633), within three (3) months of the commencement of construction on the properties identified with PINs 84-A-50 and 84-A-29. An extension of this time limit may be granted by the County prior to the start of construction, upon the recommendation of a licensed

landscape architect or horticulturalist to ensure the planting occurs during optimal seasonal conditions in order to improve the survivability of the required plantings, upon submission to the County of a letter from such licensed landscape architect or horticulturalist, specifying the appropriate time frame for planting to accompany the site plan application project file.

4. Prior to site plan approval, the owner shall enter into a written agreement with Frederick County to decommission solar energy equipment, facilities, or devices pursuant to the terms and conditions of §15.2-2241.2(B) of the Code of Virginia. The written agreement shall be updated every five (5) years and in general conformance with the Decommissioning Plan, included with the CUP application, prepared by Walsh, Colucci, Lubeley & Walsh, revised June 24, 2020.
5. Batteries, for the purposes of mass storage of electricity that will eventually be transferred to the grid, are prohibited as part of this CUP.
6. Entrance to the site from Hites Road (Route 635) shall be prohibited.
7. Lay-down yards shall not be permitted to be accessed from or located directly adjacent to Hites Road (Route 635)
8. Pile-driving of poles for solar arrays during construction shall be limited to 7:00AM to 5:00PM Monday through Friday. All other construction activities are permitted 7:00AM to 7:00PM Monday through Friday and 7:00AM to 5:00PM on Saturday. No construction activities are permitted on Sundays.
9. Any expansion or modification of this land use will require the approval of a new CUP.

If you have any questions regarding this action, please feel free to call this office.

Sincerely,



M. Tyler Klein, AICP  
Senior Planner

MTK/pd

- cc: Shawn L. Graber, Back Creek Board of Supervisor  
J. Rhodes Marston and John F. Jewell, Back Creek Planning Commissioners  
Jane Anderson  
Commissioner of Revenue  
Inspection Department  
✓ Foxglove Solar, LLC 337 Log Canoe Circle, Stevensville, MD 21666  
Woodbine Farms, Inc., 510 Barley Lane, Winchester, VA 22602  
Alfred Snapp & Son, Inc., 883 Clark Road, Stephens City, VA 22655  
Levi and Keighley Gore 856 Hites Road, Stephens City, VA 22655

## Attachment C – Interconnection Studies



***Generation Interconnection  
Feasibility Study Report***

***For***

***PJM Generation Interconnection Request  
Queue Position AD1-155***

***Meadow Brook – Strasburg 138 kV***

*January 2018*

## Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Feasibility Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

## General

Urban Grid Solar Projects, (“Interconnection Customer”) has proposed a new solar generation facility located in Frederick County, Virginia. The requested Maximum Facility Output is 75 MWs with 37.1 MW being recognized by PJM as Capacity Interconnection Rights (CIR). The proposed in-service date for this project is December 31, 2020. **This study does not imply a Potomac Edison (“Transmission Owner”) commitment to this in-service date.**

## Point of Interconnection (“POI”)

This project will interconnect with the Potomac Edison distribution system by either one of the following interconnection options:

Option #1 POI or primary Point of Interconnection: Tapping the Meadow Brook - Strasburg 138 kV transmission line at a point located approximately 2.25 miles from Meadow Brook substation and 7.11 miles from Strasburg substation. A new three breaker ring bus station will be built within 1 mile from the transmission line and the POI will be located at the exist side of the substation to solar plant. The Primary POI interconnection costs for attachment facilities and network upgrades are detailed in the Cost Summary section of this report.

Option #2 POI or Secondary Point of Interconnection: direct injection into Klines Mill 138 kV substation which is owned by Shenandoah Valley Electric Cooperative (“SVEC”) but FirstEnergy owns the high side bus of the substation where the POI is located. The Secondary POI interconnection costs are not provided in this report.

Please refer to Appendix 2 for one-line diagram of system configuration.

## Costs Summary and Transmission Owner Scope of Work

The following upgrades are required to support AD1-155 Interconnection:

(a) Attachment Facilities: None.

(b) Direct Connection Network Upgrades:

(b1) Construct a 138kV three breaker ring bus interconnection substation with terminals to Meadow Brook, Strasburg, and AD1-155 Generation. Loop the Meadow Brook - Strasburg line through the substation. @ AD1-155 Interconnect.  
Estimated cost: .....\$6,107,600

(b2) Loop the Meadow Brook-Strasburg 138kV line through the new AD1-155 Interconnection Substation. @ AD1-155 Interconnection on the Meadow Brook-Strasburg 138kV Line.  
Estimated cost: .....\$859,900

(b3) Modify nameplates and drawings for connection to AD1-155 interconnect substation @ AD1-155 Generation.  
Estimated cost: .....\$23,700

(c) Non-Direct Network Upgrades:

(c1) Replace Strasburg line tuner with wide band tuner for AD1-155. Add DTT for anti-islanding, change carrier frequency, and modify relay settings. @ Meadow Brook SS. Estimated cost: .....\$107,700

(c2) Replace Meadow Brook line tuner with wide band tuner for AD1-155. Add DTT for anti-islanding, change carrier frequency, and modify relay settings. @ Strasburg SS. Estimated cost: .....\$107,700

(d) Direct Local Network Upgrades: None.

(e) Non-Direct Local Network Upgrades: None.

(f) Option to Build Upgrades: None.

***Estimated Total Costs (a) to (f): .....\$7,206,600***

NOTE: The above shown estimated costs do not include Contribution in Aid of Construction (CIAC) Federal Income Tax Gross Up charge. The tax Dollars may or may not be charged to this project depending upon whether this project meets the eligibility requirements of the latest IRS Safe Harbor provisions for non-taxable status.

## Interconnection Customer Requirements

In addition to Potomac Edison facilities, Interconnection Customer is responsible for meeting all criteria as specified in the applicable sections of the "FirstEnergy Requirements for Transmission Connected Facilities" document, effective October 3, 2016, which can be found at this link:

<http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx>, including:

1. The purchase and installation of fully rated 138 kV circuit breaker on the high side of the AD1-155 step-up transformer. A single breaker must be used to protect this line; individual GSU transformer breakers cannot be used to protect this line.
2. The purchase and installation of the minimum required FirstEnergy generation interconnection relaying and control facilities. This includes over/under voltage protection, over/under frequency protection, and zero sequence voltage protection relays.
3. The purchase and installation of a revenue class meter to measure the power delivered in compliance with the FirstEnergy standards.
4. The purchase and installation of supervisory control and data acquisition (SCADA) equipment to provide information in a compatible format to the FirstEnergy Transmission System Control Center.
5. The establishment of dedicated communication circuits for SCADA to the FirstEnergy Transmission System Control Center.
6. A compliance with the FirstEnergy and PJM generator power factor and voltage control requirements. Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a range of dynamic reactive capability that supports its operation from 0.95 leading (absorbing VARs) to 0.95 lagging (supplying VARs) measured at the high-side of the facility substation transformers. Should Interconnection Customer fail to provide dynamic reactive capability from the AD1-155 generation project for any reason once interconnected, the FirstEnergy and/or PJM Dispatchers may need to take action to curtail its output to prevent non-compliance with voltage criteria.
7. The execution of a back-up service agreement to serve the customer load supplied from the AD1-155 generation project metering point when the units are out-of-service. This assumes the intent of Interconnection Customer is to net the generation with the load.
8. The proposed interconnection facilities must be designed in accordance with the FirstEnergy requirements which can be found in the document posted at above mentioned link.
9. Interconnection Customer must follow the requirements of the FirstEnergy "Approved Vendors and Contractors" document which is located at above mentioned link.
10. Interconnection Customer must meet all PJM, ReliabilityFirst and NERC reliability criteria and operating procedures required for standards compliance. For example, Interconnection Customer will need to properly locate and report the over and under-voltage and over and under-frequency system protection elements for its units as well as the submission of the generator model and protection data required to satisfy the PJM and ReliabilityFirst audits. Failure to comply with these requirements may result in a disconnection of service if the violation is found to compromise the reliability of the FirstEnergy system.

11. Interconnection Customer will be responsible for constructing all of the facilities on its side of the POI including the attachment line and for acquiring all easements, properties and permits that may be required to construct their line and the associated attachment facilities. Interconnection Customer may not install above ground equipment within any Transmission Owner's right-of-way unless permission to do so is expressly granted by the Transmission Owner.

The above requirements are in addition to any metering or other requirements imposed by PJM.

## **Revenue Metering and SCADA Requirements**

### **PJM Requirements**

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for Interconnection Customer's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Sections 24.1 and 24.2.

### **Interconnected Transmission Owner Requirements**

Interconnection Customer will be required to comply with all FirstEnergy Revenue Metering Requirements for Generation Interconnection Customers. The Revenue Metering Requirements may be found within the "FirstEnergy Requirements for Transmission Connected Facilities" document located at the following links:

<http://www.firstenergycorp.com/feconnect>

<http://www.pjm.com/planning/design-engineering/to-tech-standards.aspx>

### **Schedule**

Based on the extent of the Potomac Energy attachment facilities and network upgrades required to support the AD1-155 generation project, it is expected to take a minimum of twenty-three (23) months from the date of a fully executed Interconnection Construction Service Agreement to complete the installation. This includes the requirement for Interconnection Customer to make a preliminary payment to FirstEnergy (via PJM) which funds the first three months of engineering design that is related to the construction of the Direct Network Upgrades facilities. It is assumed that Interconnection Customer will provide all rights-of-way, permits, easements, etc. that will be needed. A further assumption is that there will be no environmental issues with any of the new properties associated with this project, that there will be no delays in acquiring the necessary permits for implementing the defined network upgrades, and that all system outages will be allowed when requested.

## **Network Impacts**

### **Option 1 POI or Primary Point of Interconnection:**

The Queue Project AD1-155 was evaluated as a 75.0 MW (Capacity 37.2 MW) injection tapping the Meadowbrook to Strasburg 138kV line in the APS area. Project AD1-155 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD1-155 was studied with a commercial probability of 53%. Potential network impacts were as follows:

### **Summer Peak Analysis - 2021**

#### **Generator Deliverability**

*(Single or N-1 contingencies for the Capacity portion only of the interconnection)*

None

#### **Multiple Facility Contingency**

*(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)*

None

#### **Contribution to Previously Identified Overloads**

*(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)*

None

#### **Steady-State Voltage Requirements**

To be determined during later study phase

#### **Short Circuit**

No short circuit impacts

#### **Delivery of Energy Portion of Interconnection Request**

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request. Only the most severely overloaded conditions are listed. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission

Interconnection Request, a subsequent analysis will be performed, which will study all overload conditions associated with the overloaded element(s) identified.

None

## **Light Load Analysis - 2021**

Light Load Studies to be conducted during later study phases (as required by PJM Manual 14B).

## **System Reinforcements**

### **Short Circuit**

None

### **Stability and Reactive Power Requirement**

To be determined during later study phase.

## **Summer Peak Load Flow Analysis Reinforcements**

### **New System Reinforcements**

*(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)*

None

### **Contribution to Previously Identified System Reinforcements**

*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)*

None

## **Light Load Load Flow Analysis Reinforcements**

### **New System Reinforcements**

*(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)*

None

### **Contribution to Previously Identified System Reinforcements**

*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)*

None

## **Option 2 POI or Secondary Point of Interconnection:**

The Queue Project AD1-155 was evaluated as a 75.0 MW (Capacity 37.2 MW) injection at the Klines Mill 138kV substation in the APS area. Project AD1-155 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD1-155 was studied with a commercial probability of 53%. Potential network impacts were as follows:

### **Summer Peak Analysis - 2021**

#### **Generator Deliverability**

*(Single or N-1 contingencies for the Capacity portion only of the interconnection)*

None

#### **Multiple Facility Contingency**

*(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)*

None

#### **Contribution to Previously Identified Overloads**

*(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)*

None

#### **Steady-State Voltage Requirements**

*(Results of the steady-state voltage studies should be inserted here)*

To be determined during later study phase.

#### **Short Circuit**

No short circuit impacts

#### **Delivery of Energy Portion of Interconnection Request**



PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request. Only the most severely overloaded conditions are listed. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed, which will study all overload conditions associated with the overloaded element(s) identified.

None

## **Light Load Analysis - 2021**

Light Load Studies to be conducted during later study phases (as required by PJM Manual 14B).

## **System Reinforcements**

### **Short Circuit**

None

### **Stability and Reactive Power Requirement**

To be determined during later study phase.

## **Summer Peak Load Flow Analysis Reinforcements**

### **New System Reinforcements**

*(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)*

None

### **Contribution to Previously Identified System Reinforcements**

*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)*

None

## **Light Load Load Flow Analysis Reinforcements**

### **New System Reinforcements**

*(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)*

None

**Contribution to Previously Identified System Reinforcements**

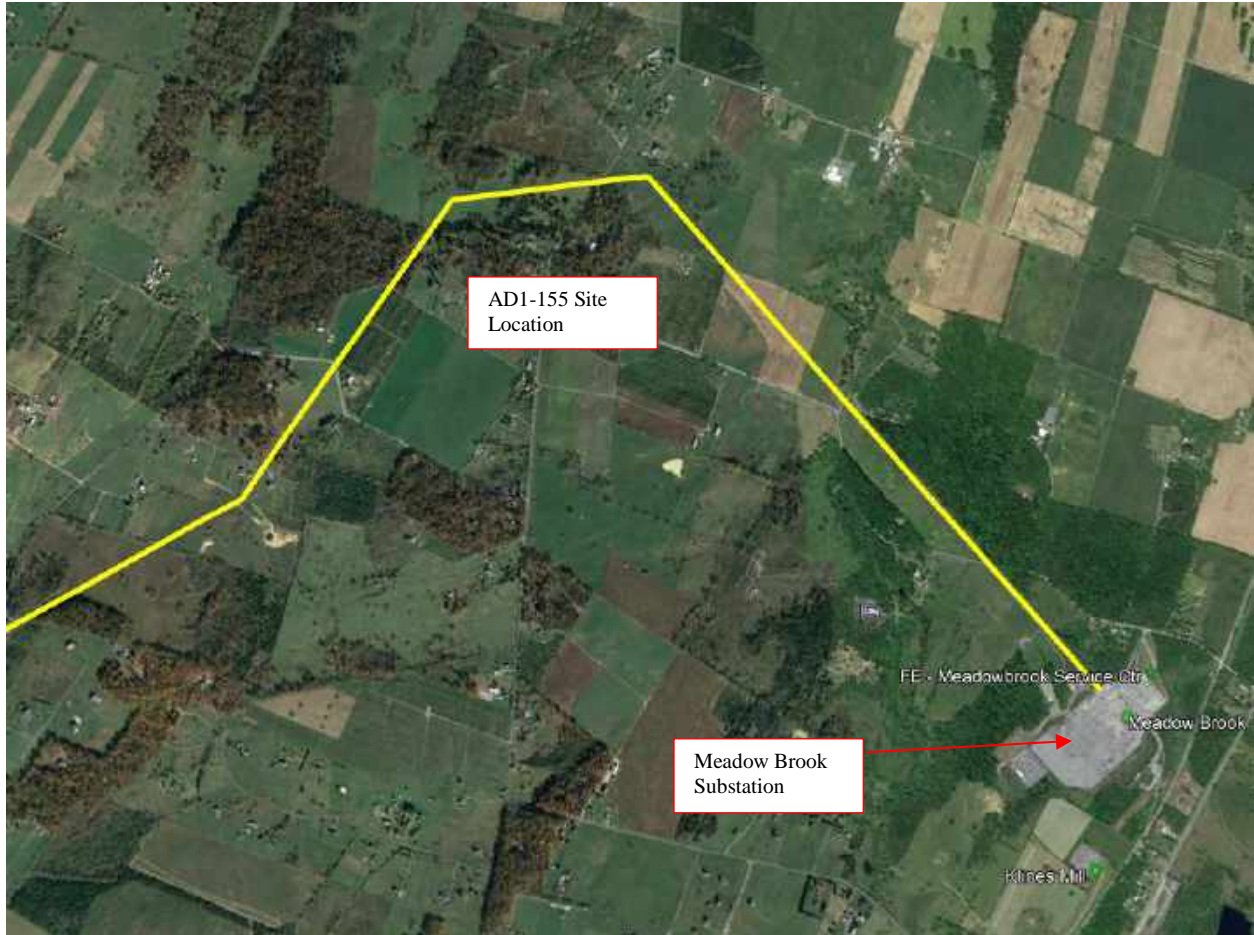
*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)*

None

# Appendix 1

## Facility Location

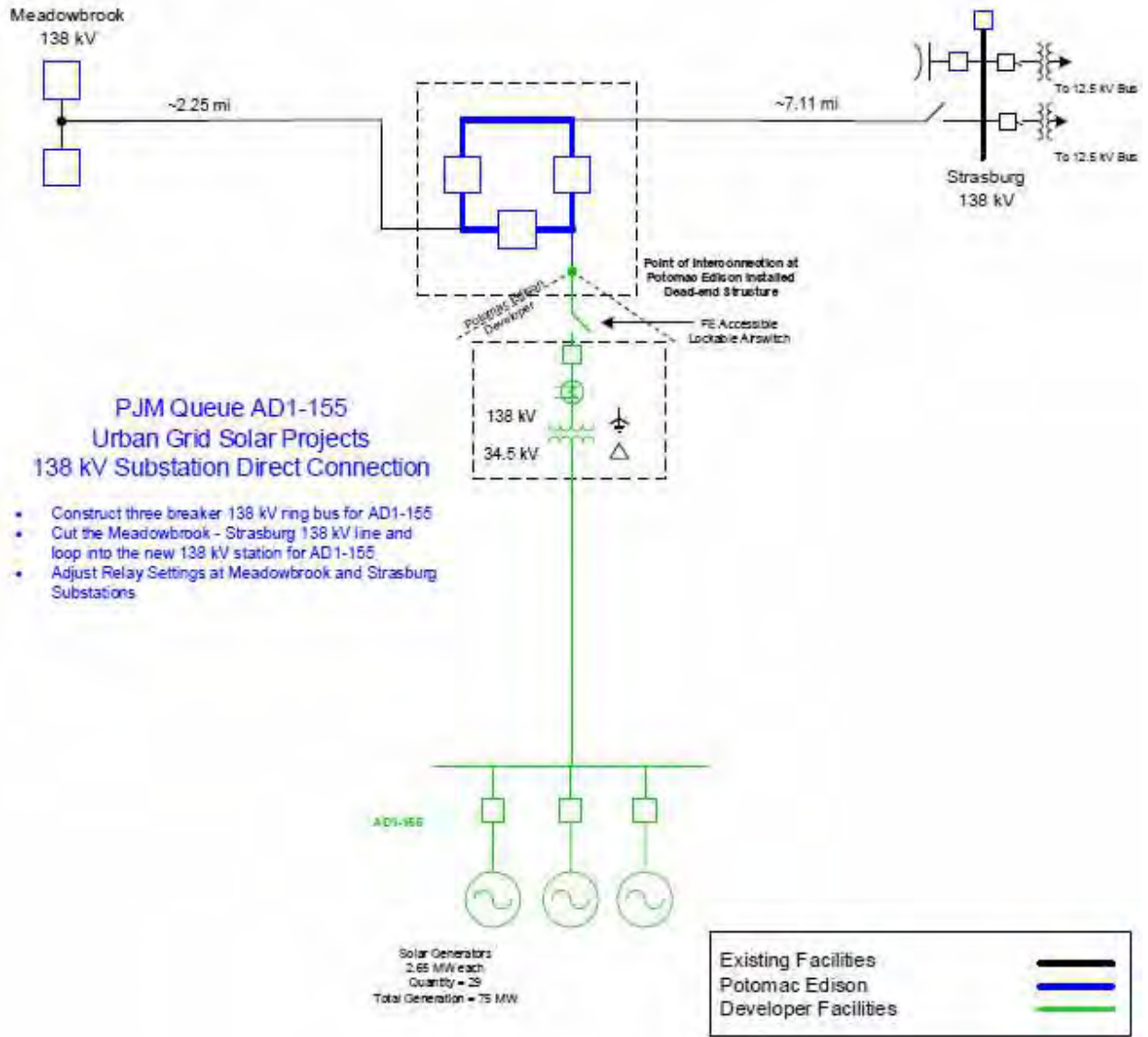
PJM Queue Position: AD1-155



# Appendix 2

## Interconnection One-Line Diagram

### PJM Queue Position: AD1-155



***Generation Interconnection  
System Impact Study Report***

***For***

***PJM Generation Interconnection Request  
Queue Position AD1-155***

***Meadow Brook – Strasburg 138 kV***

***October 2018***

## Preface

The intent of the System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the Feasibility Study, but the actual allocation will be deferred until the System Impact Study is performed.

The System Impact Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

## General

Urban Grid Solar Projects, LLC (“Interconnection Customer”) has proposed a new solar generation facility located in Frederick County, Virginia. The requested Maximum Facility Output is 75 MWs with 37.2 MW being recognized by PJM as Capacity Interconnection Rights (CIR). The proposed in-service date for this project is December 31, 2020. **This study does not imply a Potomac Edison (“Transmission Owner”) commitment to this in-service date.**

## Point of Interconnection (“POI”)

This project will interconnect with the Potomac Edison distribution system by tapping the Meadow Brook - Strasburg 138 kV transmission line at a point located approximately 2.25 miles from Meadow Brook substation and 7.11 miles from Strasburg substation. A new three breaker ring bus station will be built within 1 mile from the transmission line. The POI will be located at the exist side of the substation to solar plant. Please refer to Appendix 2 for one-line diagram of system configuration.

## Transmission Owner Scope of Work and Costs Summary:

The following upgrades are required to support AD1-155 Interconnection. Please Note: The estimated costs shown below do not include Contribution in Aid of Construction (CIAC) Federal Income Tax Gross Up charge. The tax may or may not be charged to this project based on whether or not this project meets the eligibility requirements of the latest IRS Notice 88-129 provisions for non-taxable status. The total tax: \$1,000,000; total cost with tax: \$7,845,700. The total cost without tax: 6,845,700. All costs are in 2018 Dollars.

(a) Attachment Facilities: None.

(b) Direct Connection Network Upgrades:

- (b1) PJM Network Upgrade Number: N5794;  
Construct a 138kV three breaker ring bus interconnection  
substation. Estimated cost: .....**\$4,665,300**
- (b2) PJM Network Upgrade Number: N5795;  
Loop the Meadow Brook-Strasburg 138kV line through the  
new AD1-155 Interconnection Substation. Estimated cost: .....**\$785,100**
- (b3) Project Management, Commissioning, Environmental, Forestry  
and Right of Way, and SCADA. Estimated cost: .....**\$746,000**
- (b4) At AD1-155 Generation Substation: Modify nameplates and  
drawings for connection to AD1-155 interconnect substation.  
Estimated cost: .....**\$17,700**
- (b5) 138 kV Metering: Customer-owned 138 kV revenue metering  
at AD1-155 urban Grid Solar facility. Estimated cost: .....**\$2,300**

(c) Non-Direct Network Upgrades:

- (c1) PJM Network Upgrade Number: N5796;  
At Meadow Brook Substation: Replace Strasburg line tuner with  
wide band tuner. Add DTT for anti-islanding, change carrier  
frequency and modify relay settings. Estimated cost: .....**\$115,200**
- (c2) PJM Network Upgrade Number: N5797;  
At Strasburg Substation: Replace Meadow Brook line tuner with  
wide band tuner for AD1-155. Add DTT for anti-islanding, change  
carrier frequency, and modify relay settings. Estimated cost: .....**\$115,200**
- (c3) PJM Network Upgrade Number: N5798;  
Estimated 3 miles of ADSS Fiber from AD1-155 Interconnection  
substation to Meadowbrook substation.. Estimated cost: .....**\$398,900**

(d) Direct Local Network Upgrades: None.

(e) Non-Direct Local Network Upgrades: None.

(f) Option to Build Upgrades: None.

***Estimated Total Costs (a) to (f): .....\$6,845,700***

## Interconnection Customer Requirements

The proposed Customer Facilities must be designed in accordance with FirstEnergy's "Requirements for Transmission Connected Facilities" document located at: <http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx>. In particular, Interconnection Customer is responsible for the following:

1. The purchase and installation of a fully rated 138 kV circuit breaker to protect the AD1-155 generator lead line. A single circuit breaker must be used to protect this line; if the project has several GSU transformers, the individual GSU transformer breakers cannot be used to protect this line.
2. Interconnection Customer will be responsible for acquiring all easements, properties, and permits that may be required to construct both the new interconnection switching station and the associated attachment facilities. Interconnection Customer will also be responsible for the rough grade of the property and an access road to the proposed three breaker ring bus site. The project will also require non-direct connection upgrades at Meadow Brook and Strasburg substations.
3. The purchase and installation of the minimum required FirstEnergy generation interconnection relaying and control facilities. This includes over/under voltage protection, over/under frequency protection, and zero sequence voltage protection relays.
4. The purchase and installation of supervisory control and data acquisition (SCADA) equipment to provide information in a compatible format to the FirstEnergy Transmission System Control Center.
5. A compliance with the FirstEnergy and PJM generator power factor and voltage control requirements.
6. Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading (absorbing VARs) to 0.95 lagging (supplying VARs) measured at the high-side of the facility substation transformer(s) connected to the FirstEnergy transmission system. Should Interconnection Customer fail to provide dynamic reactive capability from the AD1-155 generation project for any reason once interconnected, the FirstEnergy and/or PJM Dispatchers may need to take action to curtail its output to prevent non-compliance with voltage criteria.
7. The execution of a back-up service agreement to serve the customer load supplied from the AD1-155 generation project metering point when the units are out-of-service. This assumes the intent of Interconnection Customer is to net the generation with the load.
8. System Protection Requirement: The proposed interconnection facilities must be designed in accordance with all applicable standards, including the standards in the FirstEnergy document for transmission connected facilities located at above mentioned link.
9. Interconnection Customer must meet all PJM, ReliabilityFirst and NERC reliability criteria and operating procedures required for standards compliance. For example, Interconnection Customer will need to properly locate and report the over and under-voltage and over and under-frequency system protection elements for its units as well as the submission of the generator model and protection data required to satisfy the PJM and ReliabilityFirst audits. Failure to comply with these requirements may result in a disconnection of service if the violation is found to compromise the reliability of the FirstEnergy system.

The above requirements are in addition to any metering or other requirements of PJM.



## **Revenue Metering and SCADA Requirements**

### **PJM Requirements**

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for Interconnection Customer's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Sections 24.1 and 24.2.

### **Interconnected Transmission Owner Requirements**

Interconnection Customer will be required to comply with all FirstEnergy Revenue Metering Requirements for Generation Interconnection Customers. The Revenue Metering Requirements may be found within the "FirstEnergy Requirements for Transmission Connected Facilities" document located at the following links:

<http://www.firstenergycorp.com/feconnect>

<http://www.pjm.com/planning/design-engineering/to-tech-standards.aspx>

### **Schedule**

Based on the extent of the Potomac Energy attachment facilities and network upgrades required to support the AD1-155 generation project, it is expected to take a minimum of twenty-four (24) months after signing an Interconnection Construction Service Agreement to complete the installation. This includes the requirement for Interconnection Customer to make a preliminary payment to FirstEnergy (via PJM) which funds the first three months of engineering design that is related to the construction of the Direct Network Upgrades facilities. It is assumed that Interconnection Customer will provide all rights-of-way, permits, easements, etc. that will be needed. A further assumption is that there will be no environmental issues with any of the new properties associated with this project, that there will be no delays in acquiring the necessary permits for implementing the defined network upgrades, and that all system outages will be allowed when requested.

## **Network Impacts**

The Queue Project AD1-155 was evaluated as a 75.0 MW (Capacity 37.2 MW) injection into a tap of the Meadowbrook – Strasburg 138 kV line in the APS area. Project AD1-155 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD1-155 was studied with a commercial probability of 100%. Potential network impacts were as follows:

### **Summer Peak Analysis - 2021**

#### **Generator Deliverability**

*(Single or N-1 contingencies for the Capacity portion only of the interconnection)*

None

#### **Multiple Facility Contingency**

*(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)*

None

#### **Contribution to Previously Identified Overloads**

*(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)*

None

#### **Steady-State Voltage Requirements**

*(Results of the steady-state voltage studies should be inserted here)*

None

#### **Short Circuit**

None

#### **Delivery of Energy Portion of Interconnection Request**

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Only the most severely overloaded conditions are listed. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed, which will study all overload conditions associated with the overloaded element(s) identified.

None

## **Light Load Analysis - 2021**

Not Required.

## **System Reinforcements**

### **Short Circuit**

None.

### **Stability and Reactive Power Requirement**

No mitigations required; please refer to Appendix 3 for more details for the dynamic simulation study report.

## **Summer Peak Load Flow Analysis Reinforcements**

### **New System Reinforcements**

*(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)*

None

### **Contribution to Previously Identified System Reinforcements**

*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)*

None

## **Light Load Load Flow Analysis Reinforcements**

### **New System Reinforcements**

*(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)*

None

### **Contribution to Previously Identified System Reinforcements**

*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)*

None

## **Winter Peak Analysis - 2021**

### **Generator Deliverability**

*(Single or N-1 contingencies for the Capacity portion only of the interconnection)*

None

### **Multiple Facility Contingency**

*(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)*

None

### **Contribution to Previously Identified Overloads**

*(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)*

None

### **Steady-State Voltage Requirements**

*(Results of the steady-state voltage studies should be inserted here)*

None

## **Winter Peak Load Flow Analysis Reinforcements**

### **New System Reinforcements**

*(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)*

None

### **Contribution to Previously Identified System Reinforcements**

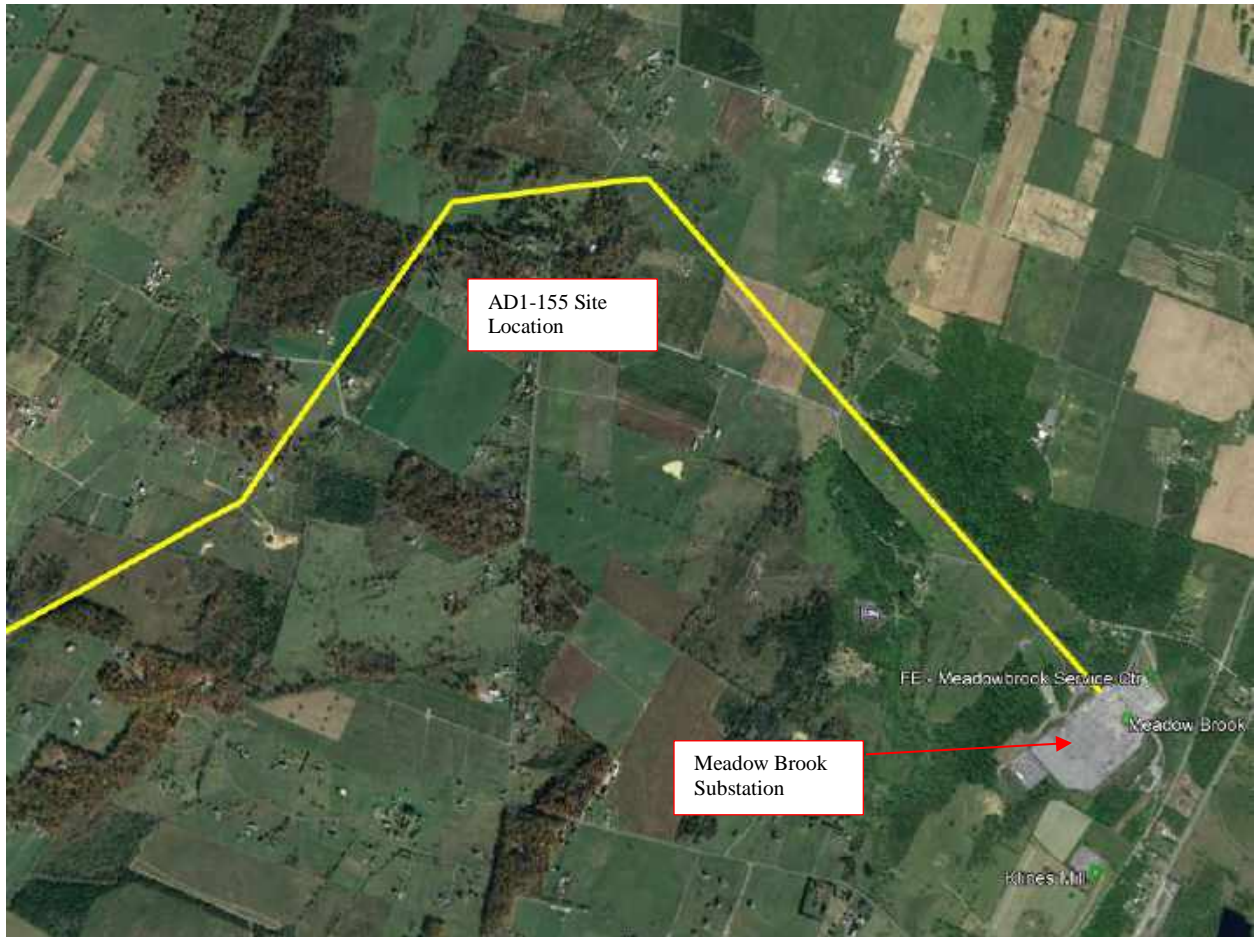
*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)*

None

# Appendix 1

## Facility Location

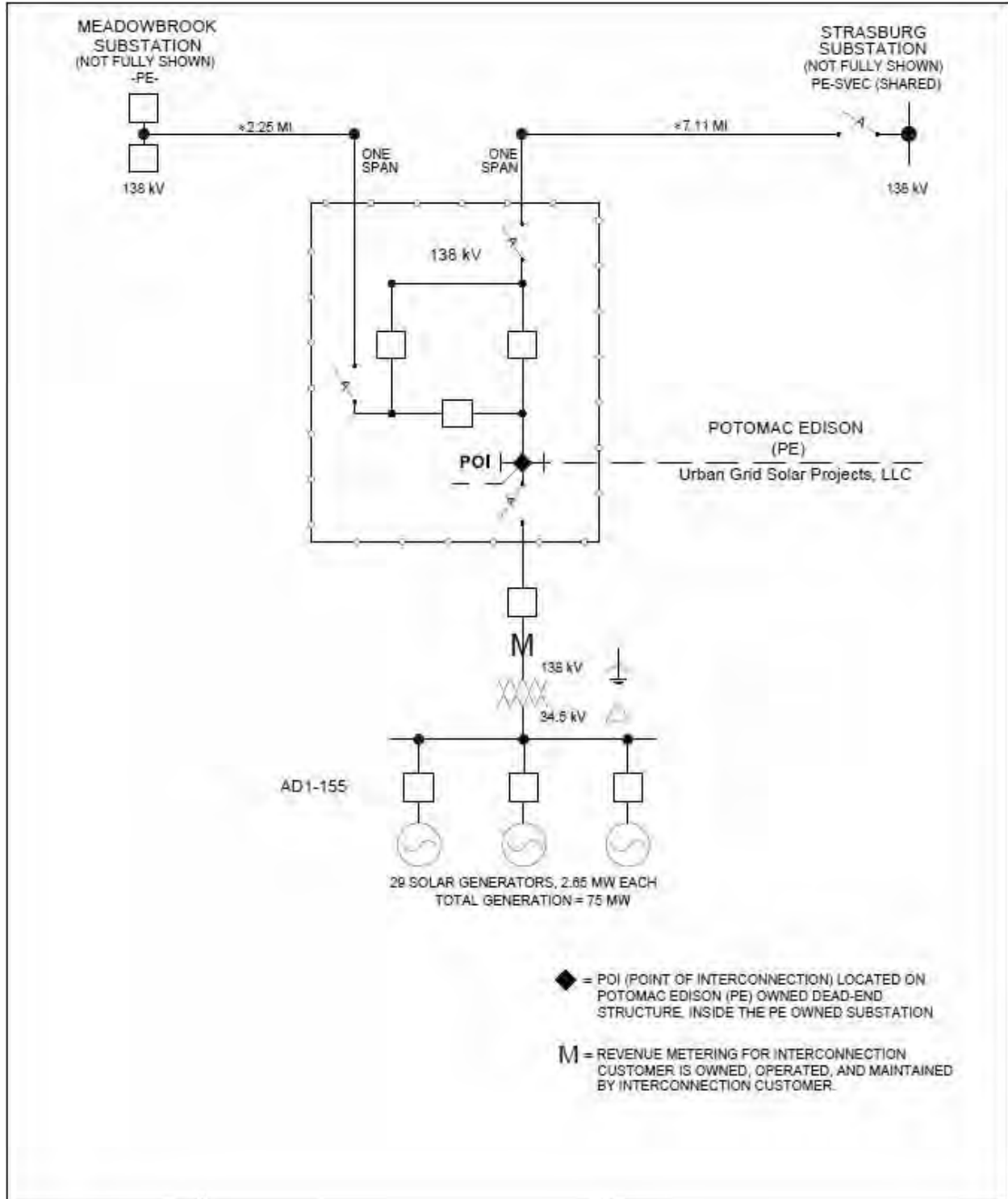
PJM Queue Position: AD1-155



# Appendix 2

## Interconnection One-Line Diagram

### PJM Queue Position: AD1-155



## Appendix 3

### Dynamic Simulation Analysis (Stability Study) PJM Queue Position: AD1-155

#### Executive Summary

Generator Interconnection Request AD1-155 is a new solar generation facility located 2.2 miles from Meadowbrook substation on Meadowbrook-Strasburg 138 kV. The request has a Maximum Facility Output (MFO) of 75MW. AD1-155 has a Point of Interconnection (POI) at a tap on the Meadowbrook-Strasburg 138 kV line in the Allegheny Power System (APS), Frederick County, Virginia.

This report describes a dynamic simulation analysis of AD1-155 as part of the overall system impact study.

The load flow scenarios for the analysis were based on the RTEP 2021 Summer Peak case, modified to include applicable queue projects. AD1-155 was set to maximum power output. AD1-155 was tested for compliance with NERC, PJM, Transmission Owner and other applicable criteria. 63 contingencies were studied, each with at least a 20 second simulation time period. Studied scenarios included:

- a) Steady state operation;
- b) Three-phase faults with normal clearing time;
- c) Single-phase faults with stuck breaker.
- d) Single phase faults placed at 80% of the line with delayed (Zone 2) clearing at line end remote from fault due to primary communications/relaying failure.
- e) Single-phase faults with loss of multi-circuit tower line.

No relevant bus or High Speed Reclosing (HSR) contingencies were identified.

For all simulations, the queue project under study along with the rest of the PJM system were required to maintain synchronism and with all states returning to an acceptable new condition following the disturbance.

AD1-155 tripping was observed for several P1 and P5 faults, the generator could ride through the faults with the updated LVRT settings.

All the contingencies tested on the 2021 peak load case met the following stability criteria:

- a) AD1-155 is able to ride through the faults (except for faults where protective action trips a generator(s)),
- b) The system with AD1-155 included is transiently stable and post-contingency oscillations are positively damped with a damping margin of at least 3%.
- c) Following fault clearing, all bus voltages recover to a minimum of 0.7 per unit after 2.5 seconds (except where protective action isolates that bus).
- d) No transmission element trips, other than those either directly connected or designed to trip as a consequence of that fault.

**No mitigations are found to be required.**

## **Appendix 3 (Continued)**

### **Dynamic Simulation Analysis (Stability Study)**

#### **PJM Queue Position: AD1-155**

##### **1. Introduction**

Generator Interconnection Request AD1-155 is a new solar generation facility located 2.2 miles from Meadowbrook substation on Meadowbrook-Strasburg 138 kV. The request has a Maximum Facility Output (MFO) of 75MW. AD1-155 has a Point of Interconnection (POI) at a tap on the Meadowbrook-Strasburg 138 kV line in the Allegheny Power System (APS), Frederick County, Virginia.

This analysis is effectively a screening study to determine whether the addition of AD1-155 will meet the dynamic requirements of the NERC, PJM and Transmission Owner reliability standards.

In this report the AD1-155 project and how it is proposed to be connected to the grid are first described, followed by a description of how the project is modeled in this study. The fault cases are then described and analyzed, and lastly a discussion of the results is provided.



# Appendix 3 (Continued)

## Dynamic Simulation Analysis (Stability Study)

### PJM Queue Position: AD1-155

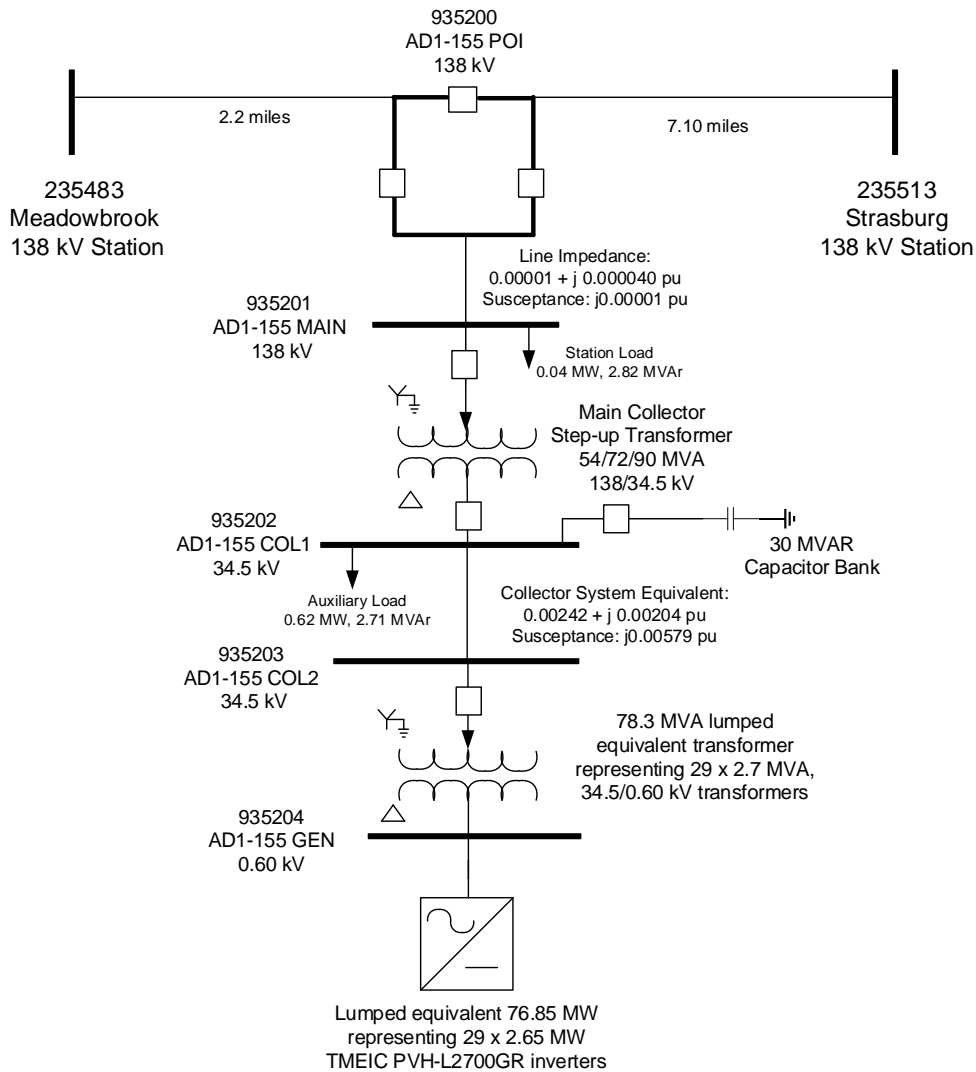
## 2. Description of the Project

Generator Interconnection Request AD1-155 is for 75 MW Solar energy injection in Frederick county, Virginia. The Maximum Facility Output (MFO) of the plant is 75 MW. AD1-155 has a Point of Interconnection (POI) at a tap on the Meadowbrook-Strasburg 138 kV line in the Allegheny Power System (APS), Frederick County, Virginia.

Figure 1 shows the simplified one-line diagram of the AD1-155 loadflow model. Table 1 lists the parameters given in the impact study data and the corresponding parameters of the AD1-155 loadflow model.

The dynamic model for AD1-155 is based on standard PSS/E models.

**Figure 1: AD1-155 Plant Model**



## Appendix 3 (Continued)

### Dynamic Simulation Analysis (Stability Study)

#### PJM Queue Position: AD1-155

**Table 1: AD1-155 Plant Model**

	<b>Impact Study Data</b>	<b>Model</b>
Generators	<p>29 x 2.65 MW generators  MVA base = 2.7 MVA  Vt = 0.6 kV  Unsaturated sub-transient reactance = j99999 pu @ MVA base</p>	<p>29 x 2.625 MW generators  Pgen 76.85 MW  Pmax 76.85 MW  Pmin 0 MW  Qgen 25.3 MVA  Qmax 25.3 MVA  Qmin -25.3 MVA  Mbase 2.7 MVA  Zsorce j99999 pu @ Mbase</p>
GSU transformer	<p>1x 34.5/0.6 kV transformer  Rating = 2.7 MVA  Transformer base = 2.7 MVA  Impedance = 0.00713 + j0.05704 pu @ MVA base  Number of taps = NA  Tap step size = NA</p>	<p>1x 34.5/0.6 kV two winding transformer  Rating = 76.85 MVA  Transformer base = 2.7 MVA  Impedance = 0.00713 + j0.05704 pu @ MVA base  Number of taps = 5  Tap step size = 2.5 %</p>
MAIN transformer	<p>1x 138/34.5 kV transformer  Rating = 54/72/90 MVA (OA/F1/F2)  Transformer base = 54 MVA  Impedance = 0.00333 + j0.0999 pu @ MVA base  Number of taps = NA  Tap step size = NA</p>	<p>1x 138/34.5 kV two winding transformer  Rating = 54/72/90 MVA  Transformer base = 54 MVA  Impedance = 0.00333 + j0.0999 pu @ MVA base  Number of taps = 5  Tap step size = 2.5 %</p>
Auxiliary load	1.25 MW + 6.4 MVA at LV side of GSU	1.25 MW + 6.4 MVA at LV side of GSU
Station Load	0.4 MW + 13.3 MVA (Not modelled)	0.4 MW + 13.3 MVA (Not modelled)
Transmission line	<p>Impedance=0.00001 + j 0.00004 pu;  Charging Susceptance = 0.00001 pu @ 100 MVA, 138 kV base.  Line length = 0.01 miles</p>	<p>Impedance=0.00001 + j 0.00004 pu; Charging  Susceptance = 0.00001 pu @ 100 MVA, 138 kV base.  Line length = 0.01 miles</p>

**Appendix 3 (Continued)**  
**Dynamic Simulation Analysis (Stability Study)**  
**PJM Queue Position: AD1-155**

**3. Loadflow and Dynamics Case Setup**

The dynamics simulation analysis was carried out using PSS/E Version 33.7.0.

The load flow scenarios and fault cases for this study are based on PJM’s Regional Transmission Planning Process<sup>1</sup> and discussions with PJM.

The selected load flow scenarios were the RTEP 2021 Summer peak load case with the following modifications:

- a) Addition of all applicable queue projects prior to AD1-155.
- b) Addition of AD1-155 queue project.
- c) Removal of withdrawn and subsequent queue projects in the vicinity of AD1-155.
- d) Dispatch of units in the PJM system in order to maintain slack generators within limits.

**Table 1: AD1-155 initial conditions**

<b>Bus</b>	<b>Name</b>	<b>Unit</b>	<b>PGEN (MW)</b>	<b>QGEN (MVar)</b>	<b>ETERM (pu)</b>	<b>POI Voltage (pu)</b>
935204	AD1-155 GEN	1	76.85	-13.31	1.01	1.01

Generation within the PJM500 system (area 225 in the PSS/E case) and within the vicinity of AD1-155 was dispatched online at maximum output (P<sub>MAX</sub>). The dispatch of generation in the vicinity of AD1-155 is given in Attachment 3.

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<sup>1</sup> Manual 14B: PJM Region Transmission Planning Process, Rev 33, May 5 2016, Attachment G : PJM Stability, Short Circuit, and Special RTEP Practices and Procedures.

## **Appendix 3 (Continued)**

### **Dynamic Simulation Analysis (Stability Study)**

#### **PJM Queue Position: AD1-155**

#### **4. Fault Cases**

Table 3 to Table 7 list the contingencies that were studied, with representative worst case total clearing times provided by PJM. Each contingency was studied over a 20 second simulation time interval.

The studied contingencies include:

- a) Steady state operation;
- b) Three phase faults with normal clearing time;
- c) Single phase faults with stuck breaker;
- d) Single phase faults placed at 80% of the line with delayed (Zone 2) clearing at line end remote from fault due to primary communications/relaying failure;
- e) Single-phase faults with loss of multi-circuit tower line.

No relevant bus or high speed reclosing (HSR) contingencies were found.

Buses at which the faults listed above will be applied are:

- AD1-155 POI 138 kV
- Strasburg 138 kV
- Edinburg 138 kV
- Edinburg 115 kV
- Meadowbrook 138 kV
- Meadowbrook 500 kV

Clearing times listed in Tables 3 to 7 are as per revision 19 of “2017 Revised Clearing times for each PJM company” spreadsheet.

The positive sequence fault impedances for single line to ground faults were derived from the stability case directly by using the ASCC fault calculation method and zero/positive sequence impedance ratio provided by PJM.

## **Appendix 3 (Continued)**

### **Dynamic Simulation Analysis (Stability Study)**

#### **PJM Queue Position: AD1-155**

##### **5. Evaluation Criteria**

This study is focused on AD1-155, along with the rest of the PJM system, maintaining synchronism and having all states return to an acceptable new condition following the disturbance. The recovery criteria applicable to this study are as per PJM's Regional Transmission Planning Process:

- a) AD1-155 is able to ride through the faults (except for faults where protective action trips a generator(s)),
- b) The system with AD1-155 included should be transiently stable and post-contingency oscillations are positively damped with a damping margin of at least 3%.
- c) Following fault clearing, all bus voltages recover to a minimum of 0.7 per unit after 2.5 seconds (except where protective action isolates that bus).
- d) No transmission element trips, other than those either directly connected or designed to trip as a consequence of that fault.

## **Appendix 3 (Continued)**

### **Dynamic Simulation Analysis (Stability Study)**

#### **PJM Queue Position: AD1-155**

#### **6. Summary of Results**

Plots from the dynamic simulations are provided in Attachment 6 with results summarized in Table 3 to Table 7.

AD1-155 tripping was observed for several P1 and P5 faults, the generator could ride through the faults with the updated LVRT settings.

No mitigations are found to be required.

## **Appendix 3 (Continued)**

### **Dynamic Simulation Analysis (Stability Study)**

**PJM Queue Position: AD1-155**

#### **7. System Reinforcement Requirements**

No mitigations were found to be required.

## Appendix 3 (Continued)

### Dynamic Simulation Analysis (Stability Study)

#### PJM Queue Position: AD1-155

**Table 2: Steady State Operation**

Fault ID	Duration	Result No Mitigation
P0.00	Steady state 20 sec	Stable

**Table 3: Three-Phase Faults with Normal Clearing**

Fault ID	Fault description	Clearing Time (Cycles)	Result No Mitigation
P1.01	Fault at AD1-155 138 kV on Meadow Brook circuit	12	Stable
P1.02	Fault at AD1-155 138 kV on Strasburg circuit, resulting in loss of transformer 1, loads 1 and 3 and capacitor at Strasburg 138kV <sup>1</sup>	12	Stable
P1.03	Fault at Meadow Brook 138 kV on AD1-155 circuit	12	Stable
P1.04	Fault at Strasburg 138kV on AD1-155 circuit, resulting in loss of transformer 1, loads 1 and 3 and capacitor at Strasburg 138kV	12	Stable
P1.05	Fault at Strasburg 138kV on Edinburg 138kV circuit, resulting in loss of Edinburg 138/115kV transformers 3 and 4, and R2 load at Strasburg 138KV	12	Stable
P1.06	Fault at Edinburg 115/138kV transformer 3, resulting in loss of Edinburg 138/115kV transformer 4, Edinburg-Strasburg 138kV circuit and R2 load at Strasburg 138kV	12	Stable
P1.07	Fault at Meadowbrook 138kV on Hampshire 138kV circuit, resulting in loss of Hampshire - Gore 138kV, and loss of Load R2 at Gore 138kV	12	Stable
P1.08	Fault at Meadowbrook 138kV on Bartonville 138kV, resulting in loss of load R2, R3 and 31.7Mvar cap at Bartonville 138kV	12	Stable
P1.09	Fault at Meadowbrook 138/500kV T1 transformer, resulting in loss of T3 transformer and 266.4Mvar Cap at MeadowBrook 500kV	12	Stable
P1.10	Fault at Meadowbrook 138/500kV T3 transformer, trips T1, trips 266.4Mvar Switched shunt @MeadowBrook 500KV (Same as P1.09)	12	Stable
P1.11	Fault at Meadowbrook 138/500kV T2 transformer, resulting in loss of T4 transformer	12	Stable
P1.12	Fault at Meadowbrook 138/500kV T4 transformer, resulting in loss of T2 transformer (Same as P1.11)	12	Stable
P1.13	Fault at Meadowbrook 138kV on W.Winchester 138kV, resulting in loss of W.Winchester-Redbud 138KV and loads R1,R2,R3 at W.Winchester 138kV	12	Stable
P1.14	Fault at Meadowbrook 138kV on Double Toll Gate 138kV #1	12	Stable
P1.15	Fault at Meadowbrook 138kV on Double Toll Gate 138kV #2	12	Stable
P1.16	Fault at Meadowbrook on KlinesMill 138kV, resulting in loss of KlinesMill-Riverton 138KV, trips load 1 at Klines Mill 138kV	12	Stable
P1.17	Fault at Meadowbrook 500kV on Loudon 500kV circuit	3	Stable
P1.18	Fault at Meadowbrook 500kV on Front Royal 500kV circuit	3	Stable
P1.19	Fault at Meadowbrook 500kV SVC	3	Stable
P1.20	Fault at Meadowbrook on Greenland Gap 500kV circuit	3	Stable
P1.21	Fault at Meadowbrook on Mt Storm 500kV circuit	3	Stable
P1.22	Fault at Meadowbrook 500 kV on 266.4Mvar Switched shunt, trips T1 and T3 MeadowBrook 138/500kV Xfms	3	Stable
P1.23	Fault at Front Royal 500kV on Morrisville 500kV circuit	4.5	Stable
P1.24	Fault at Edinburg 115 kV on Mt Jackson - Endless Caverns 115 kV circuit, resulting in loss of Load 1 and D1 at Mt Jackson 115 kV and loss of AC2-074 unit	5.5	Stable



## Appendix 3 (Continued)

### Dynamic Simulation Analysis (Stability Study)

PJM Queue Position: AD1-155

**Table 4: Single-phase Faults with Stuck Breaker**

<b>Fault ID</b>	<b>Fault description</b>	<b>Clearing Time Primary and Delayed (Cycles)</b>	<b>Result No Mitigation</b>
P4.01	Fault on AD1-155-MeadowBrook 138kV circuit, SB @ AD1-155, delayed clear loss of AD1-155 – Strasburg 138 kV line and AD1-155 generator, followed by loss of load R1, load R3, transformer 138/34.5kV #1 and 27 Mvar cap at Strasburg 138kV,	12/20	Stable
P4.02	Fault on AD1-155-Strasburg 138kV, SB @AD1-155, normal clear loss of AD1-155-Strasburg 138kV with a loss of load R1, load R3, transformer 138/34.5kV #1 and 27 Mvar cap at Strasburg 138kV, delayed clear loss of AD1-155-MeadowBrook 138kV and AD1-155 generator	12/20	Stable
P4.03	Fault on MeadowBrook-AD1-155, SB #4 @MeadowBrook 138kV resulting in no additional loss	12/20	Stable
P4.04	Fault on Strasburg-AD1-155 with SB @ Strasburg bus tie 138kV, normal clear loss of Strasburg-AD1-155 138kV, followed by loss of 27Mvar Cap @Strasburg 138kV, Load R1, R2, R3 and transformer 138/34.5kV #1 at Strasburg 138kV, delayed clear loss of Strasburg-Edinburg 138kV and Edinburg 138/115kV transformers 3 and 4	12/20	Stable
P4.05	Fault on MeadowBrook – AD1-155 138kV with SB #5 @Meadow Brook 138kV, delayed clear loss of MeadowBrook-Bartonville 138kV followed by loss of load R2, R3, 31.7Mvar Cap bank at Bartonville 138kV.	12/20	Stable
P4.06	Fault on MeadowBrook-Bartonville 138kV with SB #6 @MeadowBrook 138kV, loss of load R2, R3, 31.7Mvar Cap bank at Bartonville 138kV, delayed clear loss of 40Mvar Cap bank on MeadowBrook 138kV	12/20	Stable
P4.07	Fault on MeadowBrook-Hampshire 138kV with SB #1 @MeadowBrook 138kV, normal clear loss of Hampshire-Gore 138kV, loss of load R2 at Gore 138KV	12/20	Stable
P4.08	Fault on MeadowBrook-Hampshire 138kV with SB #2 @MeadowBrook 138kV, normal clear loss of Hampshire-Gore 138kV, loss of load R2 at Gore 138kV, delayed clear loss of 40Mvar cap bank at MeadowBrook 138kV	12/20	Stable
P4.09	Fault on MeadowBrook 500/138kV T1 transformer with SB #7 @MeadowBrook 138kV, normal clear loss of MeadowBrook T3 138/500kV, 266.4Mvar Cap bank at MeadowBrook 500kV	12/20	Stable

## Appendix 3 (Continued)

### Dynamic Simulation Analysis (Stability Study)

PJM Queue Position: AD1-155

**Table 4 (Continued): Single Line to Ground Faults with Stuck Breaker**

P4.10	Fault on MeadowBrook 500/138Kv T1 transformer with SB #8 @MeadowBrook 138kV, normal clear loss of MeadowBrook T3 138/500kV, delayed clear loss of MeadowBrook-W.Winchester-Redbud 138kV, loss of load R1, R2, R3 at W.Winchester 138KV, and loss of 266.4Mvar Cap bank at MeadowBrook 500kV	12/20	Stable
P4.11	Fault on MeadowBrook-W Winchester 138kV with SB #9 @MeadowBrook 138kV, normal clear loss of W.Winchester-Redbud 138kV, loss of load R1, R2, R3 at W.Winchester 138KV, and loss of 40Mvar cap bank at MeadowBrook 138kV	12/20	Stable
P4.12	Fault on MeadowBrook 500/138kV T3 transformer with SB #10 @MeadowBrook 138kV, normal clear loss of MeadowBrook T1 138/500Kv transformer, and loss of 266.4Mvar Cap bank at MeadowBrook 500kV	12/20	Stable
P4.13	Fault on MeadowBrook 500/138kV T3 transformer with SB #11 @MeadowBrook 138kV, normal clear loss of MeadowBrook T1 138/500Kv transformer, and 266.4Mvar Cap bank at MeadowBrook 500kV , delayed clear loss of MeadowBrook-DoubleTollGate 138kV	12/20	Stable
P4.14	Fault on MeadowBrook-Double Toll Gate 138kV with SB #12 @MeadowBrook 138kV, normal loss of 40Mvar cap bank at MeadowBrook 138kV	12/20	Stable
P4.15	Fault on MeadowBrook 138/500Kv T2 transformer with SB #13 @MeadowBrook 138kV, normal clear loss of MeadowBrook T4 138/500Kv transformer	12/20	Stable
P4.16	Fault on MeadowBrook 138/500kV T2 transformer with SB #14 @MeadowBrook 138kV, normal clear loss of MeadowBrook T4 138/500Kv transformer , delayed clear loss of MeadowBrook-DoubleTollGate 138kV(2 <sup>nd</sup> circuit)	12/20	Stable
P4.16A	Fault on MeadowBrook-DoubleTollGate #2 138kV with SB #15 @MeadowBrook 138kV, normal loss of 40Mvar cap bank at MeadowBrook 138kV	12/20	Stable
P4.17	Fault on MeadowBrook T4 138/500 kV transformer with SB #16 @MeadowBrook 138kV, normal clear loss of MeadowBrook T2 138/500Kv transformer	12/20	Stable

## Appendix 3 (Continued)

### Dynamic Simulation Analysis (Stability Study)

PJM Queue Position: AD1-155

**Table 4 (Continued): Single Line to Ground Faults with Stuck Breaker**

P4.18	Fault on MeadowBrook 138/500 kV T4 transformer with SB #17 @MeadowBrook 138kV, normal clear loss of MeadowBrook T2 138/500 kV transformer, delayed clear loss of MeadowBrook-KlinesMill-Riverton 138kV and loss of load #1 at KlinesMill 138kV	12/20	Stable
P4.19	Fault on MeadowBrook-Klines Mill 138kV with SB #18 @MeadowBrook 138kV, normal clear loss of KlinesMill-Riverton 138kV, loss of load #1 at KlinesMill 138kV and delayed clear loss of 40Mvar cap bank at MeadowBrook 138kV.	12/20	Stable
P4.20	Fault on MeadowBrook-Greenland Gap 500kV with SB #6 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T2 and T4 500/138kV transformers.	3/12	Stable
P4.21	Fault on MeadowBrook-Loudon 500kV with SB #3 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T2 and T4 500/138kV transformers.	3/12	Stable
P4.22	Fault on MeadowBrook-Mt Storm 500kV with SB #8 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T2 and T4 500/138kV transformers	3/12	Stable
P4.23	Fault on MeadowBrook-FrontRoyal 500kV with SB #10 @MeadowBrook 500kV, normal clear loss of MeadowBrook-FrontRoyal 500kV, delayed clear loss of MeadowBrook T2 and T4 500/138kV transformers.	3/12	Stable
P4.24	Fault on MeadowBrook 500kV SVC with SB #18 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T2 and T4 500/138kV transformers.	3/12	Stable
P4.25	Fault on MeadowBrook-GreenlandGap 500kV with SB #5 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T1 and T3 500/138kV transformers and loss of 266.4 Cap at MeadowBrook 500kV	3/12	Stable
P4.26	Fault on MeadowBrook-Loudon 500kV with SB #2 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T1 and T3 500/138kV transformers and loss of 266.4 Cap at MeadowBrook 500kV	3/12	Stable
P4.27	Fault on MeadowBrook-Mt Storm 500kV with SB #7 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T1 and T3 500/138kV transformers and loss of 266.4 Cap at MeadowBrook 500kV	3/12	Stable
P4.28	Fault on MeadowBrook-FrontRoyal 500kV with SB #9 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T1 and T3 500/138kV transformers, loss of 266.4 Cap at MeadowBrook 500kV	3/12	Stable
P4.29	Fault on MeadowBrook 266.4Mvar Cap bank at 500kV with SB #11 @MeadowBrook 500kV delayed clear loss of MeadowBrook T1 and T3 500/138kV transformers	3/12	Stable
P4.30	Fault on MeadowBrook 500kV SVC with SB #15 @MeadowBrook 500kV, delayed clear loss of MeadowBrook T1 and T3 500/138kV transformers and loss of 266.4 Cap at MeadowBrook 500kV	3/12	Stable
P4.31	Fault on Edinburg 115 kV - Mt Jackson - Endless Caverns 115 kV circuit, SB 12812 @ Edinburg 115 kV, normal clear loss of Load 1 and D1 at Mt Jackson 115 kV and loss of AC2-074 unit. Delayed clear loss of 39.6 MVAR cap at Edinburg 115 kV.	5.5/26	Stable

## Appendix 3 (Continued)

### Dynamic Simulation Analysis (Stability Study)

PJM Queue Position: AD1-155

**Table 5: Single-phase Bus Faults with Delayed (Zone 2) Clearing at line end closest to AD1-155 POI**

<b>Fault ID</b>	<b>Fault description</b>	<b>Clearing Time (Cycles)</b>	<b>Results</b>
P5.01	Fault at 80% of line from AD1-155 138 kV on AD1-155 - MeadowBrook 138kV circuit. Delayed clearing at AD1-155.	12/45	Stable
P5.02	Fault at 80% of line from AD1- 155 kV on AD1-155 - Strasburg 138kV circuit. Delayed clearing at AD1-155.	12/45	Stable
P5.04	Fault at 80% of line from MeadowBrook 138 kV on MeadowBrook-AD1-155 138kV. Delayed clearing at MeadowBrook 138kV.	12/45	Stable

**Table 6: Single-phase Bus Faults with Normal Clearing Time**

<b>Fault ID</b>	<b>Fault description</b>	<b>Clearing Time (Cycles)</b>	<b>Results</b>
P2.01	Fault at Double Toll Gate 138 kV on Bus No. A. Fault cleared with loss of Double Toll Gate Cap, Double Toll Gate – Greenwood 138 kV circuit and Double Toll Gate - Meadowbrook 138 kV circuit (trips Z2-030 and AC2-174 units, loads R1 at Double Toll Gate 138 kV Bus no. A). CONTINGENCY ‘AP-P2-2-PE-138-009’	12	Stable
P2.02	Fault at Double Toll Gate 138 kV on Bus No. B. Fault cleared with loss of Double Toll Gate – Old Chapel 138 kV circuit, Double Toll Gate – Riverton 138 kV circuit and Double Toll Gate - Meadowbrook 138 kV circuit. CONTINGENCY ‘AP-P2-2-PE-138-010’	12	Stable
P2.03	Fault at Klines Mill 138 kV Bus. Fault cleared with loss of Klines Mill – Meadowbrook 138 kV circuit, Klines Mill – Riverton 138 kV circuit. CONTINGENCY ‘AP-P2-2-PE-138-052’	12	Stable
P2.04	Fault at Hampshire 138 kV Bus. Fault cleared with loss of Hampshire – Meadowbrook 138 kV circuit, Hampshire – Gore 138 kV circuit. CONTINGENCY ‘AP-P2-2-PE-138-054’	12	Stable

**Appendix 3 (Continued)**  
**Dynamic Simulation Analysis (Stability Study)**  
**PJM Queue Position: AD1-155**

**Table 7: Single-phase Faults with Loss of Multiple-Circuit Tower Line**

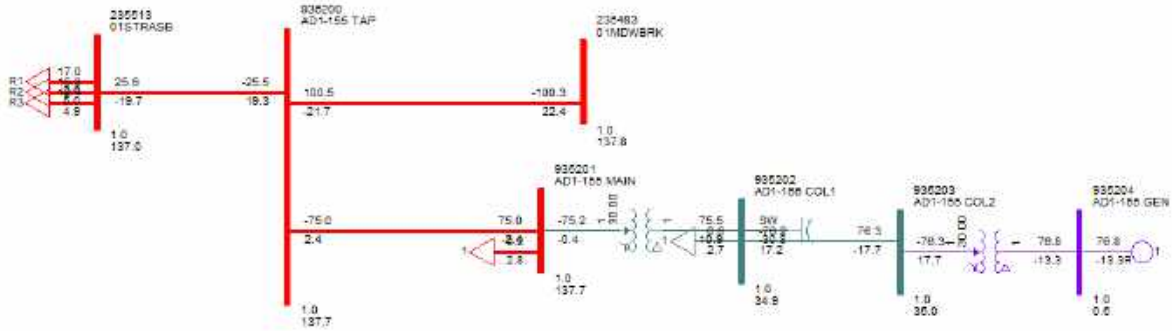
<b>Fault ID</b>	<b>Fault description</b>	<b>Clearing Time (Cycles)</b>	<b>Results</b>
P7.01	Fault at Meadowbrook 138 kV on Meadowbrook – Bartonville 138 kV circuit resulting in tower failure. Fault cleared with loss of Meadowbrook – W Winchester 138 kV circuit. CONTINGENCY ‘AP-P7-1-PE-138-007’	12	Stable
P7.02	Fault at Meadowbrook 138 kV on Meadowbrook – W Winchester 138 kV circuit resulting in tower failure. Fault cleared with loss of Bartonville – Stephenson 138 kV circuit. CONTINGENCY ‘AP-P7-1-PE-138-008’	12	Stable
P7.03	Fault at Meadowbrook 138 kV on Meadowbrook – AD1-155 TAP 138 kV circuit resulting in tower failure. Fault cleared with loss of Meadowbrook – Hampshire, Gore – Hampshire 138 kV circuit. CONTINGENCY ‘AP-P7-1-PE-138-020-A’	12	Stable
P7.04	Fault at AD1-155 TAP 138 kV on AD1-155 TAP – Meadowbrook 138 kV circuit resulting in tower failure. Fault cleared with loss of Meadowbrook – Hampshire, Gore – Hampshire 138 kV circuit. CONTINGENCY ‘AP-P7-1-PE-138-020-B’	12	Stable

# Appendix 3 (Continued)

## Dynamic Simulation Analysis (Stability Study)

### PJM Queue Position: AD1-155

## Attachment 1. PSS/E Model One Line Diagram



**Appendix 3 (Continued)**  
**Dynamic Simulation Analysis (Stability Study)**  
**PJM Queue Position: AD1-155**

**Attachment 2. AD1-155 PSS/E Dynamic Model**

```

/*****
/*** Project: AD1-155 - 75.0 MW MFO
/*** POI: Tap on Meadowbrook – Strasburg 138 kV circuit
/*** Inverter: TMEIC L2700GR inverters
/*** Size: 29 x 2.65 MW Solar PV
/*** PSSE Version 33
/*****
935204,'USRMDL', 1, 'REGCAU1', 101, 1, 1, 14, 3, 4, 1, 0.2, 10.0, 0.75,-10.0, 0.23, 2.0, 0.1,
0.0, -0.377, 0.02, 0.0, 10.0, -10.0, 0.0/
935204,'USRMDL', 1, 'REECBU1', 102, 0, 5, 25, 6, 4, 935200, 0, 0, 0, 0, 0.0, 2.0, 0.0, -0.1, 0.1,
0.0, 0.377, -0.377, 0.0, 0.05, 0.377, -0.377, 1.1, 0.9, 0.0, 0.0, 0.0, 0.0, 0.02, 2.0, -2.0, 0.981, 0.0,
1.00, 0.02/
935204,'USRMDL', 1, 'REPCAU1', 107, 0, 7, 27, 7, 9, 935200, 0, 0, 0, 0, 1, 0, 0.02, 18, 5, 0,
0.15, -1, 0, 0, 0, 999, -999,-0.02, 0.02, 0.377, -0.377, 10, 1, 0.02, -99.0, 99.0, 999, -999, 0.981, 0,
20, 20, 20/

93520401, 'VTGTPAT', 935200, 935204, 1, -1, 1.200, 0, 0.0/
93520402, 'VTGTPAT', 935200, 935204, 1, -1, 1.175, 0.2, 0.0/
93520403, 'VTGTPAT', 935200, 935204, 1, -1, 1.15, 0.5, 0.0/
93520404, 'VTGTPAT', 935200, 935204, 1, -1, 1.10, 1.0, 0.0/
93520405, 'VTGTPAT', 935200, 935204, 1, 0.45, 5, 0.8, 0.0/
93520406, 'VTGTPAT', 935200, 935204, 1, 0.65, 5, 0.80, 0.0/
93520407, 'VTGTPAT', 935200, 935204, 1, 0.75, 5, 2, 0.0/
93520408, 'VTGTPAT', 935200, 935204, 1, 0.90, 5, 3, 0.0/
93520409, 'FRQTPAT', 935200, 935204, 1, -100, 61.8, 0, 0.0/
93520410, 'FRQTPAT', 935200, 935204, 1, -100, 60.5, 600.66, 0.0/
93520412, 'FRQTPAT', 935200, 935204, 1, 57.8, 100, 0, 0.0/
93520413, 'FRQTPAT', 935200, 935204, 1, 59.5, 100, 1792.049, 0.0/

```

**Appendix 3 (Continued)**  
**Dynamic Simulation Analysis (Stability Study)**  
**PJM Queue Position: AD1-155**

**Attachment 3. AD1-155 Dispatch**

Bus Number	Bus Name	Id	Area Num	In Service	PGen (MW)	QGen (Mvar)
235585	01HARRN1 20.000	1	201	1	384.3784	7.2971
235586	01HARRN2 20.000	2	201	1	384.3784	7.2971
235587	01HARRN3 20.000	3	201	1	384.3784	7.2971
235838	01GRNGAP 0.6900	W1	201	1	30.7454	-6.2431
236001	01WARRIOR RN18.000	1	201	1	73.8006	50.574
237044	01MB CAP 500.00	SV	201	1	0	337.4122
237315	01FLF_U1-044138.00	1	201	1	1.5654	2
290229	S14_GEN_1 0.6900	1	201	1	5.37	1.6386
290230	S14_GEN_2 0.6900	1	201	1	64.4	19.9456
315201	1BATH 1A 20.500	1	345	1	307.5028	-17.4004
315201	1BATH 1A 20.500	A	345	0	-485	98.101
315202	1BATH 2B 20.500	2	345	1	307.5028	-17.4004
315202	1BATH 2B 20.500	B	345	0	-485	98.101
315203	1BATH 3C 20.500	3	345	1	307.5028	-17.4004
315203	1BATH 3C 20.500	C	345	0	-485	98.101
315204	1BATH 4D 20.500	4	345	1	307.5028	-17.4004
315204	1BATH 4D 20.500	D	345	0	-485	98.101
315205	1BATH 5E 20.500	5	345	1	307.5028	-17.4004
315205	1BATH 5E 20.500	E	345	0	-485	98.101
315206	1BATH 6F 20.500	6	345	1	307.5028	-17.4004
315206	1BATH 6F 20.500	F	345	0	-485	98.101
315251	1MT STM1 22.000	H1	345	1	112.7511	-29.5
315251	1MT STM1 22.000	L1	345	1	112.7511	-29.5
315252	1MT STM2 22.000	H2	345	1	112.7511	-55.5
315252	1MT STM2 22.000	L2	345	1	112.7511	-55.5
315253	1MT STM3 24.000	3	345	1	225.5022	-128
315254	1MT STMG 13.800	1	345	1	9.3126	-0.7252
315270	1FRNT RYL G121.000	G1	345	1	91.4576	-57.289
315271	1FRNT RYL G221.000	G2	345	1	91.4576	-57.289
315272	1FRNT RYL G321.000	G3	345	1	91.4576	-57.289
315273	1FRNT RYL S123.500	S1	345	1	171.4319	-57.289
916551	Z1-113 C 138.00	1	201	1	3.9145	0
916552	Z1-113 E 138.00	1	201	0	0	0
917161	Z2-030 C 138.00	1	201	1	5.9497	0
917162	Z2-030 E 138.00	1	201	0	0	0
917261	Z2-039 3 138.00	1	201	0	0	0
917291	Z2-040 3 138.00	1	201	1	1.6556	0.888
918812	AA1-100 E 138.00	1	201	0	0	0
932541	AC2-074 C 115.00	1	345	1	10.4	4.992
932542	AC2-074 E 115.00	1	345	1	5.25	2.52
932571	AC2-174 C 138.00	1	201	1	3.8	1.824
932572	AC2-174 E 138.00	1	201	1	6.2	2.976
935204	AD1-155 GEN 0.6000	1	201	1	76.85	15



This page is intentionally left empty to indicate the end of this AD1-155 System Impact Study Report.

Attachment D – Interconnection Agreement

Attachment D – *Final Interconnection Agreement Pending*

Attachment E – Maximum Generation Capacity Certification

**Virginia Department of Environmental Quality  
Small Renewable Energy Projects  
Maximum Generation Capacity Certification**

Facility Name and Location: Foxglove Solar, LLC  
Frederick County, VA

Applicant's Name: Foxglove Solar, LLC

Applicant's Mailing Address:  
337 Log Canoe Circle  
Stevensville, MD 21666

Telephone Number and Email Address:  
(410)604-3603  
James.crawford@urbangridco.com

The applicant or his authorized representative is submitting an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 -1197.6 of the Code of Virginia, before such permit application can be considered complete, a professional engineer licensed in Virginia must certify that the maximum generation capacity of the small renewable energy project by an electrical generation facility that generates electricity only from sunlight or wind, as designed, does not exceed 150 megawatts.

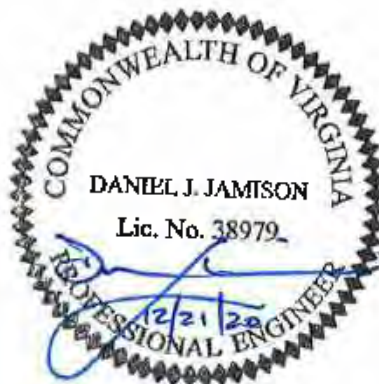
**The undersigned is an professional engineer licensed in Virginia and certifies that the maximum generating capacity for the project is 150 megawatts.**

Professional Engineer's signature:



Date:

12/21/2020



Attachment F – State threatened and endangered species review

Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Nathan Burrell  
Deputy Director of  
Government and Community Relations

Thomas L. Smith  
Deputy Director of  
Operations

December 31, 2020

Julia Campus  
Timmons  
1001 Boulders Parkway, Suite 300  
Richmond, VA 2322547

Re: 41147 Foxglove Solar

Dear Ms. Campus:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

This project has intersected the karst bedrock screening layer. Encountering undocumented caves, sinkholes or other sensitive karst features in this area is possible. During every phase of the project, DCR recommends stabilization of the soil around the site. Minimizing surface disturbance, strict use of E&S control measures appropriate for the location and adherence to best management practices appropriate for karst will help to reduce any potential impact to the karst, groundwater and surface water resources as well as any associated fauna and flora.

If karst features such as sinkholes, caves, disappearing streams, and large springs are encountered during the project, please coordinate with Wil Orndorff (540-230-5960, [Wil.Orndorff@dcr.virginia.gov](mailto:Wil.Orndorff@dcr.virginia.gov)) the Virginia DCR, Division of Natural Heritage Karst Protection Coordinator, to document and minimize adverse impacts. Activities such as discharge of runoff to sinkholes or sinking streams, filling of sinkholes, and alteration of cave entrances can lead to environmental impacts including surface collapse, flooding, erosion and sedimentation, contamination of groundwater and springs, and degradation of subterranean habitat for natural heritage resources (e.g. cave adapted invertebrates, bats). These potential impacts are not necessarily limited to the immediate project area, as karst systems can transport water and associated contaminants rapidly over relatively long distances, depending on the nature of the local karst system. If the project involves filling or "improvement" of sinkholes or cave openings, DCR would like detailed location information and copies of the design specifications. In cases where sinkhole improvement is for storm water discharge, copies of VDOT Form EQ-120 will suffice.

DCR recommends the development of an invasive species management plan for the project and the planting of Virginia native pollinator plant species that bloom throughout the spring and summer, to maximize benefits to native pollinators. DCR recommends planting these species in at least the buffer areas of the planned facility, and optimally including other areas within the project site. Guidance on plant species can be found here: <http://www.dcr.virginia.gov/natural-heritage/solar-site-native-plants-finder>. In addition, Virginia native species alternatives to the non-native species listed in the Virginia Erosion and Sediment Control Handbook

(Third Edition 1992), can be found in the 2017 addendum titled “Native versus Invasive Plant Species”, here: <https://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/NativeInvasiveFAQ.pdf>. Page 3 of the addendum provides a list of native alternatives for non-natives commonly used for site stabilization including native cover crop species (i.e. Virginia wildrye).

The proposed project will fragment an Ecological Core in the project area (C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection.

Ecological Cores are areas of unfragmented natural cover with at least 100 acres of interior that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Cores also provide benefits in terms of open space, recreation, water quality (including drinking water protection and erosion prevention), and air quality (including carbon sequestration and oxygen production), along with the many associated economic benefits of these functions. The cores are ranked from C1 to C5 (C5 being the least ecologically relevant) using many prioritization criteria, such as the proportions of sensitive habitats of natural heritage resources they contain.

Fragmentation occurs when a large, contiguous block of natural cover is dissected by development, and other forms of permanent conversion, into one or more smaller patches.. Habitat fragmentation results in biogeographic changes that disrupt species interactions and ecosystem processes, reducing biodiversity and habitat quality due to limited recolonization, increased predation and egg parasitism, and increased invasion by weedy species.

Therefore minimizing fragmentation is a key mitigation measure that will preserve the natural patterns and connectivity of habitats that are key components of biodiversity. The deleterious effects of fragmentation can be reduced by minimizing edge in remaining fragments; by retaining natural corridors that allow movement between fragments; and by designing the intervening landscape to minimize its hostility to native wildlife (natural cover versus lawns).

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR’s jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months (July 1, 2021) has passed before it is utilized.

A fee of \$95.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 24<sup>th</sup> Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

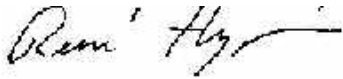
The VDWR maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Ernie Aschenbach at 804-367-2733 or [Ernie.Aschenbach@dwr.virginia.gov](mailto:Ernie.Aschenbach@dwr.virginia.gov). According to the information currently in our files, Buffalo Marsh Creek and Meadow Creek, which has been designated by the VDWR as a “Threatened and Endangered Species Waters”



for the Appalachian Springsnail and the Wood turtle respectively are within the submitted project boundary. Therefore, DCR recommends coordination with VDWR, Virginia's regulatory authority for the management and protection of these species to ensure compliance with protected species legislation.

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "René Hypes", with a stylized flourish at the end.

S. René Hypes  
Natural Heritage Project Review Coordinator

Cc: Mary Major, DEQ  
Wil Orndorff, DCR-Karst  
Ernie Aschenbach, VDWR  
Troy Andersen, USFWS

Species Observed within Two Miles		
Common Name	Federal Status	State Status
Bat, little brown	NE/NT	State Endangered
Bat, big brown	NE/NT	NE/NT
Bat, eastern red	NE/NT	NE/NT
Bat, hoary	NE/NT	NE/NT
Bluebird, eastern	NE/NT	NE/NT
Bullfrog, American	NE/NT	NE/NT
Dace, blacknose	NE/NT	NE/NT
Dace, pearl	NE/NT	NE/NT
Darter, fantail	NE/NT	NE/NT
Frog, pickerel	NE/NT	NE/NT
Salamander, cave	NE/NT	NE/NT
Thrasher, brown	NE/NT	NE/NT
Watersnake, northern	NE/NT	NE/NT
Wren, house	NE/NT	NE/NT

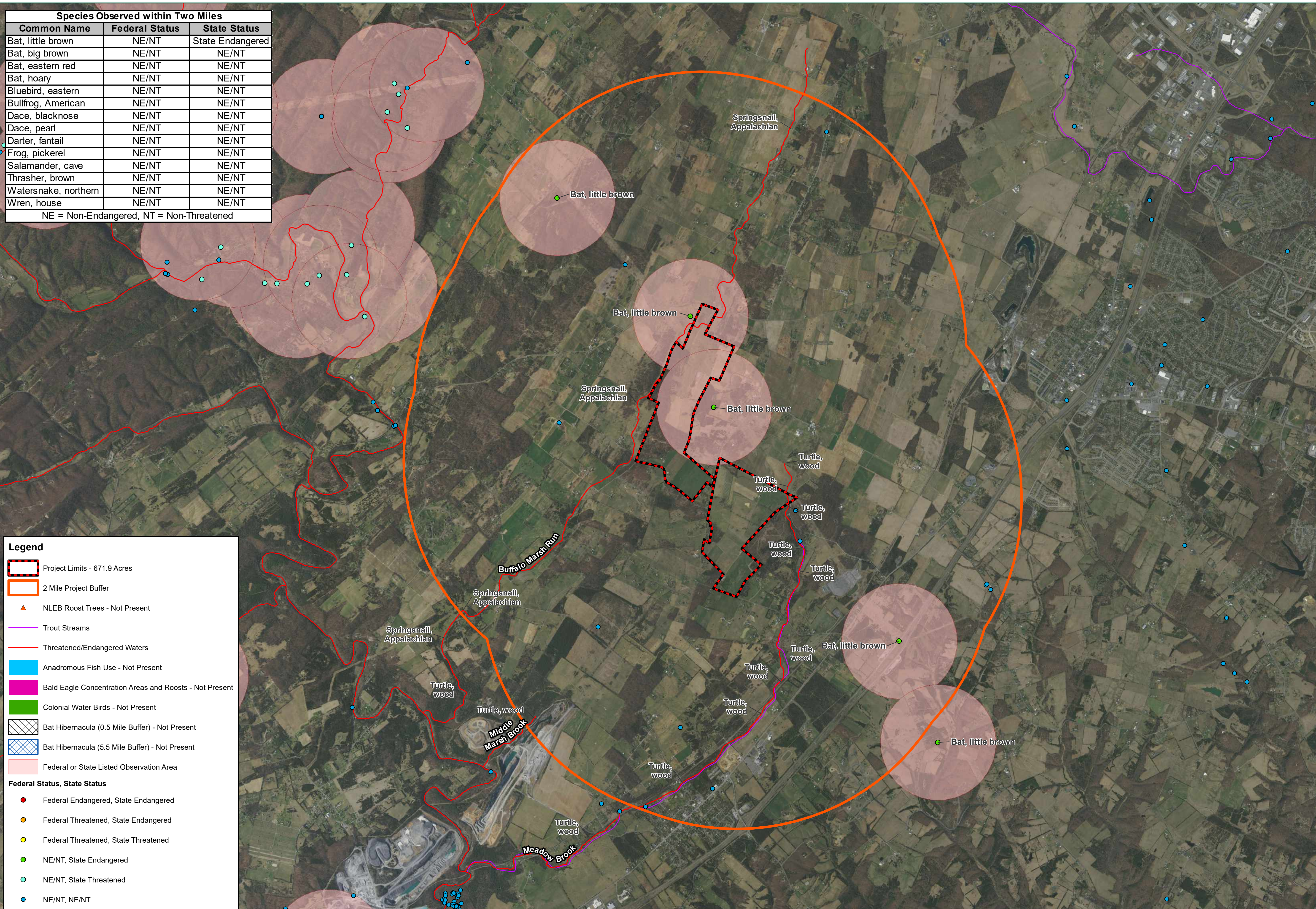
NE = Non-Endangered, NT = Non-Threatened

**Legend**

- Project Limits - 671.9 Acres
- 2 Mile Project Buffer
- NLEB Roost Trees - Not Present
- Trout Streams
- Threatened/Endangered Waters
- Anadromous Fish Use - Not Present
- Bald Eagle Concentration Areas and Roosts - Not Present
- Colonial Water Birds - Not Present
- Bat Hibernacula (0.5 Mile Buffer) - Not Present
- Bat Hibernacula (5.5 Mile Buffer) - Not Present
- Federal or State Listed Observation Area

**Federal Status, State Status**

- Federal Endangered, State Endangered
- Federal Threatened, State Endangered
- Federal Threatened, State Threatened
- NE/NT, State Endangered
- NE/NT, State Threatened
- NE/NT, NE/NT



**TIMMONS GROUP**  
 YOUR VISION ACHIEVED THROUGH OURS.  
 1001 Boulders Parkway, Suite 300  
 Richmond, VA 23226  
 TEL: 804.600.6500  
 www.timmons.com

PROJECT NAME & LOCATION  
**FOXGLOVE SOLAR**  
 FREDERICK COUNTY - VIRGINIA

DATE	12/12/2020
PROJECT NUMBER	41147
PROJECT NAME	FOXGLOVE SOLAR
DESIGNED BY / DRAWN BY	K. SCHMIDT

**NOTES:**  
 Project Limits have been ALTA surveyed.  
 WERMS data from DWR.  
 Bat hibernacula include identifications of Northern long-eared bat, Tri-colored bat, Little-brown bat, Virginia big-eared bat, Gray bat, and Indiana bat.  
 Aerial imagery from VGIN.

These plans and associated documents are the exclusive property of TIMMONS GROUP and may not be reproduced in whole or in part and shall not be used for any purpose whatsoever, inclusive, but not limited to construction, bidding, and/or construction staking without the express written consent of TIMMONS GROUP.

REVISIONS	
#	DESCRIPTION

DRAWING DESCRIPTION  
**WILDLIFE ENVIRONMENTAL REVIEW MAP**

SCALE (FEET)  
 0 2,000 4,000  
 PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H:1" = 2,000' 1

**VaFWIS - Department of Game and Inland Fisheries**

39.07446 -78.27466

is the Search Point

**Search Point**

- Change to "clicked" map point
- Fixed at 39.07446 -78.27466

**Show Position Rings**

- Yes  No
- 1 mile and 1/4 mile at the Search Point

**Show Search Area**

- Yes  No
- 2 Search distance miles buffer

Search Point is at map center

**Base Map Choices**

BW Aerial Photography

**Map Overlay Choices**

Current List: Anadromous, TEWaters, BAEANests, BECAR, Trout, TierII, Habitat, Search

**Map Overlay Legend**

**T & E Waters**

- Federal
- State

**Predicted Habitat WAP Tier I & II**

- Aquatic
- Terrestrial

**Trout Waters**

- Class I - IV
- Class V - VI

**Anadromous Fish Reach**

- Confirmed
- Potential

**Impediment**

2 mile radius Search Area

**Bald Eagle Concentration Areas and Roosts**

- Bald Eagle nests 660 and 330 foot management zones
- Data Observation Site

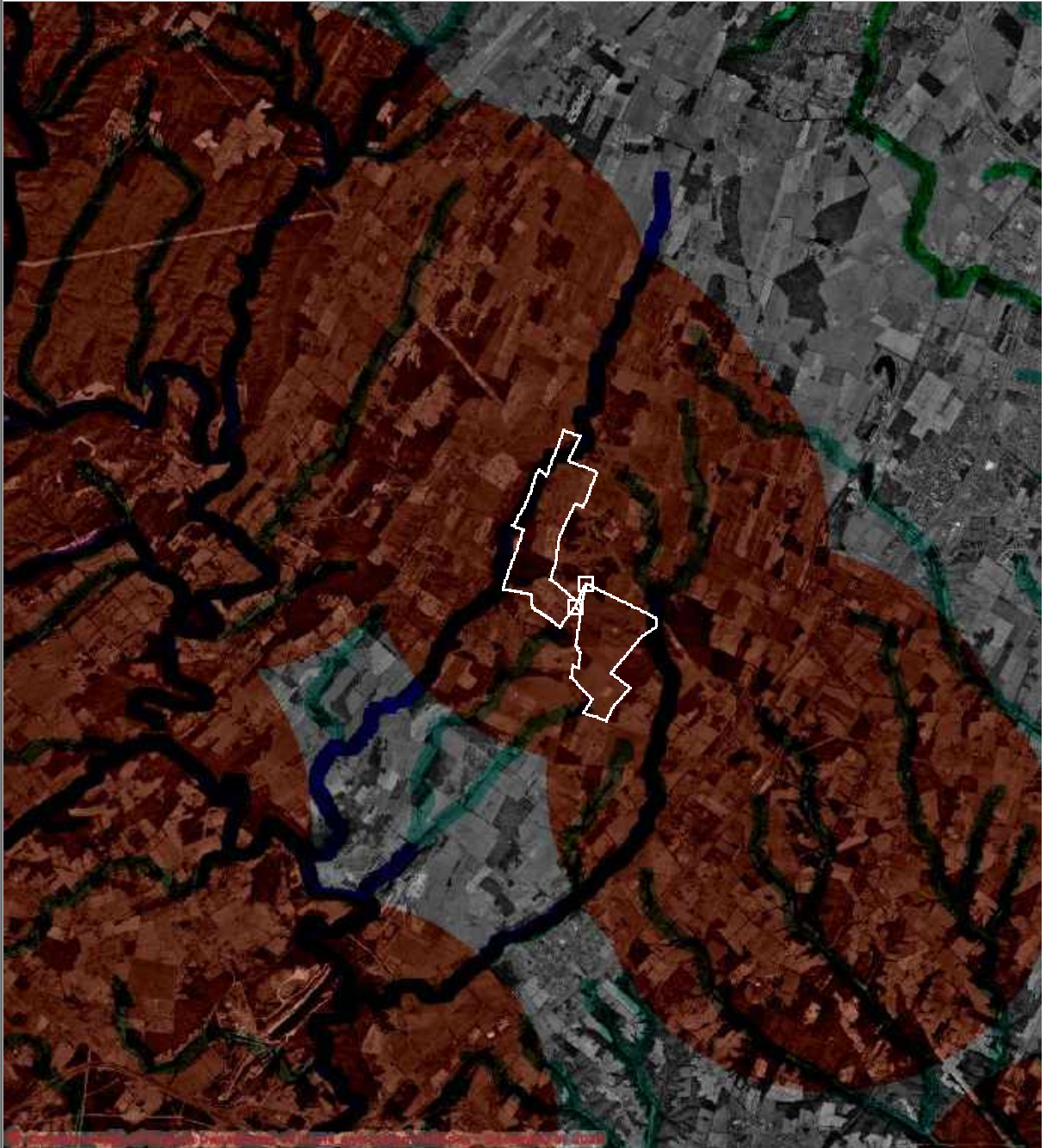
[back](#)

Map Click

Map Scale

Screen Size

[Refresh Browser Page](#)



Point of Search 39.07446 -78.27466

Map Location 39.07446 -78.27466

- Select Coordinate System:
- Degrees,Minutes,Seconds Latitude - Longitude
  - Decimal Degrees Latitude - Longitude
  - Meters UTM NAD83 East North Zone
  - Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see [Microsoft terraserver-usa.com](https://microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 17 NAD 1983 with left 727763 and top 4336576. Pixel size is 16 meters. Coordinates displayed are decimal Degrees North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey. Color aerial photography acquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic  
<http://www.national.geographic.com/topo>

All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2020-12-08 16:05:49 (qa/qc March 21, 2016 12:20 - tn=1065749 dist=3218 I )  
\$poi=39.0706000 -78.2755600

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| [DGIF](#) | [Credits](#) | [Disclaimer](#) | Contact [vafwis\\_support@dgif.virginia.gov](mailto:vafwis_support@dgif.virginia.gov) | Please view our [privacy policy](#) |  
© 1998-2020 Commonwealth of Virginia Department of Game and Inland Fisheries

**VaFWIS Initial Project Assessment Report** Compiled on 12/8/2020,[Help](#)

4:10:06 PM

Known or likely to occur within a **2 mile buffer around polygon; center 39.0706000 -78.2755599**  
in **069 Frederick County, VA**

[View Map of  
Site Location](#)

444 Known or Likely Species ordered by Status Concern for Conservation  
(displaying first 20) (20 species with Status\* or Tier I\*\* or Tier II\*\* )

<a href="#">BOVA Code</a>	<a href="#">Status*</a>	<a href="#">Tier**</a>	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>	<a href="#">Confirmed</a>	<a href="#">Database(s)</a>
050022	FTST	Ia	<a href="#">Bat, northern long-eared</a>	Myotis septentrionalis		BOVA
050020	SE	Ia	<a href="#">Bat, little brown</a>	Myotis lucifugus	<a href="#">Yes</a>	BOVA,SppObs
050027	SE	Ia	<a href="#">Bat, tri-colored</a>	Perimyotis subflavus		BOVA
060006	SE	Ib	<a href="#">Floater, brook</a>	Alasmidonta varicosa		Habitat
060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>	TEWaters,Habitat
040267	SE		<a href="#">Wren, Bewick's</a>	Thryomanes bewickii		BOVA
030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>	BOVA,TEWaters,Habitat,SppObs
040096	ST	Ia	<a href="#">Falcon, peregrine</a>	Falco peregrinus		BOVA
040293	ST	Ia	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus		BOVA
100155	ST	Ia	<a href="#">Skipper, Appalachian grizzled</a>	Pyrgus wyandot		BOVA
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	Lanius ludovicianus migrans		BOVA
030012	CC	IVa	<a href="#">Rattlesnake, timber</a>	Crotalus horridus		BOVA
040306		Ia	<a href="#">Warbler, golden-winged</a>	Vermivora chrysoptera		BOVA
050024		Ia	<a href="#">Myotis, eastern small-footed</a>	Myotis leibii		BOVA
100248		Ia	<a href="#">Fritillary, regal</a>	Speyeria idalia idalia		BOVA
040052		IIa	<a href="#">Duck, American black</a>	Anas rubripes		BOVA
040320		IIa	<a href="#">Warbler,</a>	Setophaga		BOVA

			<a href="#">cerulean</a>	cerulea		
040140		Iia	<a href="#">Woodcock, American</a>	Scolopax minor		BOVA
040203		Iib	<a href="#">Cuckoo, black-billed</a>	Coccyzus erythrophthalmus		BOVA
100256		Iic	<a href="#">Crescent, tawny</a>	Phyciodes batesii batesii		BOVA

To view **All 444 species** [View 444](#)

\*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

\*\*I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need  
 Virginia Wildlife Action Plan Conservation Opportunity Ranking:  
 a - On the ground management strategies/actions exist and can be feasibly implemented.;  
 b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;  
 c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Bat Colonies or Hibernacula: **Not Known**

**Anadromous Fish Use Streams**

N/A

**Colonial Water Bird Survey**

N/A

**Threatened and Endangered Waters** ( 30 Reaches - displaying first 20 )

[View Map of All Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
<a href="#">Buffalo Marsh Run (035793.)</a>	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060201	SE	Iic	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	
<a href="#">Buffalo Marsh Run (028363.)</a>	SE	060201	SE	Iic	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (030206.)</a>	SE	060201	SE	Iic	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (031697.)</a>	SE	060201	SE	Iic	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (031734.)</a>	SE	060201	SE	Iic	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>

<a href="#">Buffalo Marsh Run (031908.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (032717.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (032866.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (035385.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (035477.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (035577.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (038035.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (041054.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (041055.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (044560.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Meadow Brook (012679.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (02941.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (02967.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (030257.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (031659.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (031663.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (035797.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (038085.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>

To view **All 30 Threatened and Endangered Waters records** [View 30](#)

**Managed Trout Streams** ( 1 records ) (Click on Stream Name to view complete reach history) [View Map of All Trout Stream Surveys](#)

Reach ID	Stream Name	Class	Brook Trout	Brown Trout	Rainbow Trout	View Map
07MDB-01	<a href="#">Meadow Brook</a>	Stockable				<a href="#">Yes</a>

### Bald Eagle Concentration Areas and Roosts

N/A

### Bald Eagle Nests

N/A

### Habitat Predicted for Aquatic WAP Tier I & II Species ( 9 Reaches )

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species						View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name					
Buffalo Marsh Run (20700061)	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060201	SE	Iic	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	
Cedar Creek (20700061)	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060006	SE	Ib	<a href="#">Floater, brook</a>	Alasmidonta varicosa	
Fawcett Run (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Meadow Brook (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Middle Marsh Brook (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
tributary (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
tributary (20700071)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
tributary (20700072)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Watson Run (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>

### Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

### Public Holdings:

N/A

Compiled on 12/8/2020, 4:10:06 PM I1065749.0 report=IPA searchType= P dist= 3218 poi= 39.0706000 -78.2755599 siteDD= 39.0706000 -78.2755642;39.0705628 -78.2756019;39.0698735 -78.2763013;39.0691642 -78.2770393;39.0681199 -78.2781258;39.0686995 -78.2789945;39.0687216 -78.2790291;39.0687473 -78.2790692;39.0687729 -78.2791093;39.0687984 -78.2791495;39.0688240 -78.2791895;39.0688496 -78.2792295;39.0688754 -78.2792694;39.0689018 -78.2793099;39.0689284 -78.2793504;39.0689551 -78.2793908;39.0689818 -78.2794312;39.0690084 -78.2794717;39.0690350 -78.2795124;39.0690554 -78.2795437;39.0690756 -78.2795751;39.0690958 -78.2796065;39.0691160 -78.2796378;39.0691363 -78.2796692;39.0691565 -78.2797004;39.0691681 -78.2797184;39.0691798



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### Threatened and Endangered Waters where Turtle, wood (030062) observed

39,04,14.1 -78,16,32.0 is the Search Point

#### Show Position Rings

Yes  No  
1 mile and 1/4 mile at the Search Point

#### Show Search Area

Yes  No  
2 Search distance miles buffer

Display Search Point is not at center

#### Base Map Choices

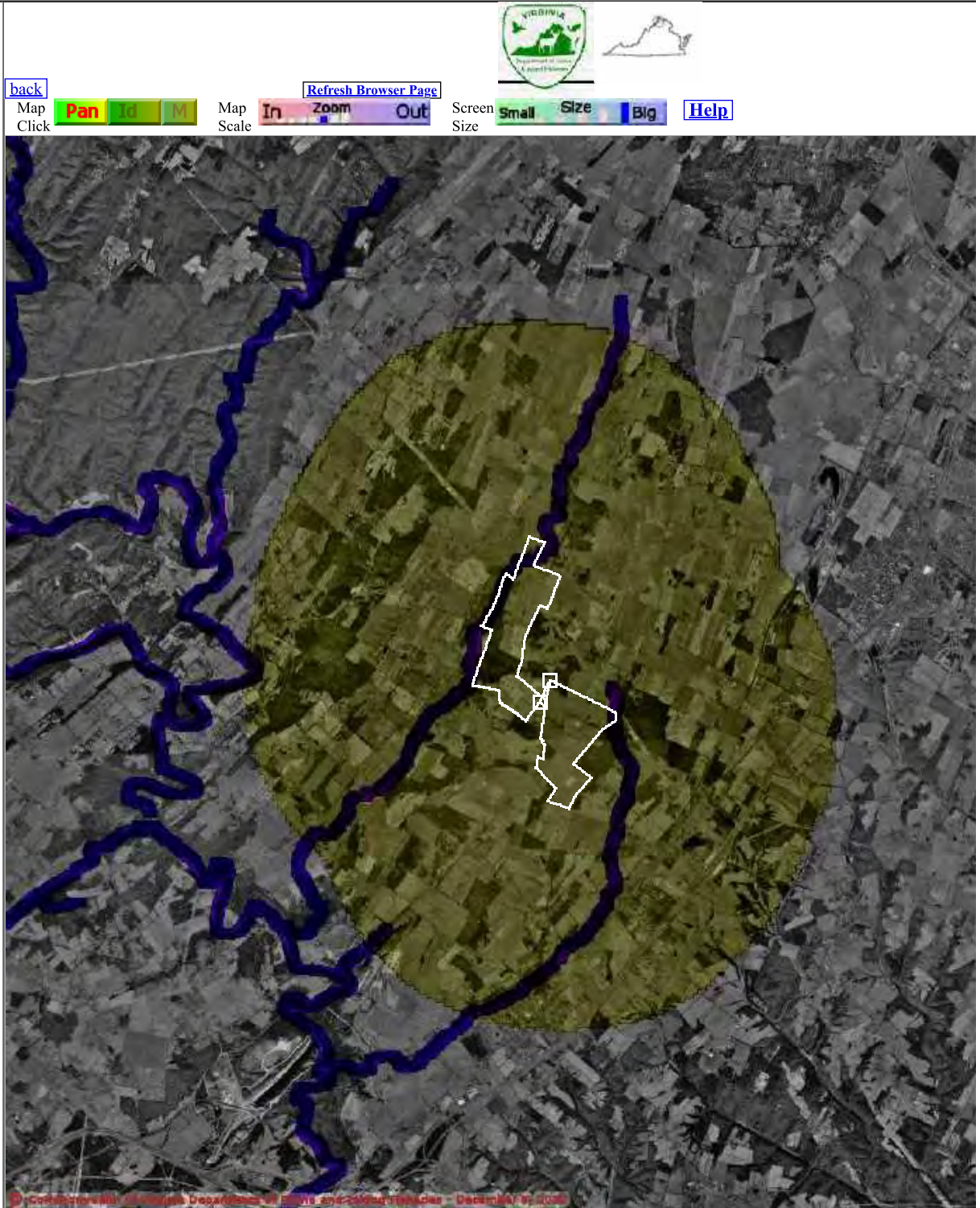
BW Aerial Photography

#### Map Overlay Choices

Current List: Search, TEWaters

#### Map Overlay Legend

- T & E Waters**
- Federal
  - State
- 2 mile radius Search Area



Point of Search 39,04,14.1 -78,16,32.0

Map Location 39,04,28.0 -78,16,28.7

Select **Coordinate System:**  Degrees,Minutes,Seconds Latitude - Longitude

Decimal Degrees Latitude - Longitude

Meters UTM NAD83 East North Zone

Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 17 NAD 1983 with left 727763 and top 4336576. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic  
<http://www.national.geographic.com/topo>

All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2020-12-08 18:45:56 (qa/qc March 21, 2016 12:20 - tn=1065819.1 dist=3218  
1)  
\$poi=39.0706000 -78.2755599

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# Virginia Department of Game and Inland Fisheries

12/8/2020 6:45:13 PM

## Fish and Wildlife Information Service

**VaFWIS Search Report** Compiled on 12/8/2020, 6:45:13 PM

[Help](#)

Known or likely to occur within a **2 mile buffer around polygon; center 39.0706000  
-78.2755599**  
in **069 Frederick County, VA**  
where (030062) [Turtle, wood](#) observed.

[View Map of  
Site Location](#)

### Threatened and Endangered Waters where Turtle, wood (030062) observed

( 16 Reaches )

[View Map of All  
Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
<a href="#">Buffalo Marsh Run (035793)</a>	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060201	SE	Iic	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	
<a href="#">Meadow Brook (012679)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (02941)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (02967)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (030257)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (031659)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (031663)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (035797)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (038085)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>

<a href="#">Meadow Brook (0395267.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (041248.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (07077.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (07670.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (08676.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Meadow Brook (08781.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
<a href="#">Middle Marsh Brook (041021.)</a>	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>

\*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

\*\*I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;  
 II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;  
 III=VA Wildlife Action Plan - Tier III - High Conservation Need;  
 IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need  
 Virginia Wildlife Action Plan Conservation Opportunity Ranking:  
 a - On the ground management strategies/actions exist and can be feasibly implemented.;  
 b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;  
 c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

**Species Observations where Turtle, wood (030062) observed** ( 1 records , 1 Observation with Threatened or Endangered species )

[View Map of All Query Results](#)  
[Species Observations where Turtle, wood \(030062\) observed](#)

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE *	Highest Tier **	
<a href="#">64628</a>	SppObs	Apr 13 2000	DR. CARL ERNST ( PRINCIPLE PERMITTEE), THOMAS AKRE (COLLECTOR), DEPT. BIOLOGICAL SCIENCES GMU	1	ST	I	<a href="#">Yes</a>

Displayed 1 Species Observations where Turtle, wood (030062) observed

**Habitat Predicted for Aquatic WAP Tier I & II Species where Turtle, wood (030062) observed**

( 9 Reaches )

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species	View

	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					Map
Buffalo Marsh Run (20700061)	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060201	SE	Iic	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	
Cedar Creek (20700061)	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060006	SE	Ib	<a href="#">Floater, brook</a>	Alasmidonta varicosa	
Fawcett Run (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Meadow Brook (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Middle Marsh Brook (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
tributary (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
tributary (20700071)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
tributary (20700072)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Watson Run (20700061)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>

### Habitat Predicted for Terrestrial WAP Tier I & II Species where Turtle, wood (030062) observed

N/A

Compiled on 12/8/2020, 6:45:13 PM I1065819.1 report=BOVA searchType=P dist= 3218 poi= 39.0706000 -78.2755599

audit no. 1065819 12/8/2020 6:45:13 PM Virginia Fish and Wildlife Information Service  
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### Threatened and Endangered Waters where Springsnail, Potomac Appalachian (060201) observed

39,04,14.1 -78,16,32.0 is the Search Point

#### Show Position Rings

Yes  No  
1 mile and 1/4 mile at the Search Point

#### Show Search Area

Yes  No  
2 Search distance miles buffer

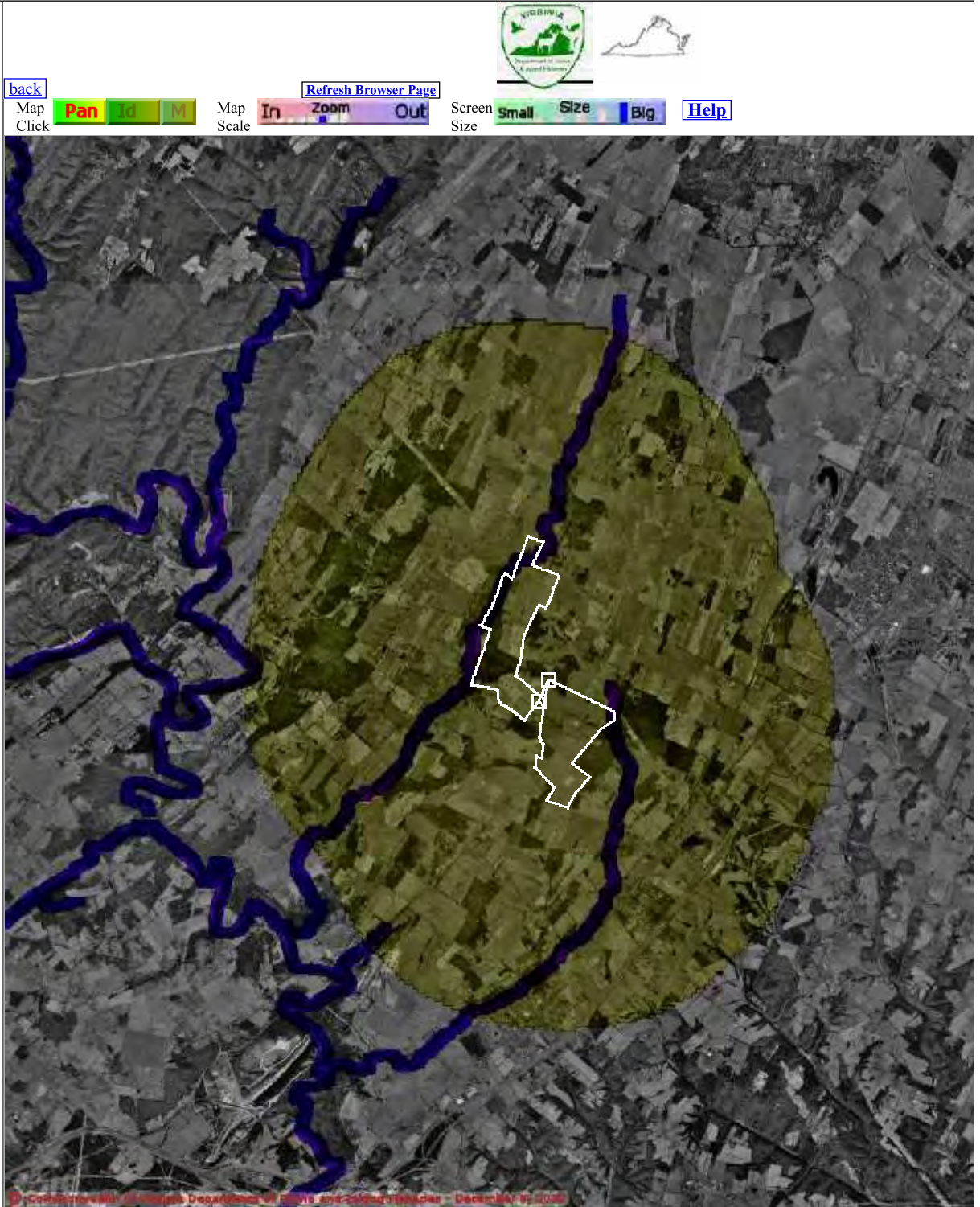
Display Search Point is not at center

Base Map [Choices](#)  
BW Aerial Photography

Map Overlay [Choices](#)  
Current List: Search, TEWaters

#### Map Overlay Legend

- T & E Waters
  - Federal
  - State
- 2 mile radius Search Area



Point of Search 39,04,14.1 -78,16,32.0

Map Location 39,04,28.0 -78,16,28.7

- Select **Coordinate System**:
- Degrees,Minutes,Seconds Latitude - Longitude
  - Decimal Degrees Latitude - Longitude
  - Meters UTM NAD83 East North Zone
  - Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see [Microsoft terraserver-usa.com](https://microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 17 NAD 1983 with left 727763 and top 4336576. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic  
<http://www.national.geographic.com/topo>

All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2020-12-08 18:42:58 (qa/qc March 21, 2016 12:20 - tn=1065819.1 dist=3218  
1)  
\$poi=39.0706000 -78.2755599

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# Virginia Department of Game and Inland Fisheries

12/8/2020 6:41:33 PM

## Fish and Wildlife Information Service

**VaFWIS Search Report** Compiled on 12/8/2020, 6:41:33 PM

[Help](#)

Known or likely to occur within a **2 mile buffer around polygon; center 39.0706000 -78.2755599**  
 in **069 Frederick County, VA**  
 where (060201) [Springsnail, Potomac Appalachian](#) observed.

[View Map of Site Location](#)

### Threatened and Endangered Waters where Springsnail, Potomac Appalachian (060201) observed

( 15 Reaches )

[View Map of All Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
<a href="#">Buffalo Marsh Run (035793)</a>	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	
<a href="#">Buffalo Marsh Run (028363)</a>	SE	060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (030206)</a>	SE	060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (031697)</a>	SE	060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (031734)</a>	SE	060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (031908)</a>	SE	060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (032717)</a>	SE	060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (032866)</a>	SE	060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (035385)</a>	SE	060201	SE	IIc	<a href="#">Springsnail, Potomac (=Appalachian)</a>	Fontigens bottimeri	<a href="#">Yes</a>

<a href="#">Buffalo Marsh Run (035477.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (035577.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (038035.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (041054.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (041055.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>
<a href="#">Buffalo Marsh Run (044560.)</a>	SE	060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	<a href="#">Yes</a>

\*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

\*\*I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;  
 II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;  
 III=VA Wildlife Action Plan - Tier III - High Conservation Need;  
 IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need  
 Virginia Wildlife Action Plan Conservation Opportunity Ranking:  
 a - On the ground management strategies/actions exist and can be feasibly implemented.;  
 b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;  
 c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

**Habitat Predicted for Aquatic WAP Tier I & II Species where Springsnail, Potomac Appalachian (060201) observed**

( 1 Reach )

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Buffalo Marsh Run (20700061)	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	
Buffalo Marsh Run (20700061)	SE	030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
		060201	SE	IIC	<a href="#">Springsnail, Potomac (=Appalachian)_</a>	Fontigens bottimeri	

## Habitat Predicted for Terrestrial WAP Tier I & II Species where Springsnail, Potomac Appalachian (060201) observed

N/A

Compiled on 12/8/2020, 6:41:33 PM I1065819.1 report=BOVA searchType= P dist= 3218 poi= 39.0706000 -78.2755599

**audit no. 1065819 12/8/2020 6:41:33 PM Virginia Fish and Wildlife Information Service**  
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7 Species Observations where Bat, little brown (050020) observed

39,04,14.1 -78,16,32.0 is the Search Point

[back](#)

Map Click

[Pan](#) [Go](#) [M](#)

Map Scale

[In](#) [Zoom](#) [Out](#)

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Screen Size

[Small](#) [Size](#) [Big](#)

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Show Position Rings

Yes  No

1 mile and 1/4 mile at the Search Point

Show Search Area

Yes  No

2 Search distance miles buffer

Display  Search Point is not at center  at map center

Base Map [Choices](#)

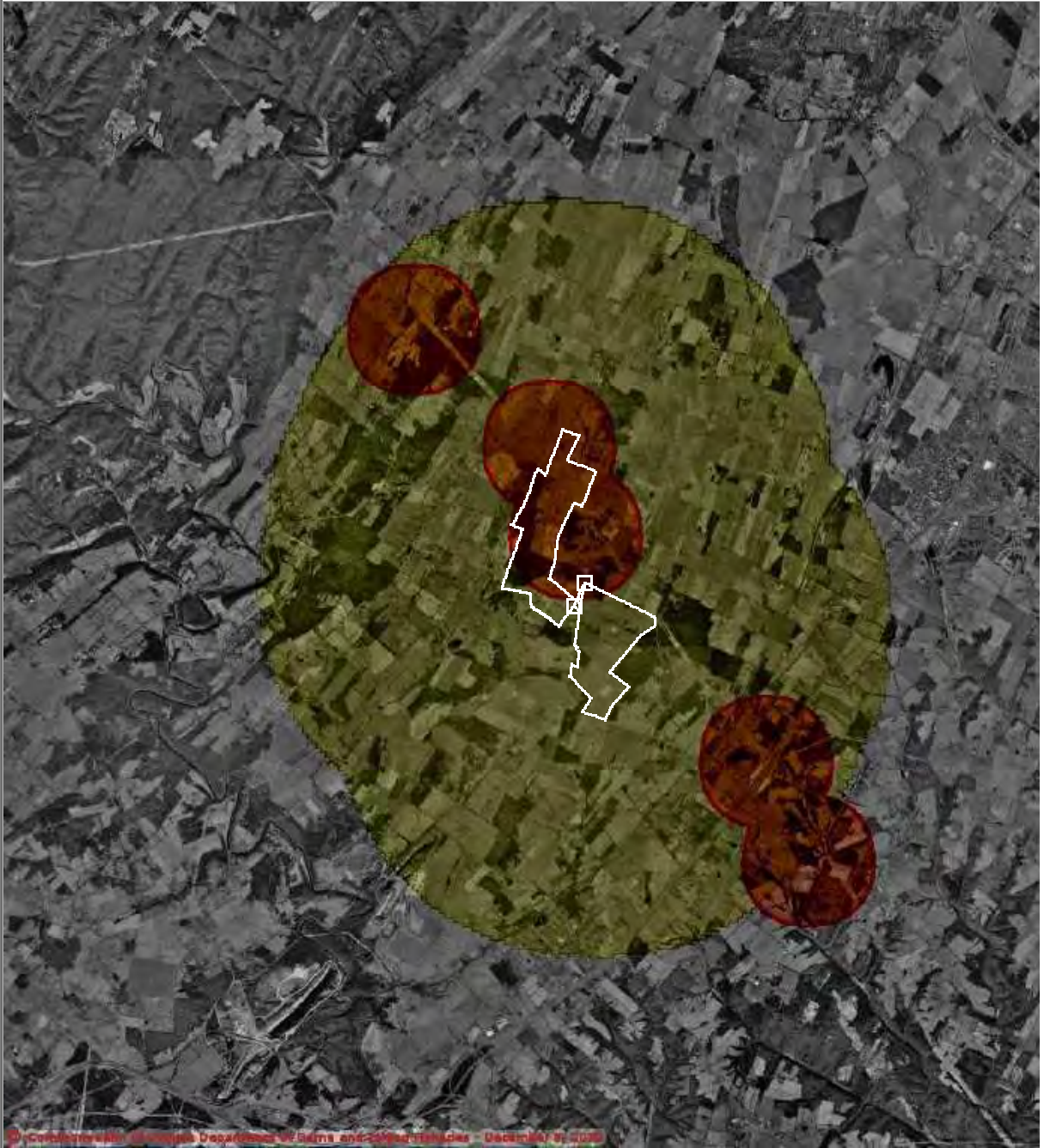
BW Aerial Photography

Map Overlay [Choices](#)

Current List: Search, SppObs

Map Overlay Legend

-  2 mile radius Search Area
-  Data Observation Site



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Point of Search 39,04,14.1 -78,16,32.0

Map Location 39,04,28.0 -78,16,28.7

Select **Coordinate System:**  Degrees,Minutes,Seconds Latitude - Longitude

Decimal Degrees Latitude - Longitude

Meters UTM NAD83 East North Zone

Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 17 NAD 1983 with left 727763 and top 4336576. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic  
<http://www.national.geographic.com/topo>

All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2020-12-08 18:39:07 (qa/qc March 21, 2016 12:20 - tn=1065819.1 dist=3218  
1)  
\$poi=39.0706000 -78.2755599

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# Virginia Department of Game and Inland Fisheries

12/8/2020 6:38:29 PM

## Fish and Wildlife Information Service

**VaFWIS Search Report** Compiled on 12/8/2020, 6:38:29 PM

[Help](#)

Known or likely to occur within a **2 mile buffer around polygon; center 39.0706000  
-78.2755599**  
in **069 Frederick County, VA**  
where (050020) [Bat, little brown](#) observed.

[View Map of  
Site Location](#)

**Species Observations where Bat, little brown (050020) observed** ( 7 records , 7 Observations with  
Threatened or Endangered species )

[View Map of All Query Results](#)

[Species Observations where Bat, little brown \(050020\) observed](#)

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
<a href="#">230931</a>	SppObs	May 26 2008	Sanders: Danielle Ireton, Jason Collins	2	SE	I	<a href="#">Yes</a>
<a href="#">230932</a>	SppObs	May 24 2008	Sanders: K. Voochees, Chris Sanders	2	SE	I	<a href="#">Yes</a>
<a href="#">230937</a>	SppObs	May 18 2008	Sanders: Clayton Lutz, Jen Hicks	2	SE	I	<a href="#">Yes</a>
<a href="#">230939</a>	SppObs	May 18 2008	Sanders: D. Ireton, C. Sanders	2	SE	I	<a href="#">Yes</a>
<a href="#">230935</a>	SppObs	May 17 2008	Sanders: Mike Schneider, Chelsea Albertson	1	SE	I	<a href="#">Yes</a>
<a href="#">230936</a>	SppObs	May 17 2008	Sanders: Clay Lutz, Jen Hicks.	5	SE	I	<a href="#">Yes</a>
<a href="#">230934</a>	SppObs	May 15 2008	Sanders: Mike Schneider, Chelsea Albertson	1	SE	I	<a href="#">Yes</a>

Displayed 7 Species Observations where Bat, little brown (050020) observed

\*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed;  
FC=Federal Candidate; CC=Collection Concern

\*\*I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;

II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;

III=VA Wildlife Action Plan - Tier III - High Conservation Need;

IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Virginia Wildlife Action Plan Conservation Opportunity Ranking:

a - On the ground management strategies/actions exist and can be feasibly implemented.;

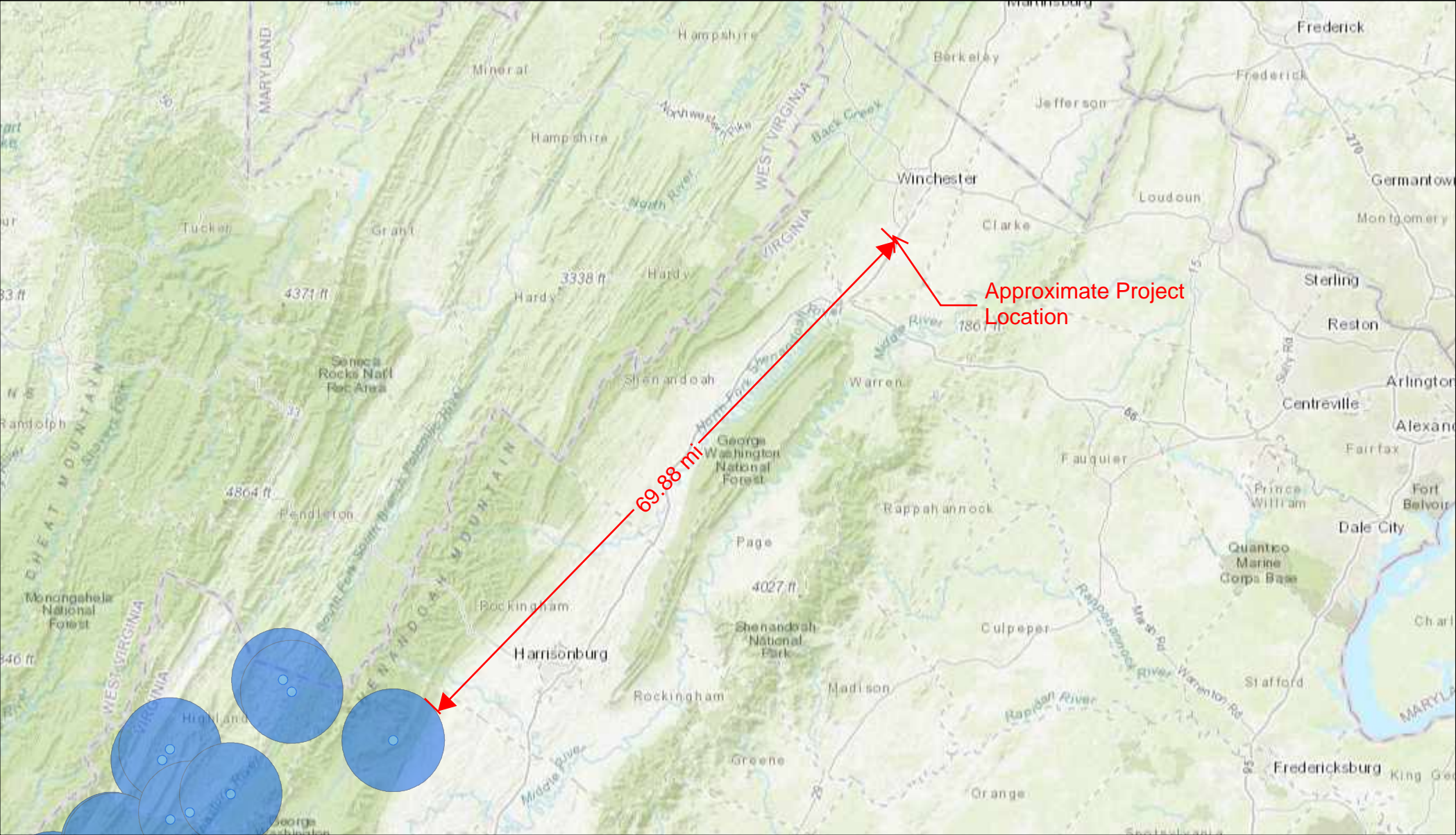
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;

c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Compiled on 12/8/2020, 6:38:29 PM 11065819.1 report=BOVA searchType= P dist= 3218 poi= 39.0706000 -78.2755599

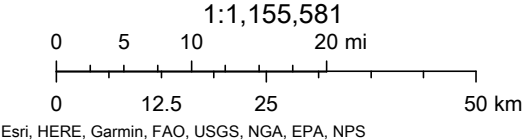
**audit no. 1065819 12/8/2020 6:38:29 PM Virginia Fish and Wildlife Information Service**  
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# Little Brown and Tri-Colored Bat



12/8/2020, 3:21:56 PM


- Tri-colored and Little Brown Hibernaculum Half Mile Buffer
- Tri-colored and Little Brown Hibernaculum 5.5 Mile Buffer












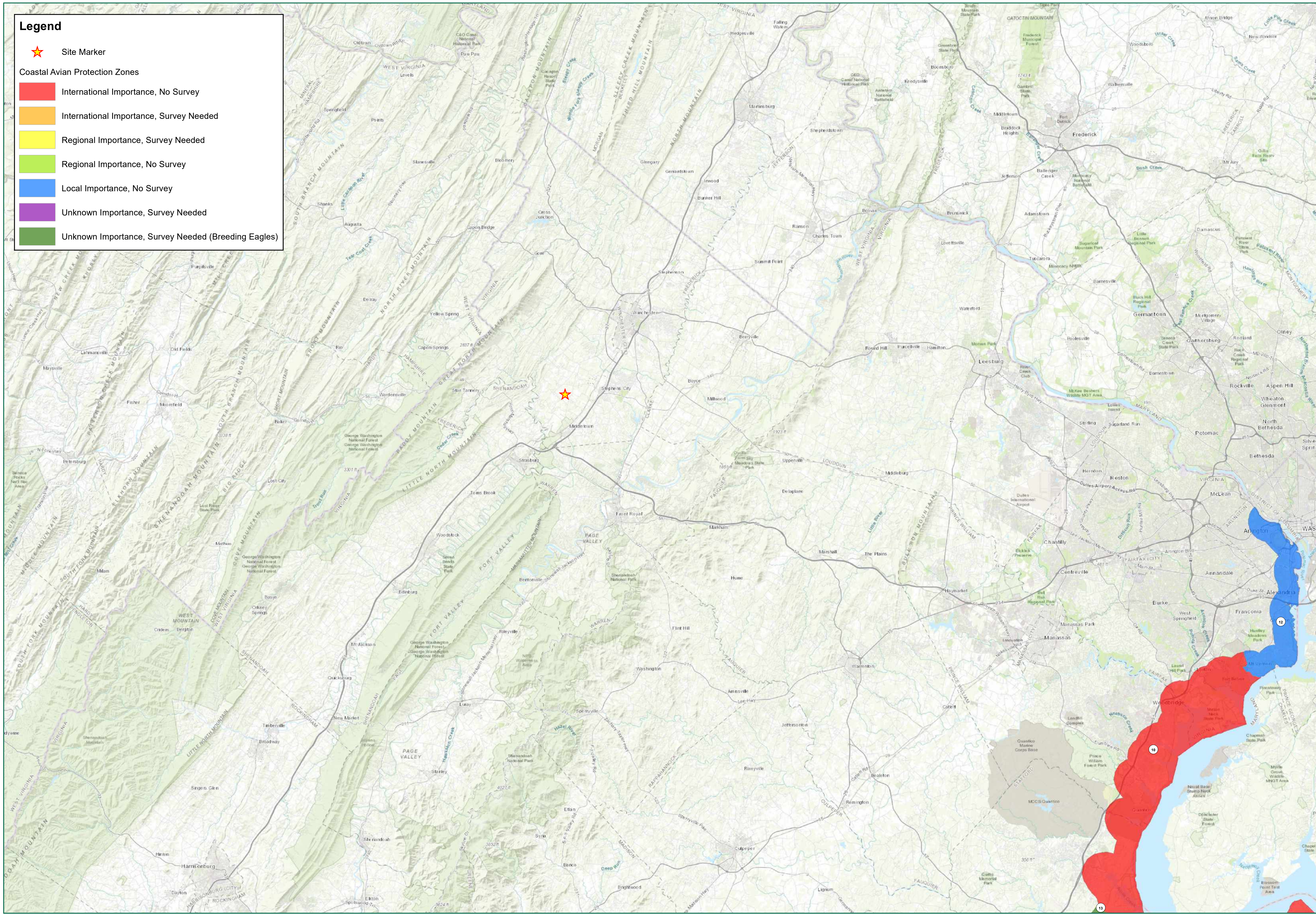
Attachment G – CAPZ

**Legend**

-  Site Marker

**Coastal Avian Protection Zones**

-  International Importance, No Survey
-  International Importance, Survey Needed
-  Regional Importance, Survey Needed
-  Regional Importance, No Survey
-  Local Importance, No Survey
-  Unknown Importance, Survey Needed
-  Unknown Importance, Survey Needed (Breeding Eagles)



**TIMMONS GROUP**  
 YOUR VISION ACHIEVED THROUGH OURS.  
 1001 Builders Parkway, Suite 300  
 Richmond, VA 23225  
 TEL: 804.600.6500  
 www.timmons.com

**PROJECT NAME & LOCATION**  
**FOXGLOVE SOLAR PROJECT**  
**FOXGLOVE SOLAR, LLC**  
**FREDERICK COUNTY - VIRGINIA**

**DATE** 02/09/2021  
**PROJECT NUMBER** 41147  
**PROJECT NAME** FOXGLOVE SOLAR LLC  
**DESIGNED BY / DRAWN BY** L. WHEELER

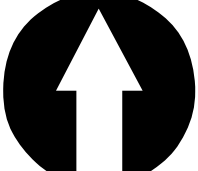
**NOTES:**  
 Project Limits are approximate.  
 Coastal Avian Protection Zone data from VCU's Virginia Coastal Zone Management Program for Virginia Only.  
 Aerial imagery from ESRI.

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**REVISIONS**

#	DATE	DESCRIPTION

**DRAWING DESCRIPTION**  
**COASTAL AVIAN PROTECTION ZONE MAP**

  
 Miles  
 0 4 8  
 PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 1" = 4 mi 1

Attachment H – Cultural Resource Analysis



# COMMONWEALTH of VIRGINIA

Matt Strickler  
Secretary of Natural Resources

**Department of Historic Resources**  
2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan  
Director

Tel: (804) 367-2323  
Fax: (804) 367-2391  
[www.dhr.virginia.gov](http://www.dhr.virginia.gov)

February 1, 2021

Robert Taylor  
Dutton and Associates  
115 Crowder Dr.  
Midlothian, VA 23113

RE: Foxglove Solar Project  
Frederick County, Virginia  
DHR File No. 2020-0416

Dear Mr. Taylor:

This letter is in regards to a conference call on January 15, 2021 and a memo providing additional information (received January 26, 2021). Thank you for providing the following additional information as requested:

- Mapping and detail on proposed vegetative screening in the vicinity of three homes;
- A comprehensive viewshed assessment of the John Chumley House (DHR ID #034-0220) to be treated as potentially eligible for the purposes of this project; and
- Avoidance of a battlefield and farm with project improvements.

*DHR concurs that as a result of these revisions, there will be no more than a minimal impact to the Ash House at 6124 Middle Road (DHR ID #034-0076), Valerie Hill at 1687 Marlboro Road (DHR ID #034-0139), John Chumley House at 231 Vacluse Spring Road (DHR ID #034-0220), and Woodbine Farm, 829 Vacluse Road (DHR ID #034-5075); as well as no more than a moderate impact to Cedar Creek Battlefield (DHR ID #034-0303) and Shiley Farm at 856 Hites Road (DHR ID #034-0264). Please note that *if the moderate impact to Cedar Creek Battlefield cannot be minimized further to be a minimal impact, mitigation is warranted.**

Western Region Office  
962 Kime Lane  
Salem, VA 24153  
Tel: (540) 387-5443  
Fax: (540) 387-5446

Northern Region Office  
5357 Main Street  
PO Box 519  
Stephens City, VA 22655  
Tel: (540) 868-7029  
Fax: (540) 868-7033

Eastern Region Office  
2801 Kensington Avenue  
Richmond, VA 23221  
Tel: (804) 367-2323  
Fax: (804) 367-2391

If you have any questions regarding these comments, please contact me at 804-482-8091 or via email, [jennifer.bellville-marrion@dhr.virginia.gov](mailto:jennifer.bellville-marrion@dhr.virginia.gov).

Sincerely,



Jenny Bellville-Marrion, Project Review Archaeologist  
Review and Compliance Division

- c. David Dutton, D+A
- Chris Egghart, DEQ
- Rob Propes, Urban Grid
- Brianne Eberline, Urban Grid



**Dutton + Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

January 26, 2021

Jenny Bellville-Marrion  
Project Review Archaeologist, Review and Compliance  
Virginia Department of Historic Resources  
2801 Kensington Avenue  
Richmond, VA 23221

RE: *Phase I Cultural Resources Survey of the Foxglove Solar Project in Frederick County, Virginia – Response to VDHR Review Letter*  
DHR File No. 2020-0416

Dear Ms. Bellville-Marrion:

Thank you for your review and comment regarding the above survey report related to the Foxglove Solar Project in Halifax County, Virginia received via letter December 18, 2020. This memo is in response to your request for additional information and consideration of resources documented in that letter, as well as follow-up discussion with your office in a phone call on January 15, 2021. Specifically, this memo addresses issues related to six architectural resources identified during the survey as summarized below. Additional supporting documentation or information is provided on the following pages.

- Ash House, 6124 Middle Road (DHR ID #034-0076) - potentially eligible. VDHR requests information regarding vegetative screening or the impact could be severe. It appears upon further review and discussion that this comment pertains to Shiley Farm (DHR# 034-0264), however, additional information regarding vegetative screening for this resources is also provided herein.
- Valerie Hill, 1687 Marlboro Road (DHR ID #034-0139) - potentially eligible. VDHR requests information regarding vegetative screening. A site plan illustrating screening and setback are provided herein.
- John Chumley House, 231 Vaucluse Spring Road (DHR ID #034-0220) – recommended not eligible. VDHR requests additional survey information or treat as eligible and provide an impacts assessment. Property will be treated as potentially eligible for the purposes of this effort and an assessment of impacts is provided herein.
- Shiley Farm, 856 Hites Road (DHR ID #034-0264) - potentially eligible. VDHR requests information regarding vegetative screening. It appears upon further review and discussion that this comment pertains to Ash House (DHR# 034-0076), however, additional information regarding vegetative screening to support a recommendation of Moderate Impact for this resources is also provided herein.

- Cedar Creek Battlefield (DHR ID #034-0303) – eligible. VDHR requests additional information on whether it is feasible to avoid the battlefield with project improvements. A revised site plan illustrating avoidance is provided herein.
- Woodbine Farm, 829 Vaucluse Road (DHR ID #034-5075) - potentially eligible. VDHR requests additional information regarding vegetative screening and/or avoidance. A revised site plan illustrating avoidance of the property with discussion of vegetative screening is provided herein.

While detailed site plans depicting the location and extent of existing and proposed vegetative screening are provided in the property-specific narratives below, the following graphic provides a planting plan for use within all proposed supplemental vegetative buffer areas (Figure 1). This graphic was included in the conditional use permit application that was approved by Frederick County.

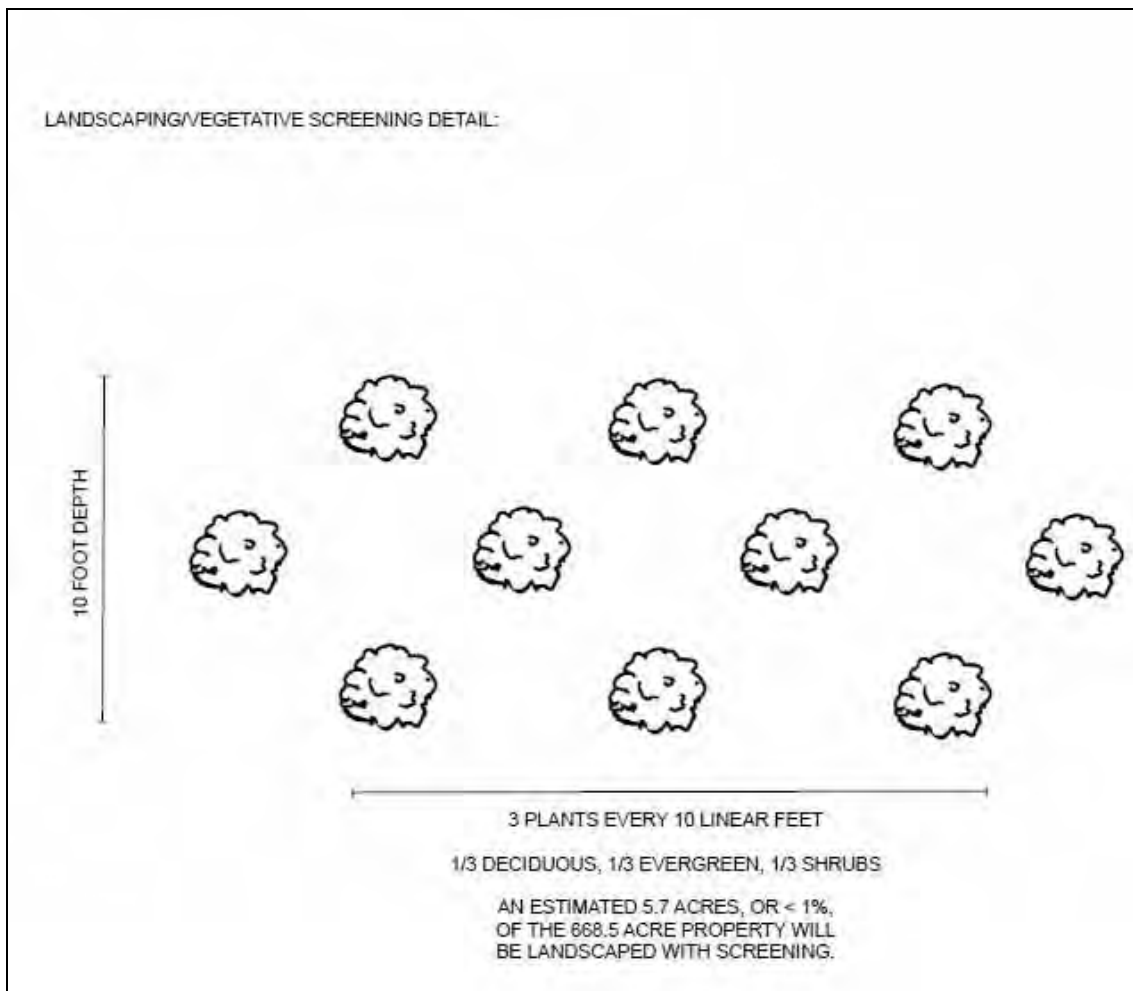


Figure 1: Landscape/vegetative screening detail. Source: Urban Grid

**Ash House, 6124 Middle Road (DHR ID #034-0076)**



Improvements related to the Foxglove Solar project are proposed to take place within the landscape to the east of the Ash House property. The house sits near the front of its property which is 0.39-miles away from the project area at its nearest point. The landscape between the property and the project is generally characterized by rolling terrain with open pasture and treeline.

Viewshed assessment found that the historic rural landscape around the resource is relatively intact, however, the setting is compromised by a wide high-voltage transmission line corridor that crosses through the open field to the north of the property. Inspection from the road in front of the house revealed that the rolling terrain and intervening treeline inhibit wide views of the project area. Much of the project is set on the opposite side of a wooded ridge from the Ash House which screens it from view, however a narrow portion of the project area may be visible where the treeline does not continue. The rolling topography, however, still breaks up the viewshed.

The revised project site plan accounts for visibility from this resource and includes the retention of 50-feet of existing mature woodland along the perimeter of the portion of the project area to be developed with solar panels (Figure 2). No improvements will take place within the portion of the project area where existing vegetation is thinner and/or does not provide complete screening. As such, the existing vegetation to be retained as a screening buffer is anticipated to provide adequate cover in all seasons, and therefore, the Foxglove Solar project is recommended to pose no more than a minimal impact on the Ash House.



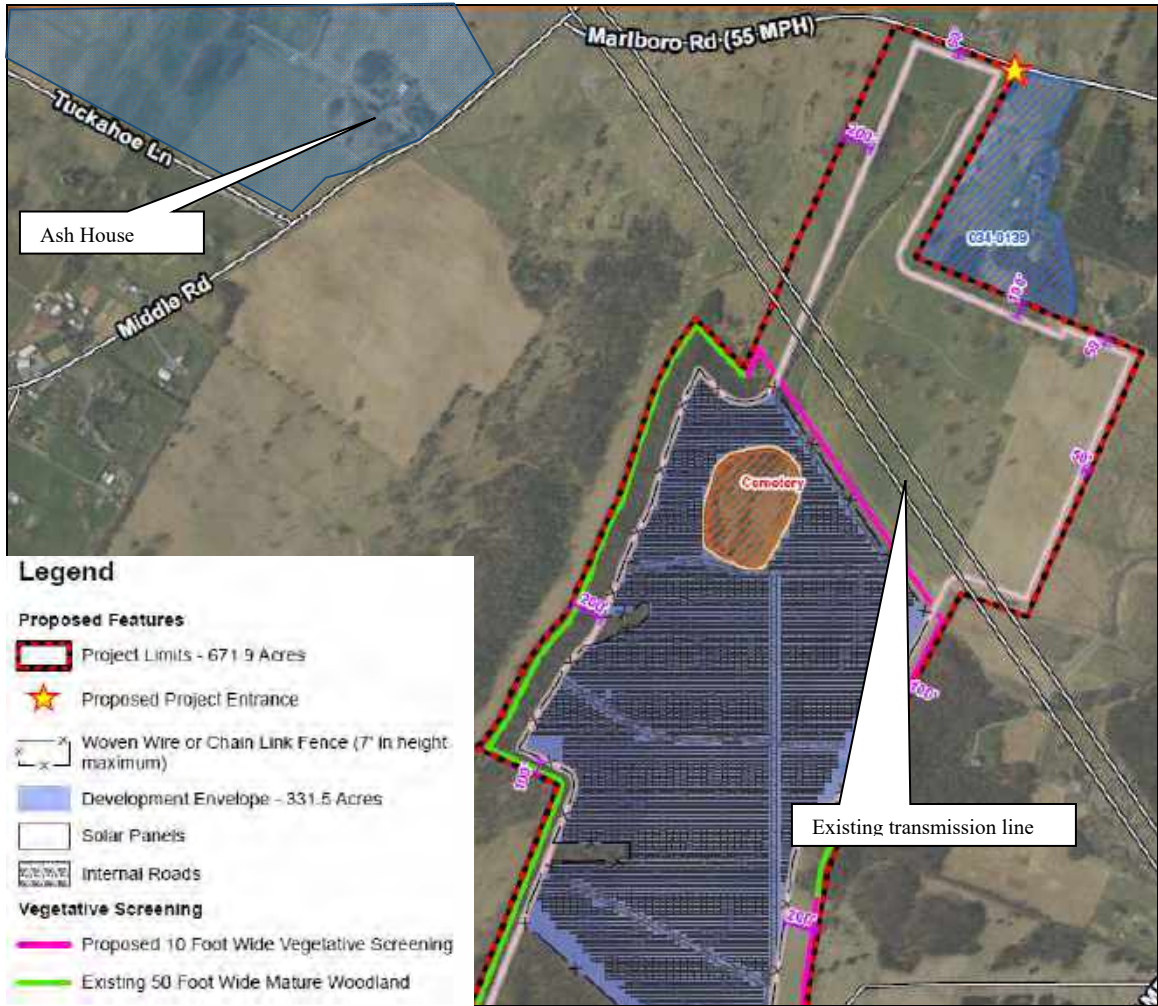


Figure 2: Location of Ash House in relation to the project area showing proposed vegetative screening. Source: Urban Grid

**Valerie Hill, 1687 Marlboro Road (DHR ID #034-0139)**



Improvements related to the Foxglove Solar project are proposed to take place within the landscape to the west and south of the Valerie Hill property. The property is immediately adjacent to project area along its western boundary, although the house is set centrally within the property and is roughly 385 feet away. The landscape surrounding the home, and between it and the project area is generally characterized by rolling and manicured lawn with planted vineyard.

Viewshed assessment found that the historic rural landscape around the resource is relatively intact, however, the property now functions as a winery and tasting room. Inspection from the road in front of the property revealed that the vegetation throughout the property, including the tree-lined driveway interrupt views towards the project area, however, it remains visible. Likewise, vantage points from within the property, including the parking lot in front of the dwelling and the outdoor seating area to the side have clear visibility of the adjacent portion of the project area, although wide views are interrupted by vegetation on the property and the rolling terrain of the project area.

The revised project site plan accounts for visibility from this resource and as such, no improvements will take place within the portion of the project area immediately adjacent to, or in close proximity of the resource (Figure 3). The nearest improvements will be set back over 1,000 feet from the edge of the property; beyond a ridge, and behind an existing utility-scale transmission line. A supplemental landscape buffer will be planted along the perimeter of the improvements. As such, the distance and additional vegetative buffer are anticipated to provide year-round screening of the project, and therefore, the Foxglove Solar project is recommended to pose no more than a minimal impact on Valerie Hill.



Figure 3: Location of Valerie Hill in relation to the project area showing setback and proposed vegetative screening. Source: Urban Grid

**John Chumley House, 231 Vaucleuse Springs Road (DHR ID #034-0220)**



This dwelling is a late-eighteenth dwelling that was relocated to its current site, along with several other historic buildings by John Chumley in 1963 to create a bed and breakfast property with multiple historic units. Despite its relocation, this building was considered potentially eligible for listing in the NRHP by the VDHR in 1996 for distinctive architecture. At this time, the building appears to have been further renovated, and enlarged, further obscuring its historic form and character. Although the integrity of the building has been diminished, close inspection and assessment was not possible, so it will be treated as potentially eligible for the NRHP for the purposes of this effort.

The building is located centrally within the large on which it is located. This property, known as Vaucleuse, is also considered eligible for listing in the NRHP. As part of the effort, impacts to the larger property were assessed. That assessment found that the distance, topography, and vegetation between the property and the project area provides screening from all inspected public vantages along the road bordering the property, as well as within the property. As such, VDHR concurred with the recommendation that the Foxglove Solar Project would have no more than a minimal impact to Vaucleuse.

The John Chumley House is located near the front edge of the Vaucleuse property, furthest from the project area (Figure 4). It is bordered by a thick wooded area, downhill from a ridge that extends through the property that inhibits distant views in the direction of the project area. As such, the overall property in which the resource is set was determined to have no more than a minimal impact, and this individual building is set within a portion of that property with substantial vegetative and screening, the Foxglove Solar project is recommended to pose no more than a minimal impact on the John Chumley House.

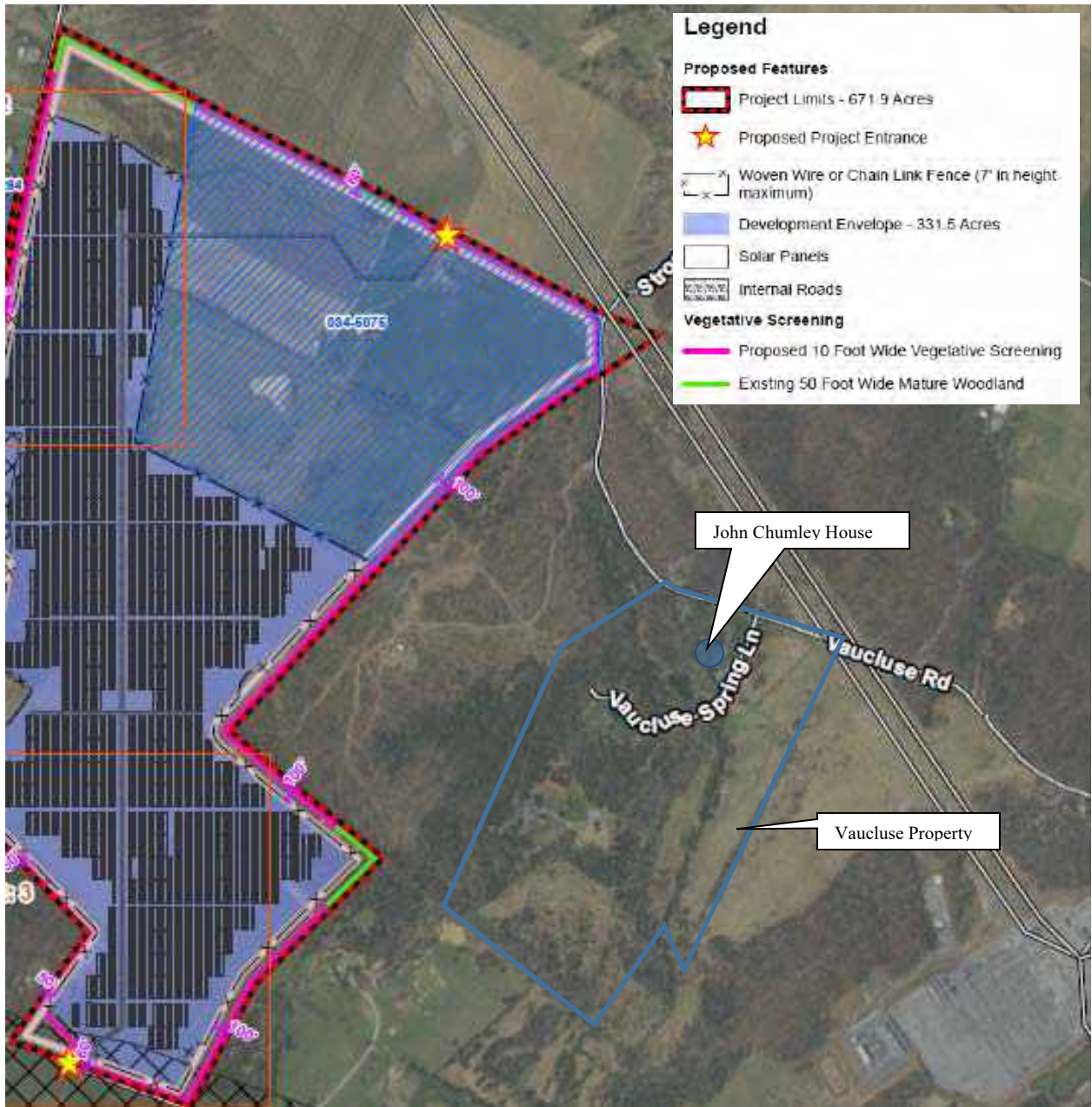


Figure 4: Location of John Chumley House in relation to the project area showing intervening distance and vegetation. Source: Urban Grid

**Shiley Farm, 856 Hites Road (DHR ID #034-0264)**



Improvements related to the Foxglove Solar project are proposed to take place within the landscape immediately to the rear (west) of the Shiley Farm property, as well as across Hites Road to the front (east). The landscape surrounding the home, and between it and the project area is generally characterized by rolling terrain currently under agriculture.

Viewshed assessment found that the historic rural landscape around the resource is intact although it is flanked by nonhistoric homes set on small lots. The dwelling rests atop a slight knoll on a lushly landscaped yard. Inspection from the road in front of the property revealed unobstructed views of the project area across the street, however the ridge atop which the home rests and extends parallel to the road screens visibility of the portion of the project area behind the house. Inspection from the driveway bordering the edge of the property revealed visibility of the project area both to the front and rear of the house. As the project area is immediately adjacent to the rear of the resource and across the road to the front, it is visible from public ROW in front of the property as well as within the property and project improvements may also be expected to be visible.

The revised project site plan accounts for visibility from this resource and includes the retention of a setback of improvements from the edges of the project area in the vicinity of the property ranging from 50-feet to 200-feet. Additionally, a ten-foot wide supplemental vegetative buffer will be planted around the perimeter of all project improvements to provide screening in all seasons (Figure 5). As such, there will be a change in viewshed from the resource due to the introduction of vegetative screening to the rear and across the street to the front, however, project improvements are anticipated to be largely screened. Therefore, the Foxglove Solar project is recommended to pose a moderate impact on the Shiley Farm.



Figure 5: Location of Shiley Farm in relation to the project area showing proposed setback and vegetative screening. Source: Urban Grid

### **Cedar Creek Battlefield (DHR ID #034-0303)**



Improvements related to the Foxglove Solar project are proposed to take place within the landscape to the north of the battlefield. The battlefield immediately borders the southern edge of the project area and slightly overlaps it along Hites Road and Klines Mill Road. The landscape within the portion of the battlefield in the vicinity of the project area is generally characterized by rolling terrain with a mix of open pasture and a patchwork of wooded area and treelines.

Viewshed found that the portion of the battlefield within the survey area retains a moderate level of historical integrity. It remains mostly rural, although later homes and other development line the roads that cross through it, including a neighborhood of modern suburban dwellings set on small lots. Inspection from locations throughout the battlefield in the survey area revealed that in general, views towards the project area are short and intermittent, due to the rolling topography and numerous treelines that interrupt longer vistas. Because the battlefield shares boundaries with the project area along three major roads, these public thoroughfares do allow visibility of the project area, however, the views are generally through narrow windows between hills and wooded areas, and typically include later homes and development.

As such, the project may introduce a new component or features into the landscape visible from public ROW immediately bordering the project area, however, visibility quickly becomes screened by terrain and development. It is mostly screened from vantage points further from the project area, and where it can be seen, it is in conjunction with and behind nonhistoric homes and other development. Therefore it was determined that the project will have a moderate impact on the Cedar Creek Battlefield, however, to



confirm this finding, VDHR and Frederick County have requested that no solar arrays be placed directly within the battlefield.

The revised project site plan accounts for this request and as such, all proposed solar arrays will be set back from the boundary of the battlefield. Proposed supplemental vegetative screening will also be planted around the perimeter of the project area along public roads to provide year-round screening of the project improvements (Figure 7). Therefore, the Foxglove Solar project is still recommended to pose a moderate impact on the Cedar Creek Battlefield.

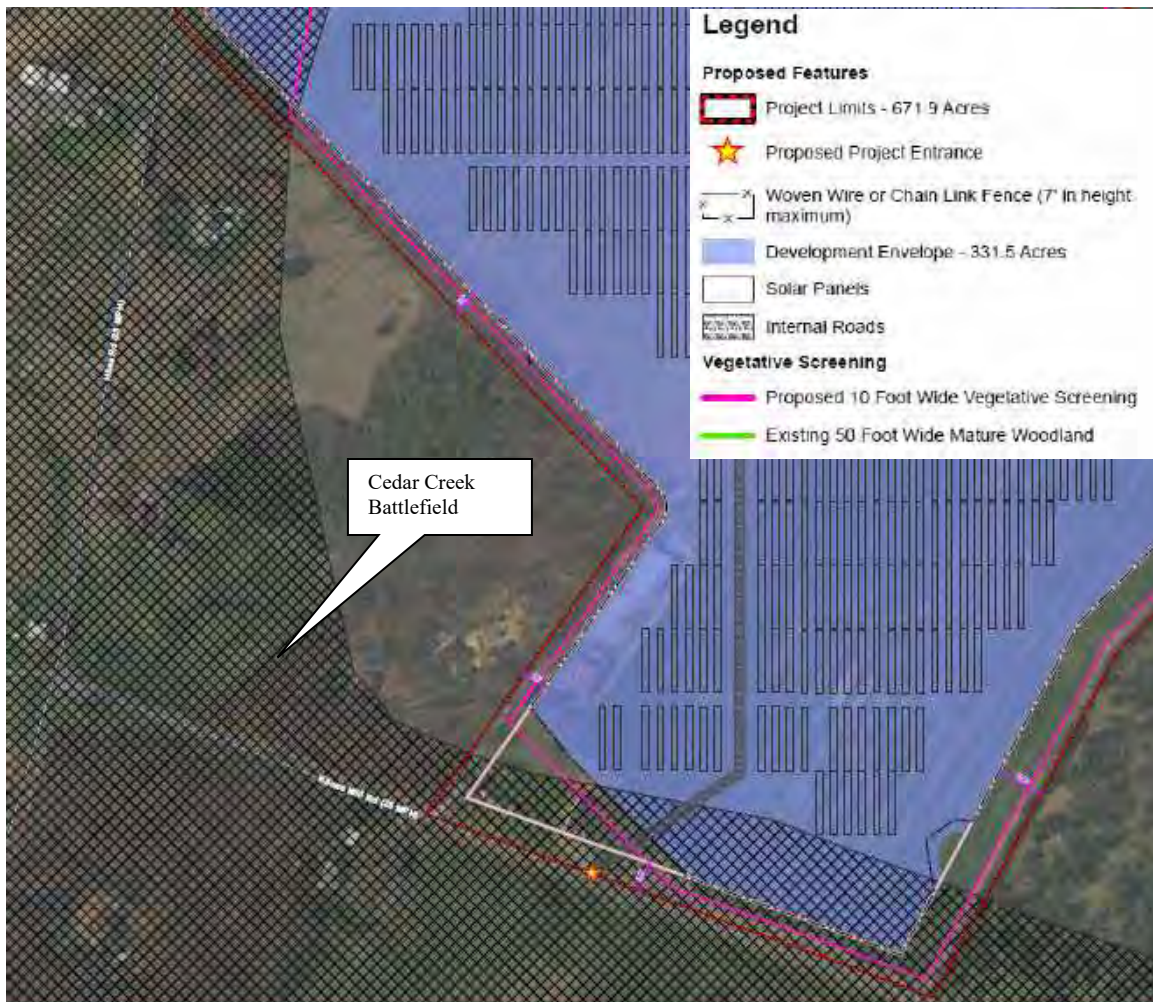


Figure 6: Detail of Cedar Creek Battlefield in relation to the project area showing proposed solar array setback and vegetative screening. Source: Urban Grid

**Woodbine Farm, 829 Vaucleuse Road (DHR ID #034-5075)**



Although the Foxglove Solar Project area includes the Woodbine Farm property, improvements related to the project are proposed to take place within the landscape to the west and south of the property. The property is immediately adjacent to project area along these borders, although the barn of primary significance is set centrally within the property and is nearly 0.25 mile away. The landscape of the property and the portion of the project area bordering it is generally characterized by rolling terrain currently under a mix of orchard and pasture.

Viewshed assessment found that the historic rural landscape around the resource is relatively intact. Inspection from the road in front of the property revealed somewhat screened visibility of the project area because of a line of trees and vegetation along the front edge of the property as well as throughout the large property. The pasture and orchards within the property are divided into smaller areas by a windbreaks and treelines. This existing vegetation screens wide and unobstructed views towards the project area beyond.

The revised project site plan accounts for the preservation of and visibility from this resource and as such, no improvements will take place within the property (Figure 3). The nearest improvements will be set back from the border of the property, and nearly one-quarter mile from the architecturally significant barn. Supplemental landscape buffers will not be planted around the perimeter of the project improvements per the request of the property owner as the property on which the solar arrays are to be set are farmed in conjunction with the property on which the barn is set. As such, additional vegetative buffers would inhibit free movement of farm equipment and livestock which are to be grazed throughout the property. Despite no supplemental plantings, the existing

treelines coupled with distance and topography are anticipated to interrupt views of the project area from within the property. Views from the perimeter of the property are anticipated to be further screened by existing and supplemental vegetative buffers along the public roads. As such, the Foxglove Solar project is recommended to pose no more than a minimal impact on Woodbine Farm.

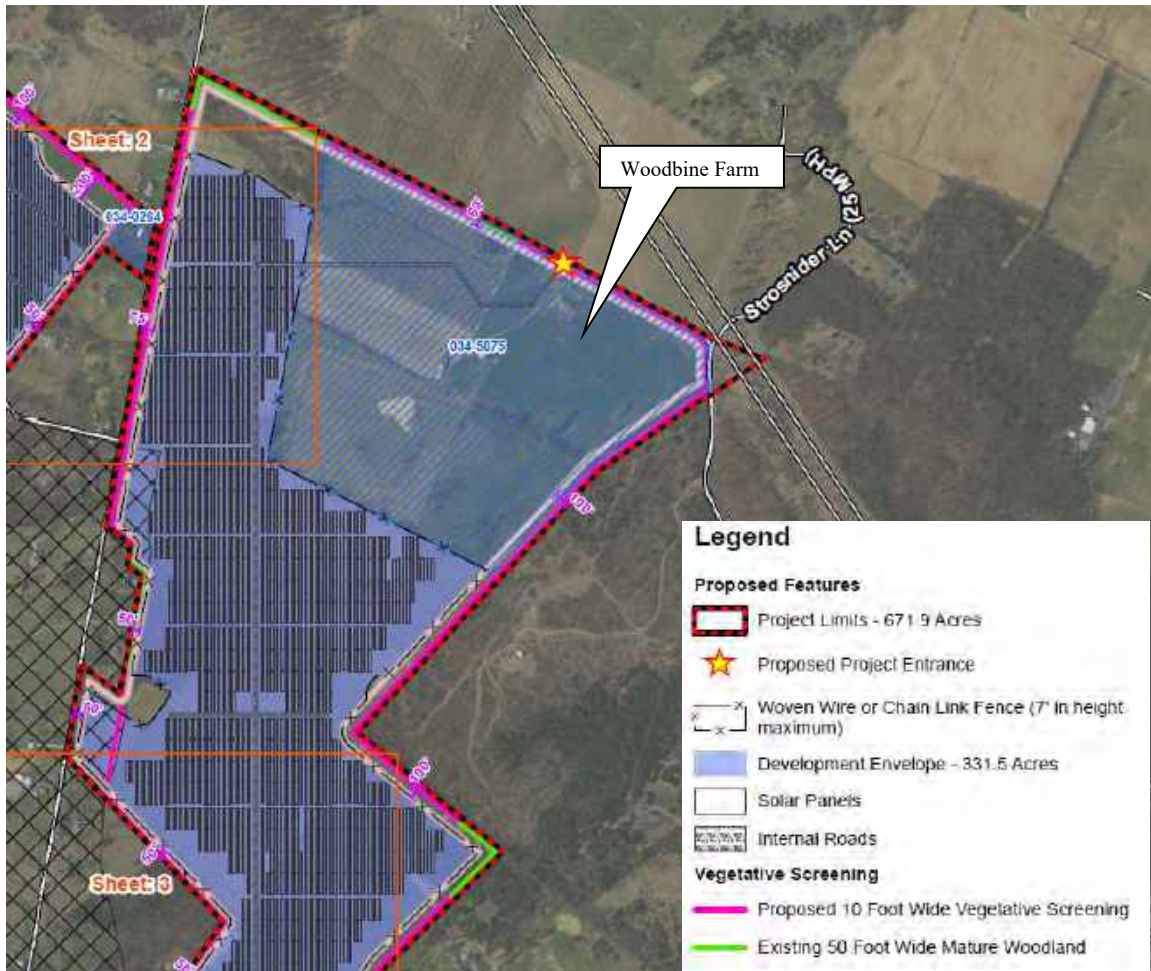


Figure 7: Location of Woodbine Farm in relation to the project area showing setback and proposed vegetative screening. Source: Urban Grid

## Conclusions

In response to a request for additional consideration of NRHP-eligible cultural resources identified as part of the Phase I Cultural Resources Survey of the Foxglove Solar Project, this memo is intended to provide additional clarification and documentation of avoidance and minimization measures. This includes additional mapping and detail on proposed vegetative screening in the vicinity of three homes, more comprehensive viewshed assessment of one resource to be treated as potentially eligible for the purposes of this effort, and avoidance of a battlefield and farm with project improvements. As a result, this memo is intended to confirm no more than a minimal impact to the

Ash House at 6124 Middle Road (DHR ID #034-0076), Valerie Hill at 1687 Marlboro Road (DHR ID #034-0139), John Chumley House at 231 Vacluse Spring Road (DHR ID #034-0220), and Woodbine Farm, 829 Vacluse Road (DHR ID #034-5075); as well as no more than a moderate impact to Cedar Creek Battlefield (DHR ID #034-0303) and Shiley Farm at 856 Hites Road (DHR ID #034-0264).

Please review the provided data and let us know if there is anything additional we can provide you or assist with to complete your review.

If you wish to discuss, please do not hesitate to contact me at (804) 897-1960 or [rtaylor@dutton-associates.com](mailto:rtaylor@dutton-associates.com).

Sincerely,

DUTTON + ASSOCIATES, LLC



Robert J. Taylor, Jr.  
Senior Architectural Historian

cc: Brianne Eberline and Robert Probst – UrbanGrid



# COMMONWEALTH of VIRGINIA

Matt Strickler  
Secretary of Natural Resources

**Department of Historic Resources**  
2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan  
Director

Tel: (804) 367-2323  
Fax: (804) 367-2391  
www.dhr.virginia.gov

December 18, 2020

Ms. Mary Major  
Department of Environmental Quality  
P.O. Box 1105  
Richmond, VA 23218

RE: Foxglove Solar Project  
Frederick County, Virginia  
DHR File No. 2020-0416

Dear Ms. Major:

We have received for review the *Phase I Cultural Resource Survey of the The ±255 Hectare (±630 Acre) Foxglove Solar Project Area, Fredrick County, Virginia*, prepared by Dutton + Associated (D+A) on behalf of Timmons Group. We provide the following comments in support of an application to the Department of Environmental Quality (DEQ) for a Permit-by-Rule to construct and operate a small solar project in Frederick County.

### Archaeology

The report documents a cultural resources survey of approximately 630 acres. During the course of the survey, two (2) new archaeological sites (44FK1010-44FK1011) were identified.

44FK1010 is an early to mid-nineteenth century site consisting of domestic artifacts associated with the previously identified Miller House and its associated outbuildings (VHDR #034-0254). VDHR #034-5085 (Miller Cemetery) is also located within the boundaries of the archaeological site. Due to the number of artifacts, the undisturbed soils, and the amount of associated architectural resources, **44FK1010** is recommended as *potentially eligible* for listing in the Virginia Landmarks Register (VLR) and National Register of Historic Places (NHRP). This site should be avoided or subjected to further archaeological excavation. D+A recommends that the Miller Cemetery be avoided.

Site 44FK1011 consists of eight (8) collected artifacts that were concentrated in the yard space of part of a previously identified architectural resource (VDHR# 034-5075). Shovel test pits excavated in this area contained cultural material associated with this site, along with modern debris like plastic. Due to the

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disturbance, **44FK1011** is recommended as *not eligible* for inclusion in the Virginia Landmarks Register (VLR) and National Register of Historic Places (NHRP). DHR concurs with D+A's eligibility and impact recommendations.

### Architecture

The architectural survey identified twenty-seven (27) previously recorded resources and ten (10) newly identified resources within the 0.5-mile study area. Four (4) of the previously recorded resources have been demolished since they were last surveyed. We offer the following comments:

- We concur that Ash House at 6124 Middle Road (DHR ID #034-0076) is potentially eligible. However, without additional vegetative screening installed, the impact could be severe, versus the D+A recommendation of moderate, although both impact levels will require mitigation. We recommend that an additional vegetative buffer be installed that will maintain adequate cover in all seasons.
- We concur that Valerie Hill at 1687 Marlboro Road (DHR ID #034-0139) is potentially eligible. As with the comments above regarding #034-0076, please provide us with information on if an additional vegetative buffer can be installed that will maintain adequate cover in all seasons.
- We do not concur that John Chumley House at 231 Vaucluse Spring Road (DHR ID #034-0220) is not eligible because we have not been provided enough photo documentation and additional survey information to overturn DHR's 1996 and 2009 recommendations as eligible. Please provide an impacts assessment for #034-0220.
- We concur that Shiley Farm at 856 Hites Road (DHR ID #034-0264) is potentially eligible. As is with DHR ID #s 034-0076 and 034-0139, commented on above, please provide us with information on if an additional vegetative buffer can be installed that will maintain adequate cover in all seasons.
- We concur that the Cedar Creek Battlefield (DHR ID #034-0303) is eligible and there will at least moderate impacts. In a May 22, 2020, letter from the County of Frederick Department of Planning and Development addressed to Walsh, Colucci, Lubeley & Walsh, P.C., in regards to a Conditional Use Permit, they requested that, "No solar structures should be placed in the portion of the property that is located within the limits of the Cedar Creek Battlefield." Let us know if this is feasible or if the panels can be reworked to minimize impacts further before we discuss mitigation.
- We concur that the Woodbine Farm, 829 Vaucluse Road (DHR ID #034-5075) is potentially eligible. However, without additional vegetative screening installed and avoidance measures specified, the impact could be severe, versus the D+A recommendation of moderate, although both impact levels will require mitigation. Page 8-155 of the report states, "The barn, home, and other outbuildings on the property are planned to be retained, as a resource significant primarily for architecture, its setting is not considered a primary aspect of its eligibility." This is incorrect. In order for any property to be listed, it must have age, significance and integrity. The definition of integrity is the ability to convey its significance. There are seven aspects of integrity: location, setting, design, materials, workmanship, feeling and association. Therefore, any eligible property's integrity is very much at the heart of its eligibility and setting is an important element of integrity. Please provide more details regarding avoidance and minimization measures before we discuss potential mitigation.

The May 22, 2020, letter from the County of Frederick Department of Planning and Development, where they expressed their concerns regarding this projects impacts to historic resources was cited above (attached). As an interested party, it would be prudent to reach out to them when further discussion regarding mitigation options begins. Please see the attached table for all eligibility and impact recommendations.

If you have any questions regarding these comments, please contact me at 804-482-8091 or via email, [jennifer.bellville-marrion@dhr.virginia.gov](mailto:jennifer.bellville-marrion@dhr.virginia.gov).

Sincerely,



Jenny Bellville-Marrion, Project Review Archaeologist  
Review and Compliance Division

- c. David Dutton, D+A  
Candice E. Perkins, County of Frederick  
Lauren Gryctko, D+A  
Chris Egghart, DEQ

VDHR ID#	Resource Name/Address	Year Built	D+A Eligibility	DHR Eligibility	D+A Impact	DHR Impact
034-0076	Ash House, 6124 Middle Road	1891	D+A: Potentially Eligible	Potentially Eligible	Minimal	Minimal only with additional buffer planted where there is visibility
034-0077	House, 6127 Middle Road	c.1770	D+A: Not Eligible	Ruinous due to Fire; Not Eligible		
034-0138	Vaucluse, 515 Vaucluse Spring Road	c.1810	D+A: Eligible	Eligible	Minimal	Minimal
<b>034-0139</b>	<b>Valerie Hill, 1687 Marlboro Road</b>	<b>1807</b>	<b>D+A: Potentially Eligible</b>	<b>Potentially Eligible</b>	<b>Moderate</b>	<b>Moderate with additional buffer planted where there is visibility</b>
034-0140	Buffalo Marsh, 697 Clark Road	1827	D+A: Eligible	Eligible	Minimal	Minimal
034-0220	John Chumley House, 231 Vaucluse Spring Road	c.1820	D+A: Not Eligible	<b>Potentially Eligible – More Survey Information is Needed to Overturn DHR’s 1996 and 2009 Recommendations as Eligible</b>	-	<b>Needs an Impacts Analysis</b>
034-0232	House, 1595 Hites Road	1911	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0233	House, 1561 Hites Road	1910	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0234	Hites Road	c.1900	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0235	House, 1282 Hites Road	c.1900	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0236	Western View Farm, 210 Westernview Drive	1830	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0238	Epworth United Methodist Church, 1031 Hites Road	c.1875	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0239	House, 1181 Clark Road	c.1870	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0240	House, 986 Clark Road	1927	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0241	House, 943 Clark Road	1901	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0243	House, 245 Buffalo Marsh Road	1926	D+A: Not Eligible	Not Eligible	N/A	N/A
034-0254	Miller House, Marlboro Road	c.1830	D+A: Demolished	Demolished	N/A	<b>Ruins should be protected from any disturbance from this project.</b>
034-0263	House, 782 Hites Road	1900	D+A: Not Eligible	Not Eligible	N/A	N/A

TABLE KEY:	Warrants Mitigation	Needs Attention	DHR does not concur
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VDHR ID#	Resource Name/Address	Year Built	D+A Eligibility	DHR Eligibility	D+A Impact	DHR Impact
<b>034-0264</b>	<b>Shiley Farm, 856 Hites Road</b>	<b>c.1870</b>	<b>D+A: Potentially Eligible</b>	<b>DHR Potentially Eligible</b>	<b>Moderate</b>	<b>Severe without Additional Screening</b>
034-0269	House, 660 Clark Road	1891	D+A: Not Eligible	Not Eligible	N/A	N/A
<b>034-0303</b>	<b>Cedar Creek Battlefield</b>	<b>1864</b>	<b>D+A: Eligible</b>	<b>DHR Eligible</b>	<b>Moderate</b>	<b>Moderate</b>
034-0428	House, 478 Klines Mill Road	c.1830	D+A: Demolished	Demolished	N/A	N/A
034-0429	Barn, 718 Klines Mill Road <b>IN PROJECT AREA</b>	c.1800	D+A: Not Eligible	Not Eligible	N/A	N/A
034-1406	House, 1512 Marlboro Road	c.1920	D+A: Demolished	Demolished	N/A	N/A
034-1552	Bridge Klines Mill Road	1927	D+A: Demolished	Demolished	N/A	N/A
<b>034-5075</b>	<b>Woodbine Farm, 829 Vaucluse Road</b>	<b>1900</b>	<b>D+A: Potentially Eligible</b>	<b>DHR Potentially Eligible</b>	<b>Moderate</b>	<b>Severe without additional screening and avoidance measures.</b>
034-5085	Miller Cemetery, Marlboro Road <b>IN PROJECT AREA</b>	1838	D+A: Not Eligible	Not Eligible Cemetery	N/A	N/A
034-5317	House, 5699 Middle Road	1955	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5318	House, 1086 Germany Road	1948	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5319	Farm Complex, 458 Hites Road	c.1920	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5320	Commercial Building, Hites Road	c.1940	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5321	House, 722 Hites Road	1966	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5322	House, 996 Hites Road	1961	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5323	Farm Complex, 685 Clark Road	c.1900	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5324	House, 609 Clark Road	1960	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5325	House, 1196 Hites Road	1901	D+A: Not Eligible	Not Eligible	N/A	N/A
034-5326	House, 1162 Hites Road	1956	D+A: Not Eligible	Not Eligible	N/A	N/A

TABLE KEY:	Warrants Mitigation	Needs Attention	DHR does not concur
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REPORT >

# Phase I Cultural Resource Survey of the The ±255 Hectare (±630 Acre) Foxglove Solar Project Area

LOCATION > Fredrick County, Virginia

DATE > October 2020

PREPARED FOR >  
Timmons Group



PREPARED BY >  
Dutton + Associates, LLC

**Dutton + Associates**

CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT



**PHASE I CULTURAL RESOURCE SURVEY OF THE  
THE ±255 HECTARE (±630 ACRE) FOXGLOVE SOLAR PROJECT AREA**

**FREDRICK COUNTY, VIRGINIA**

***PREPARED FOR:***

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**OCTOBER 2020**



**ABSTRACT**

*In August and September of 2020, Dutton +Associates, LLC (D+A) conducted a Phase I cultural resource survey (Phase I) of the ±255 hectares (±630 acres) Foxglove Solar Project Area in Frederick County, Virginia. The project area is in Middletown, between Valley Pike (Route 11) to the southeast and Marlboro Road to the (T-631) to the north. The effort involved both archaeological and architectural investigations of the property to confirm the presence or absence of cultural resources located within the project area and assess their potential eligibility for listing in the National Register of Historic Places (NRHP). The effort was conducted in support of and in accordance with the terms of a Virginia Department of Environmental Quality (DEQ) Solar Permit by Rule (PBR).*

*As part of the archaeological survey, a total of 487 shovel tests were excavated throughout the project area. This subsurface testing revealed shallow soils across the project area, typical of pastoral land. Visual inspection of the project area revealed that exposed bedrock on the surfaces of the land was typical across the project area, and in many cases, shovel test pits terminated at bedrock. Two sites were identified during subsurface testing. The first, Site 44FK1010, an early to mid-nineteenth century site consisting of domestic artifacts associated with the previously identified Miller House and its associated outbuildings (VDHR #034-0254) was identified in the northernmost parcel, east of the project area boundary. VDHR #034-5085 – The Miller Cemetery – is also located within this archaeological site. **Due to the number of artifacts, the undisturbed soils, and the amount of associated architectural resources, Site 44FK1010 is recommended as potentially eligible for inclusion in the NRHP. This site should be avoided or subjected to further archaeological excavation. D+A recommends that VDHR #034-5085 – The Miller Cemetery – be avoided.***

*Site 44FK1011 consists of a total of eight (8) collected artifacts which are concentrated in the yard space of part of a previously identified architectural resource – VDHR 034-5075 – in the northern portion of the southernmost parcel of the project area. The site identified here was located on an overgrown, in some cases impenetrable, landform on which the circa 1880 dwelling associated with VDHR #034-5075 sits. Each shovel test pit excavated in this area contained cultural material associated with this site, along with debris such as plastic. The house appears to have been occupied for an extended amount of time, and there is debris on the surface, where assessable. **Due to the disturbance as confirmed by visual inspection and by the presence of debris in the excavated shovel test pits, this site is recommended as not eligible for inclusion in the NRHP.***

*The architectural resources survey for the Foxglove Solar Project resulted in the identification and recordation of thirty-seven (37) architectural resources greater than 50 years of age (constructed in 1970 or earlier) located within the one-half mile architectural survey area, five of which are located directly within the project area. Of the surveyed resources, twenty-seven (27) were previously recorded (VDHR# 034-0076, 034,0077, 034-0138/0140, 034-0220, 034-0232/0236, 034-0238/0241, 034-0243, 034-0254, 034-0263/0264, 034-0269, 034-0303, 034-0248/0249, 034-1406, 034-1552, 034-5075, and 034-5085) and ten (10) were newly recorded during this Phase I Survey (VDHR# 034-5317/5326). Four of the previously recorded resources were found to have been demolished since they were last surveyed (VDHR# 034-0254, 034-0428, 034-1406, and 034-1552). The extant resources within the survey area and documented as part of*

*this effort consist primarily of domestic buildings and farmsteads from the early nineteenth to mid-twentieth century, as well as a nineteenth century family cemetery, a Civil War battlefield, a twentieth century commercial building, twentieth century bridge, and assorted isolated barns and agricultural buildings. Seven of the surveyed resources are considered potentially eligible for listing in the NRHP, generally as good examples of regional forms and styles or for their representation of intact agricultural complexes. One eligible resource is the Cedar Creek Battlefield, significant for its association with Civil War in the region. The rest of the surveyed resources reflect national trends in building styles and do not appear to reflect any unique or significant design or historical associations, and as such, are recommended to be not eligible for listing in the NRHP individually or collectively.*

*The seven NRHP-eligible resources were assessed for impacts brought about by the project through inspection of existing conditions and viewshed analysis. This effort found that the rolling terrain and vegetation patterns within the area provide screening of the project area from three of the resources and as such, the project area will not be visible from the resources themselves or most public vantage points near them. It is therefore not anticipated to introduce any substantially different components into their viewsheds and is recommended to pose no more than a **minimal impact** to these resources. Three resources are located immediately adjacent to a portion of the project area with only minimal existing vegetative buffer between and may potentially have more uninterrupted visibility of the project area. Further screening may be provided by supplemental landscape buffering proposed as part of the project. As the project may introduce new and/or incompatible visual intrusions to the viewshed of these resources, it is recommended to pose a **moderate impact** to these properties, but should be reassess following final engineering. One final resource is located directly within a portion of the project area, however, the primary significance of this resource is derived from the design and construction of the associated bank barn which will remain extant. As setting is not considered a primary aspect of its eligibility, the project is recommended to pose a **moderate impact** to this resource.*

**Table of NRHP-eligible architectural resources with recommendations of project impacts**

<b>VDHR ID#</b>	<b>Resource Name/Address</b>	<b>Year Built</b>	<b>NRHP Eligibility</b>	<b>Project Impacts</b>
034-0076	Ash House, 6124 Middle Road	1891	Potentially Eligible	Minimal Impact
034-0138	Vaucluse, 515 Vaucluse Spring Road	c.1810	Eligible	Minimal Impact
034-0139	Valerie Hill, 1687 Marlboro Road	1807	Potentially Eligible	Moderate Impact
034-0140	Buffalo Marsh, 697 Clark Road	1827	Eligible	Minimal Impact
034-0264	Shiley Farm, 856 Hites Road	c.1870	Potentially Eligible	Moderate Impact
034-0303	Cedar Creek Battlefield	1864	Eligible	Moderate Impact
034-5075	Woodbine Farm, 829 Vaucluse Road	1900	Potentially Eligible	Moderate Impact

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## 1. INTRODUCTION

In August and September of 2020, Dutton +Associates, LLC (D+A) conducted a Phase I Cultural Resource Survey (Phase I) of the ±255 hectares (±630 acres) Foxglove Solar Project Area in Fredrick County, Virginia. The D+A effort is intended to provide documentation and assessment of cultural resources within the project area to make recommendations as to whether they may be potentially eligible for listing in the National Register of Historic Places (NRHP) and assess those that are considered NRHP-eligible for project impacts. The effort was conducted in support of and in accordance with the terms of a Virginia Department of Environmental Quality (DEQ) Solar Permit by Rule (PBR).

All research, fieldwork, and recording conducted as part of these investigations will conform to the guidance specified in the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (Federal Register 48:44716-44742, September 29, 1983), the Virginia Department of Historic Resources' (VDHR) *Guidelines for Conducting Historic Resources Survey in Virginia* (rev. 2017) and the Virginia Department of Environmental Quality's (DEQ) *Solar Permit by Rule Guidance* (2012) for complying with the provisions of §10.1-1197.6 B 7 of the *Code of Virginia*. Principal investigators meet the Secretary of the Interior's Professional Qualification Standards (48 FR 44716) for archaeology, history, architecture, architectural history, or historic architecture. Hope Smith, Ph.D., served as the Principal Investigator, prepared the research design, and oversaw project management. Archaeological investigations were conducted under the direction of Lauren Gryctko who co-authored the report. Architectural resource investigations were conducted under the direction of Robert J. Taylor, Jr. M.A. who coauthored the report. Copies of all field notes, maps, correspondence, and research materials are on file at D+A's main office in Midlothian, Virginia.

### PROJECT LOCATION

The Foxglove Solar Project Area is in Middletown (Figure 1-1). The project area consists of a roughly ±255 hectare (±630 acre) tract of land composed of three parcels, between Valley Pike (Route 11) to the southeast and Marlboro Road to the (T-631) to the north (Figure 1-2).



**Figure 1-1: Aerial view of the project area. Source: Google Earth 2019.**

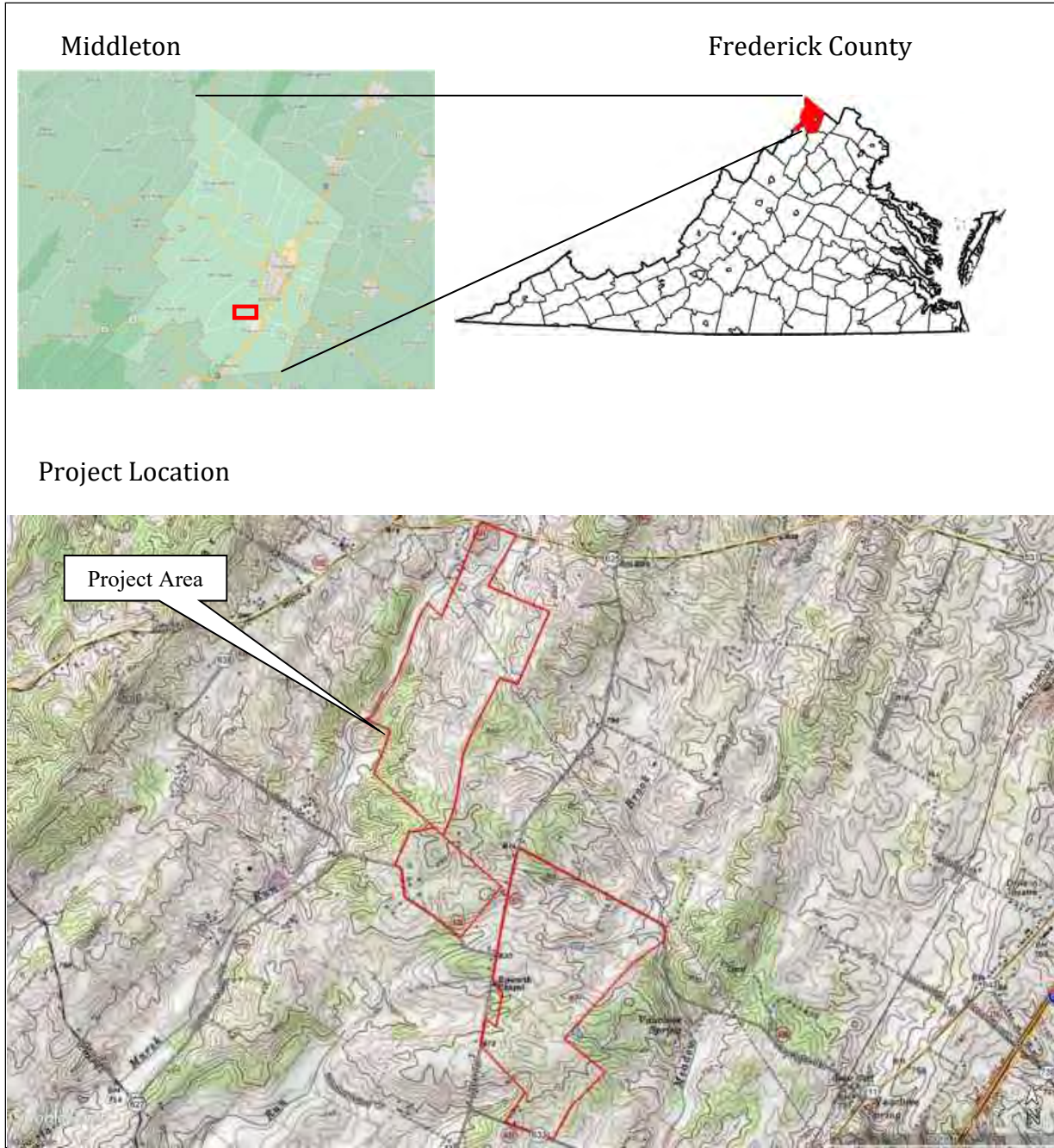


Figure 1-2: General location of the project area.

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## 2. SURVEY AREA

For the purposes of this project, the survey area was established to define the area in which the project may result in impacts to NRHP-eligible cultural resources. Impacts considered include “direct”, in which project construction, components, or other aspects may physically alter a cultural resource. “Indirect” impacts are those which may introduce features, qualities, or other characteristics into the setting of a cultural resource. In the case of solar projects, direct impacts are typically introduced by the location of proposed arrays, access roads, fence lines, and utility easements. Indirect impacts are typically limited to the introduction of visual features.

As such, the archaeological survey area includes the footprint of the project property, workspaces, access roads, and/or any other areas where ground-disturbing activities directly related to the project may take place. Specifically, it includes those portions of the project area deemed suitable for testing as outlined in the *Assessment and Probability Analysis Foxglove Solar, LLC 557.40 Acres Frederick County, Virginia* (Circa~ August 2018).

The architectural survey area includes the project area property, as well as the geographic area around the project within which the associated project components may be seen. The default viewshed survey area for solar project according to the Virginia Department of Environmental Quality (DEQ) Permit by Rule (PBR) for Solar Energy Projects is one-half mile, unless topography, vegetation, or other aspects of the landscape warrant a more refined distance. In the case of the Foxglove Solar Project Area, a one-half mile survey area was deemed appropriate. A map of the defined survey area for archaeological and architectural resources is illustrated in Figure 2-1.

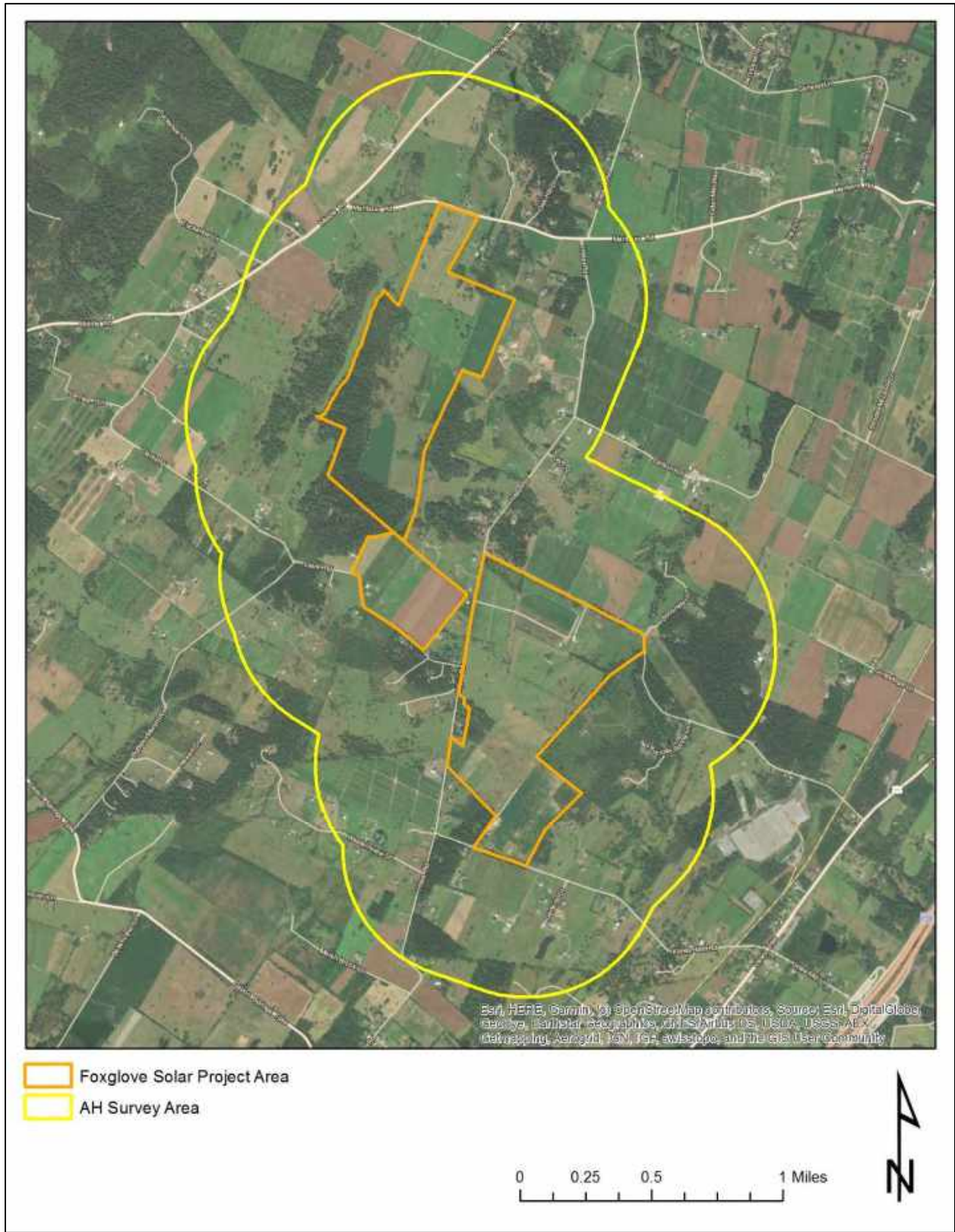


Figure 2-1: Foxglove Solar Project Area with archaeological and architectural survey areas

### 3. RESEARCH DESIGN

The Phase I cultural resource survey of the Foxglove Solar Project Area was undertaken in order to confirm the existing condition of the property, note any surface evidence of cultural activity, recommend and implement an appropriate survey methodology for the property based upon the results of the background research and field reconnaissance, and identify the presence or absence of cultural resources on the property. The background research, field reconnaissance, and field survey methodologies are summarized below.

#### ARCHIVAL RESEARCH

In July 2020, D+A conducted background research with the goal of identifying all previously recorded historic properties located within and in the vicinity of the project area in accordance with VDHR's guidance document titled *Guidelines for Conducting Cultural Resources Survey in Virginia* (Revised October 2017). Background research was conducted at the VDHR and on the internet and including the following sources:

- VDHR V-CRIS site files; and
- National Park Service, American Battlefield Protection Program, maps and related documentation.

As part of this Phase I study, D+A checked resource data at each of the above sources to verify accuracy and ensure the information was up to date at the time of the survey. In further preparation for the Phase I survey, D+A conducted additional review of the following documents and sources for information relative to unrecorded historic property locations in the project area:

- County Tax Assessors records;
- USDA Historic Aerial Imagery;
- U.S. Geological Survey Topographic Maps;
- Previous historic resource survey documents; and
- Local historical society archives.

The additional review conducted in support of the Phase I survey was designed to identify all properties greater than 50 years of age located within the project area. Historic properties include architectural resources, historic and cultural landscapes, battlefields, and historic districts.

#### CONTEXT DEVELOPMENT

Information from the literature review and background search was used in conjunction with additional research to develop a cultural and historical context to place the project area and any identified historic resources within their appropriate context for evaluations of historical significance. This context was developed through review of previous cultural resource studies, published and unpublished manuscripts, historic maps, aerial photographs, local histories, and a variety of internet sources.



For the purposes of this effort, a comprehensive cultural context of Fredrick County was prepared summarizing general historical trends, settlement patterns, and development with a focus on the vicinity of the project area. Further analysis and context development was undertaken for the defined survey area so that newly recorded resources could be effectively evaluated.

## **FIELD SURVEY**

### *Architectural Resources*

The background research conducted in support of this effort was designed to identify properties greater than 50 years of age located within the survey area. A reconnaissance field survey was undertaken to identify and document all buildings, objects, structures, sites, and districts within the survey area that were constructed in 1970 or earlier and meet (or will soon) the 50-year threshold for NRHP-consideration. Construction dates for resources were established through a combination of archival research, property records search, map analysis, and field inspection. Properties that have been subject to previous Phase I survey within the last five years or determined not eligible for listing in the NRHP by the VDHR within the last ten years were not subject to survey as part of this effort.

For each surveyed resource, field forms were completed with information from site observations including a physical description of the resource with information such as relationship to adjacent buildings and structures, general condition, surrounding setting, description of exterior materials, identifiable architectural or structural treatments, and retention of historic physical integrity. Site plans depicting the built environment around each property were sketched. Each identified resource was then marked on both USGS 7.5-Minute Quadrangle maps and current aerial photographs. Representative digital photographs were taken to document each property's existing conditions, setting, and secondary resources.

All field survey identification and documentation were conducted from public ROW and included exterior features only. No interior inspections were conducted as part of this effort. In cases where a resource was not visible or accessible from the public ROW, the property was noted as such. All field documentation was organized and labeled with a unique identification number. Previously recorded resources subject to survey were numbered using their existing VDHR ID# while newly recorded resources were assigned a field recorder number.

All buildings and structures surveyed as part of this study were documented in accordance with VDHR's standards and guidelines and evaluated to determine potential significance in accordance with NRHP criteria. Concentrations of historic resources within or adjacent to the survey area were assessed in terms of their potential for inclusion in historic districts. Each resource's present condition, location relative to other resources, and distinguishing neighborhood characteristics were noted and photographed for an accurate assessment of NRHP Historic District eligibility.

From each resource deemed to be eligible or potentially eligible for listing in the NRHP, a viewshed assessment was conducted from the property towards the project area. This assessment included a visual inspection and photograph of the intervening landscape and vegetation to make

a recommendation as to the likelihood that any improvements related to the project may introduce impacts to the resource.

### *Archaeological Resources*

In 2018, Circa~ conducted a Phase IA assessment of the project area (Circa~ 2018). This document was utilized, however, D+A also conducted a pedestrian survey prior to subsurface testing to confirm that conditions described in the 2018 report remained similar. Thus, at the outset of field investigations, a pedestrian survey of the project area was conducted to document existing conditions and to note surface evidence of cultural activity or material and identify areas with the potential for intact subsurface archaeological resources. Attempts were made to re-identify previously identified resources and features noted in the 2018 assessment. Between Phase IA assessment and Phase I survey an additional parcel – located between the northern and southern parcel – was added to survey area. This new parcel was subjected to pedestrian survey and assessed for site potential based on its topography, vegetation, and land use. For any newly encountered archaeological resources identified during the reconnaissance, photographs were taken of the general vicinity and of any visible features. A field map was prepared showing feature locations, permanent landmarks, topographic and vegetation variation, as well as sources of disturbance. Sufficient information was included on the map to permit easy re-identification of the resources.

Once D+A confirmed that conditions were as stated in the 2018 Circa~ report, taking into account the expected vegetation growth and general disrepair that is typical of two years of disuse and with the addition of the middle parcel. Following this confirmation, systematic shovel testing was conducted throughout the high probability sections, with shovel test placement avoided in areas of documented or visible significant ground disturbance, slopes in excess of 15 percent, and areas in statutory wetlands or water saturated soils at the time of the survey. Shovel tests were excavated at a maximum of 15-meter (50-foot) intervals along transects spaced 15 meters (50 feet) apart. The soil excavated from all shovel tests was passed through 0.63-centimeter (1/4-inch) mesh screen and all shovel tests were approximately 0.38 meters (15 inches) in diameter and excavated to sterile subsoil or the practical limits of excavation. Isolated positive shovel tests were bracketed with radial shovel tests (half the distance to the next shovel test in all four directions) until two negative shovel tests in each direction were documented.

For any archaeological resources identified during the survey, photographs were taken of the general vicinity and of any visible features. A field map was prepared showing site limits, feature locations, permanent landmarks, topographic and vegetational variation, sources of disturbance, and all surface and subsurface investigations. GPS coordinates for all identified site locations were recorded and sufficient information was included on maps to permit easy relocation of sites. Notes were taken on surface and vegetational conditions, soil characteristics, dimensions and construction of features evident, and the amount and distribution of cultural materials present. All subsurface archaeological excavations were backfilled and returned to pre-survey conditions.

### **LABORATORY ANALYSIS**

All artifacts generated in the course of the survey were provenienced in the field and recorded. Following fieldwork, the artifacts were transported to the D+A laboratory facilities where they

were cleaned, sorted, and identified. After processing, all artifacts were inventoried using Microsoft Excel. A computer-printed artifact inventory of prehistoric and historic artifacts is included as an appendix to this report.

Identification of diagnostic artifacts was made by consulting existing comparative collections and available regional literature regarding artifact types. Artifacts were assigned dates through the comparison of identified artifacts with other material culture classes having documented use-popularity patterns. Ceramics and glass provided primary chronological information. All artifacts were placed in polyethylene re-sealable storage bags and placed in acid free boxes suitable for permanent curation. At the conclusion of the survey, arrangements will be made with the client regarding final deposition of the artifacts.

### **REPORT AND RECORD PREPARATION**

Information from field survey was used in conjunction with background research and context development to assess each identified cultural resource for potential NRHP-eligibility. A results section was prepared that summarizes the field findings, assessment of significance and NRHP-eligibility. The results of the study are accompanied by maps and photographs as appropriate and were synthesized and summarized in this report along with the research design, archives search, and cultural contexts. All research material and documentation generated by this project are on file at D+A's office in Midlothian, Virginia. VDHR site forms (Virginia Cultural Resources Information System (V-CRIS) were completed for all cultural resources, 50 years of age or older, identified during the survey. Site forms for archaeological sites are include as an appendix to this report.

### **QUALIFICATIONS AND STANDARDS**

The D+A personnel who directed and conducted this survey meet the professional qualification standards of the Department of the Interior (48 FR 44738-9). All work was conducted in accordance with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (Federal Register 48:44716-44742, September 29, 1983), and VDHR's *Guidelines for Conducting Historic Resource Survey in Virginia* (rev. 2017).

## 4. ENVIRONMENTAL CONTEXT

### PHYSICAL DESCRIPTION AND LOCATION

The Foxglove Solar Project Area consists of  $\pm 255$  hectares ( $\pm 630$  acres) of land situated in the Valley and Ridge physiographic region in Virginia (Figure 4-1). The project area is located between Valley Pike (Route 11) to the southeast and Marlboro Road (T-631) to the north. The project area consists primarily of open pasture and corn fields, with some wooded areas. Runoff from the project area drains west into Buffalo Marsh Run, to the southwest into Watson Run and Middle Marsh Brook, and to the east into unnamed tributaries of Meadow Brook.



Figure 4-1: Aerial view of the Foxglove Solar project area (red). Source: Google Earth 2018

### GEOLOGY AND TOPOGRAPHY

The project area topography is characterized by several prominent landforms. Moderate relief and rolling hills are associated with the Great Valley subprovince of the Valley and Ridge region. The area is underlain by carbonate rocks. A trellised drainage pattern occurs throughout this region, with tributaries running perpendicular to fast flowing major streams. The elevation of the project area ranges from approximately  $\pm 226$  meters (750 feet) above mean sea level (AMSL) to  $\pm 260$  meters (850 feet) AMSL, with a general trend toward higher elevation in the northern-central portion of the project area.

**HYDROLOGY**

The project area drains west into Buffalo Marsh Run, southwest into Watson Run and Middle Marsh Brook, and east into unnamed tributaries of Meadow Brook. These waterways drain into Cedar Creek, which drains into Shenandoah River, which drains into Potomac River, which drains into the Chesapeake Bay before ultimately flowing into the Atlantic Ocean.

**PEDOLOGY**

The most prominent soil types within the project area are Frederick-Poplimetno loams, Nicholson silt loam, and Oaklet silt (Figure 4-2 and Table 4-1). A total of 51.3 percent of the soils located within the project area are considered not prime farmland. A total of 39 percent of project area consists of land which slopes at or over 15 percent. Thirty-three percent of the project area is listed as either very rocky or as “rock outcrop”. All of the soils within the project area are well or moderately well drained.

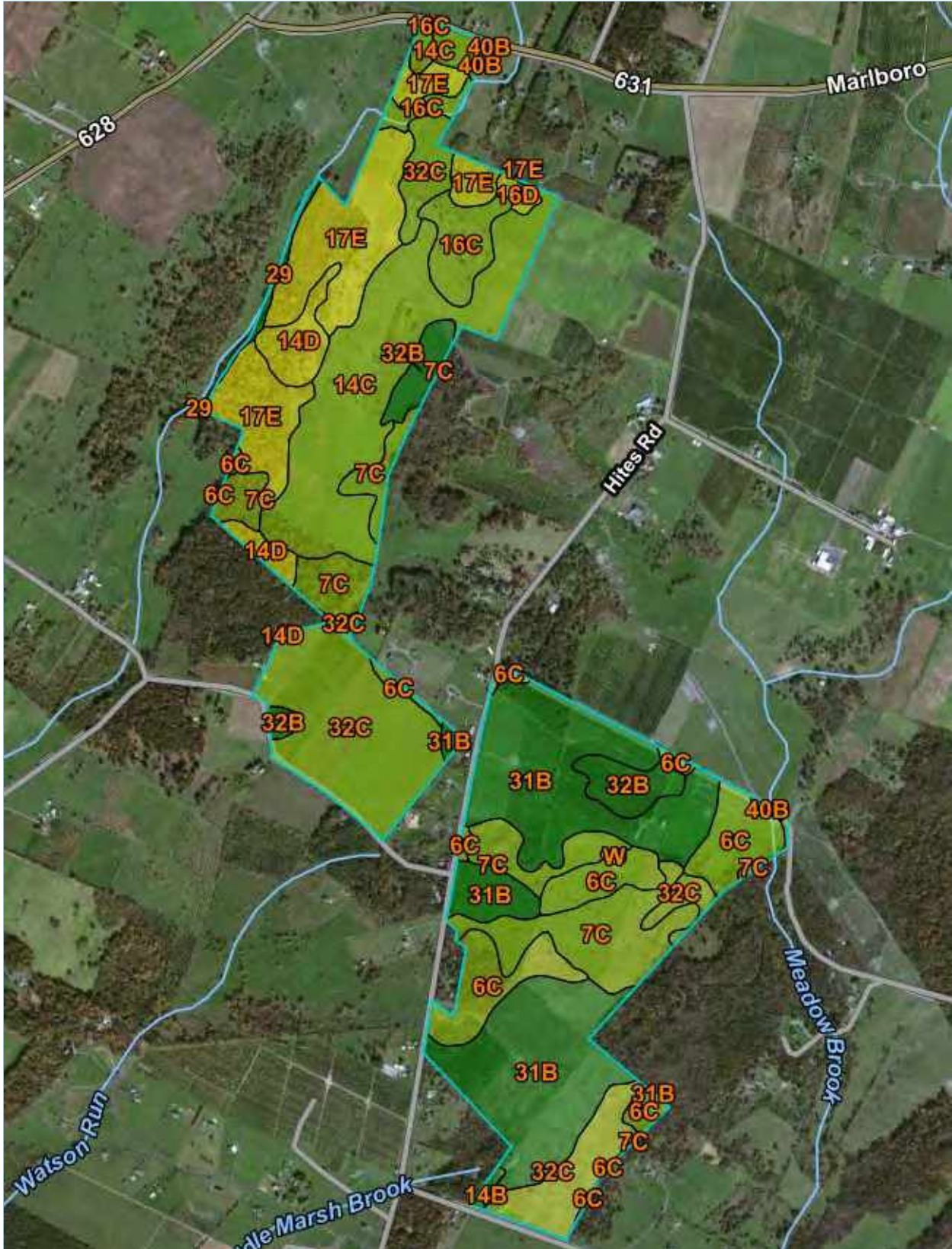


Figure 4-2: Soil Survey of the Foxglove Solar Project Area showing soil types. Source: USDA

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
5C	Carbo silt loam, 7 to 15 percent slopes	11.0	2.3	0.4%
6C	Carbo-Oaklet, very rocky silt loams, 2 to 15 percent slopes	10.0	56.2	9.0%
7C	Carbo-Oaklet-Rock outcrop complex, 2 to 15 percent slopes	10.0	72.2	11.6%
14B	Frederick-Poplimento loams, 2 to 7 percent slopes	5.0	1.4	0.2%
14C	Frederick-Poplimento loams, 7 to 15 percent slopes	11.0	95.5	15.3%
14D	Frederick-Poplimento loams, 15 to 25 percent slopes	20.0	16.8	2.7%
16C	Frederick-Poplimento, very rocky loams, 7 to 15 percent slopes	11.0	21.1	3.4%
16D	Frederick-Poplimento, very rocky loams, 15 to 25 percent slopes	20.0	2.8	0.4%
17E	Frederick-Poplimento-Rock outcrop complex, 15 to 45 percent slopes	30.0	74.6	12.0%
29	Massanetta loam	2.0	3.0	0.5%
31B	Nicholson silt loam, 2 to 7 percent slopes	5.0	148.3	23.8%
32B	Oaklet silt loam, 2 to 7 percent slopes	5.0	22.6	3.6%
32C	Oaklet silt loam, 7 to 15 percent slopes	11.0	103.8	16.7%
40B	Timberville silt loam, 2 to 7 percent slopes, frequently flooded	4.0	0.9	0.1%
W	Water		0.9	0.1%
<b>Totals for Area of Interest</b>			<b>622.3</b>	<b>100.0%</b>

Table 4-1: Unit summary of soils within the Foxglove Solar project area. Source: USDA

## 5. PREVIOUS INVESTIGATIONS

This section includes a summary of all the cultural resource management events that have taken place within the project area registered at VDHR through July 2020. It also lists all previously identified architectural resources and archaeological sites located within the project area, as well as within one mile of the project area.

### PREVIOUS SURVEYS RELEVANT TO THE SITE

Research at the VDHR reveals that six surveys have been conducted within one mile of the project area. A summary of these surveys is provided in Table 5-1, and the location and extent of these surveys is illustrated in Figure 5-1. Two surveys associated with the VA State Line-Meadowbrook Substation and the Meadowbrook Substation conducted in 2008 and 2010 intersect the project area directly. The remaining surveys were conducted around the same time, with the exception of one survey conducted in 1985.

**Table 5-1: Previously conducted Phase I surveys within 1.0 mile of the project area.**

VDHR ID#	Title	Affiliation	Survey Date
44PW0195	A Phase I Cultural Resource Assessment of the Middle Marsh Tract, Frederick County, Virginia	James Madison University (Archaeological Research Center/Laboratory)	2011
44PW0196	Phase I Cultural Resources Survey VA State Line - Meadowbrook Substation and Meadowbrook Substation - Appalachian Trail Segments of the Trans-Allegheny Interstate Line (TrAIL) Project, Frederick and Warren Counties, Virginia	GAI Consultants, Inc.	2008
44PW0304	Phase I Archeological Investigations: Meadowbrook Substation	Thunderbird Archaeological Associates (Thunderbird Research Corp.)	1985
44PW0368	Addendum Phase I Archaeological Survey Report VA State Line-Meadowbrook Substation and Meadowbrook Substation-Appalachian Trail Segments of the Trans-Allegheny Interstate Line (TrAIL) Project, Frederick and Warren Counties, Virginia	GAI Consultants, Inc.	2010
44PW0626	A Phase I Cultural Resource Assessment: Appendix A, Description of Archaeological Sites/Cultural Resources Identified in 2010-2011 Season in the Middle Marsh Project Area	James Madison University (Archaeological Research Center/Laboratory)	2011
44PW1162	A Phase I Cultural Resource Assessment of the Middletown Woods Tract, Frederick County, Virginia	James Madison University (Archaeological Research Center/Laboratory)	2012



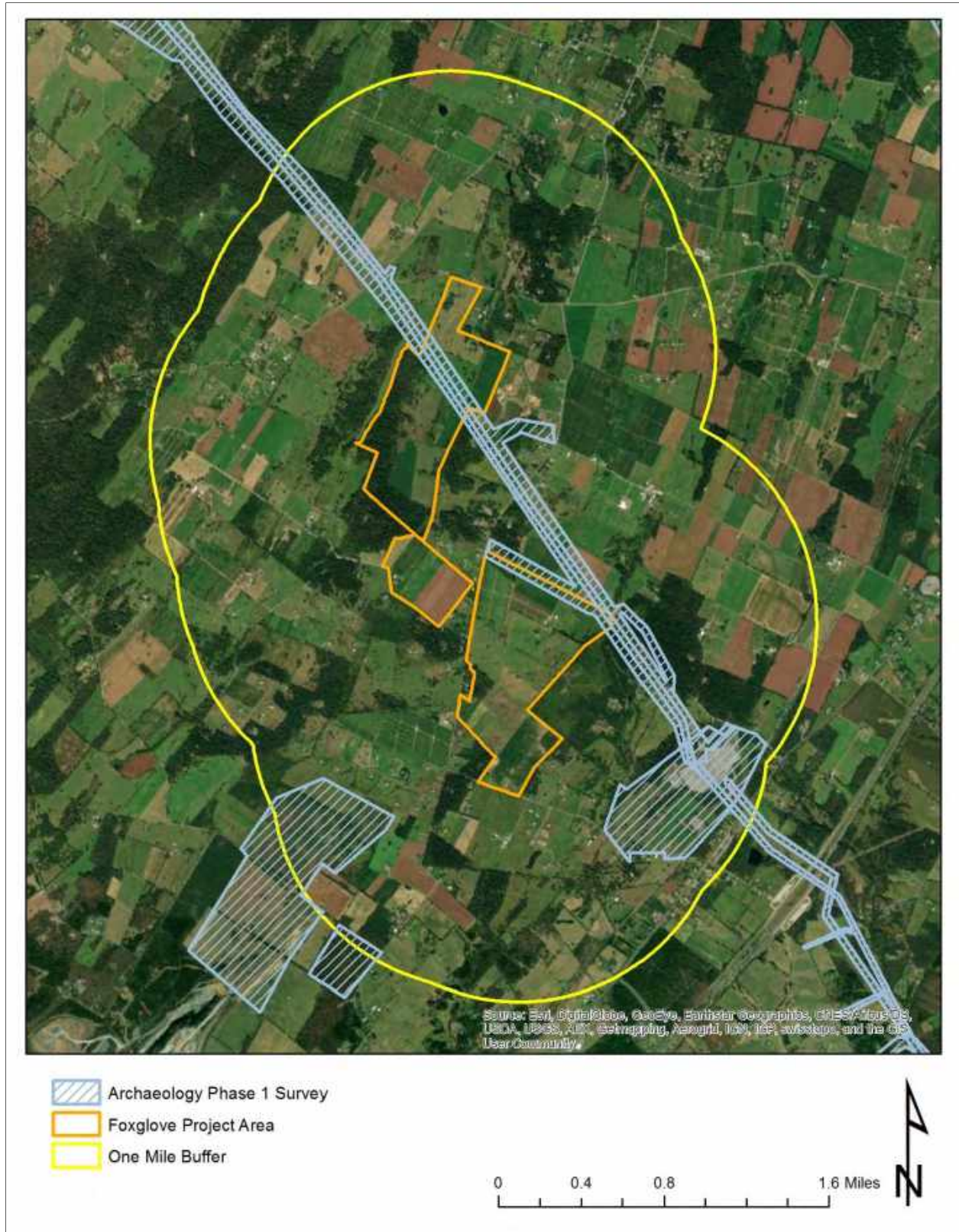


Figure 5-1: Previous surveys conducted within 1.0 mile of the project area. Source: V-CRIS

## PREVIOUSLY IDENTIFIED ARCHAEOLOGICAL SITES WITHIN ONE MILE

There are eleven previously recorded archaeological sites located within one mile of the project area, none of which are located within the project area (Figure 5-2, Table 5-2). These sites range in date from the prehistoric period to the twentieth century and represent a range of types, including camps, cemeteries, roads, a farmstead, and a lime kiln. These sites range in date from the prehistoric period to the twentieth century. VDHR has not formally evaluated any of these sites for listing in the NRHP.

**Table 5-2: Previously identified archaeological sites located within 1.0 mile of the project area.**

VDHR ID#	Site Name	Site Types	Temporal Association	NRHP Status
44FK0057	None	Other	19th Century (1800 - 1899)	Not Evaluated
44FK0055	None	Dwelling, single, Other	Historic/Unknown, Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FK0051	None	Camp	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FK0056	None	Camp, temporary, Trash scatter	Prehistoric/Unknown (15000 B.C. - 1606 A.D.)	Not Evaluated
44FK0712	None	Kiln, lime	20th Century: 1st quarter (1900 - 1924)	Not Evaluated
44FK0767	Tabler Farm Complex	Farmstead	Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1988)	Not Evaluated
44FK0768	Tabler Cemetery	Cemetery	Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)	Not Evaluated
44FK0769	Tabler Farm Road	Road	Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1988)	Not Evaluated
44FK0772	East Road	Road	Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945)	Not Evaluated
44FK0770	Merritt's Camp	Military camp	Civil War (1861 - 1865)	Not Evaluated
44FK0778	Nieswander's Cemetery	Cemetery	Early National Period (1790 - 1829), Antebellum Period (1830 - 1860), Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916)	Not Evaluated

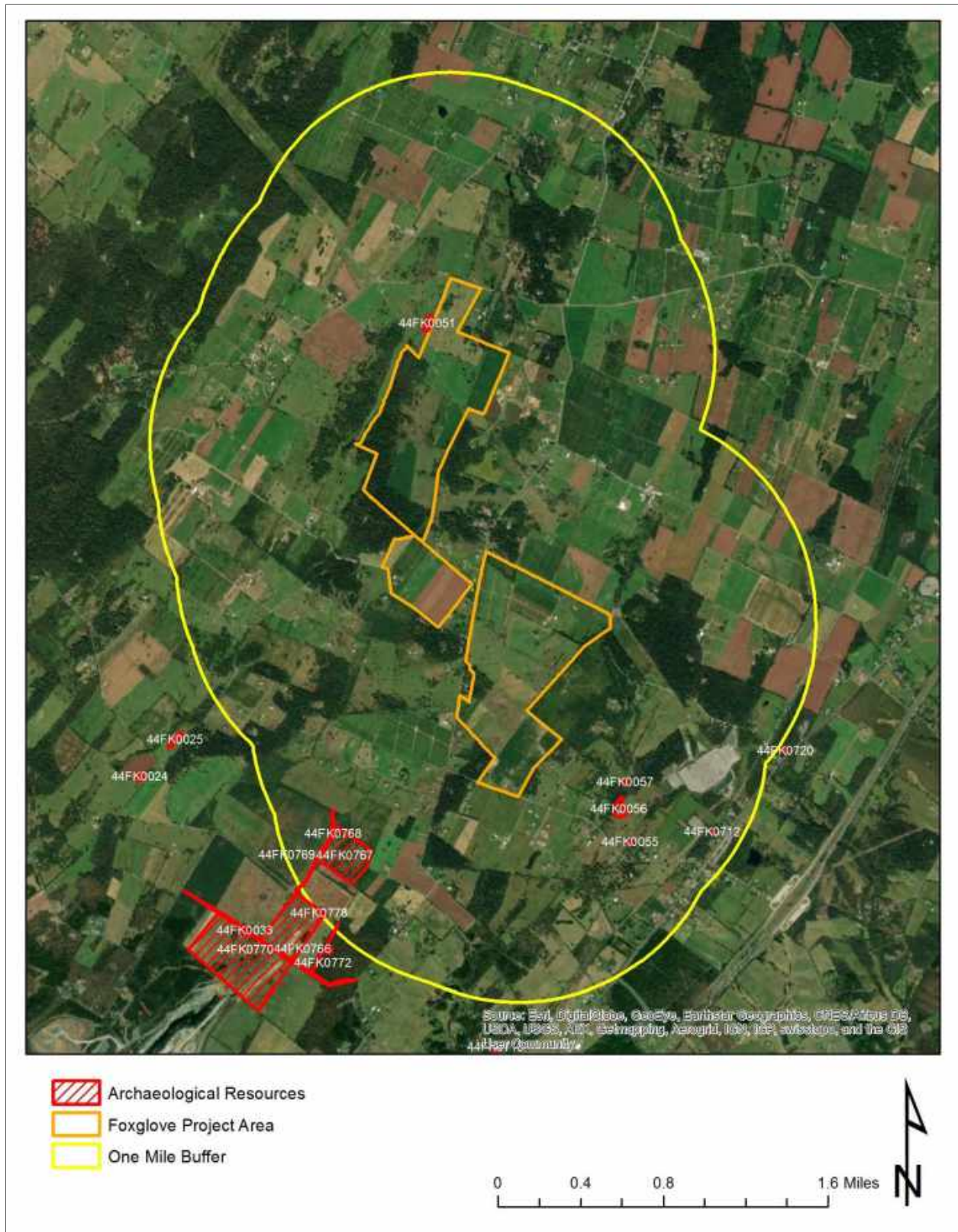


Figure 5-2: Map detailing all archaeological resources within 1.0 mile of the project area. Source: V-CRIS

**PREVIOUSLY IDENTIFIED ARCHITECTURAL RESOURCES WITHIN ONE MILE**

Review of VDHR records identifies 72 previously recorded architectural resources located within one mile of the project area; several of these resources are located within the project area (Figure 5-3, Table 5-3). Included among the resources are many houses, several cemeteries, a bridge, and a kiln. The resources range in date from the mid-nineteenth century to the mid-twentieth century. One architectural resource, the Belle Grove Plantation, is currently listed in the NRHP, the NHL, and the VLR. Aside from this property there are two resources listed as eligible, nine resources listed as potentially eligible, and fourteen resources listed as not eligible for listing in the NRHP. The remaining resources have not been formally evaluated. VDHR #034-0254 and VHDR #034-5085; a circa 1830 dwelling and its cemetery – the Miller House and the Miller Cemetery – are located within the project area. Neither of these resources have been evaluated. VDHR #034-5075 is also located within the northeastern corner of the southernmost parcel of the project area. This resource has been deemed potentially eligible for inclusion in the NRHP by DHR.

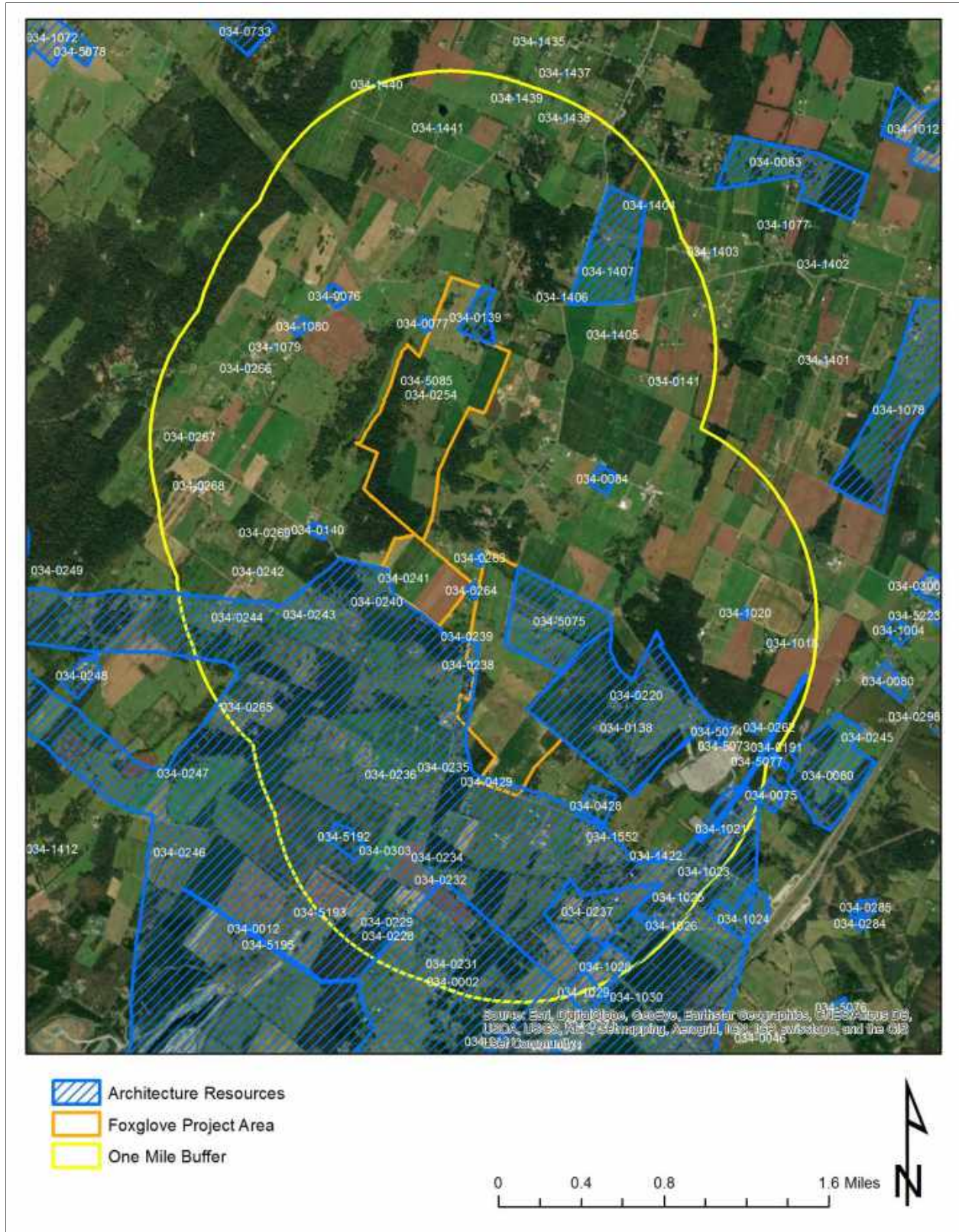


Figure 5-3: Map detailing all architectural resources within 1.0 mile of the project area. Source: V-CRIS

**Table 5-3: Previously identified architectural resources located within 1.0 mile of the project area. Bolded resources are located within the project area. Resources highlighted orange are listed in the NRHP or are potentially eligible or eligible for listing.**

VDHR ID #	Property Name	NRHP Status
034-0084	General Carson House (Historic), Pleasant Green (Current)	DHR Staff: Potentially Eligible
034-0242	Rickard House (Historic), Rock Hill Dairy Farm (Current)	
034-0244	Brumback-Huffman House (Historic), Win-Liz Farm (Current)	
034-1441	Rogers-Solenberger House (Current)	DHR Staff: Not Eligible
034-1440	Tewalt-Solenberger House (Current)	DHR Staff: Not Eligible
034-0076	Ash House (Historic), Deerfield Acres (Current)	DHR Staff: Potentially Eligible
034-0140	Baldwin-Clark House (Historic), Buffalo Marsh (Current)	DHR Staff: Eligible
034-0237	Abel Tract, Cedar Creek Battlefield (Descriptive), Dinges House, 294 Rienzi Knoll Ln (Historic/Location), Rienzi Knoll (Historic)	
034-0220	John Chumley House (Historic/Current), The Inn at Vaocluse Spring (Current)	DHR Staff: Potentially Eligible
034-0139	Rust Hill (Historic), Valerie Hill (Current)	DHR Staff: Potentially Eligible
034-0269	House, Route 638 (Current)	
034-1028	David Dinges House (Historic), House, 7114 Valley Pike (Function/Location), Sunny Side (Current)	
034-1019	Kline, F. Estes, House (Current)	
034-0239	House, Route 625 (Function/Location)	
034-1027	Nixon's Motel (Historic), Plantation Garden Apartments (Current)	
034-1422	Glenmore Farm (Current), Judge Rice House (Historic), Kenner House (Historic)	DHR Staff: Potentially Eligible
034-1021	House, 6688 Valley Pike (Function/Location)	DHR Staff: Not Eligible
034-0229	Fishel House (Historic)	
034-0191	Vaocluse Station (Historic)	DHR Staff: Not Eligible
034-0075	Stickley House, 6519 Valley Pike (Historic/Location)	
034-0266	Deerfield School (Historic/Current)	
034-0077	Bauserman House (Historic/Current)	DHR Staff: Potentially Eligible
034-1080	Snapp-Fewell House (Historic)	DHR Staff: Not Eligible
034-0238	Epworth Chapel (Current), Epworth United Methodist Church (Historic)	
034-0265	House, Route 759 (Function/Location)	
034-0240	Cooke House, The (Current)	
034-0262	Mildred Kline House (Current)	DHR Staff: Not Eligible
034-0259	Cedar Cliff Presbyterian Church (Historic), Unitarian Universal Church (Historic), Unity of the Shenandoah Church (Current)	DHR Staff: Not Eligible
034-0233	Walters, Hank, House, The (Current)	
034-0232	House, Route 625 (Function/Location), Walters House (Historic)	
034-0228	Sager House (Historic)	
034-1404	Craig-Miller House (Historic)	
034-1079	Richard, Harvey A., House (Current)	
034-1018	Stickley, B.F., House (Current)	

034-1405	Sleepy Hollow Farm (Historic), Tuttle-Robinson-Bauserman House (Current)	
034-0141	Waveland (Historic/Current)	
034-1026	Bayliss-Seaman House (Current)	
034-0230	House, Rt. 625 (Function/Location)	
034-0243	Rickard House (Historic)	
034-0138	Inn at Vacluse Spring (Current), Vacluse (Historic/Current)	DHR Staff: Eligible
034-1438	Richards-Fauble House (Historic), Ridings, W.H., House (Historic)	DHR Staff: Not Eligible
034-1023	Martha Downes House (Current), W.H. Dinges House (Historic)	
034-0429	Farmhouse, Route 633 (Function/Location)	DHR Staff: Not Eligible
034-0241	House, on Route 638 (Current)	
034-0260	House at Vacluse (Function/Location)	
034-1020	Stickley House (Current)	
034-0264	Shiley Farm (Current)	DHR Staff: Potentially Eligible
034-0268	Lindamood House (Historic/Current)	
034-0267	House, Route 638 (Current)	
034-0263	House, 782 Hites Road (Function/Location)	DHR Staff: Not Eligible
034-1406	Rothgeb-Morgan House (Current)	
034-0235	Tenant House for Western View Farm (Function/Location)	
034-0236	Western View Farm (Current)	
<b>034-0254</b>	<b>Miller House (Current)</b>	
034-1439	Snap, Luther, House (Historic), Sunnyside Farm (Current)	DHR Staff: Not Eligible
034-1025	Wise-Chadwell House (Current)	
034-1022	Kiln, Route 11S (Function/Location)	
034-1552	Bridge, Route 633 (Function/Location)	
034-0231	House, Rt. 634 (Function/Location)	
034-0234	House, Route 625 (Function/Location)	
034-5073	House, 263 Vacluse Road (Function/Location)	
034-5074	House, 265 Vacluse Road (Function/Location)	DHR Staff: Not Eligible
034-1029	Randall, E.H., House (Historic), Valley View Farm (Current)	
034-5077	Harper's Ferry and Valley Branch of the B&O Railroad/Winchester and Potomac Railroad (Historic/Current)	DHR Staff: Not Eligible
034-5075	Woodbine Barn (Current), Woodbine Farm (Historic)	DHR Staff: Potentially Eligible
<b>034-5085</b>	<b>Miller Cemetery (Descriptive)</b>	
034-0303	Cedar Creek Battlefield (Historic)	DHR Staff: Potentially Eligible
034-5193	Nieswander's Cemetery (Historic)	
034-5192	Tabler Cemetery (Historic), Tabler Farm (Historic)	
034-0428	Conard House (Historic)	DHR Staff: Not Eligible
034-0002	Belle Grove Plantation (Historic/Current), Cedar Creek and Belle Grove National Historical Park (Current Name), Cedar Creek Battlefield and Belle Grove (NRHP Listing), Isaac Hite, Jr. House (Historic)	NHL Listing, NRHP Listing, VLR Listing
034-1407	Fred W. Ridings House (Historic), Ridings Hill (Historic), Ridings House (Current)	

## 6. CULTURAL CONTEXT

The following section provides a brief summary of the general overarching regional prehistoric and historic themes relevant to Virginia and Frederick County. The primary emphasis of this context focuses on the anthropological and material culture trends in prehistory and history, and describes how people throughout time could have left their archaeological mark on the landscape of the project area specifically. Prehistoric and historic occupation statistics and trends were analyzed, as were historic maps and available first-hand accounts which aided in establishing the appropriate cultural context for the project area as defined by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and the Virginia Department of Historic Resources' *How to use Historic Contexts in Virginia: A Guide for Survey, Registration, Protection, and Treatment Projects* (VDHR 2017).

### PALEOINDIAN PERIOD (PRIOR TO 8000 B.C.)

Recent archaeological findings in Virginia have found the first Paleoindians are projected to have arrived in southeastern North America between 15,000 and 11,000 years ago, or approximately 13000 to 9000 B.C. (McAvoy and McAvoy 1997). Three of the earliest archaeological sites associated with Paleoindian occupation in Virginia are the Cactus Hill site (VDHR #44SX0202) located along the Nottoway River in Sussex County, the Thunderbird Site (VDHR #44WR0011) in Warren County, and the Saltville site (VDHR #44SM0037) in Smyth County. These early populations coincided with the late glacial era when sea levels were approximately 230 feet below their present-day level (Anderson et al. 1996:3). The Laurentide Ice Sheet covered much of northern North America, lowering temperatures in the region and creating an ideal environment for a boreal forest (Delcourt and Delcourt 1981). Paleoindians apparently survived in this environment through opportunistic hunting and gathering of smaller mammals, fish, and wild plants (Anderson 2001). Seasonably mobile, these Paleoindians utilized different food sources at different times of the year, an extensive subsistence pattern that required a large territory.

Accordingly, the Paleoindians may have maintained a central base camp located either in a diverse ecozone where flora and fauna were easily procured or near lithic sources that contained cryptocrystalline stone. Wider ranging satellite camps would then have been seasonally occupied to exploit other natural resources, be they lithic material, flora, or fauna (Anderson et al 1996; Daniel 1996; Binford 1980). Most Paleoindian sites are small and scattered, suggesting that the groups lived in small familial bands distributed across the landscape. The lack of status items among their archaeological remains suggests that these groups recognized little differentiation in status, and probably employed an egalitarian social structure. Ethnographic analogies suggest that Paleoindians might have maintained this rough equality by shunning aspiring leaders, and methods of property redistribution.

The Paleoindians relied upon durable and easily-shaped cryptocrystalline materials such as chert and jasper for their tools. They fashioned these rocks into a variety of instruments, among which were scrapers, graters, and adzes. Paleoindian projectile points tended to be fluted and bifacially sharpened. Due to time and rising sea levels, many Paleoindian material culture finds are limited to isolated projectile points. Researchers differentiate the Paleoindian Period into three smaller



periods reflecting changes in the morphology of projectile points. These periods include the Early Paleoindian (9500-9000 B.C.), the Middle Paleoindian (9000-8500 B.C.), and the Late Paleoindian (8500-8000 B.C.).

During the Early Paleoindian, Paleoindians produced large fluted Clovis points, a style widespread throughout North America, which could be affixed to a spear shaft. Sites from this period are found throughout the eastern seaboard in very low densities. Regions depicting greater concentrations of these sites are in Tennessee, the Cumberland and Ohio River Valley, western South Carolina, the northern Piedmont of North Carolina, and southern Virginia (Anderson 1990:164-71; Daniel 1996; Ward and Davis 1999).

The Middle Paleoindian saw a modification of Clovis points, such as the disappearance of the fluting in some cases and the addition of “ears” at the base of the point. The appearance of these new types, such as the Cumberland, Simpson, Clovis variants, and Suwanee points, might reflect changes in subsistence patterns as the result of rising global temperatures. During this time, it is theorized that American Indians began to radiate out from their previous range of occupation to exploit resources from more distant environments (Anderson 1990; Anderson et al. 1996; Ward and Davis 1999:31).

Changes to the projectile points intensified during the final centuries of the Paleoindian Period resulting in an increased number of changes in projectile point morphology. The Dalton and Hardaway types and other variants allowed late Paleoindian peoples to hunt new species.

The Paleoindian’s scattered settlement pattern and simple culture contribute to the limited number of associated sites in the region, fewer than 75 sites have been identified in present-day Virginia and only 25 have been positively identified in the entire Chesapeake (Turner 1989; Dent 1995). Those Paleoindian sites that have been located tend to be quarry sites, which groups frequently visited and areas where several bands gathered (Meltzer 1988; McAvoy 1992). Many sites were likely destroyed when warming global temperatures melted the glaciers and inundated the low-lying Paleoindian settlements.

### **ARCHAIC PERIOD (8000 TO 1200 B.C.)**

Dramatic climatic changes beginning about 10,000 years ago prompted a reconfiguration of prehistoric people’s subsistence strategies and social organization. Specifically, global temperatures began rising with the dawn of the Holocene geological period, simultaneously shrinking the glaciers and raising sea levels. In North America, the Laurentide Ice Sheet gradually receded northward, making the southeastern portion of the modern-day United States warmer and drier. The boreal forest of the Pleistocene era slowly gave way to a mixed conifer and northern hardwood forest. The area began to assume its modern-day climate and floral and faunal species. This warming also resulted in dramatic hydrological changes for coastal Virginia. As the sea level gradually climbed, the land was flooded; as a result, the lower reaches of the Susquehanna River flooded to form the Chesapeake Bay.

These climatic changes created new food sources for prehistoric people. The warmer, drier climate led to a greater biodiversity, especially floral, as spruce and fir forests gave way to nut- and fruit-

bearing trees (Aaron 2009:17). This allowed humans to rely more heavily on gathering wild plants, nuts, and berries. Indeed, archaeologists have discovered tools, such as nutting stones and pestles, for processing vegetable materials. The creation of the Chesapeake Bay, furthermore allowed Archaic people to exploit seafood, such as anadromous fish and shellfish. The appearance of shell middens during the period testifies to the importance of mollusks to the Archaic diet (Dent 1995).

To exploit these new resources, Archaic people likely intensified their seasonal movement, splitting their time between a semi-permanent base camp and smaller, dispersed hunting and gathering camps. Bands of as many as 30 people may have gathered in the base camp for part of the year, and then dispersed into “microbands,” composed of a single family or two, in other seasons (Griffin 1952; Anderson and Hanson 1998; Ward and Davis 1999). The range of band movement would have occurred over relatively large regions. These larger base camps are theorized to have been located along rich environmental areas near the Fall Line or along main rivers.

New subsistence patterns also required new technologies and the adaption of existing technologies to be suitable to existing game. “The spear thrower [called an atlatl] added range and power to the hunter’s arm. The axe enabled people to fell trees. The mortar and pestle made it easy to pound and grind nuts, seeds, and roots” (quoted in Aaron 2009:18). With new technologies, smaller game could be more easily hunted and plants could be processed more effectively. The resulting products of these technologies differentiate the Archaic Period into three smaller periods. The period also saw innovations in projectile point manufacturing. In a further divergence with the Paleoindians who relied heavily on cryptocrystalline lithics, Archaic people utilized more materials, such as quartzite and quartz.

The Early Archaic (8000-6500 B.C.) is characterized by projectile points with corner and side-notches, rather than hafting the points to a wood shaft by fluting as the Paleoindians did. The resulting points, such as the Kirk Stemmed and Notched, Palmer Corner-Notched, Fort Nottoway, Kessell, Charleston, and Amos, are thus readily distinguishable from Paleoindian points (Custer 1990). Early Archaic people hunted caribous, elk, moose, deer, and bear (Egloff and Woodward 1992:12). Additionally, there appears to be an increase in population at this time.

The Middle Archaic (6500-3000 B.C.) is defined primarily by the appearance of stemmed projectile points which were fitted into a hold in the spear shaft. Therefore, points such as the LeCroy, Stanly, Morrow Mountain, and Guilford are diagnostic of Middle Archaic assemblages. Some evidence also points to the use of grinding technology to make atlatls in this period. Mortar and pestles also began to appear during the Middle Archaic, as did axes. The ability to more easily clear forests, resulted in a change in hunting as deer, bear, turkey, and other animals came to the cleared land to eat the new, low-lying growth (Egloff and Woodward 1992:14-15).

Researchers have also pointed out that contexts from this period contain a larger amount of “expedient” stone tools, owing in part to the rapid environmental changes of the Climatic Optimum, which dates from 6000 to 2000 B.C. (Wendland and Bryson 1974; Claggett and Cable 1982; Ward and Davis 1999). These tools were makeshift and less formal, allowing their owners to use them for a wider variety of activities than tools designed for specific uses. The greater

density and disbursement of archaeological sites from this period indicates a consistent rise in American Indian populations.

By the Late Archaic (3000-1200 B.C.), a more congenial climate and more abundant food sources led to dramatic population increases, there are estimates of tens of thousands of Virginia Indians during this time (Egloff and Woodward 1992:20). To be certain, this apparent increase might be exaggerated because Late Archaic people had a richer material culture than previous peoples and hence left more archaeological evidence of their existence (Klein and Klatka 1991). Nonetheless, the greater number of Late Archaic sites relative to earlier periods suggests that the human population did in fact expand over the course of the Archaic Period. According to Barber et al. (1992), Late Archaic sites were more than twice as numerous as Middle Archaic sites. As humans occupied the land more densely, they also became more sedentary and less mobile, perhaps owing to the greater reliance on plant-based food resources compared to hunting and fishing. Late Archaic people settled along fertile flood plains (Egloff and Woodward 1992:20).

American Indians from this region may also have begun to domesticate plants such as goosefoot, squash, and gourds (Yarnell 1976:268; Chapman and Shea 1981:70). They also used squash and gourds for food storage, in addition to earthen pits (Egloff and Woodward 1992:22). The projectile point technology of the Late Archaic Period is dominated by stemmed and notched point forms, many with broad blades, likely used as projectiles or knives. These points diminish in size towards the latter portion of this period (Dent 1995; Justice 1995).

It should also be noted that prehistoric sites that consist of lithic debitage, no diagnostic artifacts, and an absence of ceramic artifacts likely date to the Archaic Period. These sites are described in the records as “Prehistoric/Unknown,” however they are most likely to date to this period despite not having a specific temporal designation.

### **WOODLAND PERIOD (1200 B.C. TO 1600 A.D.)**

The American Indians of the Woodland Period began to maintain a greater reliance on horticulture and agriculture based on the cultivation of maize, imported from Mesoamerica via the Mississippi Valley, as well as squash, beans, and other crops. This increased sedentism and the nucleating of societies (Klein and Klatka 1991; Mouer 1991). Populations during this time began to consolidate into villages near rivers and floodplains with fertile soil, favorable terrain, and access to fauna. Satellite procurement camps are far less frequent than in the Archaic Period.

The Woodland Period is defined foremost by the development of a ceramic technology for storing and cooking food. Although Archaic people had carved out vessels from soft soapstone, prehistoric Americans did not begin shaping ceramic vessels until around 1200 B.C. The earliest pottery produced on the coastal plain, the Marcey Creek Plain, and other types, in fact resembled those soapstone vessels, suggesting that they were used for similar purposes. Woodland peoples, however, modified the square- or oval-shape soapstone inspired vessels. They began decorating the pieces with cord and tempering them with soapstone and other types of grit to make them stronger. Examples include Selden Island ceramics (tempered with soapstone) and Accokeek pieces (which used sand and grit for tempering). Anthropologists divide the period up into smaller periods based on changing projectile points and ceramics, as well as settlement patterns.

The beginning of the Early Woodland (1200 B.C.-A.D. 300) is defined by the appearance of ceramics from prehistoric archaeological context. Ceremonialism associated with the burial of the dead also appears at about 500 B.C. with stone and earth burial cairns and cairn clusters in the Shenandoah Valley (McLearen 1992; Stewart 1992). Early Woodland settlements in the Piedmont region of Virginia are located along rivers as well as in interior areas and there is evidence to suggest the Piedmont areas developed a more sedentary lifestyle during this time (Klein and Klatka 1991; Mouer 1991). Many Early Woodland sites in the Piedmont are permanent or semi-permanent villages that are large and intensively occupied. This corresponds with the domestication of weedy plants such as the goosefoot and sunflower along intentionally cleared riverine areas.

During the Middle Woodland (A.D. 300-1000), there is an increase in sites along major trunk streams and estuaries as people move away from smaller tributary areas and begin to organize into larger groups (Hantman and Klein 1992). The Middle Woodland diet becomes more complex as people begin to exploit nuts, amaranth, and chenopod seeds in addition to fish, deer, waterfowl, and turkey. Corn by this time had transformed into the large ears familiar today. The bow and arrow replaced spears for hunting (Egloff and Woodward 1992:25). With more specialized crafts and increased trade came status. Evidence of rank societies emerges more clearly with the spreading of religious and ritual behavior including symbols and regional styles apparent in ceramic styles and other sociotechnic and ideotechnic artifacts.

Variance in ceramic manufacture is a hallmark of the Middle Woodland Period. Pope's Creek ceramics are associated with the beginning of this period, and Mockley ceramics with the later. Pope's Creek ceramics are tempered with medium to coarse sand, with occasional quartz inclusions, and interior scoring has also been recorded (Stephenson 1963:94; McLearen and Mouer 1989). The majority of Pope's Creek ceramics have net-impressed surfaces (Egloff and Potter 1982:99; McLearen and Mouer 1989:5). Shell-tempered Mockley ceramics first appeared around 200 A.D. in Virginia to southern Delaware. There was a variation in surface treatments for Mockley that included plain, cord-marked, and net-impressed (Egloff and Potter 1982:103; Potter 1993:62).

By the Late Woodland Period (A.D. 1000-1606), the use of domesticated plants had assumed a role of major importance in the prehistoric subsistence system. The arrival and cultivation of beans joined corn and squash as the three major crops (Egloff and Woodward 1992:26). The adoption of agriculture represented a major change in the prehistoric subsistence economy and settlement patterns. Expanses of arable land became a dominant settlement factor, and sites were located on fertile floodplain soils or, in many cases, on higher terraces or ridges adjacent to them.

Virginia Indians became more settled and developed strong identities to their local settings. They began to organize into villages and small hamlets with more substantial housing that may have been placed in rows around a plaza (Egloff and Woodward 1992:26). These villages were highly nucleated and occasionally fortified with palisades. The fortifications demonstrate inter-group conflict.

By the seventeenth century, the largest village sites within the northern Virginia region were along the Potomac River including Namassingakent, near present-day Mount Vernon, Assaomeck, on the south side of Hunting Creek, and Namoraughquend, near present-day Roosevelt Island. The Manahoacs occupied the region of northern Virginia east of the Blue Ridge Mountains. When Captain John Smith explored the region in the early seventeenth century, he stated that the “valley beyond the mountains was densely populated by agricultural peoples, but did not provide detailed descriptions of the inhabitants” (Eyewitness Accounts 2012). Dominant American Indian tribes in the Shenandoah Valley included the Delaware, Catawba, Iroquois, Cherokee, Susquehannock, and Shawnee (Lehman c.1989).

### **SETTLEMENT TO SOCIETY (1607 – 1750)**

The first English settlement in what is now the United States began at Jamestown on the James River. They then slowly explored and settled the colony, following its navigable waterways. The remoteness of the project area delayed its exploration and settlement though Jesuit missionaries may have entered the wilderness of the Shenandoah Valley as early as 1632. Though European ownership of land encompassing Frederick County was originally by the Virginia Company, the Crown took it in 1624 and in 1649 King Charles II granted nearly 5,282,000 acres of land to a wealthy group of English investors (History of Frederick County n.d.). This consisted of all land between the Potomac and Rappahannock Rivers and from there extended westward into much of northern Virginia, over the Alleghenies into present-day West Virginia (Parsons and Ravenhorst 2002:2). By 1681, Thomas, the Second Lord Culpeper, owned most of this original land grant; after his death, his land would pass to his daughter’s husband Thomas, the Fifth Lord Fairfax (History of Frederick County n.d.).

Explorers, traders, and trappers slowly pushed west into the Shenandoah Valley from the north and east. In an attempt to speed up settlement, thereby forming a buffer between American Indians and more established English settlements to the east, in 1716, Lieutenant Governor Alexander Spotswood and his survey party crossed the Shenandoah River and surveyed the Blue Ridge (G&P 1997:24). The colony of Virginia began to argue that Fairfax’s land did not extend west of the Blue Ridge Mountains and began issuing grants of up to 1,000 acres to encourage settlements. Each parcel would revert to Virginia unless settled with a house and orchard within two years (History of Frederick County n.d.). For additional enticement, the colonial governor allowed Quakers, Lutherans, and other Protestants to practice their faiths without joining the Church of England (Parker 2006:7).

In 1722, governors of Virginia, Maryland, Pennsylvania, and New York undertook treaty negotiations with the Iroquois. The result of the 1722 Treaty of Albany in Virginia was that the American Indians would not occupy settlements east of the Blue Ridge. The colony later interpreted the treaty to mean that the Iroquois had ceded claims to the Shenandoah Valley (Grymes n.d.a). Settlement of the future Frederick County began in 1729 (History of Frederick County n.d.).

The 1730s saw the arrival of several groups traveling south from Pennsylvania along an established American Indian path in the valley that became known as the Great Wagon Road (G&P 1997:24; History of Frederick County n.d.). This included Germans, such as Jost Hite and those that

accompanied him. In 1731, Hite acquired land in the vicinity of present-day Bartonville, land that would also be claimed by Lord Fairfax. With this dispute, Hite initiated a lawsuit which would not be settled until 1786, after the deaths of both Hite and Fairfax. The land that would eventually become Middletown was part of a 2,168-acre tract granted to Hite in 1734 (Klimm et al. 2002:31).

To the north of Middletown, Peter Stephens, who had traveled into the region with Hite, settled in what would become Stephens City in 1732 (Kalbian 1991:38). Closer to the project area, David Logan acquired 860 acres on the “west side of Buffalow Meadow” in 1742 (Cartmell 1909:16). This marshy area became known as Buffalo Marsh and was known for the slightly salty water that was frequented by buffalo in the eighteenth century (Cartmell 1909:280). The settlement patterns of the region were influenced by the land policies of the colonial government, which encouraged settlers to disperse across the landscape and establish small farmsteads (G&P 1997:25).

In 1738, the colony’s House of Burgesses created Frederick County from western Orange County and named it after the Prince of Wales (History of Frederick County n.d.). Because of its sparse settlement, however, the county’s government was not organized until 1743 (G&P 1997:24). Multiple counties would be formed from Frederick County between 1753 and 1836.

James Wood, County Surveyor for Orange County, platted the county seat midway between the early settlements of Opequon and Hopewell (G&P 1997:24). The land that he chose was 1,300 acres of wilderness that he believed to be owned by Virginia. Wood planned 26 half-acre lots and named the county seat Winchester after his birthplace, though it was known as Fredericktown before that (History of Frederick County n.d.). A c.1747 map illustrates Winchester in the Shenandoah Valley with a number of early paths extending out from the settlement (Figure 6-1). At this time, owners of merchant mills generally took ownership and responsibility of roadways. This map also depicts Fort Loudoun in the vicinity; this fort is believed to have been constructed during the French and Indian War.

Also in 1747 the new county court admitted that the land did belong to Lord Fairfax and in 1749 Fairfax moved to Frederick County and built his home, Greenway Court, at White Post, in present-day Clarke County east of the project area (History of Frederick County n.d.).



Figure 6-1: Detail of *A survey of the northern neck of Virginia*, by Warner c.1747, depicting the project area. Source: Library of Congress

### COLONY TO NATION (1750 – 1789)

The western frontier of the colonies witnessed the French and Indian War between 1754 and 1763. As the French and British struggled for control of territory in North America, the northern Shenandoah Valley region became an important foothold for the English and multiple forts and stockades were constructed in Frederick County (G&P 1997:25; Parker 2006:7). The largest of these forts was the previously mentioned Fort Loudoun in Winchester. This fort was designed and built under the guidance of George Washington who would come to serve as Commander in Chief of the colonial forces with his headquarters in Winchester. Following the war, Washington was elected to his first public office representing Frederick County in the House of Burgesses in 1758 and 1861 (History of Frederick County n.d.).

The construction of forts led to an increase in population in Frederick and in the vicinity of Winchester with the presence of soldiers and families seeking protection. This created an increase in the demand for food and supplies and led to an expansion of wheat production in the area. Frederick County's economy was based on agriculture and by 1760 the primary focus was the commercial production of wheat. This was in stark contrast to Piedmont and Tidewater Virginia where the early agricultural economy was based on tobacco. Wheat grew well in eastern Frederick where there were fertile limestone soils and land was cleared to create additional farmland. In the western portion of the county, where the soil was underlain by shale, and grains did not grow as well, mills and pastures were more common. Besides grist mills, ironworks were another industry present in the county by the last quarter of the eighteenth century. In the 1760s, Isaac Zane founded the Marlboro Iron Works in Marlboro, a couple of miles west of the project area. By the 1770s,

the manufactory was producing four tons of bar iron and two tons of casting per week which were exported outside of the region (Kalbian 1992:87). The large number of goods produced in the region also led to an increased number of roads and improvement of existing roads leading to Winchester (Figure 6-2).

Winchester became the primary market town in the region and in the 1750s the town began to change; it was incorporated in 1779 (Norris 1890:147). To its south, Stephensburg, now Stephens City, was also growing. Chartered in 1758 by Lewis Stephens, son of the original European settler in the area, the community was centered on the important crossroads of Valley Pike (Route 11) and the Old Dutch Wagon Road (Route 277). With this focus on transportation, the Newtown wagon was produced there. It became well-known for its ruggedness and sturdiness (Kalbian 1991:40).

Even as communities were establishing during the unrest throughout the fledgling country, settlers were building homesteads along the region's roadways. West of the project area, the Ash family made their home Deerfield on the Middle Road, which extended to the iron works at Marlboro (Cartmell 1909:280).

Following the French and Indian War in the mid-eighteenth century, England passed laws and instilled taxes upon the colonists in order to pay its war debts. The result was increased tension between England and the colonies. In response, the 1774 Virginia Convention adopted resolves against the importation of British goods and the importation of slaves. The Convention also required each county to form a volunteer company of cavalry or infantry. From eastern Frederick County (now Clarke County) came Gen. Daniel Morgan and his "Long Rifles". Additionally, citizens furnished the troops with food and supplies, including Isaac Zane who supplied the army with ammunition made at his ironworks in Marlboro, near the Frederick-Shenandoah border. County residents also supplied food (Kalbian 1992:22). While no military engagements took place in Frederick County, many prisoners of war were held in the county. Originally, prisoners were placed in Fort Loudoun, however their numbers grew to the point that new facilities were necessary. A barracks was built four miles west of Winchester; by 1781 there were 1,600 prisoners (History of Frederick County n.d.).



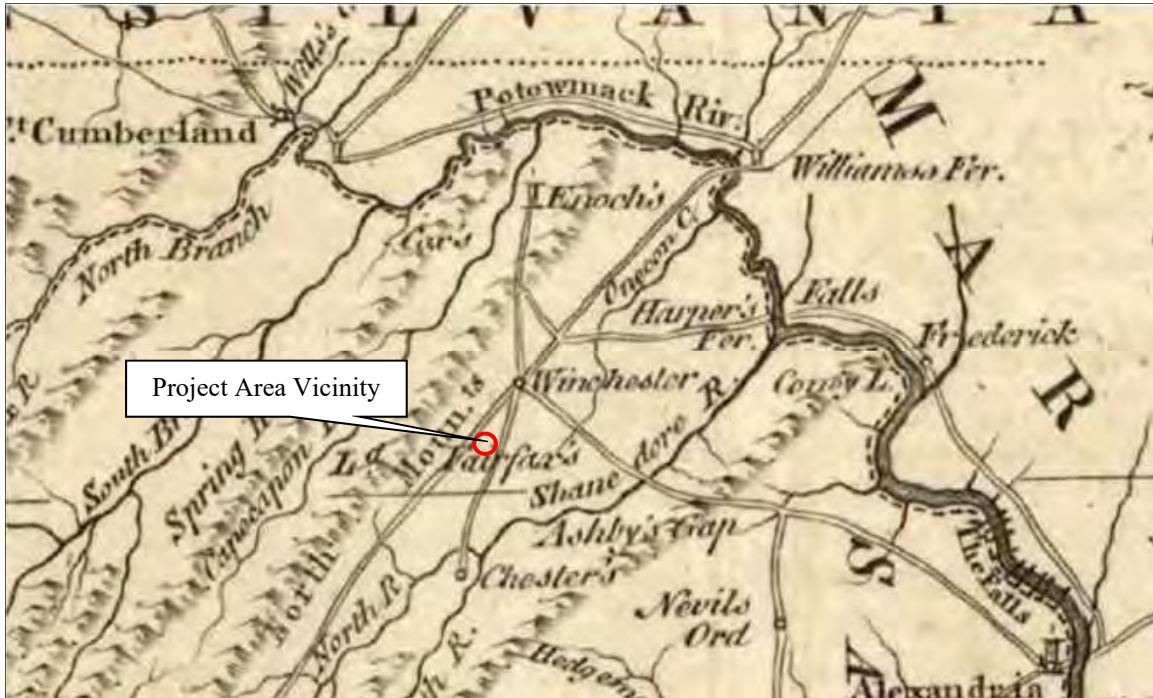


Figure 6-2: Detail of *A new map of Virginia from the best authorities*, by Kitchin c.1761, depicting the project area. Source: Library of Congress

### EARLY NATIONAL PERIOD (1789 – 1830)

Following the American Revolution, Frederick County's strong agricultural economy based on grains and livestock continued to grow and insulated farmers from the economic depression experienced by tobacco farmers. While tobacco was raised in some eastern portions of the county where Tidewater planters had relocated, it was not a driving force in the economy. In addition to tobacco, Tidewater planters brought with them a plantation system operated by forced slave labor. Despite the presence of these plantations, there were fewer slaves and more free blacks in the Shenandoah Valley compared with other areas of Virginia. Farmsteads were often run by family members or temporarily hired help (G&P 1997:26).

With sustained peace in the new nation, Winchester flourished and by 1810 had about 2,000 residents (Norris 1890:170). South of the project area, Dr. Peter Senseney purchased land in the vicinity of today's Middletown between 1776 and 1787. Though he moved back to Winchester, his family established farming, hide tanning, and merchant mill operations. In 1794, Virginia's General Assembly established Middletown. The village would stabilize and slowly become a thriving community with a number of businesses, churches, and schools (Klimm et al. 2002:30-32).

An early nineteenth century map depicts the project area between Stephensburg, Middletown, and Marlboro Iron Works (Figure 6-3). Just east of the project area was a home identified as being of W.S. Jones. Between 1782 and 1785, Gabriel Jones had purchased property that would become Vacluse (VDHR #034-0138). Jones was a prominent lawyer and politician. The land would be conveyed to his son, Strother, who would build a home there and name it Vacluse (V-CRIS #034-

138). At the northern end of the project area, the Bauserman family constructed their dwelling circa 1800 (VDHR #034-0077) (GAI Consultants 2008:108).

The 1809 map also illustrates the network of roads extending out from Winchester. One such road that has been on maps throughout the eighteenth century was the Great Wagon Road. This began to be known as the Valley Turnpike and generally follows the modern alignment of U.S. Route 11, east of the project area; it connected Pennsylvania with North Carolina. As early as 1797 stagecoaches were running on the Valley Pike (Lehman c.1989). Beginning in 1824, macadam was used to pave many of the major roadways in Virginia, including the Valley Turnpike (G&P 1997:27).

Throughout the county, residents worked in an assortment of industries including a variety of mills (grist, saw, oil, paper, and fulling), leather tanneries, breweries and liquor distilleries, blacksmiths and coopers (G&P 1997:26). In 1820, there were 54 mills in Frederick County along with numerous sawmills, tanneries, and other business activities (History of Frederick County n.d.). Many of these mills were south and east of Winchester, including along Meadow Run south of the project area.



Figure 6-3: Detail of *Map of Frederick, Berkeley, & Jefferson counties in the state of Virginia*, by Varle and Jones in 1809, depicting the project area. Source: Library of Congress

#### ANTEBELLUM PERIOD (1830 – 1860)

Frederick County continued to prosper during this period with an economy based on agriculture and life was centered in Winchester and other smaller towns where there were craftsmen and

merchants (G&P 1997:27; History of Frederick County n.d.). The transportation corridors leading to these towns, especially Valley Turnpike, were a major driver in their growth. Activity associated with this road made Winchester one of the largest towns in western Virginia (History of Frederick County n.d.).

Additional roads and modes of transportation came to Frederick during this period further increasing growth in the county. Like many places in the country and state, the region received a major boon with the coming of the railroad. In 1826, the Virginia legislature authorized the Baltimore & Ohio Railroad (B&O RR) to operate in Virginia (G&P 1997:27). This led to the creation of the Winchester & Potomac Railroad (W&P RR) linking Winchester and the port of Baltimore through Harper's Ferry. Connection to this large port and Baltimore merchants improved the farming economy of the valley (Grymes n.d.b). Furthermore, two major roadways added to the transportation network in the region. These were the Winchester & Berryville Turnpike, now following the general alignment of Route 7, and the Front Royal Turnpike, now Route 522 (G&P 1997:27).

Circa 1830, a dwelling was constructed within the project area (V-CRIS #034-0254). This was the Miller House, once called Buffalo Marsh. Joseph Miller had moved to Frederick from Maryland prior to 1800 and laid down roots for his large family (Cartmell 1909:280). In 1850, Joseph was identified as a farmer living with his wife Mary and likely three children. A man that was likely his son lived on an adjacent parcel with his family (USCB 1850). The region continued to flourish. Middletown was becoming a busy small trading center and Stephensburg continued to grow and was known as New Town by the mid-nineteenth century (Klimm et al. 2002:34; Kalbian 1991:38).

The quiet, peaceful life experienced by residents of Frederick County soon began to change. The first tastes of violence regarding the institution of slavery occurred in 1859. On October 16, John Brown conducted a raid on Harpers Ferry to liberate and arm area slaves and form an autonomous realm for them in the mountains of Maryland and western Virginia, where there were few slaveholders. Frederick County had about 2,300 slaves out of a population of about 16,000, or 14-percent of the population (Holsworth 2011). While any number of enslaved people is too many, by comparison, counties continuing to heavily cultivate tobacco had a much higher proportion; for example Mecklenburg County had a total population of 20,096, 62-percent of which was made up of enslaved people (USCB).

As the initial public response to the raid ran its course in Frederick, the sentiment grew more cautious given the strong economic ties that the county had to the northeastern markets (Duncan 2007:4). When Virginia held its secessionist convention in 1861, the four lower Valley counties (Frederick, Clarke, Berkeley, and Jefferson) sent a strongly anti-secessionist delegation. Strong Union sympathies would lead to the two northern most counties (Berkeley and Jefferson) to join the new state of West Virginia (G&P 1997:28). Frederick County was given the option of joining West Virginia and voting was conducted in 1863, however no votes were reported (Grymes n.d.c).

**CIVIL WAR (1861 – 1865)**

There were military campaigns throughout the Civil War to gain control of the strategically important Shenandoah Valley. The valley supplied food, livestock, horses, and soldiers to the southern cause and it was also important because of its strategic location in relation to Washington, D.C. (History of Frederick County n.d.). The gently rolling hills provided cover for advancing troops and the roadways provided access into the interior; Winchester in particular was surrounded on all sides by low hills that hid the approach of armies (G&P 1997:29; Fordney 1996).

While railroad lines were important during the war throughout the south, the W&P RR was not as important as others. In early 1861, the W&P RR supported the Virginia move to capture Harper's Ferry and removed Confederate supplies when that position was evacuated. However, the line's weak construction, its orientation to Union territory, and proximity to the Potomac River made it of little use to the Confederacy after early 1862 (Winchester & Potomac n.d.). The line was damaged and repaired multiple times throughout the war (Lehman c.1989).

Winchester, however, was a strategic prize during the Civil War. With its excellent roads north and east, in Confederate hands it was a serious threat to the supply lines of the Union armies trying to reach Richmond. In the hands of the Union army, Winchester made Confederate raids and invasion of the north risky and opened a protected avenue for Union troop movements south through a valley from which they could attack on the flanks and rear of Lee's main armies (History n.d.). Because of this it is believed that the town of Winchester changed hands between the two sides during the war about 70 times, though it was probably closer to 14 ("History of Frederick County" n.d.; Fordney 1996). Occupiers of the town found it almost impossible to mount a defense, so they usually had to flee quickly, sparing the town from prolonged, destructive sieges (Fordney 1996). During the Civil War, multiple forts were built in the vicinity of Winchester (Lehman c.1989).

In addition to occupation of Winchester, six major battles were fought on Frederick County's land. These include: the First, Second, and Third Battles of Winchester, the First and Second Battles of Kernstown, and Cedar Creek. The closest battle to the project area was the Battle of Cedar Creek (Figure 6-4)

In 1864, Grant made Philip Sheridan commander of the new Army of the Shenandoah and set him on the task of rendering the Valley useless to Confederates. On September 19, 1864, Early's 14,000 soldiers and Sheridan's 39,000 clashed at the Third Battle of Winchester, also called the Battle of Opequon (Adelman n.d.). Sheridan's Shenandoah Valley Campaign also included the systematic destruction of Valley farms, mills, crops, and livestock and anything else that might have aided the Confederate army (G&P 1997:28). For three weeks in 1864 from late September to early October, they burned 2,000 barns, 120 mills, and a half a million bushels of grain and confiscated 50,000 head of livestock in the Valley. Virginia's richest valley was left desolate (History of Frederick County n.d.).

By mid-October, Sheridan was considering his campaign of destruction a success and Confederate Lt. Gen. Jubal A. Early no longer a threat so he left his command to Maj. Gen. Horatio G. Wright and left for Washington. Sheridan's 32,000 men were bivouacked just north of Cedar Creek south

of Middletown. Because of the topography, the divisions were separated by deep ravine of Meadow Brook (Salmon 2001:368).

Early studied this arrangement with his 21,000 men to the south at Fisher's Hill and a plan of a three pronged attack was formed. In the early hours of October 19, under cover of fog, Confederates began their offensive and their surprise, violent attack met little resistance and portions of the encamped men fled north. To the west, Federals were alerted of the Rebels approach and began retreating. As the Confederate forces reorganized their attack, Sheridan, who had made it to Winchester, returned and responded with a quick counterattack resulting the Confederates fleeing or taken as prisoners (Salmon 2001:370-371). Sheridan's victory at Cedar Creek extinguished any hope of further Confederate offensives in the Shenandoah Valley (CWT n.d.).

The battle resulted in nearly 3,000 killed, wounded and captured Confederates while the Union saw almost 5,700 (Salmon 2001:372). The southern edge of the project area overlaps with the study area and NRHP potentially eligible area for the battle as determined by the ABPP. Though the battle was to the south, a resident of Vaocluse at the time wrote of the Federals fleeing through their land before the tide of the battle had changed (Bierle 2019).



Figure 6-4: Detail of *Battle of Belle Grove or Cedar Creek*, by Hotchkiss in 1864, depicting the battle area. The project area lies outside of the frame. Source: Library of Congress

### RECONSTRUCTION AND GROWTH (1865 – 1917)

The Civil War affected Virginia severely resulting in a heavy loss of life, devastated economy, and destruction of farms. With the long occupation of Winchester by both armies, the town and its surroundings were impacted. With the destruction witnessed throughout Virginia, the region slipped into a depression (G&P 1997:29). As with much of the rest of Virginia, economic realities following the end of the Civil War resulted in slow redevelopment of the area's agricultural and industrial capabilities. Road and railway infrastructure was slowly rebuilt as industry and agriculture struggled to gain a foothold in the post-Civil War south and towns attempted to re-establish themselves.

Transportation, which had previously helped the valley to flourish, also aided in its recovery. During Reconstruction the W&P RR was operated by the B&O RR; afterwards, W&P stockholders regained control and leased the line to the B&O RR which became the Harpers Ferry Valley Branch of the B&O RR (G&P 1997:27). This line would link the rail hubs of Winchester and Strasburg (Klimm et al. 2002:34). A rail depot was constructed east of Vacluse and the community that formed around it became known as Vacluse. Stations also opened at Middletown and Newtown.

With the presence of the railroad, the communities planned for growth. In the 1890s, the Middletown Land Improvement Company formed to make plans for the expansion of the town. Unfortunately, expansion efforts soon fizzled (Klimm et al. 2002:35). Alternatively, to the north, Newtown did grow. A new charter was granted in 1879 and the town was known as Newtown-Stephensburg (Kalbian 1991:38). By 1887, it had become Stephens City (Kalbian 1991:38).

An 1885 map of the county also depicts additional development within the project area (Figure 6-5). Circa 1870 and 1880 dwellings were built within the project area (V-CRIS #034-0241 and 034-5075). The later house became known as Woodbine Farm (VDHR #034-5075). Homes within the project area appear to have belonged to the Miller and McCrea families.

Frederick County's grain and livestock production recovered and they were back to pre-war levels by the 1880s. Unfortunately, the region had a new competitor in the Great Plains where massive amounts of grain were cultivated. This competition would lead the county to diversify its economy into fruit production. Farmers began to plant orchards, specifically apple orchards, in the fertile limestone soils and by the turn of the century, apples would become the major growth industry in the region with the largest percentage increase in production occurring between 1910 (351,490 bushels) and 1920 (1,019,546 bushels) (G&P 1997:29). By 1909, an estimated 2,000 acres were planted with apples (Cartmell 1909:510).

Other early twentieth century crops included corn, potatoes, oats, hay, buckwheat, rye, and peaches and livestock such as cattle, hogs, sheep, and chickens. Additionally, the quarrying of limestone emerged in the early twentieth century with several kilns opening along the B&O RR. The poorer shale soils of the county were largely abandoned for agricultural pursuits during this time and many reverted back to forest land (G&P 1997:29).

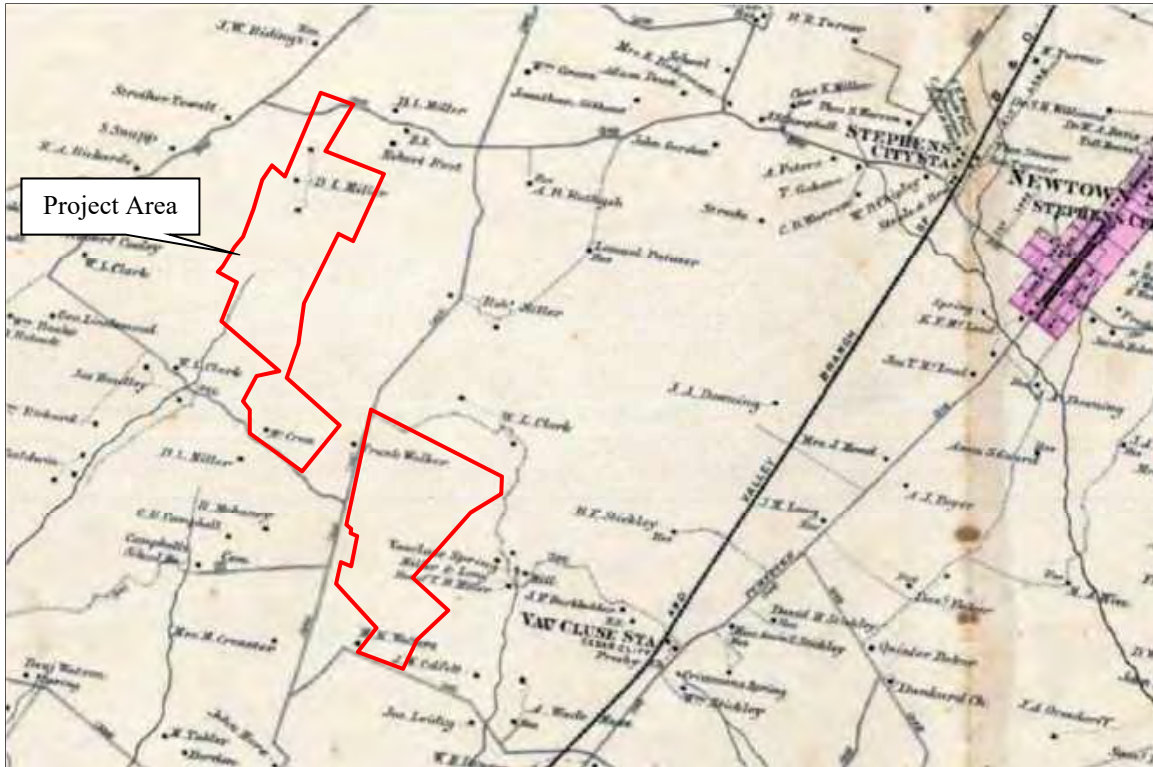


Figure 6-5: Detail of *An Atlas: Frederick County, 1885*, depicting the project area. Source: Historic Map Works

## WORLD WAR I TO WORLD WAR II (1917 – 1945)

The production of apples began in the late nineteenth century with the first large scale orchard planted in 1871 (Hanson 1969). Frederick began the Apple Blossom Festival, in Winchester, in 1924 and the area became known as one of the leading apple producing areas of the state, earning it the moniker of “Apple Capital”. Businesses related to the production, storage, packing, and shipping of apples have developed throughout the area (G&P 1997:30). The ease of transportation of this product was facilitated by the road network around Winchester and the B&O RR and CVRR which, by 1919, was the Pennsylvania Railroad.

In 1918, Virginia’s General Assembly established the first state highway system, a network of 4,002 miles of roadway. Among the roads to be included was the old Valley Turnpike between Winchester and Staunton, which still was being operated as a toll road in 1918. As late as 1926, it remained the only hard-surfaced road of much distance (VDOT 2006:27).

Typically in rural counties of Virginia, where agriculture is the primary driver of the economy, population fell during the Great Depression and World War II as residents relocated to urban centers in search of work. In Frederick County, however, population increased by nearly 41-percent as it grew from 12,461 residents in 1920 to 17,537 in 1950 (USCB). A 1943 topographic map depicts the homes along the county’s roadways including within the project area (Figure 6-6). Aside from the construction, it appears that the project area consisted of farmland.



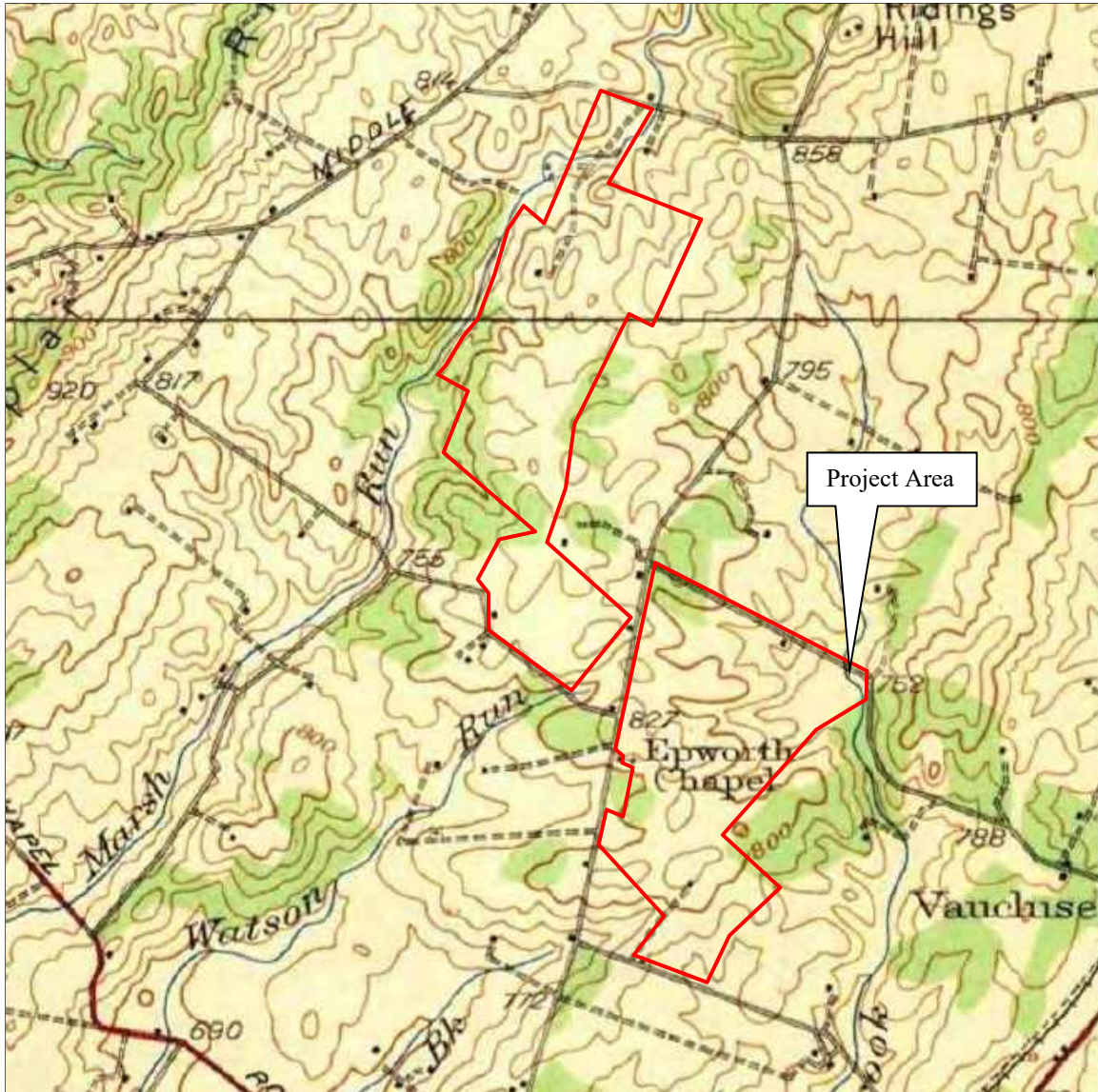


Figure 6-6: Detail of the 1943 topographic map, *Middletown*, depicting the project area. Source: USGS

#### NEW DOMINION (1945 – PRESENT)

In the second half of the twentieth century, much of northern Virginia changed quickly as it developed into a metropolitan suburb. While much of Frederick County remains fairly rural, Winchester and its surroundings have achieved a more suburban atmosphere in the last decades of the twentieth century and into the twenty-first century. Between 1950 and 2000 the population of Frederick more than tripled from 17,537 residents to 59,209 (USCB). The apple industry continues to be a large part of the local economy however, there is growing employment among manufacturing, retail, and service jobs (G&P 1997:30). Other industries, including limestone quarries, manufacturing corporations, construction and light industrial parks, are thriving in the county (G&P 1997:30; Parker 2006:7). As growth continues in the county, many apple orchards are being replaced by new roads, homes, shopping centers, and institutions (Parker 2006:7).

These changes in the rural landscape are evident in the area surrounding Winchester and, to a slightly less extent, Stephens City. Between 1970 and 1990, the population of Stephens City nearly doubled (Kalbian 1991:42). Topographic maps and aerials, however, continue to depict a project area that was largely unaltered. While, the larger regional development was evident in the project area with a crossing of a transmission line by the 1960s (Figures 6-7 and 6-8). The number of dwellings within the area decreased and shifted locations and the land remained largely open. In 1963, the artist John Chumley moved a circa 1820 dwelling (VDHR #034-0220) to its current location at Vaucuse, east of the project area. Chumley used this building as his first studio (GAI Consultants 2008:117). In the late twentieth century, Vaucuse was restored bringing back a portion of the county's early history.



Figure 6-7: Detail of the 1966 topographic map, *Middletown*, depicting the project area. Source: USGS



Figure 6-8: Detail of a 1997 aerial depicting the project area. Source: Google Earth

## 7. EXPECTED RESULTS

A number of factors must be considered in determining the types of sites that can reasonably be expected to be found in the course of an archaeological testing program. Environmental data such as geology and hydrology along with historic data including transportation routes and proximity to settled areas can provide indications about general use and settlement. In addition to background research, data on previously identified sites can shed light on the types of resources one might expect to find. The following section summarizes the types of cultural resources expected to be present within the project area following a review of these factors.

### ENVIRONMENTAL CONSIDERATIONS

Prior to modern disturbances the character and type of soil would have had a direct effect on the kind of vegetation and hydrology of the area and on the potential for human habitation and usage. There is a strong correlation between settlement density and soil fertility. A well-known study of settlement patterns in relation to soil types (Lukezic 1990) indicates that historic settlement is closely correlated with the location of prime farmland, and Native Americans during the late prehistoric period also appear to have had preferences for specific site locations and soil types (Rountree and Turner 2002:69).

The topography is characterized by a series of upland ridges separated by drainages and swales. A total of 51.3 percent of the soils located within the project area are considered not prime farmland. A total of 39 percent of project area consists of land which slopes at or over 15 percent. Thirty-three percent of the project area is listed as either very rocky or as “rock outcrop” All of the soils within the project area are well or moderately well drained. As stated in the Circa~ 2018 report, the southernmost parcel of the project area was historically used as an apple orchard that has now been converted to agricultural fields or is utilized as pastureland for cattle. The apple trees were planted roughly eight feet apart in rows approximately eight feet apart. The trees were cut, and the stumps were removed with a backhoe post 1997. This clearing activity created disturbance to the soil in the fields in this area. Crops are now planted in the converted apple orchards in the southern, western, and eastern sections of the project area. Mature apple orchards are planted along the western boundary and the north western boundaries of the southern parcel of the project area, and in the western half of the central parcel of the remaining acreage is used as pasture for livestock

### MAP PROJECTED SITES

Historic documents, maps, and literature provided some evidence on the likelihood for the project area to contain prehistoric or historic archaeological sites. As illustrated earlier in the cultural context section of this report, a circa 1800 dwelling (VDHR #034-0077) is located just outside of the northern parcel’s project area boundary. The 1809 map also illustrates the network of roads extending out from Winchester. Circa 1830, a dwelling was constructed within the project area (V-CRIS #034-0254). An 1885 map of the county also depicts additional development within the project area. Circa 1870 and 1880 dwellings were built within the project area (V-CRIS #034-0241 and 034-5075). The later house became known as Woodbine Farm (VDHR #034-5075).

**PREVIOUSLY RECORDED SITES**

While documentary sources have bias and often are limited in their attention to detail, information on previous surveys and recorded resources in the vicinity of the project area, as well as regional settlement models offer additional information and perspective on the project area's potential to contain intact significant archaeological deposits.

Review of the VDHR VCRIS records show no archaeological sites within the project area, however, VDHR #034-0254 and VHDR #034-5085; a circa 1830 dwelling and its cemetery – the Miller House and the Miller Cemetery – are located within the project area. Neither of these resources have been evaluated. VDHR #034-5075 is also located within the northeastern corner of the southernmost parcel of the project area. This resource has been deemed potentially eligible for inclusion in the NRHP by DHR.

**PREHISTORIC SITE POTENTIAL**

The topography is characterized by a series of upland ridges separated by drainages and swales. It is approximately 8.5 miles northwest of the Shenandoah River, although there are a few freshwater seeps located within the project area. There is some potential for lithic processing sites or temporary camps to be located near the freshwater seeps. However, these seeps are currently being used to provide water to cattle, and as such, there is a fair degree of disturbance around these resource rich locations. Near the freshwater seeps, prehistoric potential ranges from high to moderate. Elsewhere, prehistoric potential is low. Potential for sites where there have been orchards is low to non-existent due to the abovementioned stumping and removal of soils associated with the removal of the apple orchard trees post-1997.

**HISTORIC SITE POTENTIAL**

The project area is located near historic roads, and structures are evident in the project area on historic maps since the 1800s. Therefore, the historic site potential is high near the indicated mapped structures. Elsewhere, the project area has acted as farmland, agricultural fields, and orchards. Potential for sites where there have been orchards is low to non-existent due to the abovementioned stumping and removal of soils associated with the removal of the apple orchard trees post-1997.

## 8. FIELD SURVEY RESULTS

In August and September 2020, D+A conducted a Phase I cultural resource survey of ±255 hectare (±630 acre) Foxglove Solar Project Area in Frederick County, Virginia. In addition to a pedestrian survey of the project area, a systematic pedestrian survey of exposed surfaces and subsurface testing was conducted to determine the presence of archaeological resources. Architectural resources older than 50 years of age within the project area were also surveyed. The work was completed in accordance with VDHR guidelines for conducting historic resources survey in Virginia. The results of the survey are summarized below.

### ARCHAEOLOGICAL FIELD RESULTS

Prior to initiating archaeological testing of the project area, a systematic pedestrian survey was undertaken in order to assess existing conditions and the potential for archaeological deposits or other historic landscape features to be present. Following the pedestrian survey, a plan for systematically testing the project area was implemented. In assessing locations which required subsurface testing or systematic pedestrian survey, the document titled *Assessment and Probability Analysis Foxglove Solar, LLC 557.40 Acres Frederick County, Virginia* (Circa~ August 2018) which assessed the prehistoric and historic site potential of the northern and southernmost parcel of the project area was utilized where deemed appropriate. The results of both the pedestrian and subsurface testing are provided below.

### PEDESTRIAN SURVEY

At the outset of the field effort a pedestrian survey was conducted throughout the project area. The project area lies in Frederick County, Virginia. Background research and field reconnaissance were used to develop an appropriate survey strategy, which was then implemented. The results of the survey include recommendations regarding potential National Register of Historic Places (NRHP) eligibility of identified resources. The project area is located in Middletown, between Valley Pike (Route 11) to the southeast and Marlboro Road to the (T-631) to the north. The project area consists of primarily of open pasture, and agricultural fields with some wooded areas

Pedestrian survey confirmed the environmental factors detailed in the environmental context: the terrain consisted of gentle, rolling hills, and in some places, exposed rock was identified on the surfaces in areas (Figure 8-1). Vegetation ranged from agricultural fields for corn and peanuts, to pastures, and apple orchards. Portions of the project area which were subjected to pedestrian survey but did not consist of exposed ground and were not subjected to further subsurface testing consisted of apple orchards, dense forested area, and rocky pastureland (Figures 8-2 through 8-4). The portions of the project area which did consist of exposed soils were subjected to systematic pedestrian survey, and consisted of young, short, corn planted in plowed soils (Figure 8-5). Modern barns associated with apple harvesting were located in the southernmost edge of the project area, the northeastern edge of the southernmost parcel of the area, and the western edge of the central parcel (Figure 8-6). Additionally, a historic barn is located in the southernmost edge of the project area (Figure 8-7).



**Figure 8-1: Typical terrain of the project area, showing exposed rocks in places, facing south.**



**Figure 8-2: Apple orchard located in the northern tip of the southernmost parcel of the project area, facing southeast.**



**Figure 8-3: Dense wooded area at edge of pastural field in the northernmost parcel of the project area, showing slope to the west, facing west.**



**Figure 8-4: Hay field in the northeastern portion of the southernmost parcel of the project area, facing east.**





**Figure 8-5: Planted corn, showing rows of exposed soils, facing north.**



**Figure 8-6: Example of pole barns for apple storage in the project area, facing southeast.**



**Figure 8-7: Historic barn in the southwestern edge of the southernmost parcel of the project area, facing southeast.**

The Miller House and its associated outbuildings and Miller Cemetery (VDHR #034-0254 and VDHR #034-5085) were re-identified. These features will be discussed further in the subsurface testing results.

#### SUBSURFACE TESTING

Following the pedestrian survey, a plan for systematically testing the project area was implemented. The project area was divided into 24 areas based on terrain labeled A through Y (excluding I) in the order they were surveyed (Figure 8-8). Grids of shovel tests at 15-meter (50-foot) intervals were placed in every area except Area R and Area L, which were subjected to judgmental shovel test pits, and Area Y which was subjected to systematic pedestrian survey due to the amount of exposed soils on the surface of the landform. A total of 487 shovel tests was excavated in the entire project area, a total of 36.05 hectares (89 acres) of exposed soils in the planted corn fields was subjected to systematic pedestrian survey. The portions of the project area which are not included in an “Area” were subjected to visual inspection, and were deemed – due to rocky soils, distance from water, land use (pastural or orchard), and slope to have low or no potential for archaeological sites. The portions of the project area which are not included in “Areas” account for the low or moderate potential portion of the project area which were not included in the 10 percent testing sample, or account for areas disturbed by orchard activities which were deemed to have no potential for archaeological sites. Due to exposed surfaces associated with agricultural fields – namely planted corn – the majority of the areas which were deemed low and moderate potential for sites were subjected to systematic pedestrian survey as opposed to shovel

test pits. A total of 36.05 hectares (89 acres) of the project area was subjected to systematic pedestrian survey.

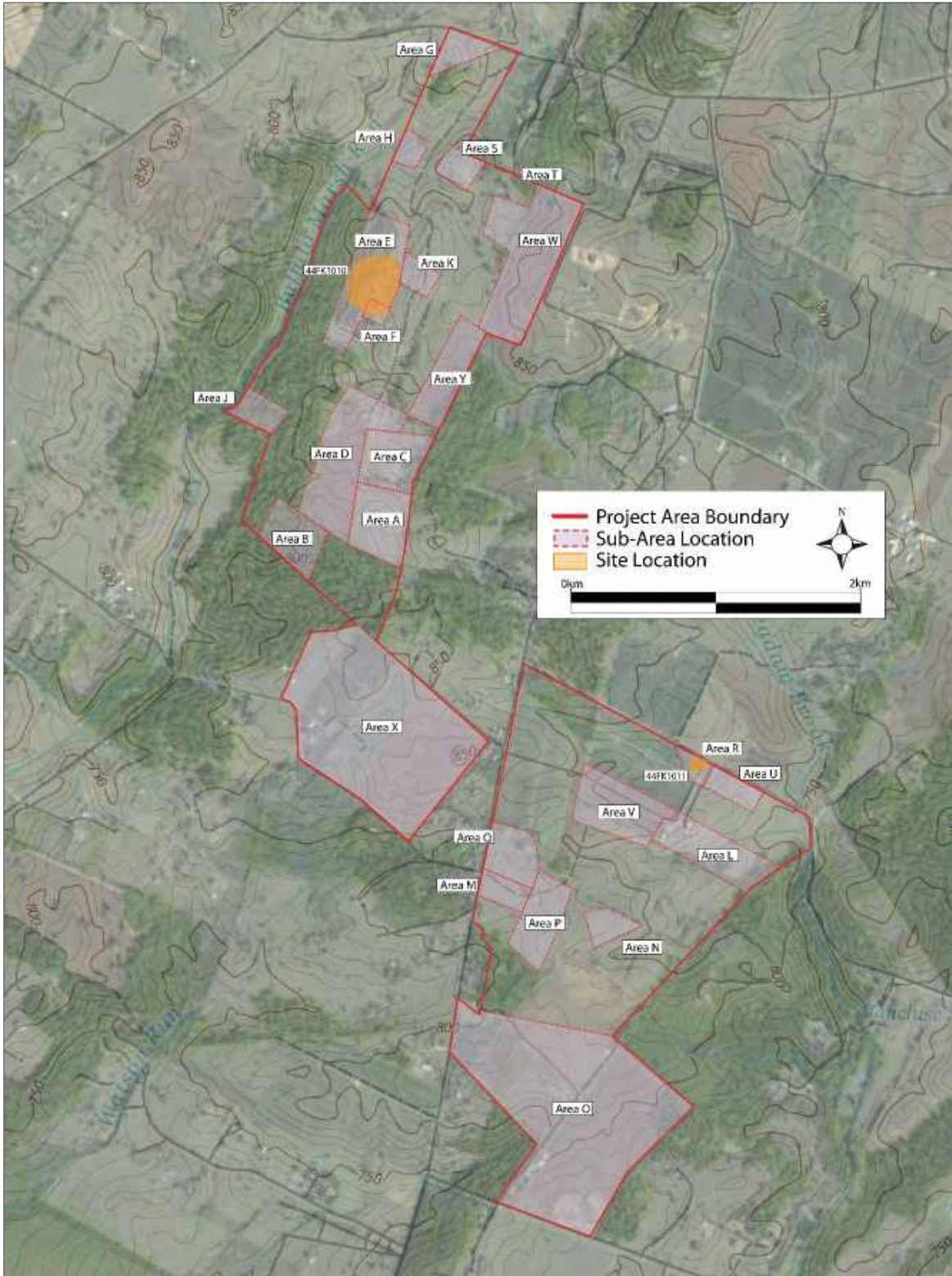


Figure 8-8: Aerial map of project area with topographic overlay.

*Area A*

Area A is located in the southeastern edge of the northernmost parcel in the project area. The area is in a flat grassland which has recently been cut. A small powerline runs southeast-northwest through the area (Figure 8-9).



**Figure 8-9: Powerline in Area A, facing south.**

The area consists of a ridge which extends north from a knoll which makes up most of the middle parcel. The area is bounded to the north, west, and east by slope. To the south, the area is bounded by wood. Vegetation in Area A consists of freshly cut grass (Figure 8-10).



**Figure 8-10: Photo illustrating typical vegetation and terrain, facing north.**

*Grid A1*

A total of 24 shovel tests were laid out at 15-meter (50-foot) intervals in 6 transects labeled -A through E. A total of five (5) shovel test pits were terminated at bedrock (Figure 8-11).

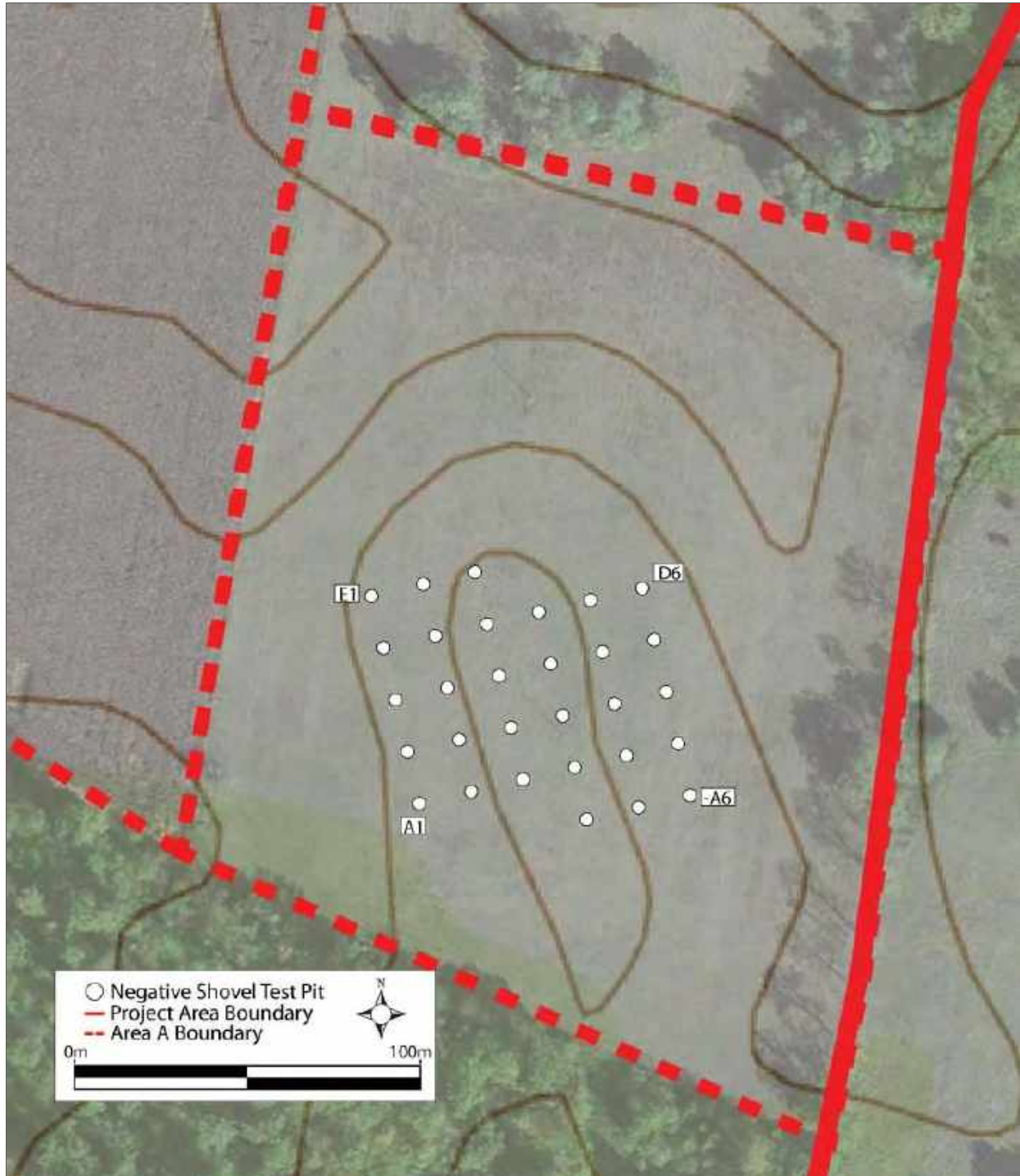
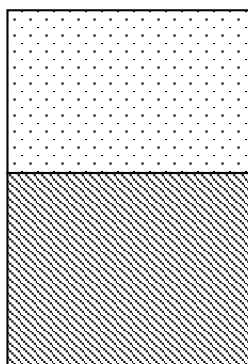


Figure 8-11: STP map of Area A.

Subsurface testing revealed that the soils were extremely rocky, as indicated by the fact that many shovel test pits terminated at bedrock, and in many cases, bedrock was directly under the surface of the root matt. Depths to subsoil or bedrock ranged from 4 cm to 37 cm. A typical profile representative of the stratigraphy in Area A consisted of 22 cm of 10YR 4/4 dark yellowish brown

silty loam over 7.5YR 5/8 strong brown silty clay (Figure 8-12). No artifacts or features were identified in Area A, no further work is recommended.



10YR 4/4 silty loam  
0-22 cm

7.5YR 5/8 silty clay  
22-33 cm

**Figure 8-12: Soil profile of Shovel Test C3.**

### *Area B*

Area B is located in the southwestern edge of the northernmost parcel in the project area. The area is in wooded land which appears to have been logged or cleared in the past, but not commercially.

The area consists of a series of small ridges which extends west from an irregularly shaped landform which makes up most of the southern half of the northernmost parcel. The area is bounded on all sides by slope. Approximately 600 feet west of the western project area boundary, Marsh Run runs north-south. Vegetation in Area B consists of hickory and white oak trees (Figure 8-13).



**Figure 8-13: Photo illustrating typical vegetation and terrain, facing south.**

*Grid B1*

On the southernmost ridge which comprises Area B, total of 7 shovel tests were laid out at 15-meter (50-foot) intervals in 3 transects labeled A through C (Figure 8-14). No shovel tests were positive for cultural material.



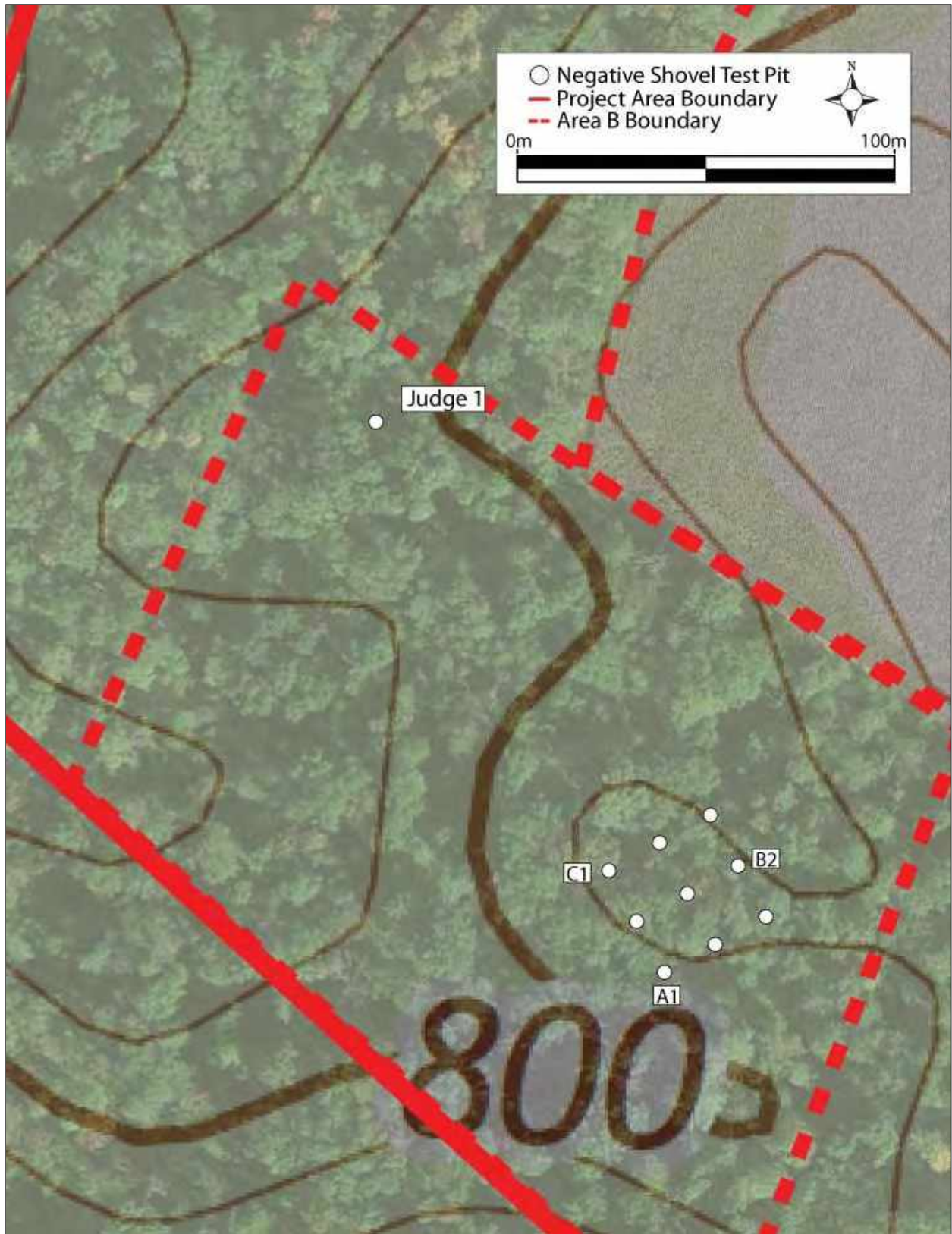
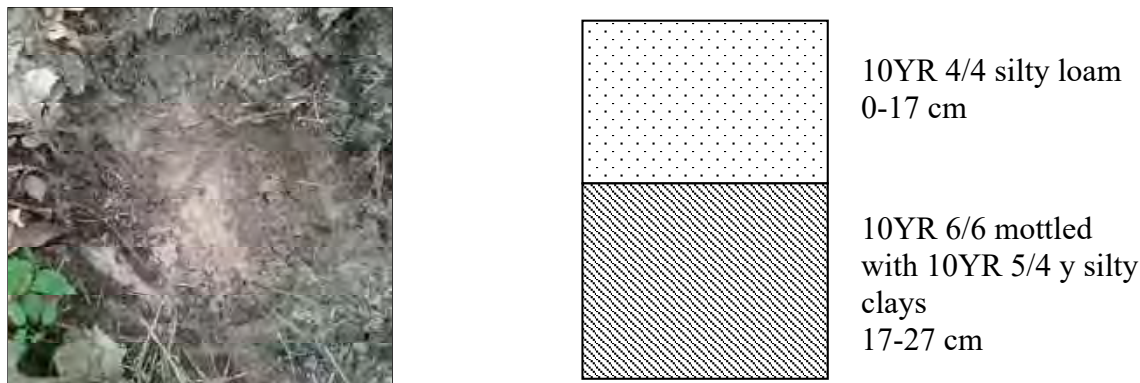


Figure 8-14: STP map of Area B.

In Grid B1, depths to subsoil ranged from 14 cm to 20 cm to subsoil. A typical profile representative of the stratigraphy in Area B consisted of 17 cm of 10YR 4/4 dark yellowish brown silty loam over 10YR 6/6 brownish yellow silty clay mottled with 10YR 5/4 yellowish brown silty clay (Figure 8-15).

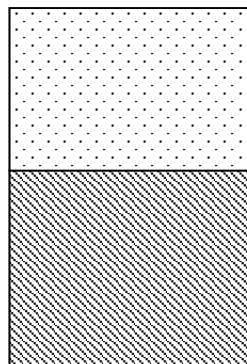


**Figure 8-15: Soil profile of Shovel Test B2.**

One judgmental shovel test pit was excavated on the ridge north of Grid B1. A grid was not excavated on this ridge because most of the landform consisted of exposed bedrock and sloped to the west (Figure 8-16). The excavated shovel test pit consisted of 13 cm of 7.5YR 4/4 brown silty loam over 5YR 5/8 yellowish red mottled with 7.5YR 6/6 reddish yellow silty clay which came down to bedrock (Figure 8-17).



**Figure 8-16:** Photo illustrating western terrain slope at location of Judgmental shovel test pit 1.



10YR 4/4 silty loam  
0-13 cm

5YR 5/8 and 7.5YR  
6/6 silty clays  
13-20 cm

**Figure 8-17:** Soil profile of Judgmental shovel test pit 1.

No cultural material was recovered, and no features were noted. No further work is recommended.

*Area C*

Area C is located in the southwestern center of the northernmost parcel in the project area. The area is located on a knoll which has been utilized as a hay field. A small powerline runs north-south along the western edge of Area C.

The area consists of an irregularly shaped knoll, with a terrace which overlooks a small drainage to the south. The area is bounded to the south, west, and east by slope. To the north, the area is

bounded by a field edge. The project area boundary runs north-south along the eastern edge of the area. Area B is southwest of Area C, Area A is south of Area C. Area D is northwest of Area C. Vegetation in Area C consists of a cut hay (Figure 8-18).



**Figure 8-18: Photo illustrating typical vegetation and terrain, facing north.**

### *Grid C1*

On the southern edge of the knoll which comprises Area C, total of 27 shovel tests were laid out at 15-meter (50-foot) intervals in five (5) transects labeled A through E (Figure 8-19). No shovel tests were positive for cultural material.

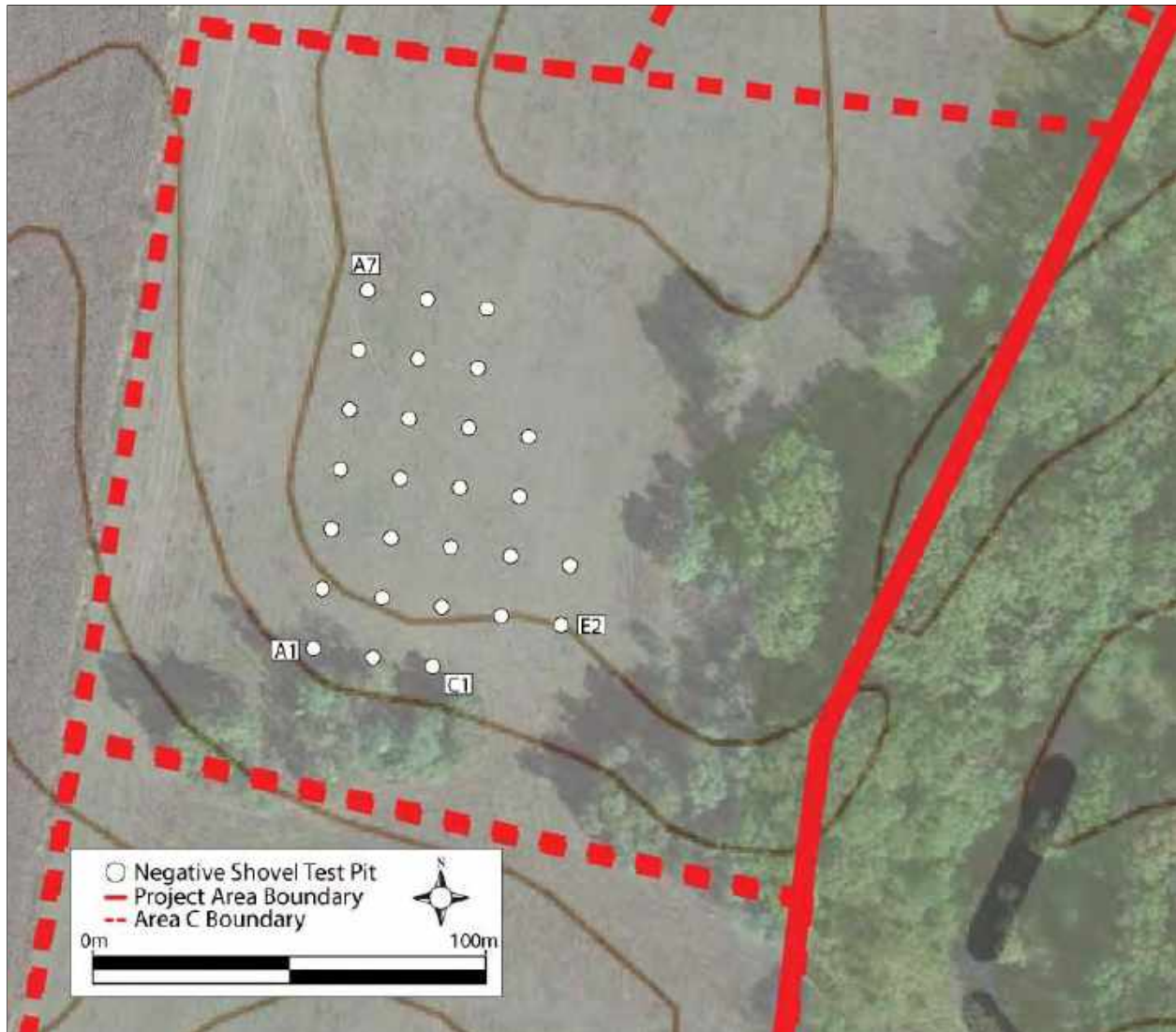
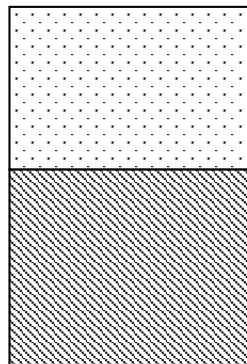


Figure 8-19: STP map of Area C.

In Grid C1, depths of shovel test pits ranged from 5 cm to 32 cm to subsoil or bedrock. In many cases, bedrock was encountered just beneath the removal of the sod cap, thus accounting for shallow shovel test pits depths such as 5 cm to subsoil. A typical profile representative of the stratigraphy in Area C consisted of 17 cm of 10YR 4/6 dark yellowish brown silty loam over 7.5YR 5/8 strong brown silty clay (Figure 8-20).



10YR 4/6 silty loam  
0-17 cm

7.5YR 5/8 silty clay  
17-27 cm

**Figure 8-20: Soil profile of Shovel Test C4.**

### *Area D*

Area D is located in the southern center of the northernmost parcel in the project area. The area is currently being utilized as a hay field and as a corn field. A small powerline runs north-south through Area D. A fence runs east-west through the area.

The area consists of an irregularly shaped knoll, a drainage, and a separate knoll south of the drainage. The area is bounded on all sides by slope. Area J is west of Area D, Area B is south of Area D. Area C is southeast of Area D. Vegetation in Area D consists of a cut hay and planted corn (Figures 8-21; 8-22).



**Figure 8-21: Photo illustrating typical vegetation and terrain, facing east.**



**Figure 8-22: Photo illustrating typical vegetation and terrain, facing south.**

*Grid D1*

In the hay field portion of Area D near the northern border of the area, a total of 14 shovel tests were laid out at 15-meter (50-foot) intervals in five (5) transects labeled A through E (Figure 8-23). No shovel tests were positive for cultural material.

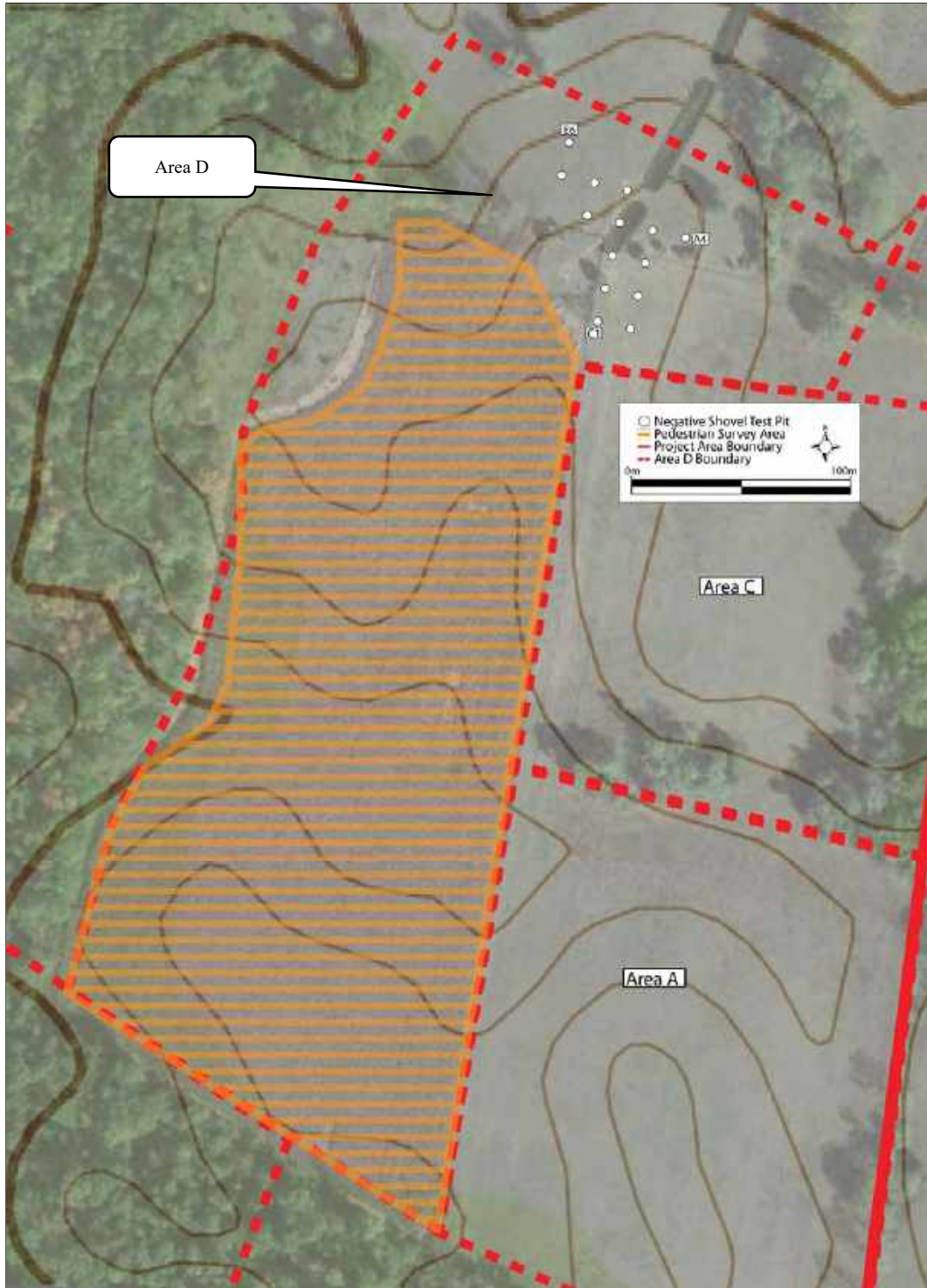
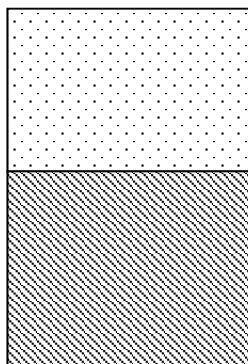


Figure 8-23: STP and pedestrian surveyed area map of Area D.

In Grid D1, depths of shovel test pits ranged from 3 cm to 12 cm to subsoil or bedrock. In many cases, bedrock was encountered just beneath the removal of the sod cap, thus accounting for shallow shovel test pits depths such as 3 cm to subsoil. A typical profile representative of the



stratigraphy in Area D consisted of 7 cm of 10YR 4/6 dark yellowish brown silty loam over 7.5YR 5/8 strong brown silty clay which came down to bedrock (Figure 8-24).



10YR 4/6 silty loam  
0-7 cm

7.5YR 5/8 silty clay  
7-10 cm

**Figure 8-24: Soil profile of Shovel Test C5.**

#### *Pedestrian Surveyed Area*

The majority of Area D consists of rows of planted corn in plowed fields. Due to the low height of the corn, this portion of Area D consisted of minimal ground coverage and allowed for pedestrian survey (Figure 8-25). Approximately 6 hectares (15 acres) of Area D was subjected to systematic pedestrian survey. No artifacts were recovered during the systematic survey of this planted corn field.



**Figure 8-25: Photo illustrating pedestrian surveyed field, facing north.**

*Area E*

Area E is located in the western center of the northernmost parcel in the project area. VDHR #034-0254 and VDHR #034-5085 – the Miller house and the Miller cemetery respectively – are located within this area. A smokehouse, and a shed which are associated with VDHR #034-0254 are also located in this area. All these resources will be discussed further below.

The area consists of the majority of a knoll located in the western center of the northernmost parcel in the project area. The area is bounded on all sides by slope. Area K is east of Area E, Area H is north of Area E. Area F is south of Area E, and the project area boundary acts as Area E's western boundary. Vegetation in Area E consists of grasses and mature hardwood trees (Figures 8-26).



**Figure 8-26: Photo illustrating typical vegetation and terrain, facing west.**

VDHR #034-0254 was re-identified along with its associated cemetery (VHDR #034-5085) (Figures 8-27 through 8-28). A collapsed structure was identified southwest of the house (Figure 8-29), a second ruinous structure was identified northeast of the house (Figure 8-30), further north, an old road trace was identified. A 16 inch diameter pipe labeled “1897” was identified just south of VDHR #034-0254 (Figure 8-31). Lastly, two stone walls were identified, both of which run north-south along the western edge of the site, and both turning to run east-west towards the primary structure of VDHR #034-0254 (Figure 8-32).



**Figure 8-27: Primary resource; VDHR #034-0254, facing southwest.**



**Figure 8-28: Stone fence around cemetery, facing north.**



**Figure 8-29: Collapsed structure, facing east.**



**Figure 8-30: Collapsed shed, facing southwest.**



**Figure 8-31: 1897 pipe.**



**Figure 8-32: Stone wall, facing southwest.**

*Grid E1*

A total of 66 shovel tests were laid out at 15-meter (50-foot) intervals in nine (9) transects labeled A through G (Figure 8-33). Two of these shovel test pits were not excavated due to their location under an electric fence or a stone pile. A total of 36 shovel test pits were positive for cultural material, including dark green bottle glass, bricks, a doorknob, ceramics, nails, and a harness. This archaeological site was called Site 44FK1010 and will be discussed in the following discussion of Area F, because surface features included in Site 44FK1010 extend into Area F.

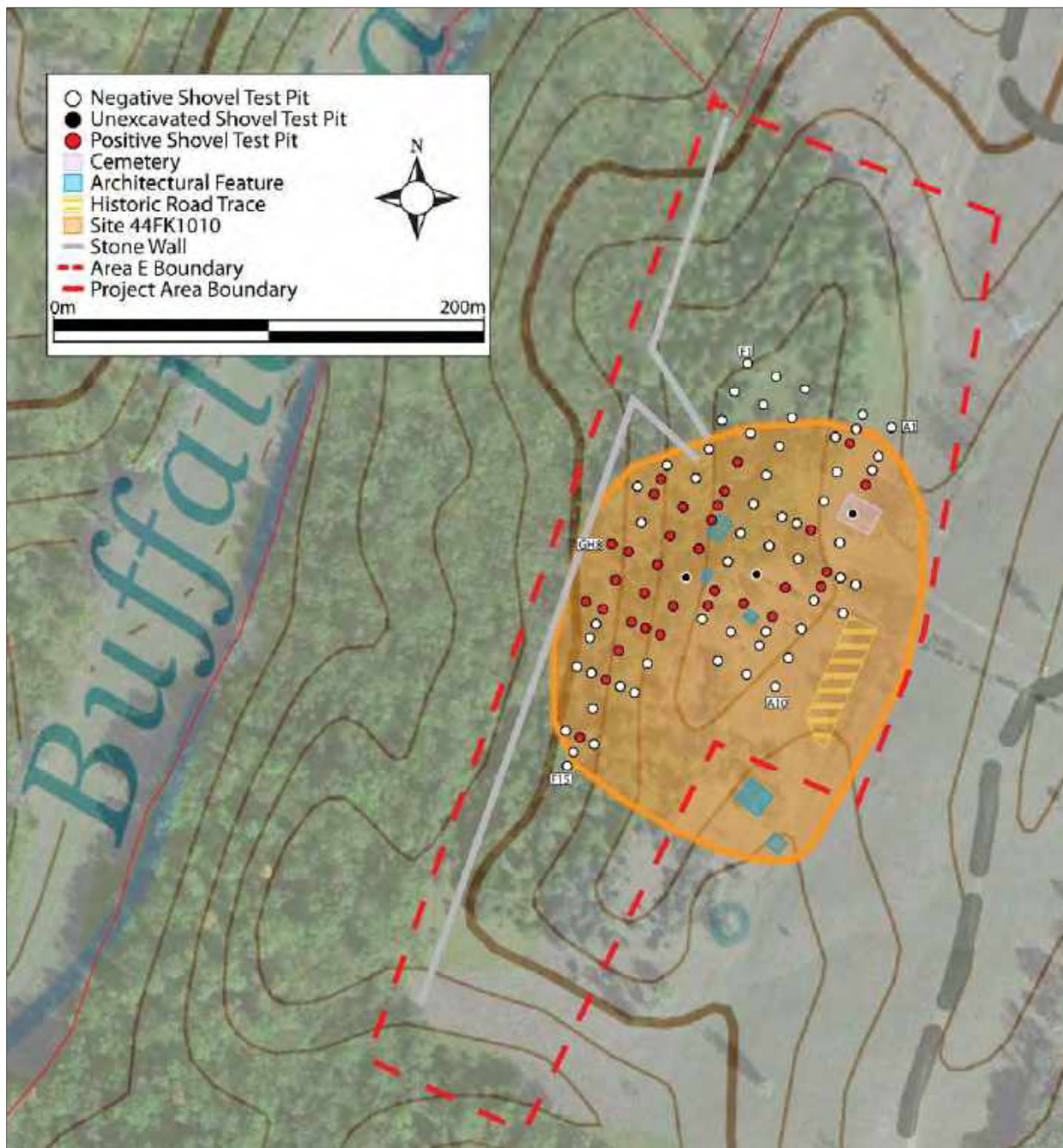
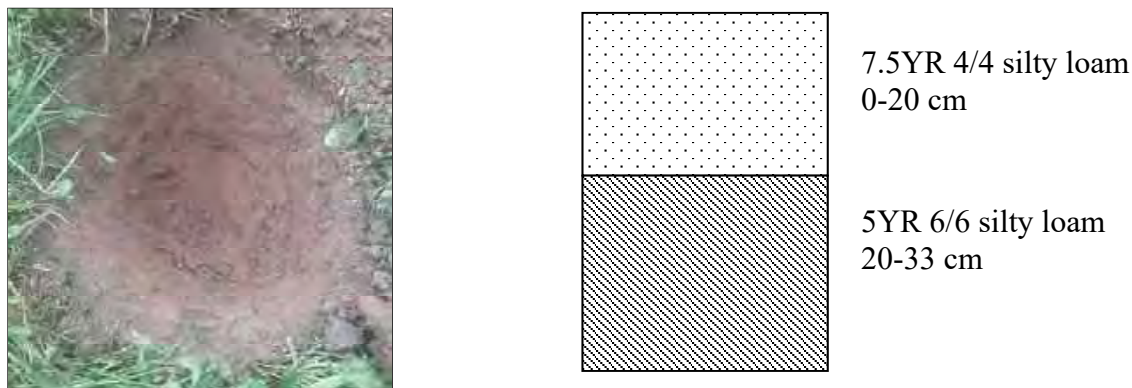


Figure 8-33: STP map of Area E, showing Site 44FK1010 in its entirety.

In Grid E1, depths of shovel test pits ranged from 3 cm to 49 cm to subsoil or bedrock. Generally, shovel test pits reached subsoil at or deeper than 20 cm below ground surface. Often, when shovel test pits were more shallow than this, they reached bedrock before the typical subsoil. A typical profile representative of the stratigraphy in Area E consisted of 20 cm of 7.5YR 4/4 silty loam brown over 5YR 6/6 reddish yellow silty loam (Figure 8-34).



**Figure 8-34: Soil profile of Shovel Test -A6.**

### *Area F*

Area F is in the western center of the northernmost parcel in the project area. The landform consists of pastoral land. One of the stone walls mentioned in Area E runs north-south along the western edge of the landform which comprises Area F.

The area consists of the southern terrace and drainage associated with the knoll which makes up the majority of Area E. Area F is bounded on all sides by slope, except for to the north. Area F is southwest of Area K, south of Area E, and north of Area D. Vegetation in Area F consists of grasses and mature hardwood trees (Figures 8-35).



**Figure 8-35: Photo illustrating typical vegetation and terrain, facing north.**

A stone foundation was identified on the flat portion of this landform just before it sloped to the south (Figure 8-36). This foundation consists of stacked stones and is most likely associated with resource VDHR #034-0254, and in extension, the identified Site 44FK1010 identified in Area E. The stone foundation measures approximately 12 meters by 15 meters (40 feet by 50 feet). Similarly, a collapsed structure was identified just south of the stone foundation (Figure 8-37). This structure consists of tin roofing and a wooden frame and is most likely a shed of some sort.





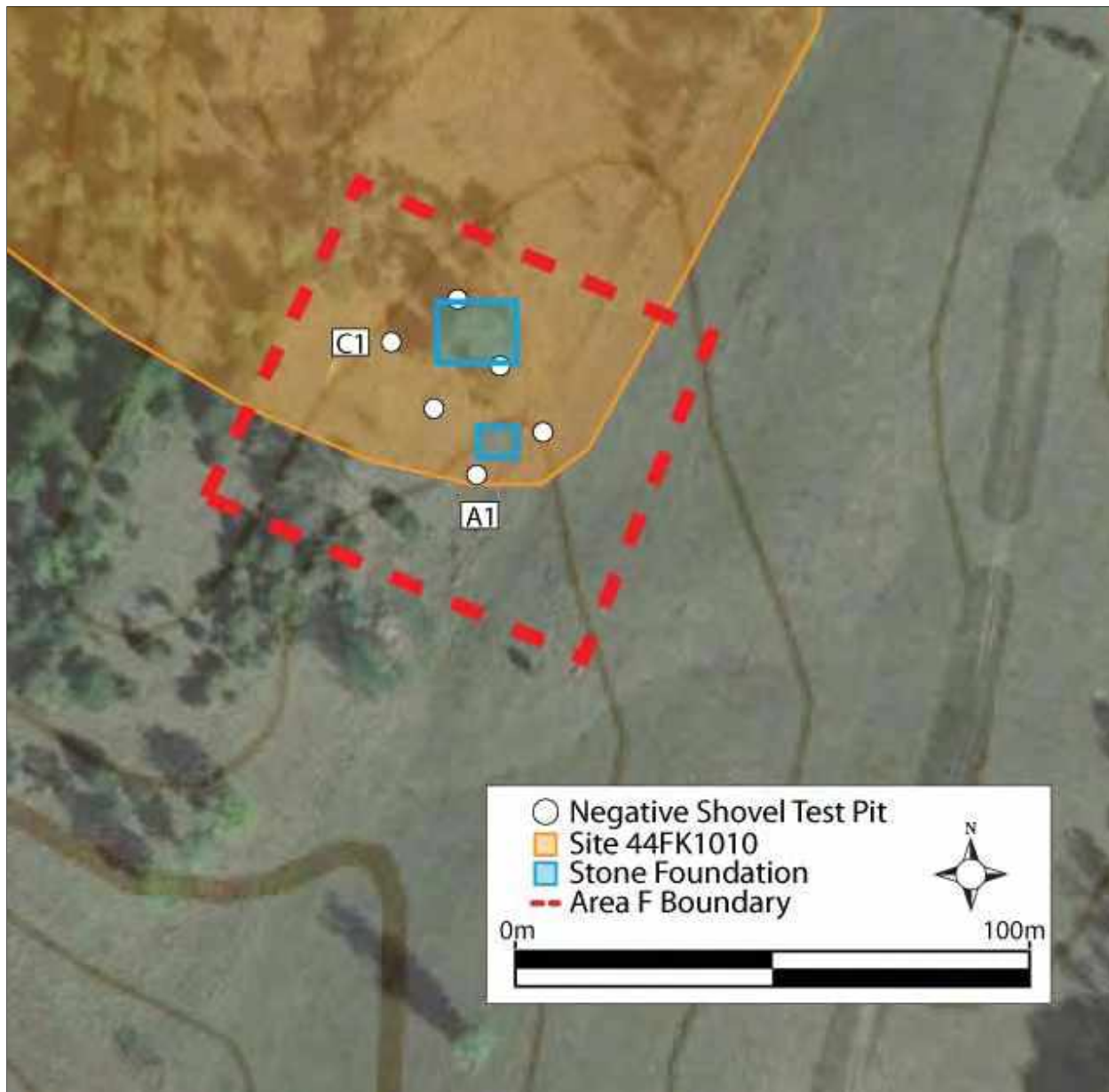
**Figure 8-36: Stone foundation, facing northeast.**



**Figure 8-37: Collapsed structure, facing southwest.**

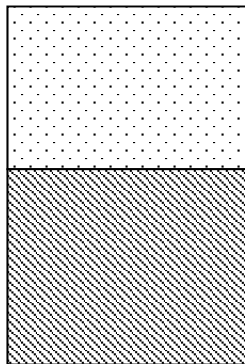
*Grid F1*

A total of six (6) shovel tests were laid out at 15-meter (50-foot) intervals in three (3) transects labeled A through C (Figure 8-38). No artifacts were recovered, however the ruins of the stone foundation and the collapsed structure will be included in Site 44FK1010 and are discussed below.



**Figure 8-38: STP map of Area F.**

In Grid F1, depths of shovel test pits ranged from 2 cm to 4 cm to subsoil or bedrock. A typical profile representative of the stratigraphy in Area F consisted of 4 cm of 10YR 4/4 silty clay loam dark yellowish brown over 5YR 6/8 yellowish red clay (Figure 8-39).



10YR 4/4 silty loam  
0-3 cm

5YR 6/8 clay  
3-8 cm

**Figure 8-39: Soil profile of Shovel Test B1.**

### *Site 44FK1010*

Site 44FK1010 is located on a knoll in the western center of the northernmost parcel of the project area. The site is clustered around the ruins of a circa 1830s single dwelling – The Miller House – and its associated outbuildings (VHDR #034-0254). VDHR #034-5085 – The Miller Cemetery – is also located within this archaeological site. The site consists of a total of 36 positive shovel test pits and a total of 235 artifacts, including aqua window glass, barbed wire, nail cut nails, redware with lead glaze, handmade brick, shell edge pearlware, an earthenware agateware doorknob, colorless vessel glass, window glass, milk glass with a molded decoration, Chinese porcelain with a transfer print, molded colorless vessel glass, whiteware with a molded rim, whiteware, wire nails, a zinc lid jar, wrought nails, an iron sheet, stoneware with Albany slip, plaster, lime, an iron chain, American gray salt glaze stoneware, yellowware, the inner workings of a clock, and hard paste porcelain (Figure 8-40) (see Appendix B for a full list of artifacts).



**Figure 8-40: Artifacts collected at Site 44FK1010.**

Surface features and architectural resources identified within the site include: 1) the remains of the circa 1830 Miller House, measuring 3 meters by 5.5 meters (10 feet by 18 feet); 2) the Miller Cemetery (VHDR #034-5085) which measures approximately 9 meters (30 feet) north-south by 19.5 meters (64 feet) east-west; 3) a stone foundation measuring approximately 12 meters by 15 meters (40 feet by 50 feet); 4) a ruined shed measuring approximately 2.4 meters by 2.4 meters (8 feet by 8 feet); 5) a second ruined shed measuring approximately 1.8 meters by 1.8 meters (6 feet by 6 feet); 6) a rubble pile and partial brick foundation representing the remains of some small structure measuring approximately 1.8 meters by 3.65 (6 feet by 12 feet); 7) remains of two stone walls, consisting of one stone wall which runs approximately 274 meters (900 feet) of stacked stone running north-south along the western edge of the site which turns and runs approximately 43 meters (142 feet) east-west towards the primary structure of VDHR #034-0254 and a second stacked stone wall north of the first one measuring approximately 112 meters (367 feet) north-south and then turns to run east-west towards the primary structure of VDHR #034-0254 for approximately 53 meters (175 feet); 8) an old road trace; and 9) a pipe in the ground dating to 1897.

This site was assessed in 2018 by Circa~ for their Phase IA report (Circa~ 2018). Since then, the area has become significantly more overgrown, and it appears that through neglect and disuse structures have become more dilapidated and more difficult to re-identify. The stone foundation of an outbuilding which was identified northeast of the main structure during the 2018 Phase IA assessment was not re-identified. This is most likely due to the overgrown nature of the area.

Visual inspection revealed that headstones within the Miller Cemetery had been displaced and were no longer in situ. Thus, identifying the number of burials within the stone fence was not possible through visual inspection. Additionally, the cemetery has become much more overgrown

since it was assessed in 2018 by Circa~. The stone fence still stands, in places, and appears to significantly delineate the cemetery on all sides.

The architectural resources and surface features coupled with the collected artifacts suggest that this site dates to the early to mid-nineteenth century. Shovel test pits revealed a level of integrity within the limits of the site which suggest – if present – subsurface features should be identifiable. Based on the site’s connection to the Miller House (VDHR #034-0254) it is possible that further archaeological research will be lucrative in providing historical details pertaining to the Miller Family and the ways of life in the mid-nineteenth century in Frederick County, Virginia. ***This site is recommended potentially eligible for inclusion in the NRHP. D+A recommends that this site either be avoided or subject to further testing.***

#### *Area G*

Area G is in the northernmost tip of the northernmost parcel in the project area. An existing access road runs northeast-southwest through the eastern edge of the area (Figure 8-41).



**Figure 8-41: Photo illustrating access road running through area, facing south**

The area consists of a knoll and its associated slopes. The area is bounded on all sides by slope. Area G is north of Area H and Area S. Vegetation in Area G consists of cut grasses with mature hardwood trees dispersed across the landscape (Figures 8-42).



**Figure 8-42: Photo illustrating typical vegetation and terrain, facing north.**

*Grid G1*

A total of 26 shovel tests were laid out at 15-meter (50-foot) intervals in five (5) transects labeled A through E (Figure 8-43). Exposed bedrock peppered the landscape of the landform. No artifacts were recovered, and shovel test pits were shallow.

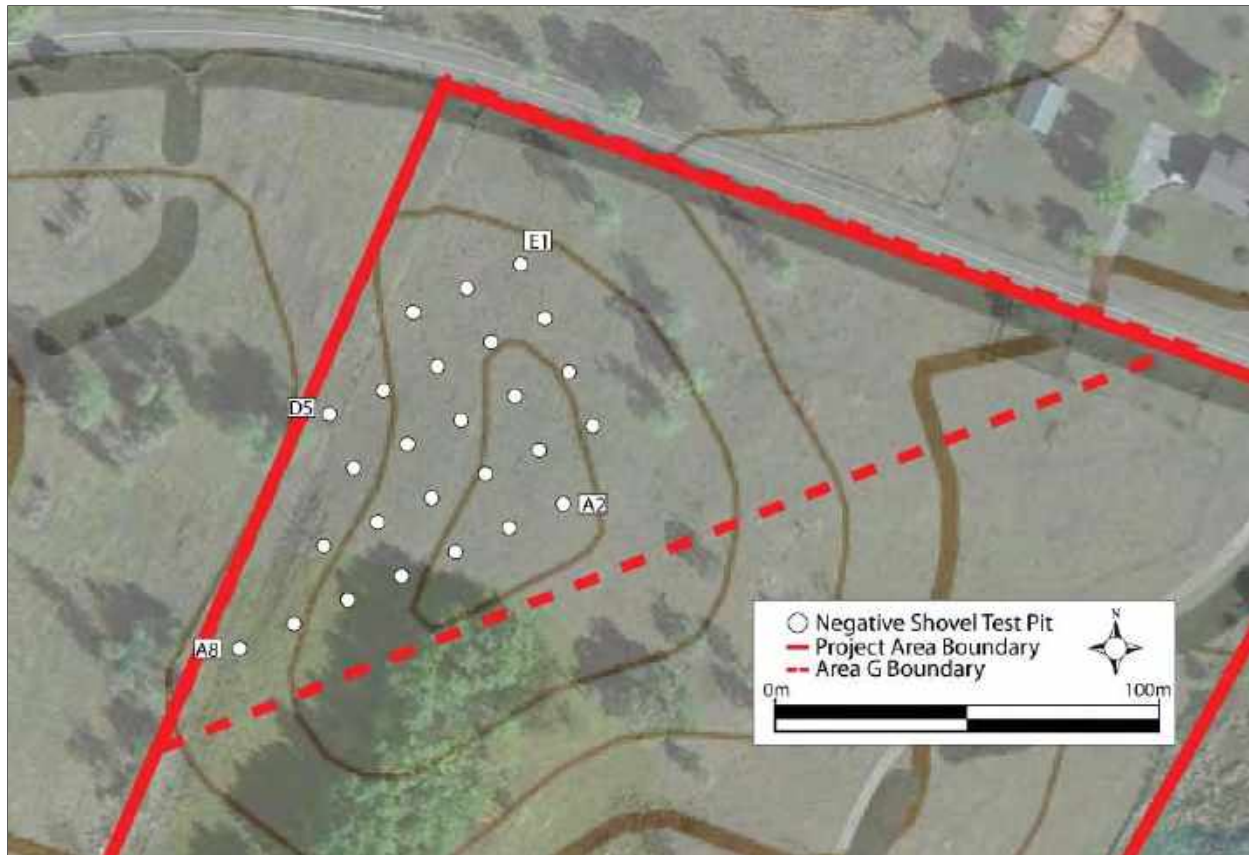


Figure 8-43: STP map of Area G.

In Grid G1, depths of shovel test pits ranged from 2 cm to 30 cm to subsoil or bedrock. A typical profile representative of the stratigraphy in Area G consisted of 12 cm of 10YR 4/4 silty loam dark yellowish brown over 10YR 6/8 brownish yellowish silty clay loam (Figure 8-44). Several shovel test pits came down to bedrock.

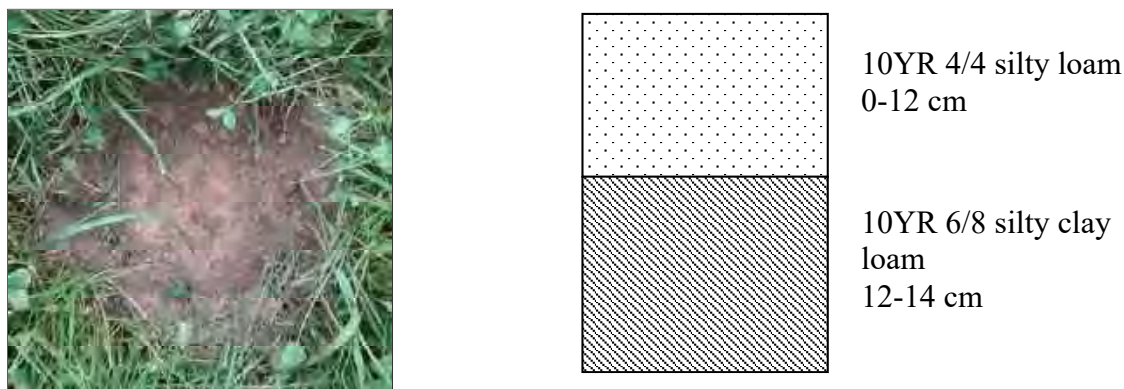


Figure 8-44: Soil profile of Shovel Test C4.

*Area H*

Area H is in the northern tip of the northernmost parcel in the project area. An existing access road runs northeast-southwest through the eastern edge of the area.

The area consists of a knoll and its associated slopes. The area is bounded on all sides by slope. Area H is west of Area S, south of Area G, and north of Area E. The project area boundary acts as the area's western border. Vegetation in Area H consists of cut grasses with mature hardwood trees dispersed across the landscape, and exposed bedrock on the surfaces of the landform (Figure 8-45).



**Figure 8-45: Photo illustrating typical vegetation and terrain, facing east.**

This area is adjacent to a previously identified architectural resource – VDHR #034-0077 – a circa 1800 single dwelling which has been deemed potentially eligible for inclusion in the NHRP and is located just to the west of the project area.

#### *Grid H1*

A total of 13 shovel tests were laid out at 15-meter (50-foot) intervals in five (5) transects labeled A through E (Figure 8-46). Exposed bedrock peppered the landscape of the landform. No artifacts were recovered, and shovel test pits were shallow.



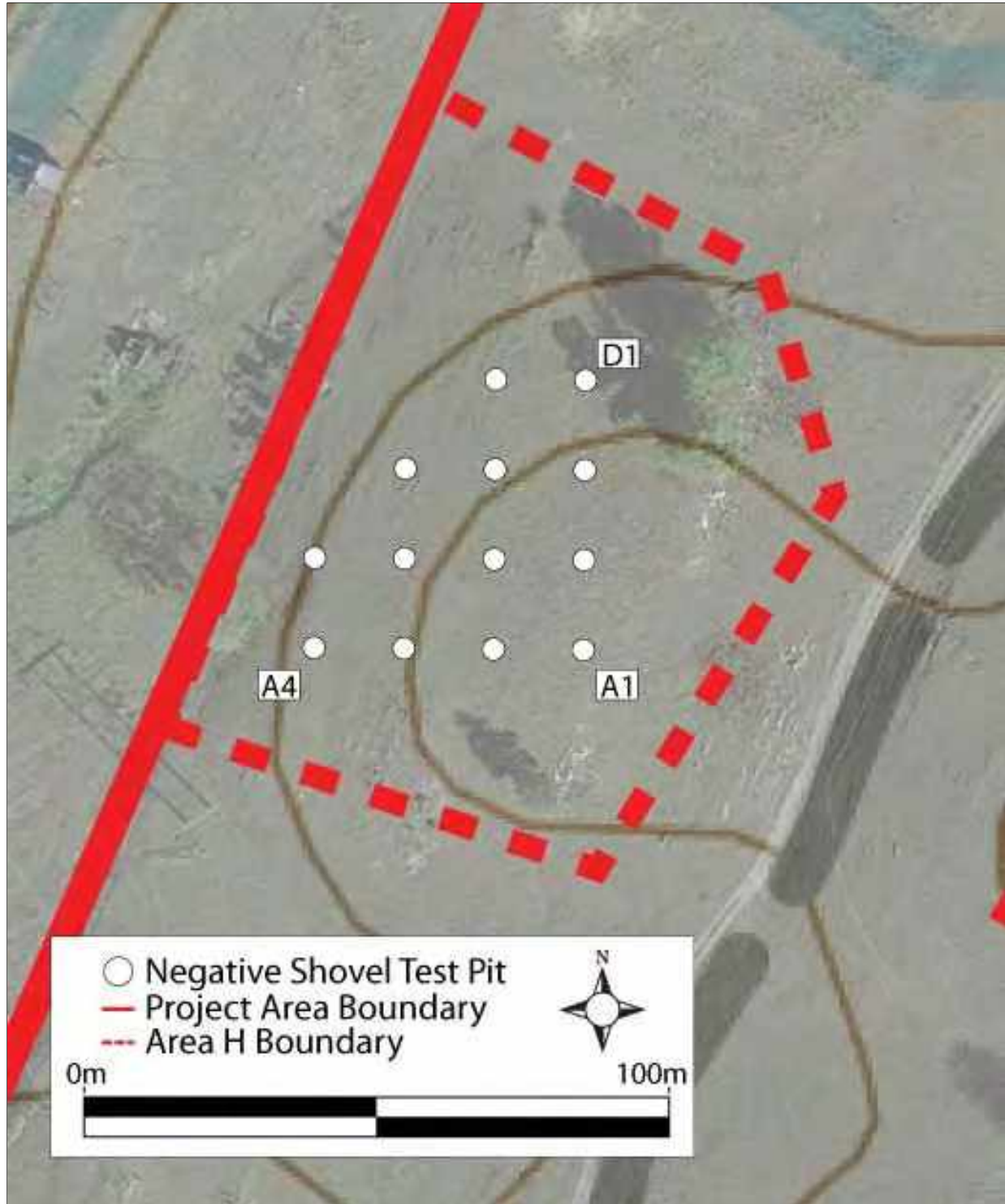
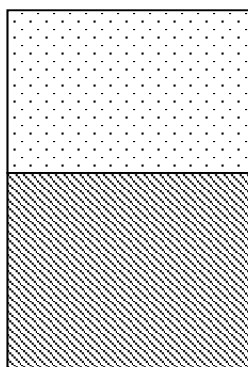


Figure 8-46: STP map of Area H.

In Grid H1, depths of shovel test pits ranged from 2 cm to 15 cm to subsoil or bedrock. A typical profile representative of the stratigraphy in Area H consisted of 8 cm of 10YR 4/4 silty loam dark yellowish brown over 10YR 5/8 yellowish brown silty clay (Figure 8-47). Several shovel test pits came down to bedrock.



10YR 4/4 silty loam  
0-8 cm

10YR 5/8 silty clay  
loam  
8-18 cm

**Figure 8-47: Soil profile of Shovel Test B1.**

### *Area J*

Area J is in the southwestern corner of the northernmost parcel in the project area. The area consists of wooded land that has been timbered or cleared in the past, but not commercially timbered.

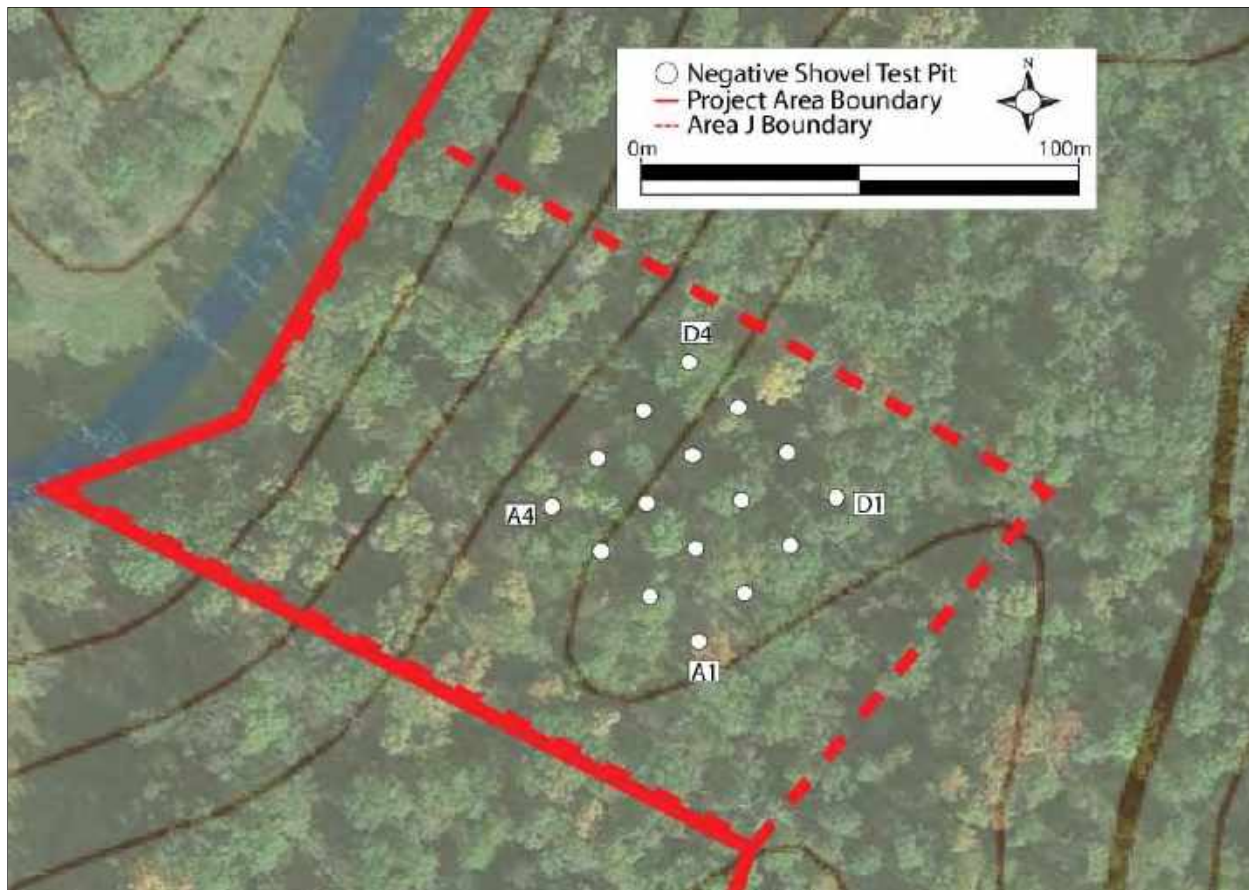
The area consists of a ridge and its associated slopes. The area is bounded on all sides by slope. Area J is west of Area D, south of Area F, and north of Area B. The project area boundary acts as the areas western border. This portion of the area is wooded, with young poplars, oaks, beech trees and a moderate amount of undergrowth (Figure 8-48).



**Figure 8-48: Photo illustrating typical vegetation and terrain, facing south.**

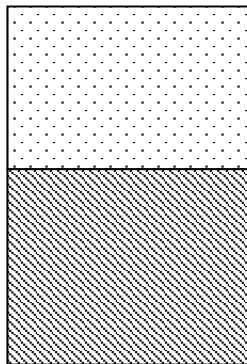
*Grid J1*

A total of 16 shovel tests were laid out at 15-meter (50-foot) intervals in four (4) transects labeled A through D (Figure 8-49). Exposed bedrock peppered the landscape of the landform. No artifacts were recovered, and shovel test pits were shallow.



**Figure 8-49: STP map of Area J.**

In Grid J1, depths of shovel test pits ranged from 5 cm to 23 cm to subsoil or bedrock. A typical profile representative of the stratigraphy in Area J consisted of 20 cm of 10YR 4/4 silty loam dark yellowish brown over 7.5YR 5/8 strong brown silty clay (Figure 8-50). Several shovel test pits came down to bedrock.



10YR 4/4 silty loam  
0-20 cm

7.5YR 5/8 silty clay  
20-30cm

**Figure 8-50: Soil profile of Shovel Test C2.**

### *Area K*

Area K is in the center of the northernmost parcel in the project area. A powerline runs southwest-northeast along the northern edge of the area, and an access road runs north-south through the ridge which makes up much of the area (Figure 8-51). The area is currently acting as a cattle pasture.



**Figure 8-51: Powerline in the northern portion of Area K, facing north.**

The area consists of a ridge and its associated slopes. The area is bounded on all sides by slope. Area K is north of Area F, east of Area E, and south of Area S. This area consists of a cattle pasture and is covered with low fescue grass and clover (Figure 8-52).



**Figure 8-52: Photo illustrating typical vegetation and terrain, facing west.**

*Grid K1*

A total of 20 shovel tests were laid out at 15-meter (50-foot) intervals in four (4) transects labeled A through D (Figure 8-53). No artifacts were recovered, and shovel test pits were shallow.

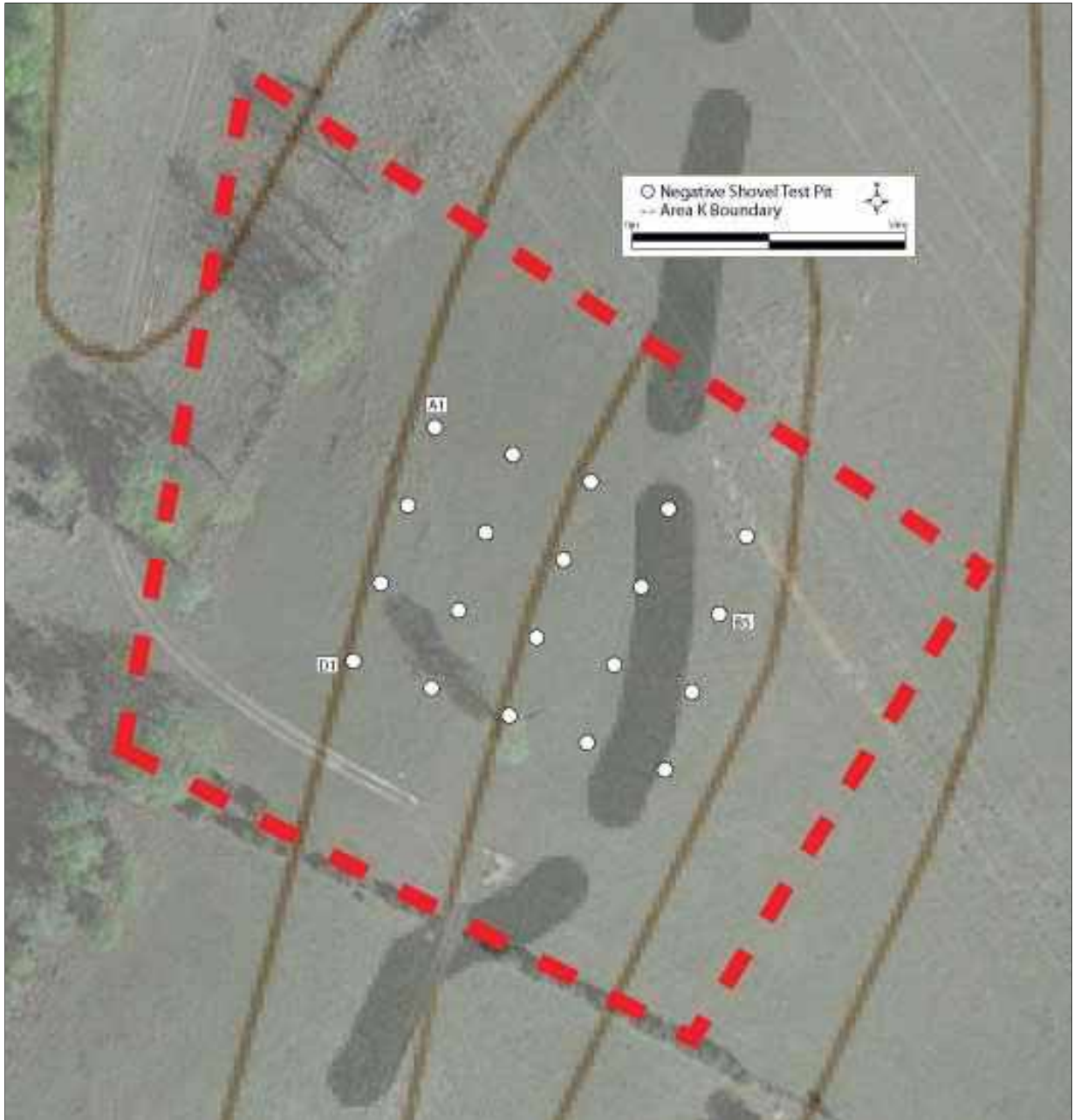
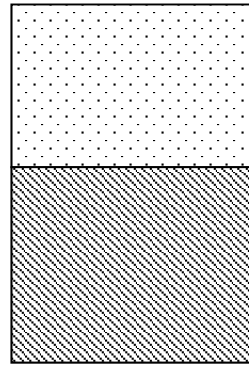


Figure 8-53: STP map of Area K.

In Grid K1, depths of shovel test pits ranged from 2 cm to 14 cm to subsoil or bedrock. A typical profile representative of the stratigraphy in Area K consisted of 10 cm of 10YR 4/4 silty loam dark yellowish brown over 7.5YR 5/8 strong brown silty clay (Figure 8-54). Several shovel test pits came down to bedrock.



10YR 4/4 silty loam  
0-10 cm

7.5YR 5/8 silty clay  
10-11 cm

**Figure 8-54: Soil profile of Shovel Test B2.**

### *Area L*

Area L is located south of the northern boundary for the southernmost parcel in the project area. The area consists of graveled land, a series of barns including a cattle barn and a hay barn, and some pastoral land (Figures 8-55 through 8-56). A barbed wire fence runs north-south through the eastern edge of the area (Figure 8-57). A stacked stone fence runs southeast-northwest along the southern edge of the area, acting as a boundary for the pastoral land which it encompasses (Figure 8-58). This landform is currently acting as a cattle paddock.



**Figure 8-55: Barn in Area L, facing north.**



**Figure 8-56: Gravel and barn in Area L, facing west.**



**Figure 8-57: Fence running north-south along eastern edge of Area L, facing north.**





**Figure 8-58: Stacked stone fence, facing south.**

The area consists of a finger ridge and its associated slopes. The area is bounded on all sides by slope and overlooks a tributary to Meadow Brook to the south. Area L is south of Area R, northwest of Area U, and southwest of Area V. This area consists of a cattle pasture with a barn complex in the center of the area, spread gravel across the top of the landform, and a sparse amount of grassland (Figure 8-59).



**Figure 8-59: Typical ground coverage in Area L.**

One judgmental shovel test pit – labeled judgmental shovel test pit 1 – was excavated in Area L to confirm the disturbance suggested by the presence of gravel, barns, and paddock activity (Figure 8-60). This shovel test pit consisted of 4 cm of 10YR 4/4 silty clay loam dark yellowish brown with approximately 30 percent gravel which came down to 10YR YR 6/8 brownish yellow with approximately 20 percent gravel (Figure 8-61). The presence of gravel and the lack of topsoil confirmed the disturbance level of this area. No artifacts were collected and no further work was conducted.

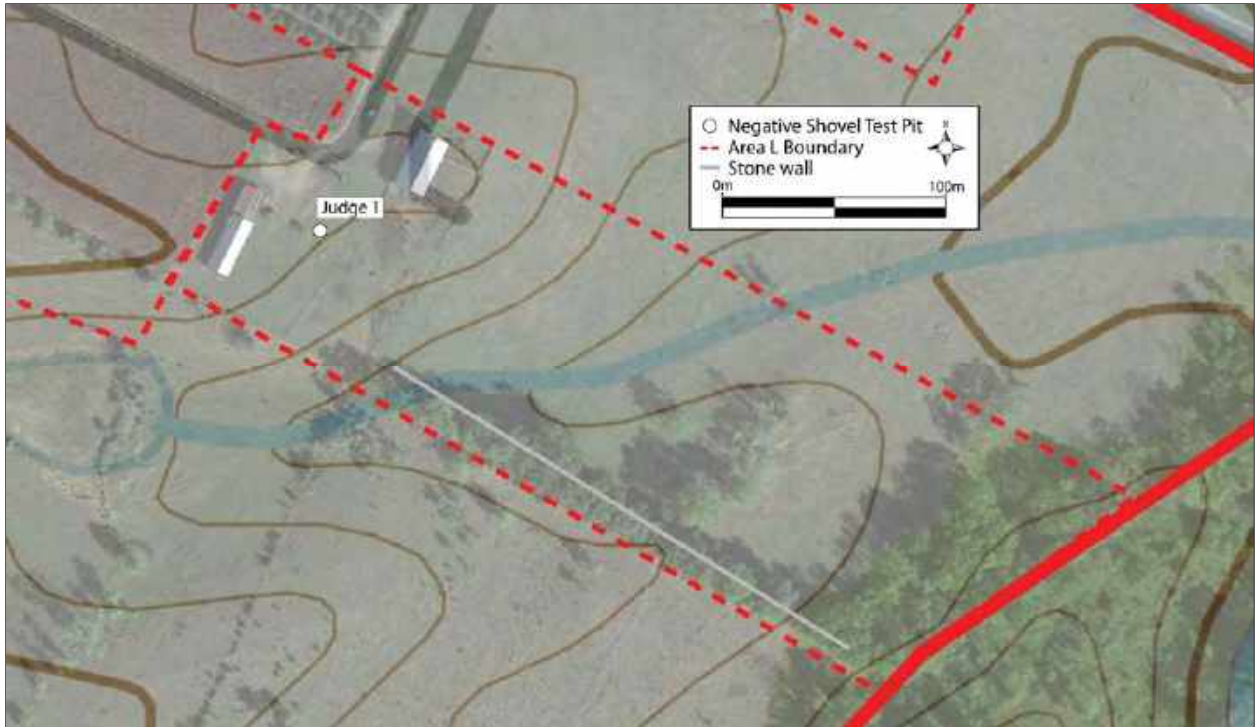


Figure 8-60: STP map of Area L.

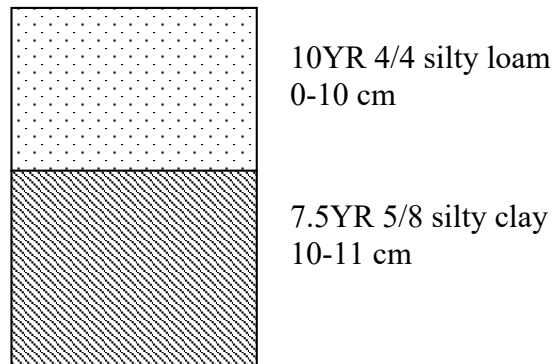


Figure 8-61: Soil profile of judgmental shovel test pit 2.

*Area M*

Area M is in the western center of the southernmost parcel in the project area. A fence runs north-south along the eastern edge of the area. The area is currently acting as a cattle pasture.

The area consists of the southern edge of the irregular landform and its associated slopes. The area slopes to the south. Area M is south of Area Q, and northwest of Area P. To the west of the area, is the project area boundary. This area consists of grassland, with low fescue grass and clover (Figure 8-62).



**Figure 8-62: Photo illustrating typical vegetation and terrain, facing north.**

*Grid M1*

A total of 35 shovel tests were laid out at 15-meter (50-foot) intervals in four (4) transects labeled A through D (Figure 8-63). No artifacts were recovered, and shovel test pits were shallow.

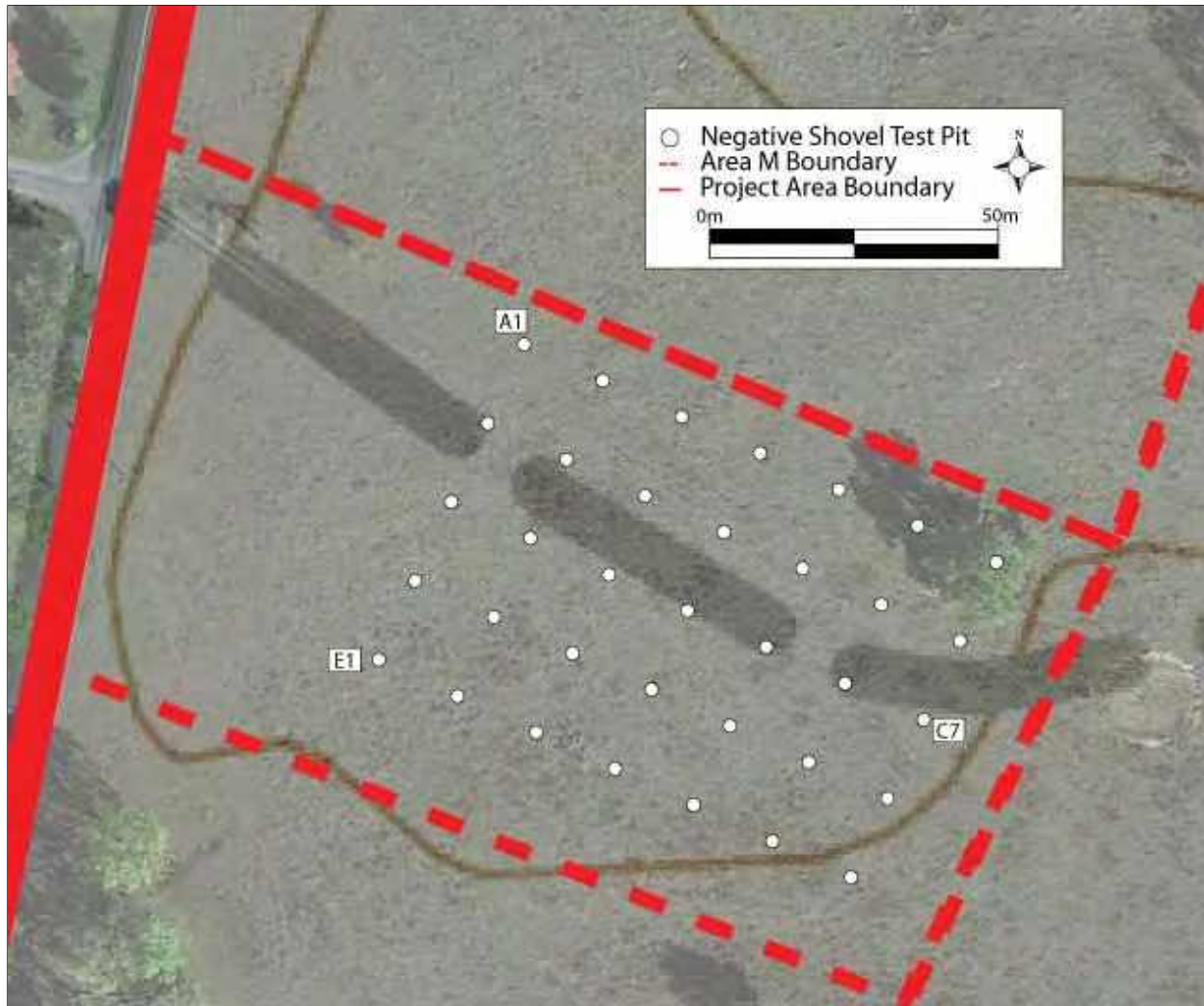
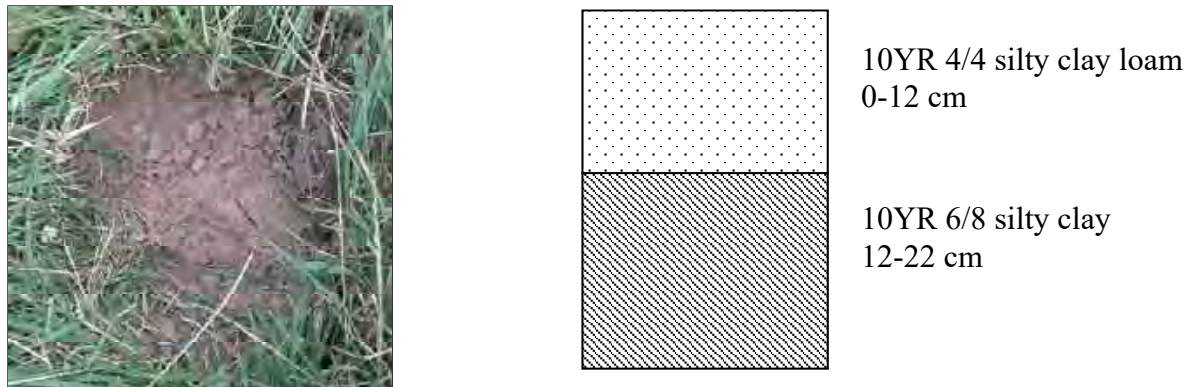


Figure 8-63: STP map of Area M.

In Grid M1, depths of shovel test pits ranged from 5 cm to 18 cm to subsoil or bedrock. A typical profile representative of the stratigraphy in Area M consisted of 12 cm of 10YR 4/4 dark yellowish brown silty clay loam over 10YR 6/8 brownish yellow silty clay (Figure 8-64). Exposed bedrock is dispersed across the area, and many shovel test pits were so shallow due to this bedrock. No artifacts were recovered and no further work is recommended for this area.



**Figure 8-64: Soil profile of Shovel Test C3.**

### *Area N*

Area N is in the center of the southernmost parcel in the project area. A fence runs east-west through the northern portion of the area. The area is currently acting as a pasture.

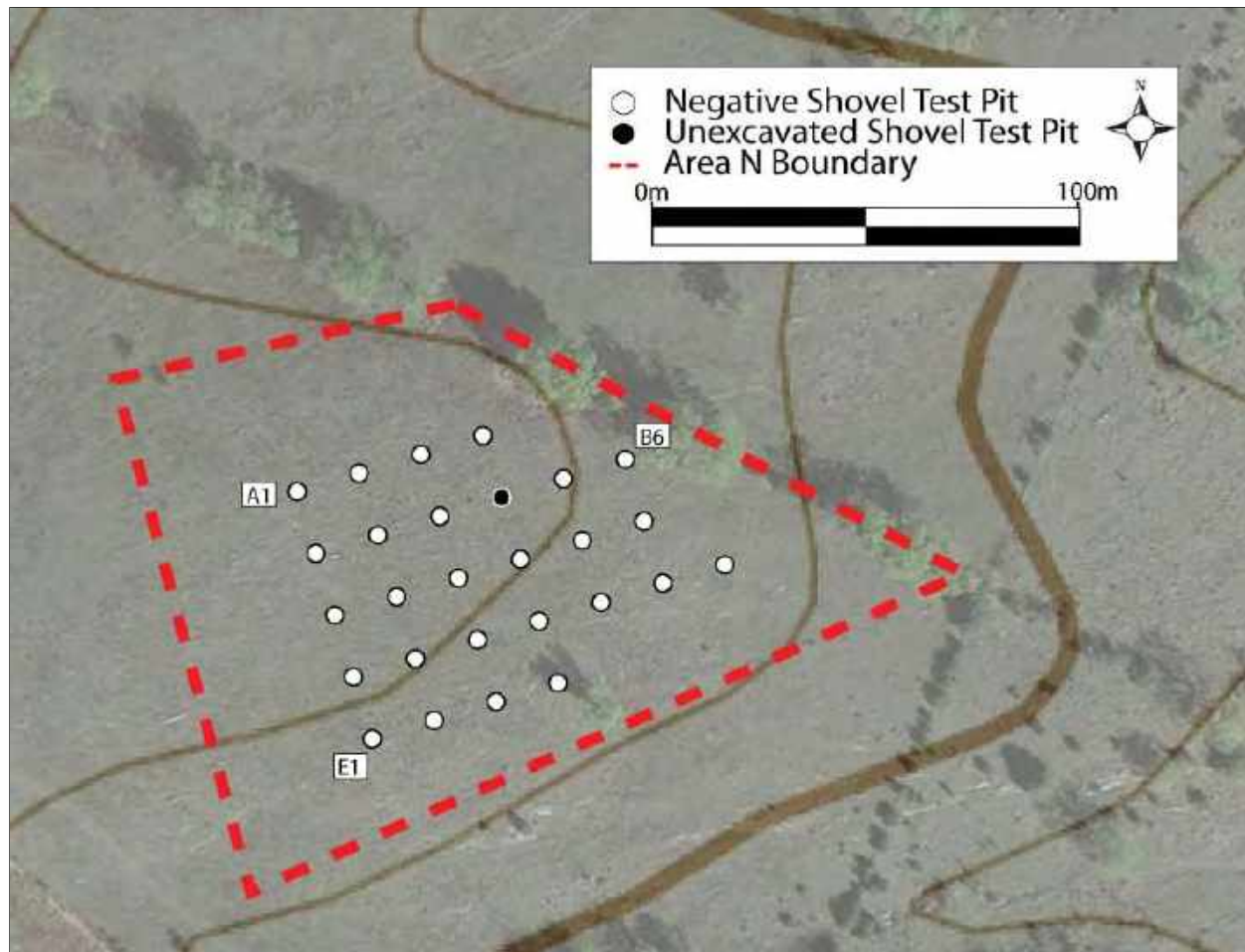
The area consists of the eastern edge of an irregular landform which makes up the majority of the center of the southernmost parcel. The area slopes to the east, west, and south. Area N is southwest of Area U, east of Area M, and south of Area L, and north of Area O. This area consists of grassland, with low fescue grass, a scatter of hardwood trees, and exposed bedrock on the surface (Figure 8-65).



**Figure 8-65: Photo illustrating typical vegetation and terrain, facing north.**

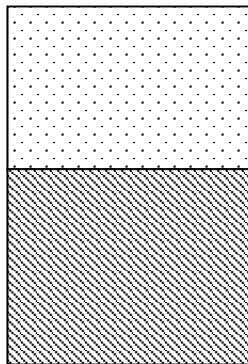
*Grid N1*

A total of 27 shovel tests were laid out at 15-meter (50-foot) intervals in four (4) transects labeled A through E (Figure 8-66). One shovel test pit was left unexcavated due to the presence of exposed bedrock on the surface. No artifacts were recovered, and shovel test pits were shallow.



**Figure 8-66: STP map of Area N.**

In Grid N1, depths of shovel test pits ranged from 8 cm to 27 cm to subsoil. A typical profile representative of the stratigraphy in Area N consisted of 17 cm of 10YR 4/4 dark yellowish brown silty clay loam over 10YR 5/8 yellowish brown silty clay (Figure 8-67). Exposed bedrock is dispersed across the area; however, shovel test pits did not come down to bedrock, but rather consisted of high clay content subsoils. No artifacts were recovered, and no further work is recommended for this area.



10YR 4/4 silty clay  
0-17 cm

10YR 5/8 silty clay  
17-27 cm

Figure 8-67: Soil profile of Shovel Test C3.

*Area O*

Area O is in the southern end of the southernmost parcel in the project area. An access road runs south-north along the western edge of the area, where it provides access to a series of structures – previously identified architectural resources VDHR #034-0491, including a pole barn, a modern modular home, and a historic barn (Figures 8-68; 8-69).



Figure 8-68: Historic barn which is part of VHDR #034-0491, facing southeast.





**Figure 8-69: Pole barn within VDHR #034-0491, facing southeast.**

The area consists of a finger ridge which extends south from a large, irregular landform that makes up the majority of the southern half of the southernmost parcel of the project area. A previously identified architectural resource – VDHR #034-0491 is located within the area. The area slopes to the east and west. The project area boundary acts as the southern, eastern, and western boundary for the area. Area O is south of Area N and bordered on all other sides by the project area boundary. This area consists of cut grasses, the abovementioned buildings, and planted corn (Figures 8-70; 8-71).



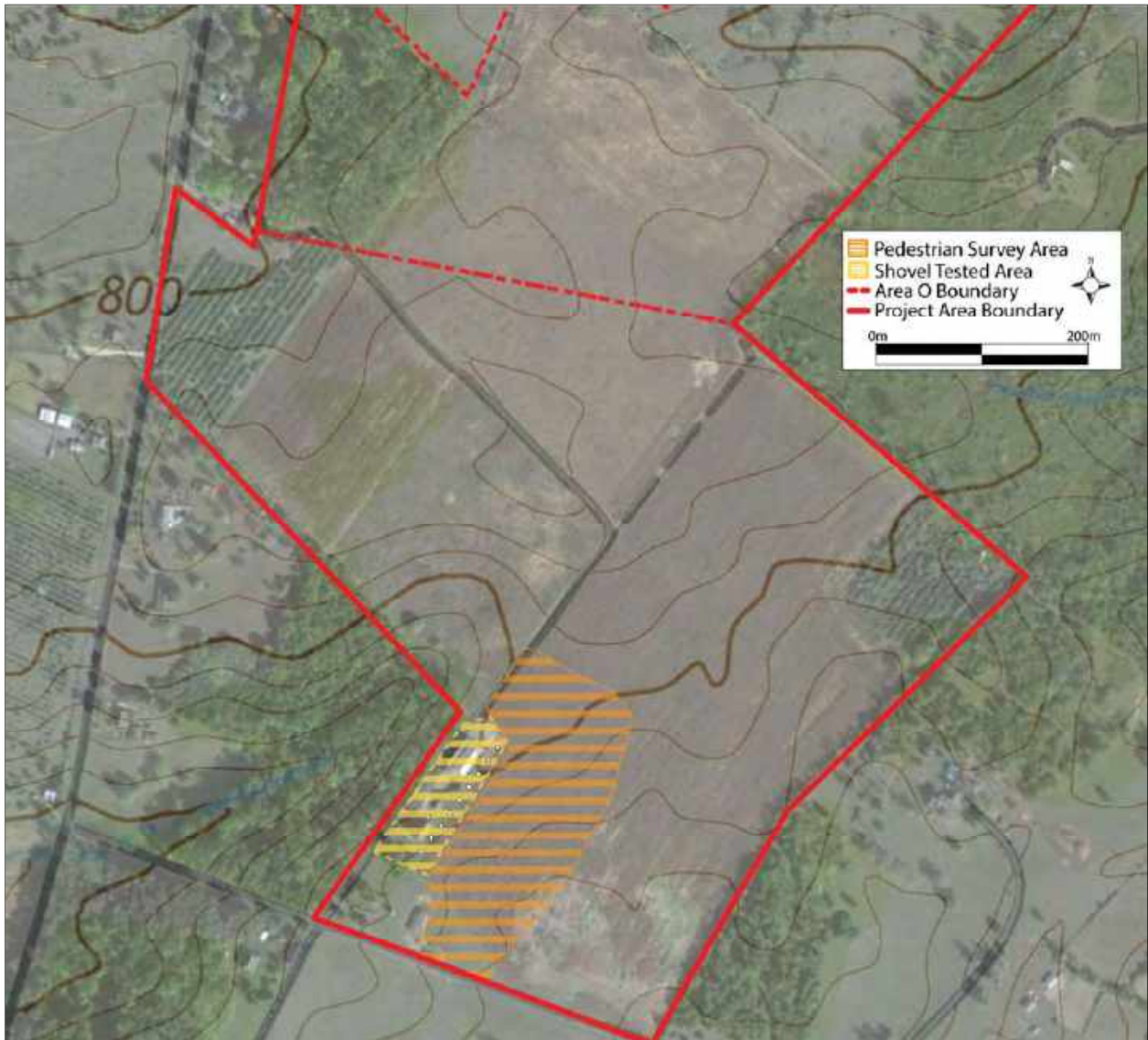
**Figure 8-70: Photo illustrating typical vegetation and terrain, showing apple crates, facing north.**



**Figure 8-71: Photo illustrating typical vegetation and terrain, showing corn fields to the east, cut grass around the barns, and the recently constructed dwelling in the background, facing south.**

*Grid O1*

Around the pole barn and the historic barn, there is a fair amount of gravel spread across the landform. Where subsurface testing was possible, between the barns and the planted corn, a total of 10 shovel tests were laid out at 15-meter (50-foot) intervals in four (4) transects labeled A through E (Figures 8-72; 8-73). No artifacts were recovered.

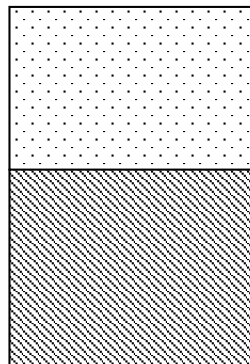


**Figure 8-72: Map of Area O, showing shovel tested area and pedestrian surveyed area.**



Figure 8-73: Detail map of Area O, showing shovel test pits.

In Grid O1, depths of shovel test pits ranged from 2 cm to 25 cm to subsoil. A typical profile representative of the stratigraphy in Area O consisted of 25 cm of 10YR 4/4 dark yellowish brown silty clay loam over 10YR 6/8 brownish yellow silty clay which came down to bedrock (Figure 8-74). No artifacts were recovered, and no further work is recommended for this area.



10YR 4/4 silty clay  
0-25 cm

10YR 6/8 silty clay  
25-30 cm

Figure 8-74: Soil profile of Shovel Test A4.

*Pedestrian Surveyed Area*

A portion of Area O consisted of rows of planted corn in plowed fields. Due to the low height of the corn, this portion of Area O consisted of minimal ground coverage and allowed for pedestrian survey (Figure 8-75). Approximately 4.45 hectares (11 acres) of Area O was subjected to systematic pedestrian survey. No artifacts were recovered during the systematic survey of this planted corn field.



**Figure 8-75: Photo illustrating pedestrian surveyed field, facing east.**

*Area P*

Area P is in the center of the southernmost parcel in the project area. A fence runs north-south along the eastern border of the area. The area is currently acting as a pasture.

The area consists of the center of an irregular landform which makes up the majority of the center of the southernmost parcel. The area slopes to the east and west. Area P is south of Area V, east of Area M, west of Area N, and north of Area O. This area consists of grassland, with low fescue grass, with a scatter of hardwood trees (Figure 8-76).



**Figure 8-76: Photo illustrating typical vegetation and terrain, facing west.**

*Grid P1*

A total of 87 shovel tests were laid out at 15-meter (50-foot) intervals in four (4) transects labeled A through H (Figure 8-77). Two (2) shovel test pits were left unexcavated due to the presence of exposed bedrock on the surface and one shovel test pit was left unexcavated due to cattle disturbance. No artifacts were recovered, and shovel test pits were shallow.

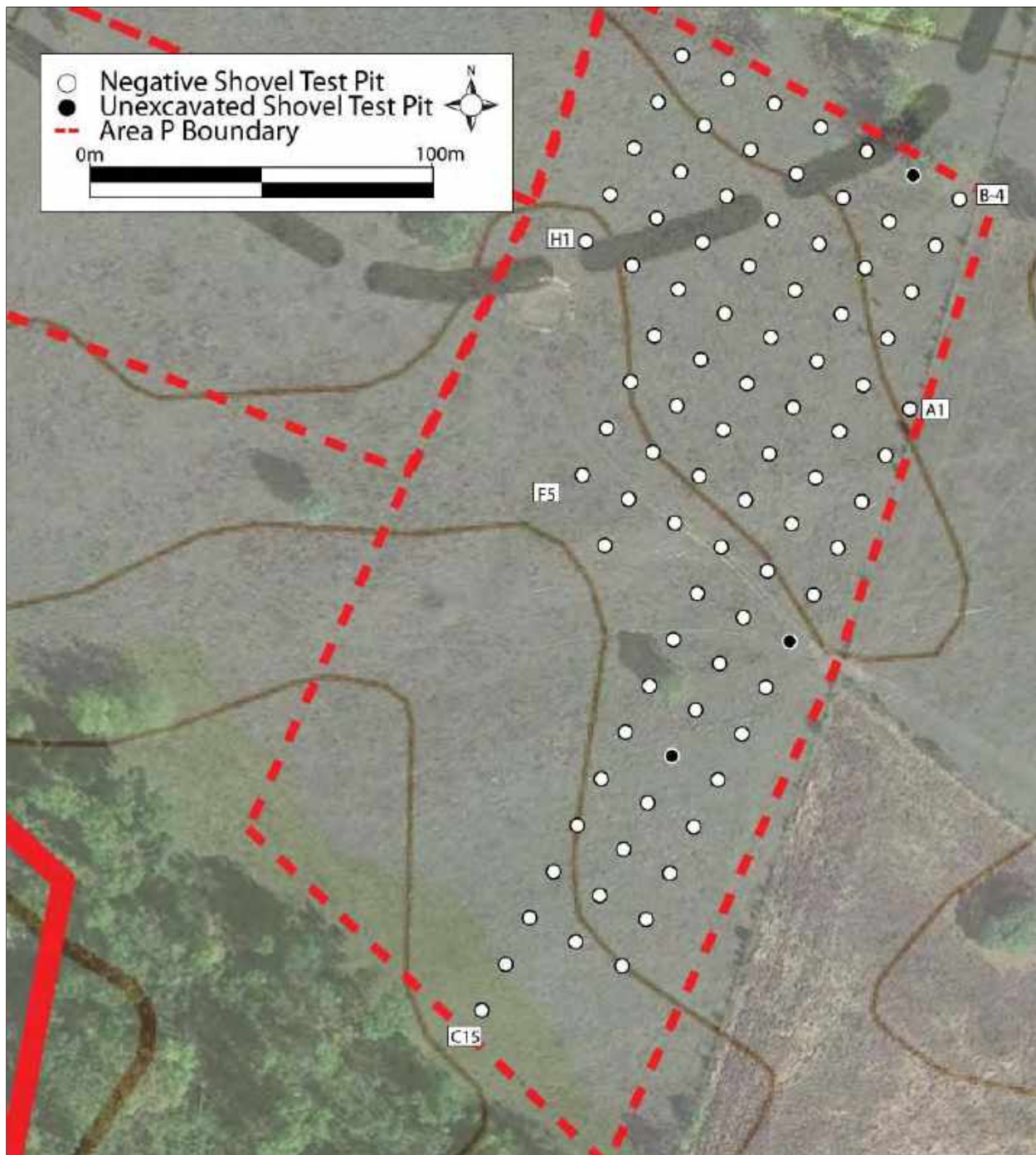
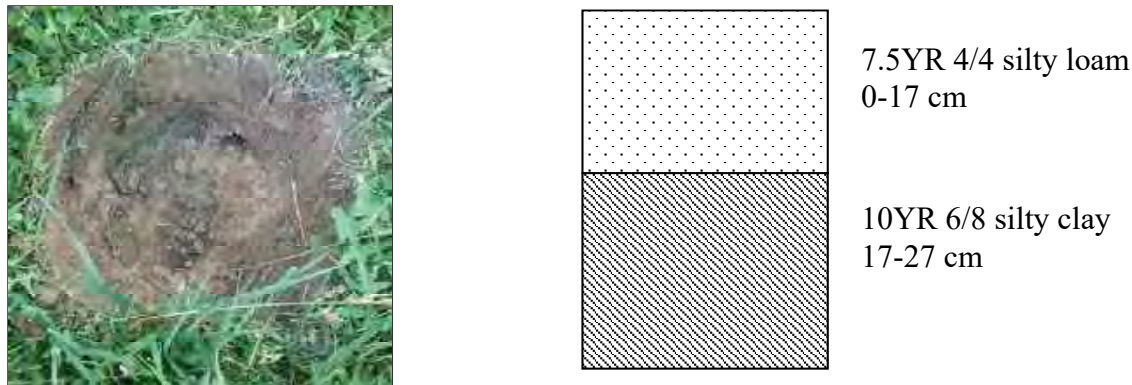


Figure 8-77: STP map of Area P.

In Grid P1, depths of shovel test pits ranged from 3 cm to 17 cm to subsoil, with several of the more shallow shovel test pits terminating at rock impasses. A typical profile representative of the stratigraphy in Area P consisted of 17 cm of 7.5YR 4/4 brown silty loam over 10YR 6/8 yellowish brown silty clay (Figure 8-78). No artifacts were recovered, and no further work is recommended for this area.



**Figure 8-78: Soil profile of Shovel Test C3.**

### *Area Q*

Area Q is in the western center of the southernmost parcel in the project area. The area is currently acting as a pasture. Small bedrock outcrops dot the landform.

The area consists of the center of an irregular landform which makes up the majority of the center of the southernmost parcel. The area slopes to the east, south, and north. Area Q is west of Area P, south of Area V, and north of Area O. The project area boundary bounds the area to the west. This area consists of grassland, with low fescue grass, and a scatter of hardwood trees (Figure 8-79).



**Figure 8-79: Photo illustrating typical vegetation and terrain, facing north.**



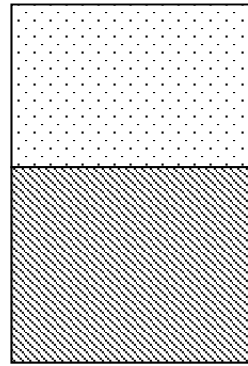
*Grid Q1*

A total of 34 shovel tests were laid out at 15-meter (50-foot) intervals in six (6) transects labeled A through F (Figure 8-80). One shovel test pit was left unexcavated due to the presence of exposed bedrock on the surface. No artifacts were recovered, and shovel test pits were shallow.



Figure 8-80: STP map of Area Q.

In Grid Q1, depths of shovel test pits ranged from 3 cm to 21 cm to subsoil, with several of the shallower shovel test pits terminating at rock impasses. A typical profile representative of the stratigraphy in Area Q consisted of 13 cm of 7.5YR 4/4 brown silty clay over 5YR 5/8 yellowish red silty clay (Figure 8-81). No artifacts were recovered, and no further work is recommended for this area.



7.5YR 4/4 silty clay  
0-13 cm

5YR 5/8 silty clay  
13-26 cm

**Figure 8-81: Soil profile of Shovel Test C2.**

### *Area R*

Area R is in the northern center of the southernmost parcel in the project area. The area consists of a standing house, shed, and a covered well (Figures 8-82 through 8-84). These resources have been previously identified and are recorded as part of the architectural resource VDHR #034-5075, a circa 1880 dwelling.



**Figure 8-82: Photo illustrating standing dwelling, facing northwest.**



**Figure 8-83: Shed in Area R, facing southeast.**



**Figure 8-84: Covered well in Area R, facing southwest.**

The area consists of a small knoll which overlooks a tributary to Meadow Brook to the south. The area slopes to the east, south, and west. To the north, the northern boundary of the southern parcel acts as the area's boundary. Area R is north of Area L, east of Area R, and west of Area U. This landform has been abandoned for some time, and the vegetation is thick, and in many places, impenetrable, debris covers the surface of this landform, and overall, the landform is highly disturbed (Figure 8-85).



**Figure 8-85: Photo illustrating typical vegetation, terrain, and disturbance, facing north.**

A total of three judgmental shovel test pits were excavated where disturbance allowed (Figure 8-86). The placement of a grid in this location was impossible due to the presence of dumped garbage and debris. All shovel test pits contained garbage, including plastic; however all shovel test pits also contained cultural material including a metal plate, glass, and ceramic.

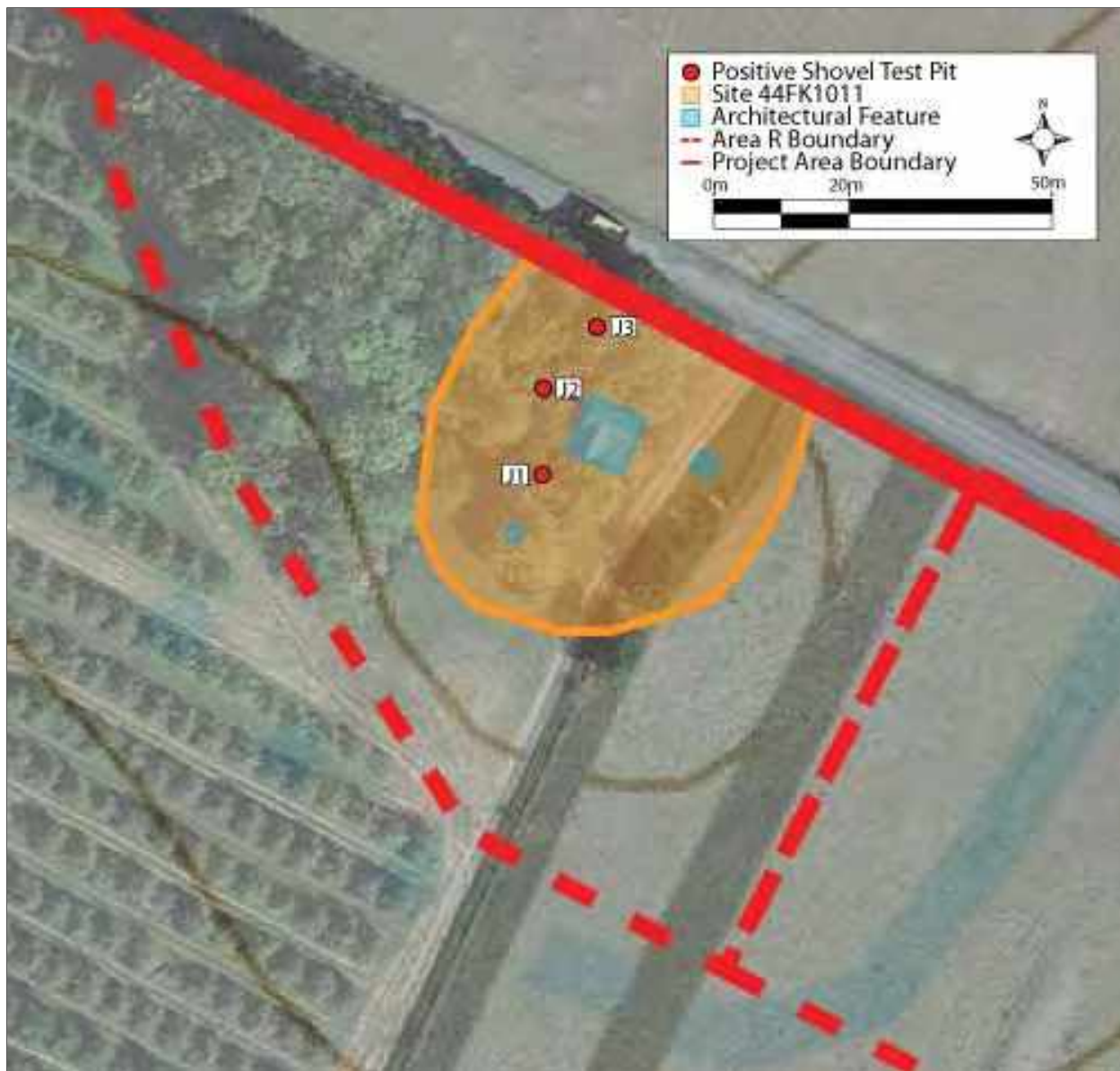


Figure 8-86: STP map of Area R.

Depths of the shovel test pits ranged from 16 cm to 29 cm to subsoil. A typical profile representative of the stratigraphy in Area R consisted of 20 cm of 10YR 4/4 dark yellowish brown silty clay loam over 7.5YR 5/8 strong brown silty clay (Figure 8-87). The three judgmental shovel test pits excavated in this area were positive for artifacts – this site was called Site 44FK1011 and will be discussed further below.

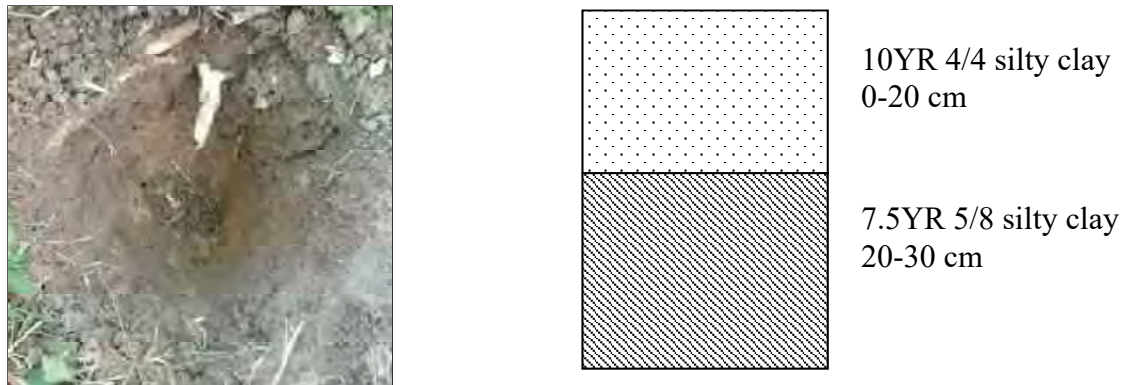


Figure 8-87: Soil profile of Shovel Test judgmental shovel test pit 1.

#### Site 44FK1011

Site 44FK1011 consists of a total of eight (8) collected artifacts which are concentrated in the yard space of part of a previously identified architectural resource – VDHR 034-5075 – Each shovel test pit excavated in this area contained cultural material associated with this site, along with debris such as plastic. Artifacts collected include porcelain, aqua window glass, an iron lock plate, European hard paste porcelain, and colorless vessel glass (Figure 8-88) (see Appendix B for a complete list of artifacts). Due to the disturbance as confirmed by visual inspection and by the presence of debris in the excavated shovel test pits, it is unlikely that further excavation of this site will provide any valuable historical data. This site is recommended as not eligible for inclusion in the NRHP.

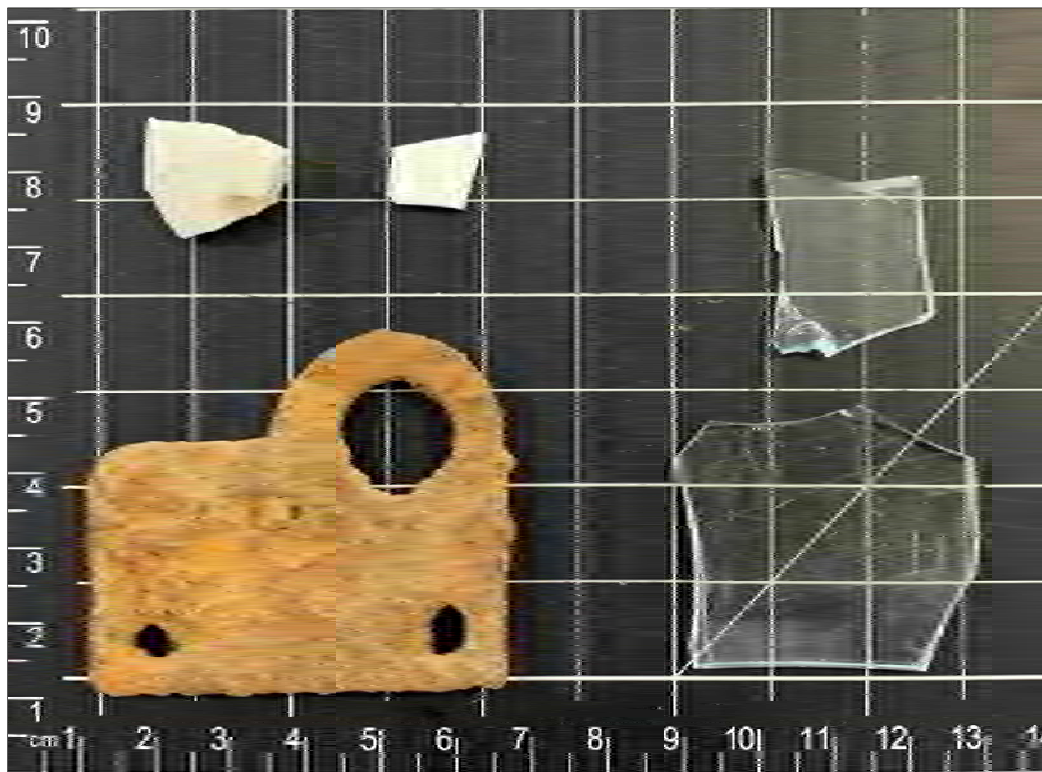


Figure 8-88: Artifacts collected at Site 44FK1011.

*Area S*

Area S is in the northern center of the northernmost parcel in the project area. The area is currently acting as a pasture for cattle. Small bedrock outcrops dot the landform.

The area consists of a knoll which slopes drastically in all cardinal directions. Area S is east of Area H, northwest of Area W, west of Area T, and northeast of Area E. The project area boundary bounds the area to the north. This area consists of grassland, with low fescue grass, weeds, and a scatter of hardwood trees (Figure 8-89).



**Figure 8-89: Photo illustrating typical vegetation and terrain, facing north.**

*Grid S1*

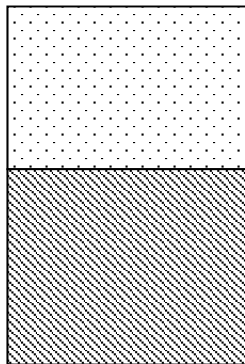
A total of 17 shovel tests were laid out at 15-meter (50-foot) intervals in five (5) transects labeled A through E (Figure 8-90). Modern wire was noted in shovel test pit B2, which was located near a row of trees. This wire most likely was associated with a since demolished wire fence and was not collected. No other cultural material was identified.



**Figure 8-90: STP map of Area S.**

In Grid S1, depths of shovel test pits ranged from 2 cm to 20 cm to subsoil, with several of the shallower shovel test pits terminating at rock impasses. A typical profile representative of the stratigraphy in Area S consisted of 10 cm of 10YR 4/4 dark yellowish brown silty clay over 7.5YR 5/8 strong brown silty clay (Figure 8-91). Other than the abovementioned wire, no cultural material was recovered, and no further work is recommended for this area.





10YR 4/4 silty clay  
0-10 cm

7.5YR 5/8 silty clay  
10-18 cm

**Figure 8-91: Soil profile of Shovel Test C3.**

### *Area T*

Area T is in the northern center of the northernmost parcel in the project area. The area is slightly overgrown and appears to have acted as an area for dumping, along with an area to bury cattle. The area is in a larger cattle pasture. A set of concrete stairs was identified on the surface on the top of the landform, on the flattest spot, along with broken cement (Figure 8-92).



**Figure 8-92: Rubble pile in Area T, facing south.**

The area consists of a ridge which extends from the knoll which comprises Area S to the west. Area T slopes to the west and south. Area T is north of Area W, east of Area S, and is bounded to the north and east by the project area boundary. This area consists of mature trees with low fescue

grass undergrowth and intentionally placed rock piles which mark cattle burials (Figures 8-93; 8-94).



**Figure 8-93: Photo illustrating typical vegetation and terrain, facing east.**



**Figure 8-94: Photo illustrating typical vegetation and terrain, facing north.**

*Grid T1*

A total of 2 shovel tests were laid out at 15-meter (50-foot) intervals in one transect labeled A (Figure 8-95). The soils surrounding these two shovel test pits were heavily disturbed by the presence of the cattle burials and the continual use of the area as a cattle pen.

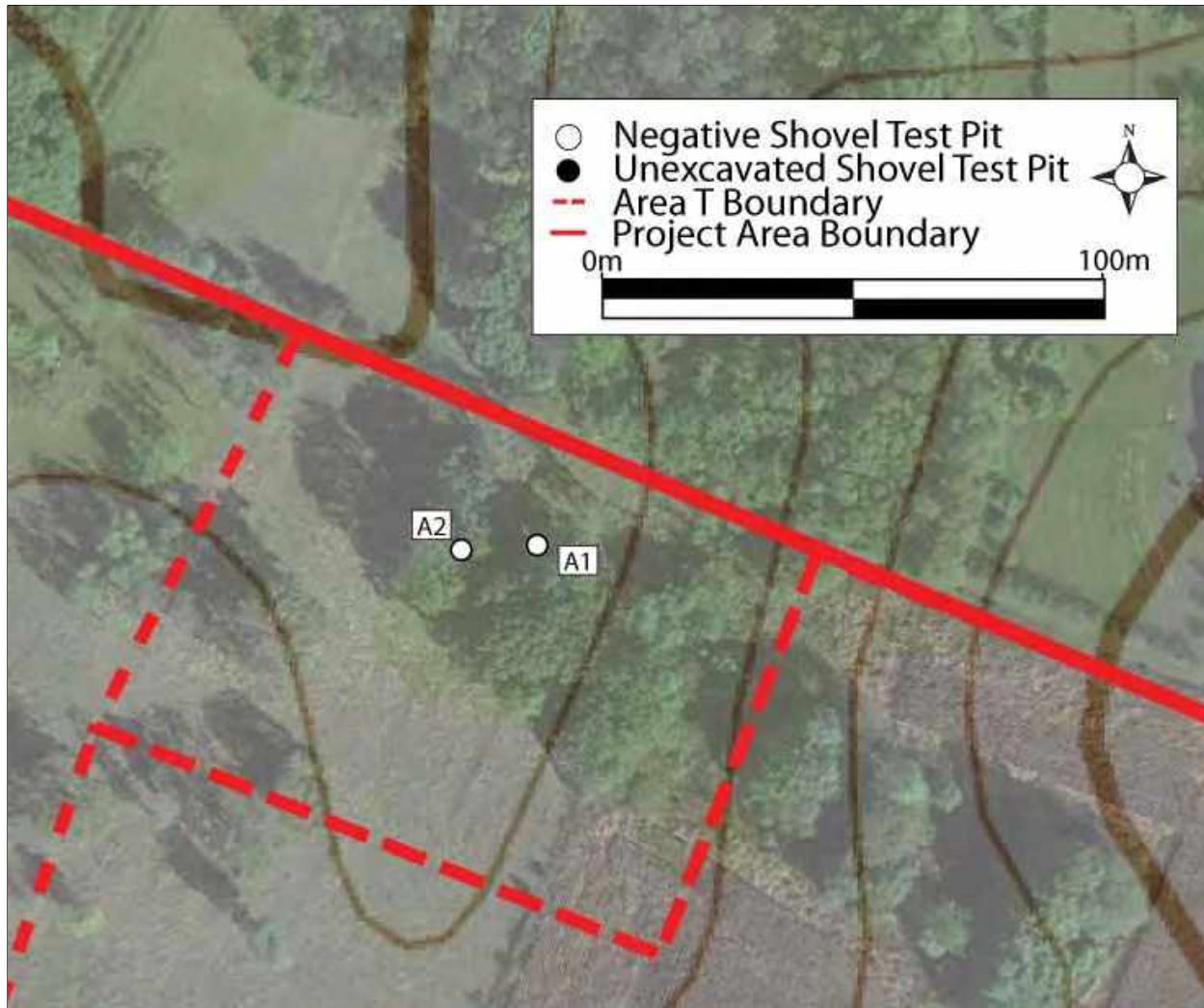


Figure 8-95: STP map of Area T.

Shovel test pit A1 reached subsoil at 10 cm, while A2 reached subsoil at 11 cm. A typical profile representative of the stratigraphy in Area T consisted of 11 cm of 10YR 4/4 dark yellowish brown silty clay over 5YR 5/8 yellowish red silty clay (Figure 8-96).

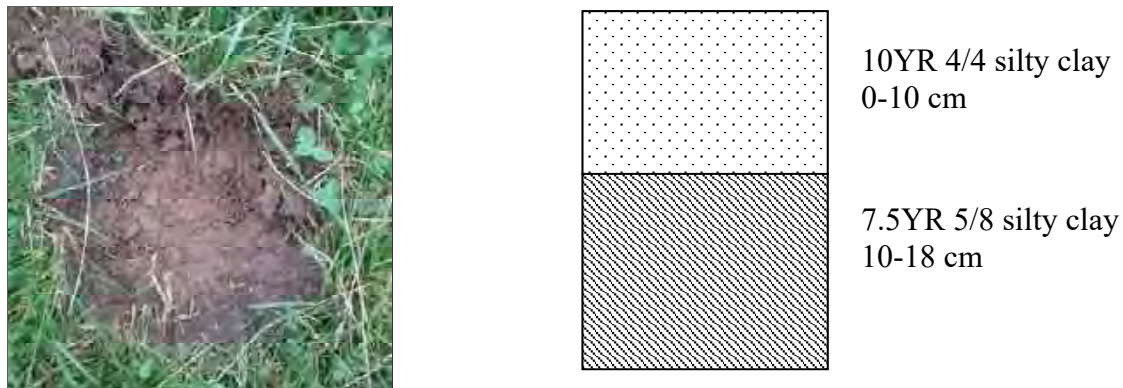


Figure 8-96: Soil profile of Shovel Test A2.

*Area U*

Area U is in the northeastern corner of the southernmost parcel in the project area. A road runs north-west along the eastern edge of the area, and a tributary to Meadow Brook runs along the southeastern edge of the landform.

The area consists of a ridge which extends from a large, irregular landform which makes up a large amount of the northern portion of the southernmost parcel of the project area. The area slopes to the north, south, and east. Area U is north of Area W, east of Area S, and is bounded to the north and east by the project area boundary. This area consists of a recently cut hay field which has been used as a cattle pasture. Portions of the area have been disturbed due to apparent bedrock removal (Figure 8-97).



**Figure 8-97: Photo illustrating disturbance, showing rocks pushed to the edge of a fence, facing south.**

*Grid U1*

A total of 19 shovel tests were laid out at 15-meter (50-foot) intervals in four (4) transects labeled A through D (Figure 8-98). No artifacts were noted or collected.

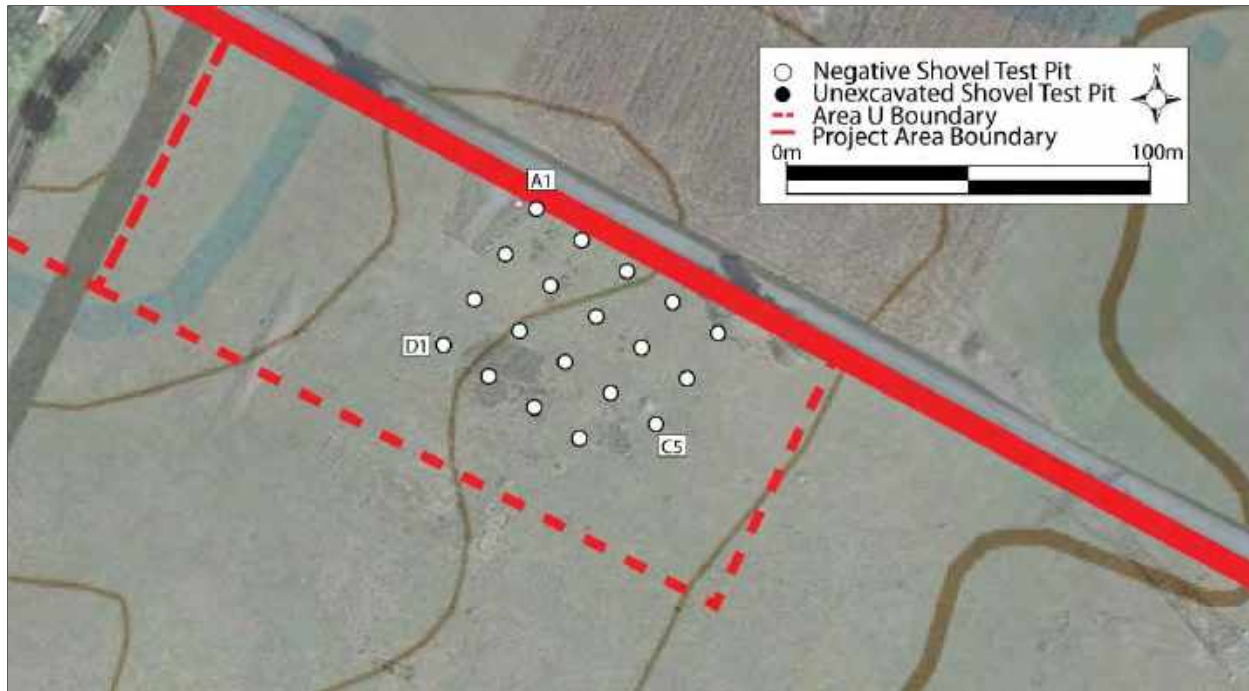


Figure 8-98: STP map of Area U.

In Grid U1, depths of shovel test pits ranged from 6 cm to 22 cm to subsoil. A typical profile representative of the stratigraphy in Area U consisted of 8 cm of 10YR 4/6 dark yellowish brown silty loam over 10YR 5/8 yellowish brown silty clay (Figure 8-99). Soils demonstrated a typical profile consistent with a pasture which has continually housed cattle, with compact topsoils. No cultural material was recovered, and no further work is recommended for this area.

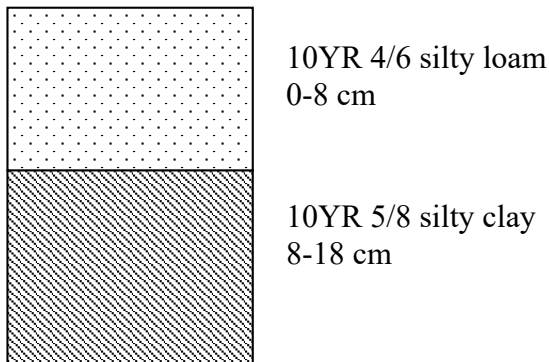


Figure 8-99: Soil profile of Shovel Test A2.

*Area V*

Area V is located in the center of the southernmost parcel in the project area. A road runs northwest along the eastern edge of the area, and a tributary to Meadow Brook runs along the southeastern edge of the landform. Portions of the area are currently being utilized as agricultural fields for planted corn.

The area consists of two ridges which extend east and northeast from a large, irregular landform which makes up a large amount of the center parcel of the project area. The area slopes to the north, south, and east. Area V is north of Areas P and Q, west of Area L, and is bounded to the north and east by the project area boundary. This area consists of a recently cut hay field which has been used as a cattle pasture and planted corn (Figure 8-100) Portions of the area have been disturbed due to apparent bedrock removal (Figure 8-101).



**Figure 8-100: Photo illustrating typical vegetation and terrain, facing south.**



**Figure 8-101: Photo illustrating planted corn and exposed soils in Area V, facing north.**

*Grid VI*

A total of 23 shovel tests were laid out at 15-meter (50-foot) intervals in three (3) transects labeled A through C (Figure 8-102). No artifacts were noted or collected.





Figure 8-102: STP map of Area V.

In Grid V1, depths of shovel test pits ranged from 2 cm to 10 cm to subsoil. A typical profile representative of the stratigraphy in Area V consisted of 11 cm of 10YR 4/6 dark yellowish brown silty loam over 10YR 6/6 brownish yellow silty clay (Figure 8-103). Soils demonstrated a typical profile consistent with a pasture which has continually housed cattle, with compact, shallow topsoils. No cultural material was recovered, and no further work is recommended for this area.

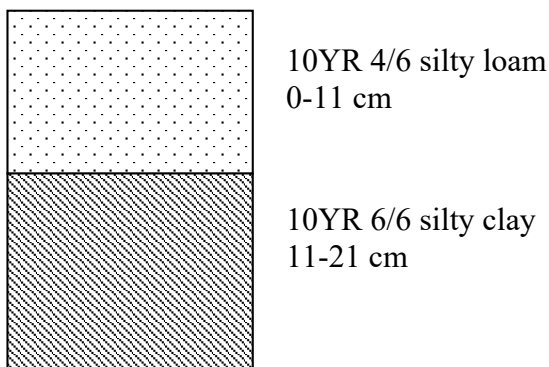


Figure 8-103: Soil profile of Shovel Test A2.

### *Pedestrian Surveyed Area*

The northernmost ridge which comprises approximately half of Area V consists of rows of planted corn in plowed fields. Due to the low height of the corn, this portion of Area V consisted of minimal ground coverage and allowed for pedestrian survey (Figure 8-104). Approximately 4 hectares (10 acres) of Area V was subjected to systematic pedestrian survey. No artifacts were recovered during the systematic survey of this planted corn field.



**Figure 8-104: Photo illustrating planted corn and exposed soils in Area V, facing east.**

### *Area W*

Area W is located in the eastern center of the northernmost parcel in the project area. A powerline corridor runs southeast-northwest along the southern edge of the area. The majority of the area is currently being utilized as a corn field. A small portion in the north and western edge of the area consists of pastural land.

The area consists of the eastern half of a ridge which runs north-south along the eastern boundary of the project area. The land slopes to the south, north, and east. Area W is south of Area T, east of Area K, and is bounded by the project area to the east, south, and partially to the north. This area consists of a recently planted corn and pastural land (Figures 8-105; 8-106).



**Figure 8-105: Photo illustrating typical vegetation and terrain, facing west.**



**Figure 8-106: Photo illustrating planted corn in Area W, facing southwest.**

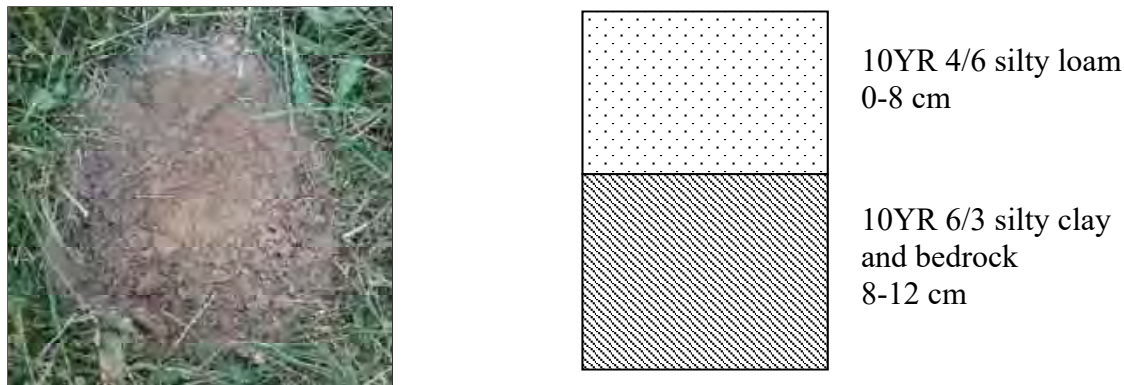
*Grid W1*

A total of 15 shovel tests were laid out at 15-meter (50-foot) intervals in four (4) transects labeled A through D (Figure 8-107). No artifacts were noted or collected.



Figure 8-107: STP map of Area W.

In Grid W1, depths of shovel test pits ranged from 2 cm to 14 cm to subsoil, with many shovel test pits terminating at bedrock. A typical profile representative of the stratigraphy in Area W consisted of 8 cm of 10YR 4/6 dark yellowish brown silty loam over 10YR 6/3 pale brown silty clay and bedrock (Figure 8-108). No cultural material was recovered.



**Figure 8-108: Soil profile of Shovel Test C1.**

#### *Pedestrian Surveyed Area*

The majority of Area W consists of rows of planted corn in plowed fields. Due to the low height of the corn, this portion of Area W consisted of minimal ground coverage and allowed for pedestrian survey (Figure 8-109). No artifacts were recovered during the systematic survey of this planted corn field. Approximately 7.5 hectares (19 acres) of Area W was subjected to systematic pedestrian survey. No further work is recommended for this area.



**Figure 8-109: Photo illustrating pedestrian surveyed field, facing northwest.**

### *Area X*

Area X comprises the entirety of the parcel located in the center of the project area. This area is divided into three distinct sections of use: an apple orchard in the northwestern third of the area; a peanut field in the center, and a corn field in the southeastern half of the area. A series of modern barns are located within the apple orchard, near the southwestern corner of the area.

The area consists of two knolls and the drainage which runs southwest-northeast between the two. Both knolls slope in all cardinal directions. The area is bounded on all sides by the project area boundary, Area A is north of Area X, and Area Q is east of Area X. Vegetation consists of planted apple trees, planted corn, and planted peanuts (Figures 8-110 through 8-112 ).



**Figure 8-110: Photo illustrating planted corn in Area X, facing southwest.**



**Figure 8-111: Photo illustrating terrain and vegetation in Area X, showing apple orchard in the background, facing northwest.**

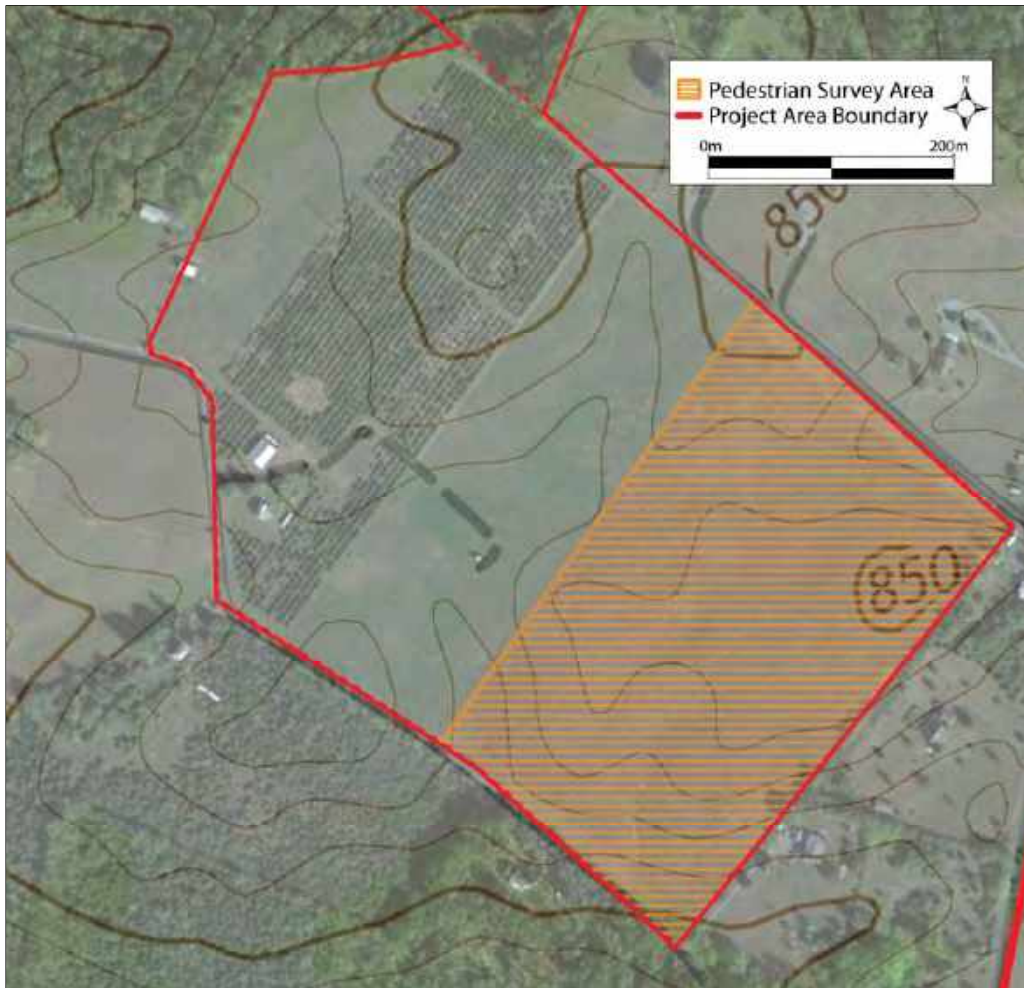


**Figure 8-112: Photo showing peanut field in Area X, facing northwest.**

#### *Pedestrian Surveyed Area*

Approximately half of Area X consists of rows of planted corn in plowed fields. Due to the low height of the corn, this portion of Area X consisted of minimal ground coverage and allowed for pedestrian survey (Figure 8-113). Approximately 10 hectares (25 acres) of this area was subjected to systematic pedestrian survey. No artifacts were recovered during the systematic survey of this planted corn field. No further work is recommended for this area.





**Figure 8-113: STP map of Area X.**

### *Area Y*

Area Y is located in the center of the eastern edge of the northernmost parcel. Area Y is currently being utilized as an agricultural field.

The area consists of a long ridge which runs northeast-southwest. A tributary to Buffalo Run extends west from the center of the area. The area slopes to the north, east, and west. Area Y is north of Area C, south of Area W, and east of Area D and F. The project area boundary bounds Area Y to the east. Area Y consists of planted corn (Figure 8-114).



**Figure 8-114: Photo illustrating planted corn in Area Y, facing southwest.**

#### *Pedestrian Surveyed Area*

Area Y consists of rows of planted corn in plowed fields. Due to the low height of the corn, Area Y consisted of minimal ground coverage and allowed for complete systematic pedestrian survey (Figure 8-115). Approximately 3.65 hectares (9 acres) of this area was subjected to systematic pedestrian survey. No artifacts were recovered during the systematic survey of this planted corn field. No further work is recommended for this area.

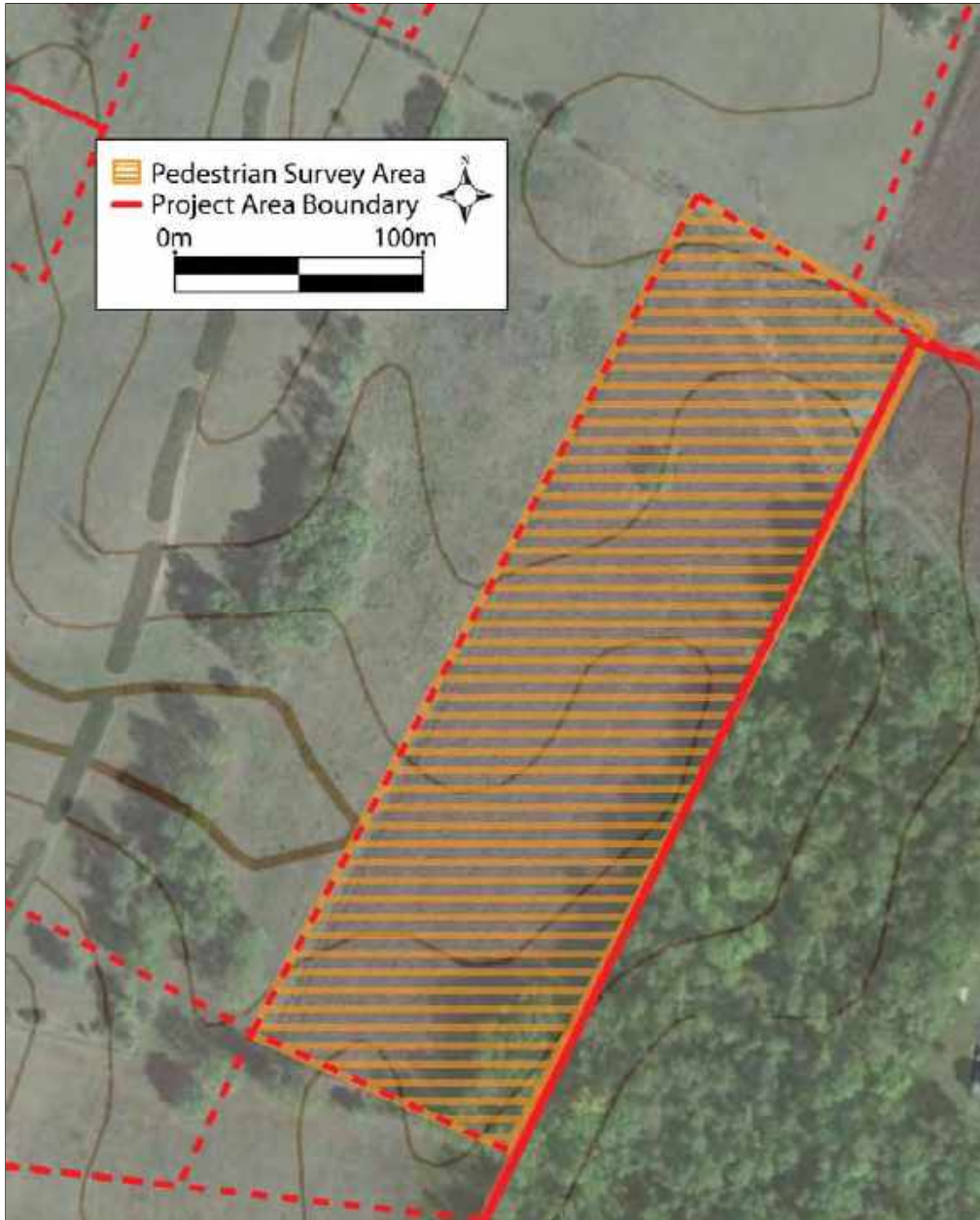


Figure 8-115: STP map of Area Y.

## ARCHITECTURAL FIELD RESULTS

The architectural resources survey for the Foxglove Solar project resulted in the identification and recordation of thirty-seven (37) architectural resources greater than 50 years of age (constructed in 1970 or earlier) located within the one-half mile architectural survey area, six of which are located directly within the project area. Of the surveyed resources, twenty-seven (27) were previously recorded (VDHR# 034-0076, 034,0077, 034-0138/0140, 034-0220, 034-0232/0236, 034-0238/0241, 034-0243, 034-0254, 034-0263/0264, 034-0269, 034-0303, 034-0248/0249, 034-1406, 034-1552, 034-5075, and 034-5085) and ten (10) were newly recorded during this Phase I Survey (VDHR# 034-5317/5326). Four of the previously recorded resources were found to have been demolished since they were last surveyed (VDHR# 034-0254, 034-0428, 034-1406, and 034-1552). VCRIS site file forms were prepared or updated for each recorded resource.

The 33 extant resources within the survey area and documented as part of this effort consist primarily of domestic buildings and farmsteads from the early-nineteenth to mid-twentieth century, as well as a nineteenth century family cemetery, a Civil War battlefield, a twentieth century commercial building, twentieth century bridge, and assorted isolated barns and agricultural buildings.

The survey area occupies a mostly rural area of southern Frederick County, just west of Stephens City. It is composed of three tracts of land that generally border Middle Road and Hites Road, south of Marlboro Road. Other primary routes that cross through the project area include Klines Mill Road, Clark Road, and Vaocluse Road. Most of the project area is characterized as agricultural land and is a mix of open pasture and orchard. A smaller portion of the project area is uncleared woodland.

Most development in the area consists of single dwellings and farmsteads set on large properties along the roads that cross through the area. Most are set near the road with associated property to the sides and rear, although there are several homes and farms set further back from the road on larger properties. The majority of development within the survey area dates from the early-nineteenth to mid-twentieth century with only a handful of more recent homes, primarily limited to two modern subdivisions. The earliest surveyed property is the previously recorded Miller House, built circa 1770, however, it has suffered recent fire damage and remains in a ruinous condition. The earliest extant homes are located on the Vaocluse property and include Vaocluse itself, built circa 1810, as well as the John Chumley House built circa 1820, although moved to that property in the 1960s. The majority of recorded homes date from the late-nineteenth to mid-twentieth century and reflect vernacular forms and influences; the most prominent being two-story I-houses. Resources from the mid-twentieth century generally consist of more modest single family homes reflecting the Ranch or Minimal Traditional style. Many resources include a variety of barns and agricultural buildings from throughout the late-nineteenth century to the modern day. There are several large bank barns with subtle architectural distinction, but most are modest frame utilitarian structures.

Of the surveyed resources, seven are considered potentially eligible for listing in the NRHP. These properties are generally considered eligible for architecture as good examples of regional forms and styles or for their representation of intact agricultural complexes. One resource is the Cedar

Creek Battlefield, significant for its association with Civil War in the region. The rest of the surveyed resources are primarily modest frame and masonry dwellings built in the late-nineteenth to third-quarter of the twentieth century and reflect national trends in building styles of that period. None of these appear to reflect any unique or significant design or historical associations, and as such, all are considered not eligible for listing in the NRHP individually or collectively.

Provided in the following pages are a table of all surveyed resources (Table 8-1), a map with the location of each resource surveyed (Figures 8-116 and 8-117), and descriptive narratives and photographs of each of the identified historic resources. Resource narratives include a physical description, discussion of history, integrity, and NRHP-eligibility. For those resources considered NRHP-eligible, an assessment of project impacts is also provided.

**Table 8-1: Surveyed Architectural Resources. Bold font denotes resource is NRHP-eligible. Orange highlight denotes resource is located directly within the project area.**

VDHR ID#	Resource Name/Address	Year Built	NRHP Eligibility
<b>034-0076</b>	<b>Ash House, 6124 Middle Road</b>	<b>1891</b>	<b>DHR: Potentially Eligible/ D+A: Potentially Eligible</b>
034-0077	House, 6127 Middle Road	c.1770	DHR: Potentially Eligible/ D+A: Not Eligible
<b>034-0138</b>	<b>Vaucluse, 515 Vaucluse Spring Road</b>	<b>c.1810</b>	<b>DHR: Eligible/ D+A: Eligible</b>
<b>034-0139</b>	<b>Valerie Hill, 1687 Marlboro Road</b>	<b>1807</b>	<b>DHR: Potentially Eligible/ D+A: Potentially Eligible</b>
<b>034-0140</b>	<b>Buffalo Marsh, 697 Clark Road</b>	<b>1827</b>	<b>DHR: Eligible/ D+A: Eligible</b>
034-0220	John Chumley House, 231 Vaucluse Spring Road	c.1820	DHR Potentially Eligible/ D+A: Not Eligible
034-0232	House, 1595 Hites Road	1911	D+A: Not Eligible
034-0233	House, 1561 Hites Road	1910	D+A: Not Eligible
034-0234	Hites Road	c.1900	D+A: Not Eligible
034-0235	House, 1282 Hites Road	c.1900	D+A: Not Eligible
034-0236	Western View Farm, 210 Westernview Drive	1830	D+A: Not Eligible
034-0238	Epworth United Methodist Church, 1031 Hites Road	c.1875	D+A: Not Eligible
034-0239	House, 1181 Clark Road	c.1870	D+A: Not Eligible
034-0240	House, 986 Clark Road	1927	D+A: Not Eligible
034-0241	House, 943 Clark Road	1901	D+A: Not Eligible
034-0243	House, 245 Buffalo Marsh Road	1926	D+A: Not Eligible
034-0254	Miller House, Marlboro Road	c.1830	D+A: Demolished
034-0263	House, 782 Hites Road	1900	D+A: Not Eligible
<b>034-0264</b>	<b>Shiley Farm, 856 Hites Road</b>	<b>c.1870</b>	<b>DHR Potentially Eligible/ D+A: Potentially Eligible</b>
034-0269	House, 660 Clark Road	1891	D+A: Not Eligible
<b>034-0303</b>	<b>Cedar Creek Battlefield</b>	<b>1864</b>	<b>DHR Eligible/ D+A: Eligible</b>
034-0428	House, 478 Klines Mill Road	c.1830	D+A: Demolished
034-0429	Barn, 718 Klines Mill Road	c.1800	DHR Not Eligible/ D+A: Not Eligible
034-1406	House, 1512 Marlboro Road	c.1920	D+A: Demolished
034-1552	Bridge Klines Mill Road	1927	D+A: Demolished
<b>034-5075</b>	<b>Woodbine Farm, 829 Vaucluse Road</b>	<b>1900</b>	<b>DHR Potentially Eligible/ D+A: Potentially Eligible</b>

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<b>VDHR ID#</b>	<b>Resource Name/Address</b>	<b>Year Built</b>	<b>NRHP Eligibility</b>
034-5085	Miller Cemetery, Marlboro Road	1838	D+A: Not Eligible
034-5317	House, 5699 Middle Road	1955	D+A: Not Eligible
034-5318	House, 1086 Germany Road	1948	D+A: Not Eligible
034-5319	Farm Complex, 458 Hites Road	c.1920	D+A: Not Eligible
034-5320	Commercial Building, Hites Road	c.1940	D+A: Not Eligible
034-5321	House, 722 Hites Road	1966	D+A: Not Eligible
034-5322	House, 996 Hites Road	1961	D+A: Not Eligible
034-5323	Farm Complex, 685 Clark Road	c.1900	D+A: Not Eligible
034-5324	House, 609 Clark Road	1960	D+A: Not Eligible
034-5325	House, 1196 Hites Road	1901	D+A: Not Eligible
034-5326	House, 1162 Hites Road	1956	D+A: Not Eligible

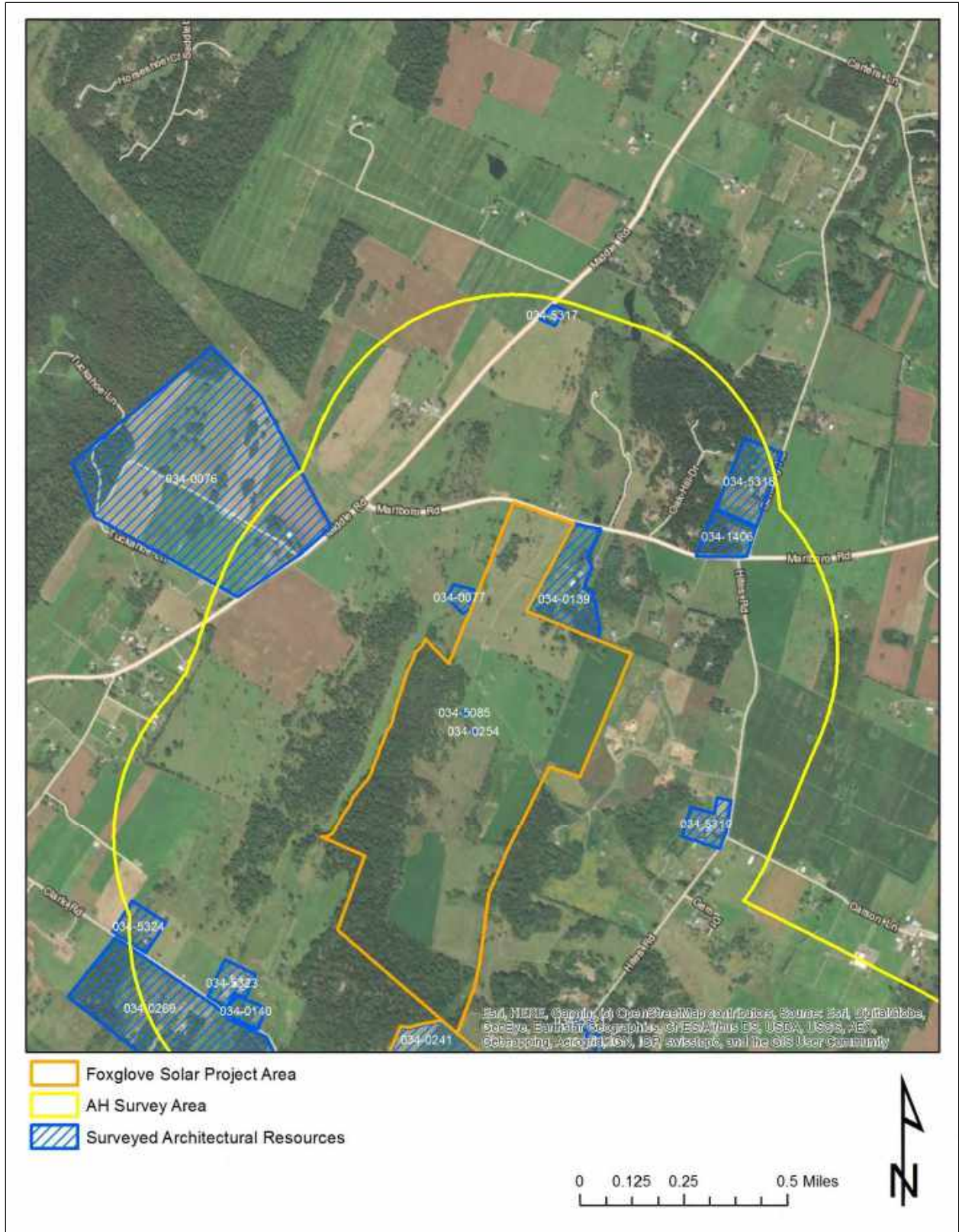


Figure 8-116: Location of surveyed architectural resources in relation to the project area (northern portion).

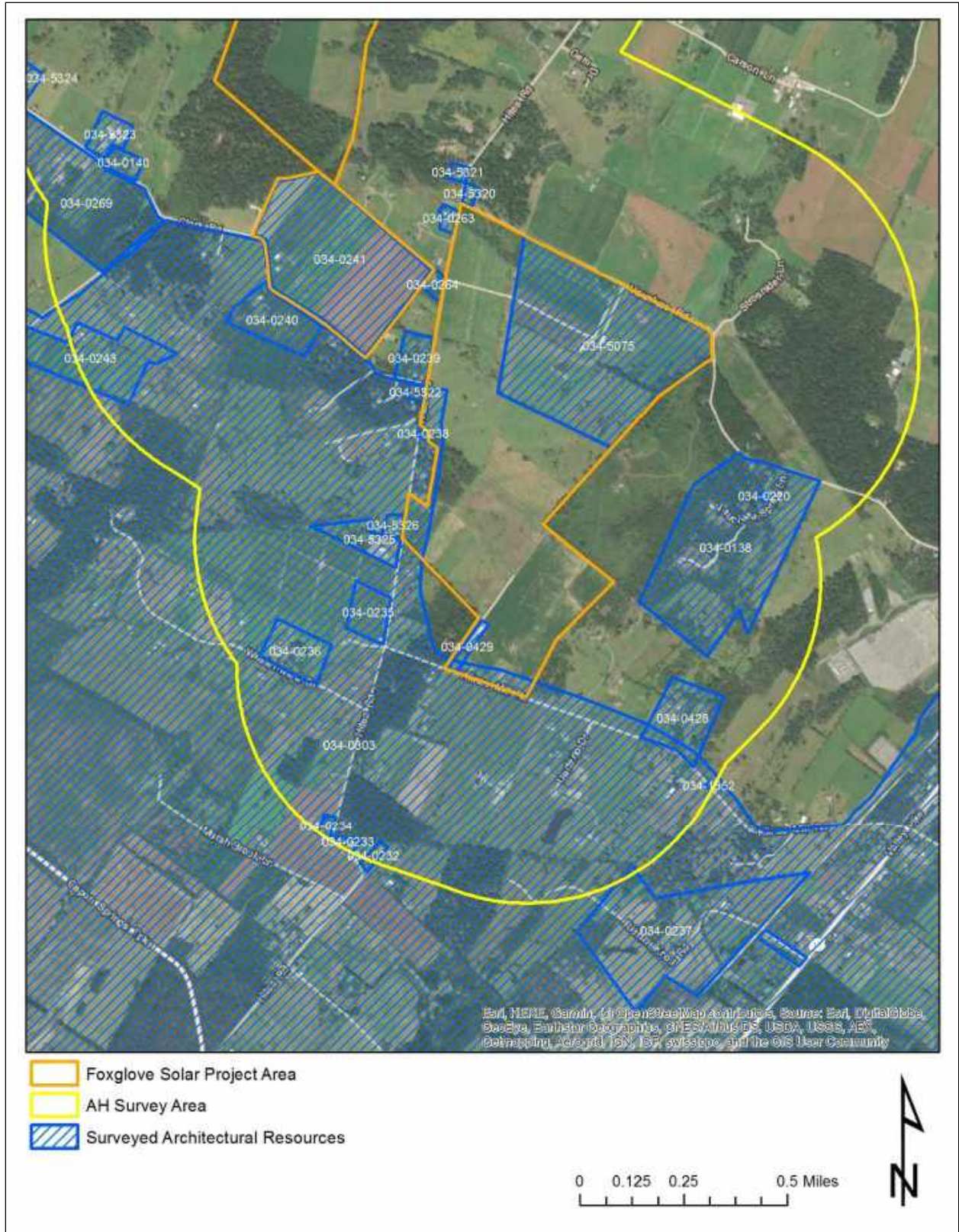


Figure 8-117: Location of surveyed architectural resources in relation to the project area (southern portion).



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**VDHR# 034-0076**  
**Ash House, 6124 Middle Road**



This single dwelling was built in 1891 according to local records and exhibits a Folk Victorian style. The two-story building has a rectangular I-house main block with an offset two-story rear wing. The wood frame structural system is clad with weatherboard and rests on an obscured foundation. It is topped by a side-gable roof with central front cross-gable covered with standing seam metal that is pierced by interior end brick chimneys at each end of the ridge. The main entrance is set centrally on the front and is sheltered by a full-width one-story porch. Fenestration consists of two-over-two double-hung sash windows. The building is ornamented with a compound roof cornice and frieze, as well as a lunette in the central cross gable.

This dwelling is located on the west side of Middle Road on a large rural property. The building sits near the road on a slight rise. It rests on an overgrown grassy yard with numerous trees and other vegetation to the sides and rear. A gravel driveway leads uphill past the side of the house to a complex of outbuildings set to the rear. Previously recorded outbuildings include a summer kitchen, three garages, a shed, a vehicle/equipment shed, barn, and vehicle shed; however, many of these could not be clearly seen at the time of this survey due to overgrown vegetation. Bordering the building complex is a small pasture area to one side, and larger agricultural fields to the sides and rear.

This property is an example of a typical turn-of-the-twentieth century rural dwelling in the region. The home reflects a Folk Victorian style as applied to an I-house. It also includes a large collection of contemporary barns and outbuildings. Overall, the property represents an intact turn-of-the-century farm in the region and was therefore deemed potentially eligible for listing in the NRHP by the VDHR in 2009. At this time, the complex appears to retain similar integrity as at that time and as such, D+A recommends it continue to be considered *potentially eligible for listing in the NRHP*.

As a *potentially NRHP-eligible* resource, an assessment was conducted to determine whether the project may pose any impacts to its eligibility. Improvements related to the Foxglove Solar project are proposed to take place within the landscape to the east of the Ash House property. The house sits near the front of the property which is 0.39-miles away from the project area at its nearest point. The landscape between the property and the project is generally characterized by rolling terrain with open pasture and treeline.

To assess whether the project or any associated components may pose an impact to the resource, a viewshed assessment was conducted. Inspection was performed and photographs taken from the public right-of-way in front of the house to document existing setting, visibility, and lines of sight (Figures 8-118 through 8-123).

This assessment found that the historic rural landscape around the resource is relatively intact, however, the setting is compromised by a wide high-voltage transmission line corridor that crosses through the open field to the north of the property. The primary dwelling sits near the road in a copse of trees with a collection of barns and outbuildings set to the rear. The building complex is currently overgrown with vegetation which limits visibility of the house and buildings from the road. Inspection from the road in front of the house revealed that the rolling terrain and intervening treeline inhibit wide views of the project area. Much of the project is set on the opposite side of a wooded ridge from the Ash House which screens it from view, however a narrow portion of the project area may be visible where the treeline does not continue. The rolling topography, however, still breaks up the viewshed.

As the majority of the project area is screened from view, and any portions that may be visible would be narrow and interrupted, the project is not anticipated to introduce any substantially new or incompatible features into the viewshed from the property. Where there is potential visibility, the project improvements would be low and set close to the ground, and seen in conjunction with the much larger and more intrusive transmission line corridor. Further screening may be provided by supplemental landscape buffering proposed as part of the project. Of additional consideration, this resource was determined potentially eligible for listing in the NRHP for its architecture, and therefore its setting beyond its own property is not considered a primary aspect of its significance. As such, the Foxglove Solar project is recommended to pose no more than a *minimal impact* on the Ash House.

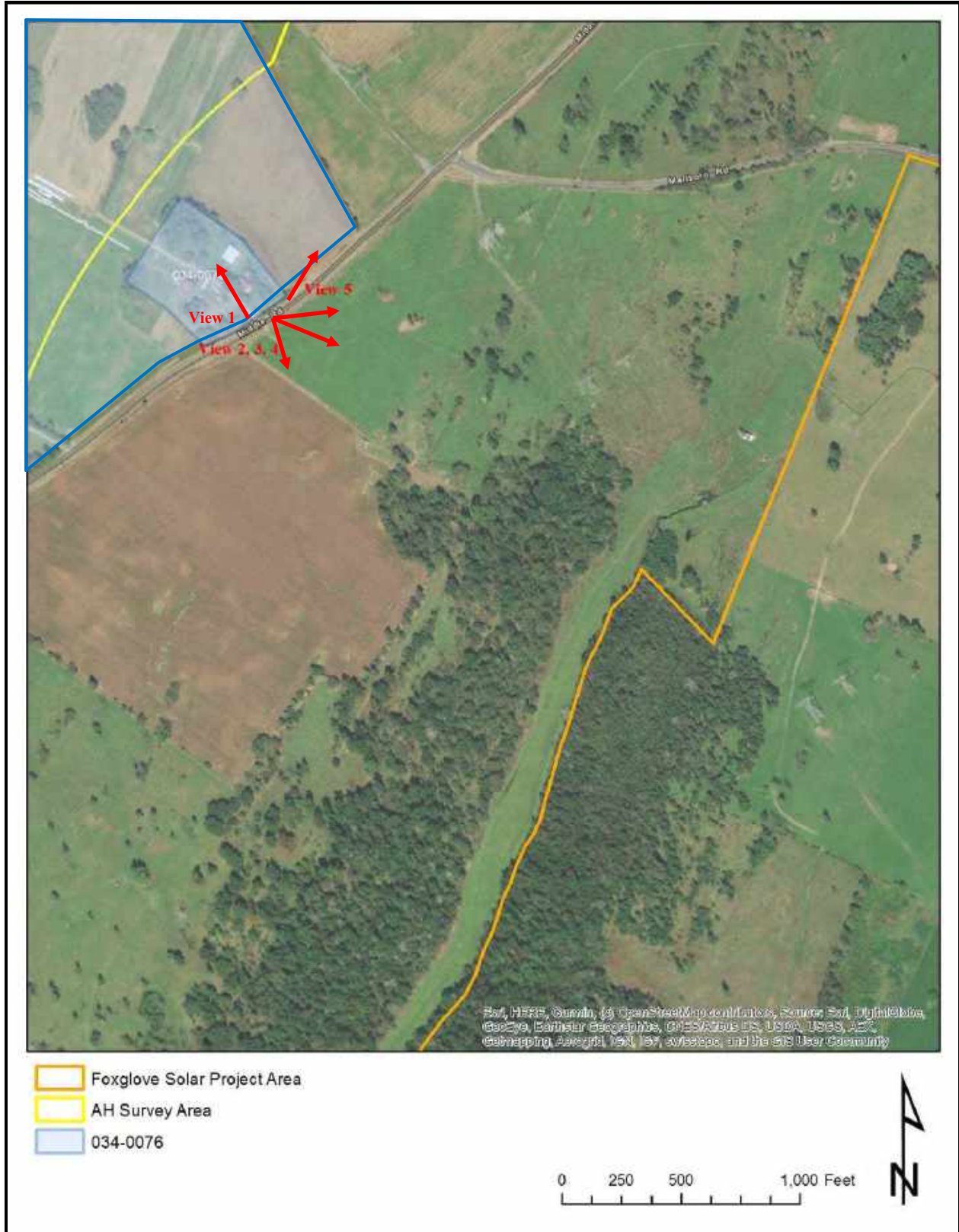


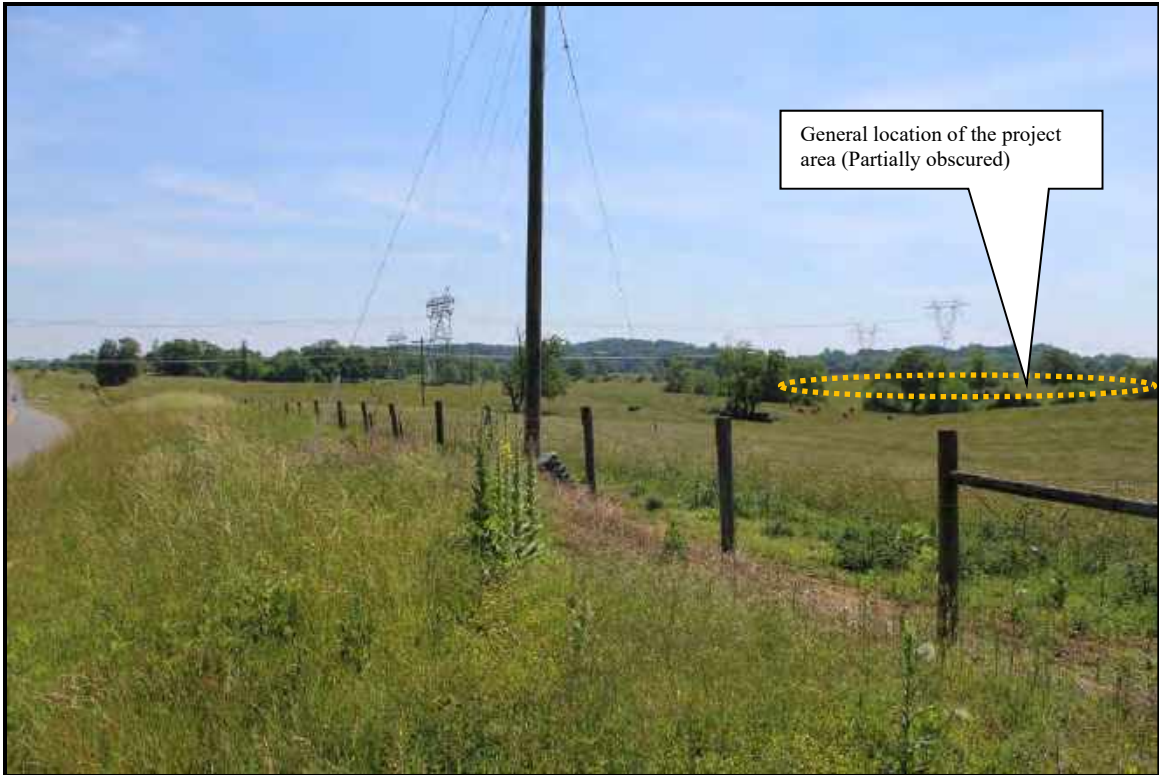
Figure 8-118: Location of Ash House in relation to the project area showing direction of representative and viewshed photos.



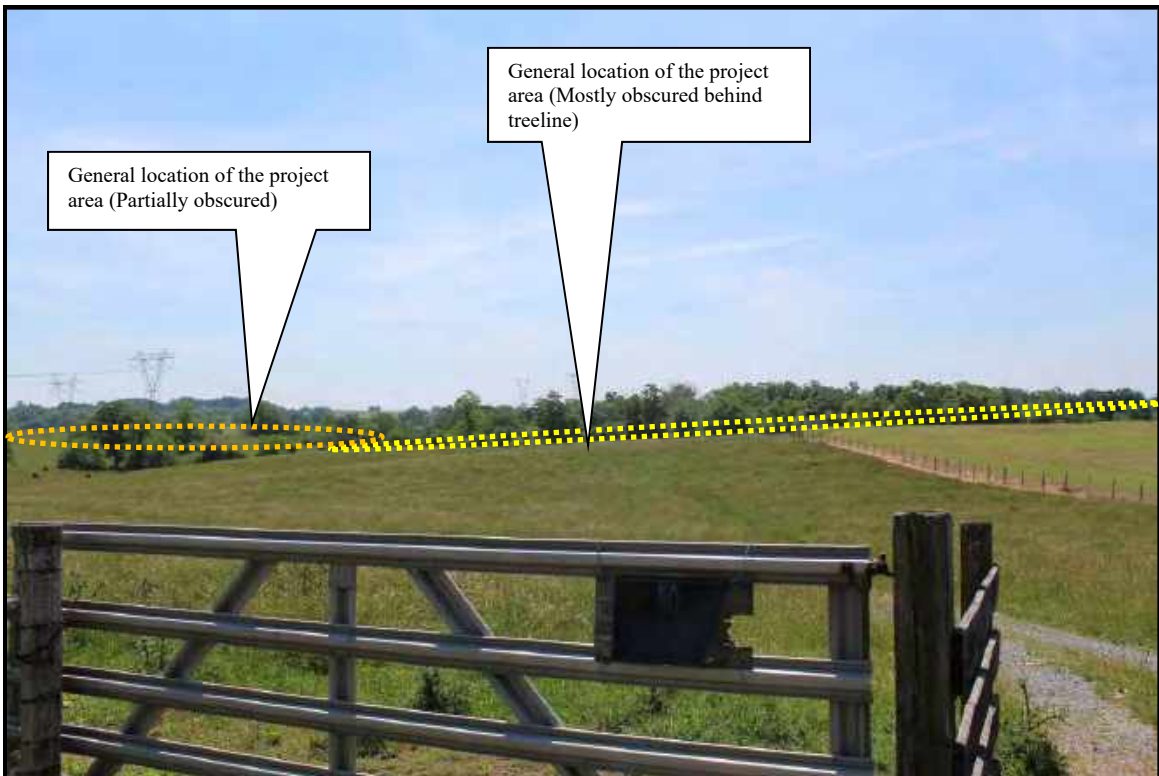
**Figure 8-119: View 1- View of the Ash House setting from Middle Road, facing west.**



**Figure 8-120: View 2- View of existing transmission line in Ash House setting, facing north.**



**Figure 8-121: View 3- View from the Ash House property towards the project area (partially visible through treeline, although seen in conjunction with transmission line corridor), facing northeast.**



**Figure 8-122: View 4- View from the Ash House property towards the project area (mostly screened by treeline), facing east.**



**Figure 8-123: View 5- View from Ash House property towards the project area (not visible through vegetation), facing southeast.**

**VDHR# 034-0077**  
**Farm, 6127 Middle Road**



This resource was previously recorded as a circa 1770 Vernacular dwelling with early-nineteenth century Federal additions. Inspection of the home at this time reveals the house recently sustained substantial fire damage and remains in a ruinous condition.

This dwelling is located on the south side of Marlboro Road on a large rural property. The building sits far back from the road in the middle of an open pasture. It appears to previously have been accessed by a long farm lane from Marlboro Road, however, the road is now unmaintained and barely recognizable as such. The foundation of a small ruinous outbuilding is evident to the southeast corner of the main house.

This property was previously an example of a late-eighteenth century rural dwelling in the region, however, has since burned and now remains in a ruinous condition. Close inspection to note how much, if any historic material or features remain was not possible at the time of this survey, however, its apparent condition would suggest very little remains. Although the resource was previously considered potentially eligible for listing in the NRHP by the VDHR in 2009, because it has now burned and all of the associated outbuildings have been demolished, it is now considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.



**VDHR# 034-0138**  
**Vaucluse, 515 Vaucluse Springs Road**



This single dwelling was built circa 1810 according to previous study and exhibits a Federal style. It was substantially renovated in 1995. The two-story building has a three-bay, double-pile main block with an offset two-story rear addition attached by a one-story hyphen. The brick structural system is laid in a Flemish Bond and rests on a continuous stone foundation. It is topped by a hipped roof covered with standing seam metal that is pierced by a pair of central interior brick chimneys on the side slopes. The main entrance is set centrally on the front and is sheltered by a full-width one-story porch. Fenestration consists of twelve-over-twelve double-hung sash windows. The building is finely ornamented.

This dwelling is located at the end of Vaucluse Springs Road on a large rural property. The building rests on a slight knoll at the center of an open grassy lawn. There is minimal vegetation around the building, although the clearing is bordered by woods to all sides. The road which becomes a private driveway, approaches the house from the rear and terminates a parking area between it and a modern guesthouse. Spread throughout the large associated property are additional guest cottages, a historic mill, and other outbuildings, several of which were moved to the property to allow it to function as a bed and breakfast.

This property is an excellent example of a late-eighteenth/early-nineteenth century rural manor house in the region. The home is believed to have been built by Strother Jones, who had been a captain in the revolutionary army. He named it after a spring in Vaucluse, France which was the country retreat of Petrarch, a 14th Century poet of courtly love. Also on the property throughout the nineteenth century was a grist mill and a variety of other tenant houses and dependencies. In the 1960s, the owners relocated a number of other nineteenth century buildings to the property to allow it to function as a bed and breakfast. In 1995, many of the buildings, including the main Vaucluse house, were renovated, generally in keeping with their historic character. As such, the

home and many of the buildings were determined eligible for listing in the NRHP by the VDHR in 1996. The eligibility was confirmed in 2009, and at this time, the complex continues to represent a good collection of representative architecture from the early-nineteenth century in the region. As such, it continues to be considered *eligible for listing in the NRHP* for distinctive architecture.

As a *potentially NRHP-eligible* resource, an assessment was conducted to determine whether the project may pose any impacts to its eligibility. Improvements related to the Foxglove Solar project are proposed to take place within the landscape to the west of the Vauclose property. The property is roughly 450 feet from the project area at its nearest point, although the house is set centrally within the property and 0.29-miles away. The landscape surrounding the home, and between it and the project area is generally characterized by rolling and mostly wooded terrain.

To assess whether the project or any associated components may pose an impact to the resource, a viewshed assessment was conducted. Inspection was performed and photographs taken from the public right-of-way in front of the house as well as throughout the property to document existing setting, visibility, and lines of sight (Figures 8-124 through 8-130).

This assessment found that the historic rural landscape around the resource is relatively intact. The setting of the resource and the property itself, however, is not intact due to the relocation of multiple buildings and structures to the property from other locations in the 1960s. The original primary dwelling sits centrally within the property atop an open grassy knoll surrounded by woodland. Set along the driveway leading to the house are secondary dwellings, cottages, and a mill moved to the property to create a bed and breakfast complex. Inspection from the road in front of the property revealed that the rolling terrain and thick vegetation screen distant views, including of the buildings within the property, as well as the project area beyond. Likewise, views from most vantage points within the property also found that the topography and vegetation screen all views beyond the property. The primary dwelling rests upon a knoll which is the highest point on the property, however, thick woods and terrain on the property and beyond inhibit any distant views.

As the project area is completely screened from view from public vantage points along the road in front of the property as well as all vantage points throughout the property, there is not anticipated to be any visibility of project improvements. Further screening may be provided by supplemental landscape buffering proposed as part of the project. Of additional consideration, this resource was determined potentially eligible for listing in the NRHP for its architecture, and is specifically noted as having a compromised setting that does not contribute to its eligibility due to numerous relocated buildings on the property. As such, the Foxglove Solar project is recommended to pose no more than a *minimal impact* on the Vauclose house.

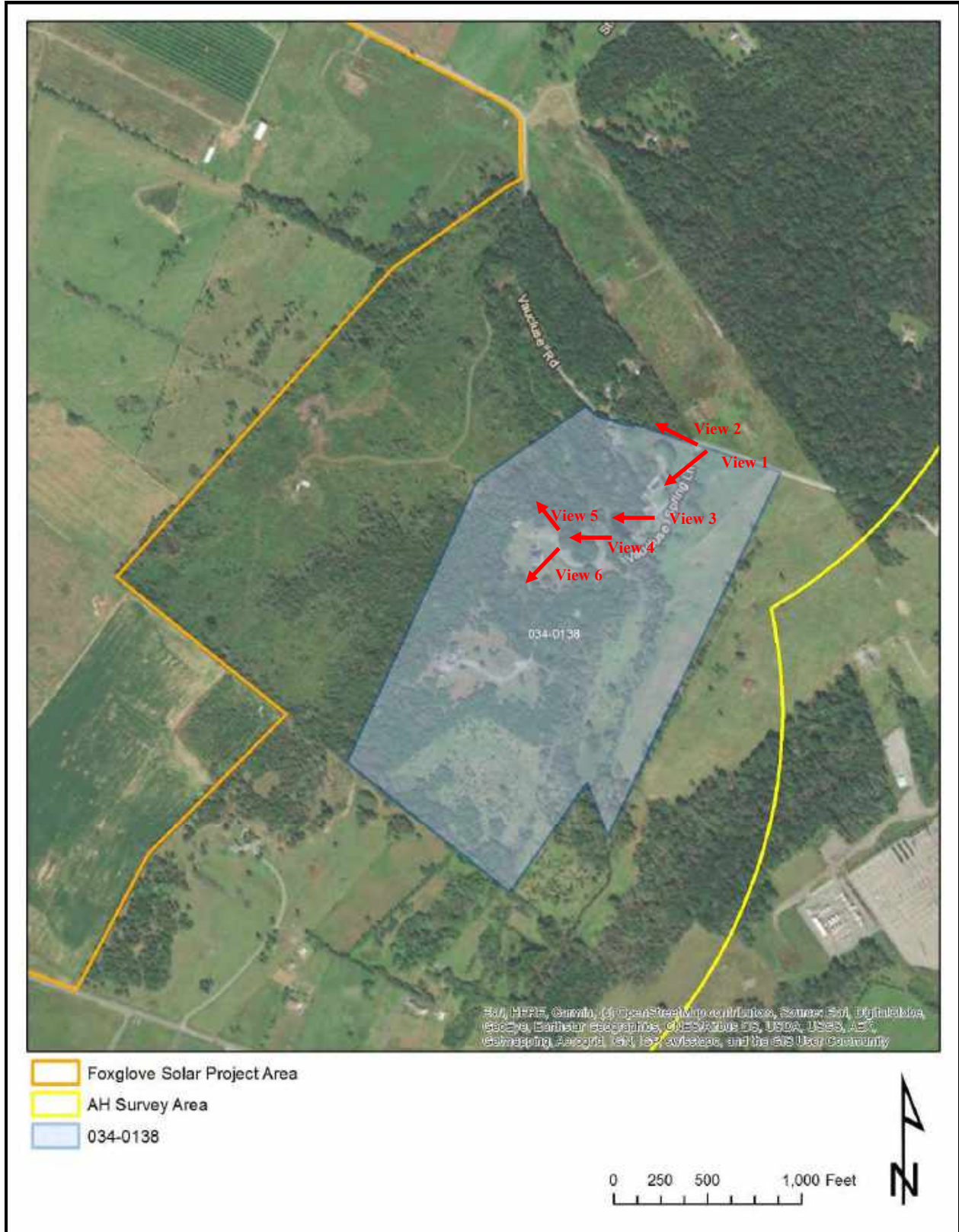
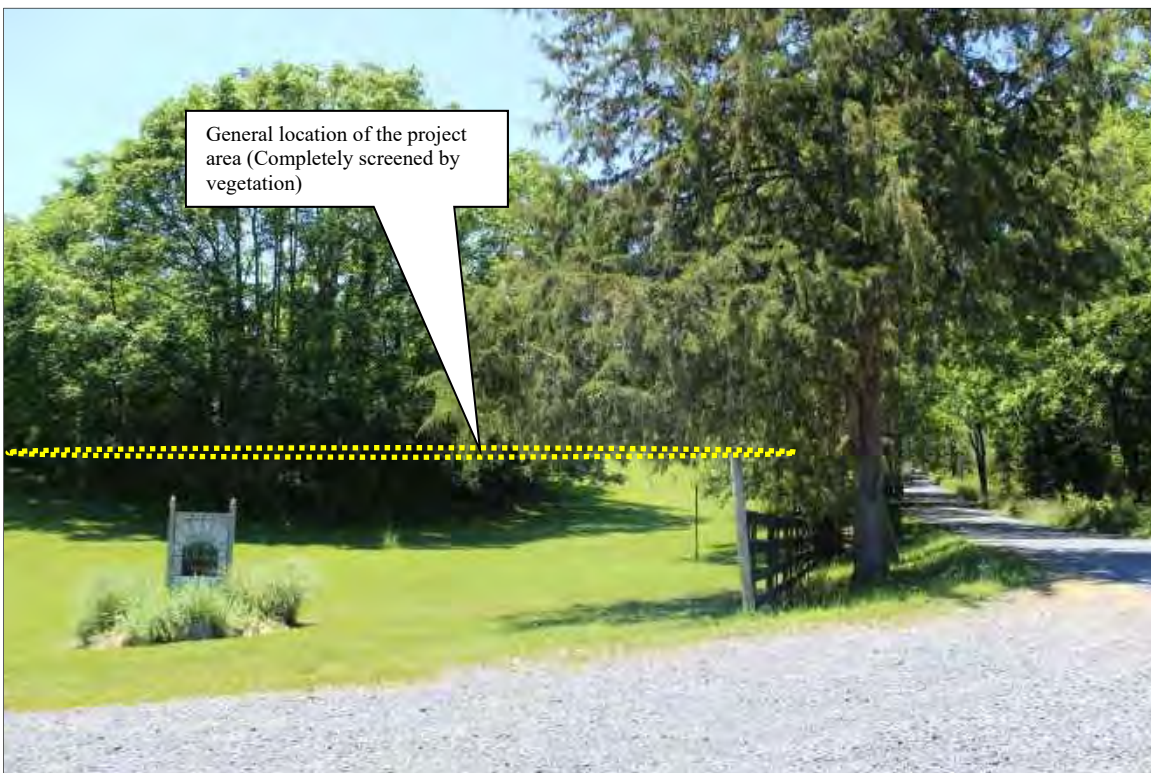


Figure 8-124: Location of Vaucluse in relation to the project area showing direction of representative and viewshed photos.



**Figure 8-125: View 1- View of Vacluse property setting from Vacluse Road, facing south.**



**Figure 8-126: View 2- View from Vacluse driveway towards the project area (not visible), facing west.**



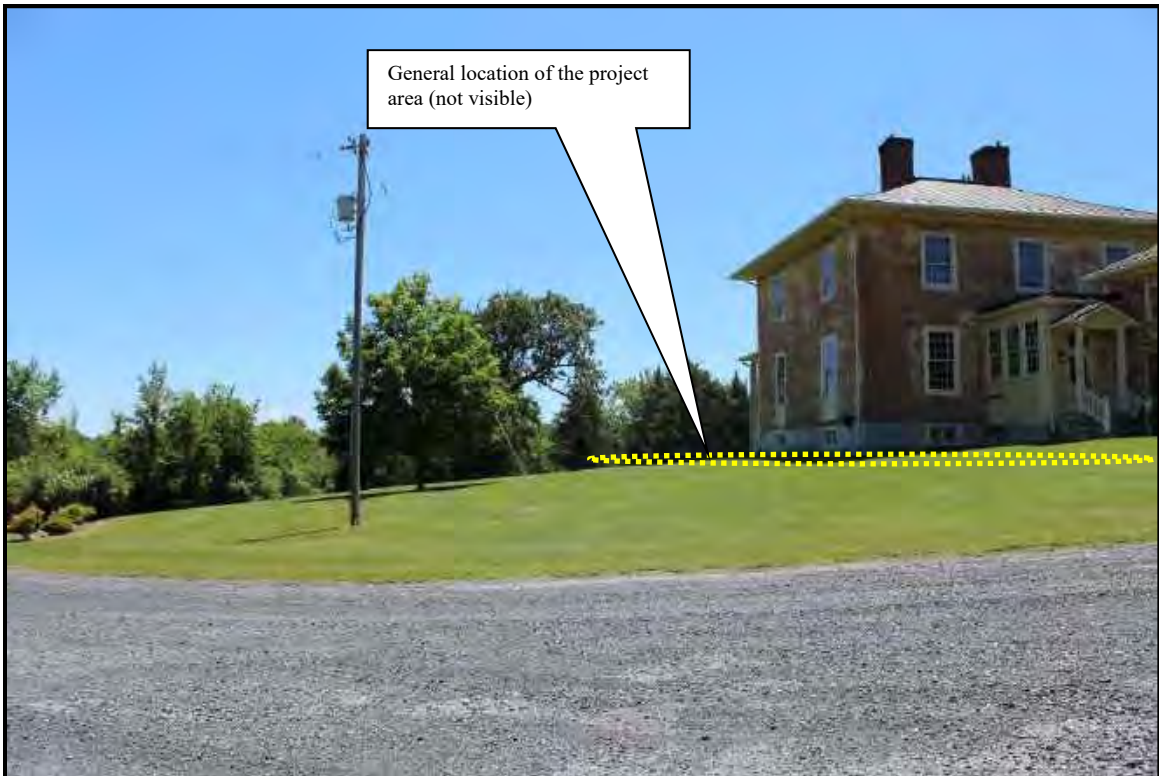
**Figure 8-127: View 3- View from Vacluse millpond towards the project area (not visible through treeline), facing west.**



**Figure 8-128: View 4- View from the Vacluse guest cottage towards the project area (not visible through vegetation), facing west.**



**Figure 8-129: View 5- View from Vacluse towards the project area (not visible through vegetation), facing north.**



**Figure 8-130: View 6- View from Vacluse towards the project area (not visible), facing southwest.**

**VDHR# 034-0139**

**Valerie Hill, 1687 Marlboro Road**



This single dwelling that now functions as a winery tasting room, was built in 1807 according to the property owners and exhibits a Federal style. It appears to have been renovated and expanded over time. The two-story building has a five-bay main block with an offset two-story rear wing and addition attached to the side of that. The brick structural system is laid in a 5:1 American Bond and rests on a continuous brick foundation. It is topped by a side-gabled roof covered with standing seam metal that is pierced by end wall chimneys at the ridge. The main entrance is set centrally on the front and is sheltered by a partial-width one-story gabled portico. Fenestration consists of six-over-six double-hung sash windows. The building is ornamented with a variety of Neoclassical influences.

This former dwelling is located on the south side of Marlboro Road on a small rural property. The building sits back from the road on a finely landscaped homesite. It is approached by a tree-lined driveway that terminates in a loop in front of the building. The building rests on a grassy lawn with foundation plantings and other ornamental trees and landscaping scattered around it. Set in the yard to the rear of the house is a stone chimney that represents the remains of a former dependency. A field stretching along the side of the driveway and homesite is now planted in vineyards.

This property is a good example of an intact early-nineteenth century rural manor house in the region. It appears that most or all of the former outbuildings and dependencies no longer remain extant, and the building no longer serves as a private dwelling instead operated as a winery. Still, the building retains moderate integrity and continues to reflect much of its historic character. As such, the home and many of the buildings were determined eligible for listing in the NRHP by the VDHR in 2009. At this time, the building continues to retain similar integrity as at that time, and as such, it continues to be considered *potentially eligible for listing in the NRHP*.

As a *potentially NRHP-eligible* resource, an assessment was conducted to determine whether the project may pose any impacts to its eligibility. Improvements related to the Foxglove Solar project are proposed to take place within the landscape to the west and south of the Valerie Hill property. The property is immediately adjacent to project area along its western boundary, although the house is set centrally within the property and is roughly 385 feet away. The landscape surrounding the home, and between it and the project area is generally characterized by rolling and manicured lawn with planted vineyard.

To assess whether the project or any associated components may pose an impact to the resource, a viewshed assessment was conducted. Inspection was performed and photographs taken from the public right-of-way in front of the house as well as throughout the property to document existing setting, visibility, and lines of sight (Figures 8-131 through 8-136).

This assessment found that the historic rural landscape around the resource is relatively intact, however, the property now functions as a winery and tasting room. The dwelling rests atop a slight knoll within a manicured lawn with shade trees and ornamental landscaping scattered throughout. Downhill from the home is a strip of planted vineyard with a fenceline and the field in which the project area is located beyond. Inspection from the road in front of the property revealed that the vegetation throughout the property, including the tree-lined driveway interrupt views towards the project area, however, it remains visible. Likewise, vantage points from within the property, including the parking lot in front of the dwelling and the outdoor seating area to the side have clear visibility of the project area, although wide views are interrupted by vegetation on the property and the rolling terrain of the project area. Inspection from the road along the front of the property revealed that generally where the resource can be seen, it can be seen in conjunction with the project area.

As the project area is immediately adjacent to the resource and the project area can be seen from vantage points around and within the property, project improvements may also be expected to be visible. However, screening may be provided by supplemental landscape buffering proposed as part of the project. While this resource was determined potentially eligible for listing in the NRHP for its architecture, its setting is not considered a primary aspect of its eligibility, however, is still an important feature of its rural character. As the project may introduce new and incompatible features into the viewshed of and from the resource, the Foxglove Solar project has the potential to pose a *moderate impact* on Valerie Hill.



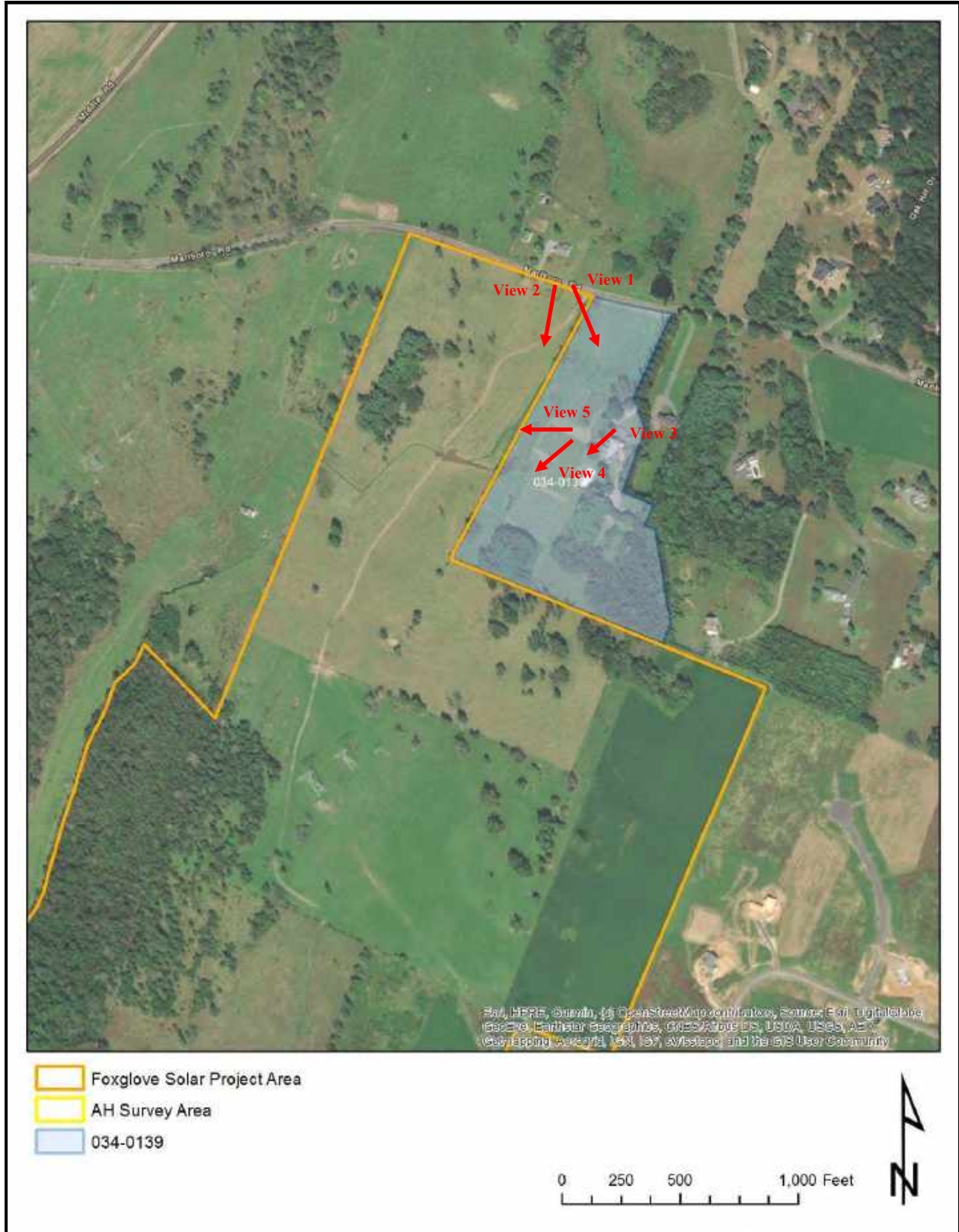


Figure 8-131: Location of Valerie Hill in relation to the project area showing direction of representative and viewshed photos.



Figure 8-132: View 1- View of the Valerie Hill setting from Marlboro Road, facing southeast.

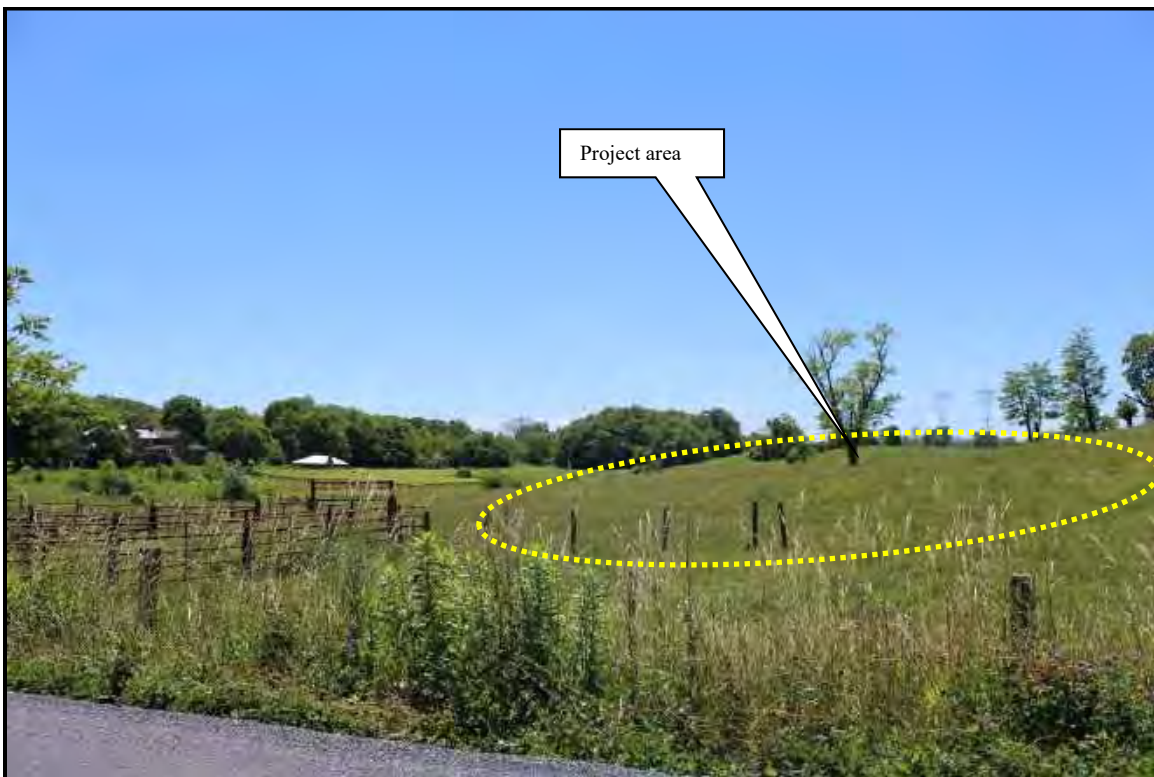


Figure 8-133: View 2- View of Valerie Hill in relation to the project area, facing south.



**Figure 8-134:** View 3- View from the Valerie Hill front lawn towards the project area (partially visible through vegetation), facing southwest.



**Figure 8-135:** View 4- View from the Valerie Hill side yard towards the project area (mostly visible), facing southwest.



**Figure 8-136: View 5- View from Valerie Hill lawn towards the project area (mostly visible), facing west.**

**VDHR# 034-0140**  
**Buffalo Marsh, 697 Clark Road**



This single dwelling was built in 1827 according to local records and exhibits a Federal style. The two-story building has a five-bay, double-pile main block with a central two-story rear wing. The stone structural system is coursed and rests on a continuous stone foundation. It is topped by a side-gabled roof covered with standing seam metal that is pierced by interior end chimneys at each end of the ridge. The main entrance is set centrally on the front and is sheltered by a partial-width one-story porch. Fenestration consists of six-over-six double-hung sash windows as well as four-light casement windows. The building is ornamented with stone jackarches and a porch that appears to be a late-nineteenth century addition.

This dwelling is located on the north side of Clark Road on a small rural property. The building sits near the road on a mostly grassy yard with shade trees and some ornamental landscaping scattered throughout. The home is oriented sideways to the road, facing downhill towards a creek to the east. A short gravel driveway and parking pad is set to the side of the house immediately off the road. Several outbuildings, including a historic school and chicken coop and nonhistoric shed are set in the yard to the rear of the house. The property is bordered by pasture and another farm complex to the rear.

This property is a good example of an intact early-nineteenth century rural manor house with unusual stone construction. The home has been renovated, but continues to convey much of its historic character and materials. As such, the building was determined eligible for listing in the NRHP by the VDHR in 1993. At this time, the building continues to retain similar integrity as at that time, and as such, it continues to be considered *eligible for listing in the NRHP*.

As a *potentially NRHP-eligible* resource, an assessment was conducted to determine whether the project may pose any impacts to its eligibility. Improvements related to the Foxglove Solar project

are proposed to take place within the landscape to the east of the Buffalo Marsh property. The property is roughly 0.27 mile away from the project area at its nearest point, although the house is set centrally within the property and 0.31-miles away. The landscape surrounding the home, and between it and the project area is generally characterized by rolling pasture and a thickly wooded area.

To assess whether the project or any associated components may pose an impact to the resource, a viewshed assessment was conducted. Inspection was performed and photographs taken from the public right-of-way in front of the house to document existing setting, visibility, and lines of sight (Figures 8-137 through 8-142).

This assessment found that the historic rural landscape around the resource is relatively intact. The home rests within a manicured lawn atop a slight knoll with a variety of trees and landscaping scattered throughout the yard. Rolling open pasture borders the property with a wooded area across a small creek running in front of the house. Inspection from the road adjacent to the property revealed that the rolling terrain and vegetation within the property mostly screen views in the direction of the project area. Inspection from beyond the wooded homesite revealed unobstructed views across the bordering pastureland, however, a thick wooded area bordering the property inhibits views of the project area beyond.

As the project area is completely screened from view from public vantage points along the road in front of the property and in the general vicinity, there is not anticipated to be any visibility of project improvements. Further screening may be provided by supplemental landscape buffering proposed as part of the project. Therefore the project is not anticipated to introduce any substantially new or incompatible features into the viewshed from the property. As such, the Foxglove Solar project is recommended to pose no more than a *minimal impact* on Buffalo Marsh.





Figure 8-138: View 1- View of the Buffalo Marsh setting from Clark Road, facing west.



Figure 8-139: View 2- View from the Buffalo Marsh homesite towards the project area (not visible beyond wooded area), facing northeast.

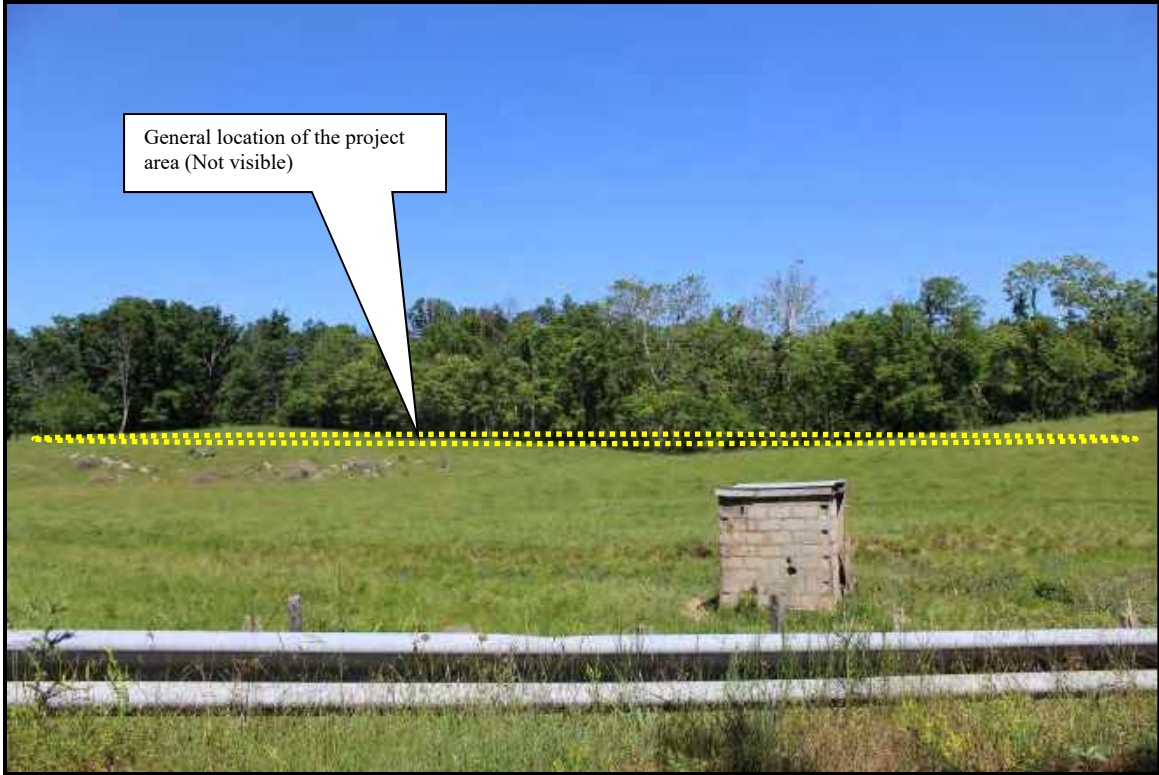




**Figure 8-140: View 3- View from the Buffalo Marsh building complex towards the project area (not visible through development and vegetation), facing northeast.**



**Figure 8-141: View 4- View from Buffalo Marsh towards the project area (not visible through vegetation), facing north.**



**Figure 8-142: View 5- View from road near Buffalo Marsh towards the project area (not visible), facing north.**

**VDHR# 034-0220****John Chumley House, 231 Vauclose Springs Road**

This single dwelling was built circa 1820 according to previous study and exhibits a Vernacular design. The home was relocated to its current site and rebuilt in 1963. The one-and-a-half-story building has a compound form created by multiple additions to all sides of the main block. The wood frame structural system is clad with weatherboard and rests on an obscured foundation. It is topped by a gable roof covered with standing seam metal that is pierced by gabled window dormers. The main entrance is offset on the north end of the building and is sheltered by a small portico. Fenestration consists of eight-over-eight double-hung sash windows. The building is moderately embellished.

This dwelling is located on the west side of Vauclose Springs Road on a large rural property. The building rests on an elevated knoll within a grassy yard enclosed by a post and rail fence. It is approached by a paved driveway that terminates at a large parking area to the side of the house and a projecting addition. Surrounding the building and immediate yardscape are a variety of additional guest cottages, outbuildings, a former mill, and the large Vauclose manor house that together comprise the Inn at Vauclose.

This property is an early-nineteenth century dwelling that was relocated to its current site in 1963. The building is now located on the Vauclose property which originally contained a late-eighteenth century dwelling and a mill. In 1963, the property was owned by artist John Chumley who moved this dwelling and several other cottages to the property to create a large bed and breakfast complex. The Vauclose property has been determined eligible by the VDHR for its architecture and history, and although this building is located within the complex, it is considered noncontributing because it was nonhistorically relocated there. On its own, however, this building was considered potentially eligible for listing in the NRHP by the VDHR in 1996 for distinctive architecture, despite its relocation. At this time, the building appears to have been further renovated, and enlarged, further obscuring its historic form and character. Coupled with its already compromised integrity from relocation, the building is now considered *not eligible* for listing in the NRHP individually or as part of the Vauclose property.

**VDHR# 034-0232**  
**House, 1595 Hites Road**



This single dwelling was built in 1911 according to local records and exhibits no discernable style. The two-story building has a three-bay main block with a large full-width addition to the rear and an additional one-story offset addition beyond that. The wood frame structural system is clad with vinyl siding and rests on an obscured foundation. It is topped by a side-gable roof covered with asphalt shingles. The main entrance is set centrally on the front and is sheltered by a full-width hipped roof porch. Fenestration consists of one-over-one double-hung sash windows. The building is minimally embellished with window shutters and Doric porch columns.

This dwelling is located on the north side of Hites Road on a small rural lot. The building sits near the road on a grassy yard lined by trees and some landscaping. Because the property is set at a sharp turn in the road, the front of the yard is lined by concrete barriers. A gravel driveway extends off the road around the side of the house. It continues past the house towards an outbuilding set at the back of the deep backyard that could not be seen from public ROW.

This property is an example of a typical early-twentieth century rural dwelling in the region. The house reflects no discernable style and has little architectural distinction. A single outbuilding on the property could not be seen for inspection. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0233**  
**House, 1561 Hites Road**



This single dwelling was built in 1910 according to local records and exhibits no discernable style. The two-story building has a three-bay form. The wood frame structural system is clad with weatherboard and rests on an obscured foundation. It is topped by a side-gable, saltbox roof covered with standing seam metal that is pierced on the front slope by an exterior end concrete block chimney. The main entrance is set centrally on the front and is sheltered by a full-width hipped roof porch. Fenestration consists of two-over-two and six-over-six double-hung sash windows. The building is minimally embellished with gabled window lintels and Doric porch columns.

This dwelling is located on the north side of Hites Road on a small rural lot. The building sits near the road on a grassy yard with trees scattered throughout the front. A gravel driveway extends past the side of the house to a nonhistoric storage shed set along a treeline to the rear. Open grassy fields border the house to both sides with a wooded area to the rear.

This property is an example of a typical early-twentieth century rural dwelling in the region. The house reflects no discernable style and has little architectural distinction. A single nonhistoric outbuilding is set to the rear of the house. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0234**  
**House, Hites Road**



This single dwelling appears to have been built circa 1900 according to site inspection and exhibits a Folk Victorian style. The two-story building has an I-house main block with an offset one-story rear ell. The wood frame structural system is clad with aluminum siding and rests on a continuous brick foundation. It is topped by a side-gable roof covered with standing seam metal that is pierced on the front slope by an exterior end concrete block chimney. The main entrance is set centrally on the front and is sheltered by a full-width hipped roof porch. Fenestration consists of one-over-one double-hung sash windows. The building is embellished with boxed roof cornices and gable returns, turned porch posts with spindlework, and an entry transom.

This dwelling is located on the west side of Hites Road on a small rural lot. The building sits near the road on a grassy yard with shade trees and other landscaping scattered around the home. A circular gravel driveway extends past the side of the house and creates a loop around an open grassy area to the side. Bordering the driveway are a mid-twentieth century equipment storage/pole barn and a concrete block cistern. An older vehicle shed is set in the backyard to the rear of the house. The building complex is bordered to the sides and rear by large agricultural fields.

This property is an example of a typical early-twentieth century rural dwelling in the region. The house reflects a subdued Folk Victorian style with little architectural distinction. A small collection of typical early to mid-twentieth century outbuildings are scattered around the home. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0235**  
**House, 1282 Hites Road**



This single dwelling appears to have been built circa 1900 according to site inspection and exhibits a Folk Victorian style. The two-story building has an I-house main block with a central rear wing and a one-story ell attached to the side. The wood frame structural system is clad with vinyl siding and rests on a continuous concrete foundation. It is topped by a side-gable roof covered with standing seam metal that is pierced on the ridge of the rear wing by an interior end chimney. The main entrance is set centrally on the front and is sheltered by a partial-width porch. Fenestration consists of one-over-one double-hung sash windows. The building is embellished with porch trim including exposed rafter tails and scalloped brackets.

This dwelling is located on the west side of Hites Road on a small rural property. The building sits near the road on a raised grassy yard with shade trees and other vegetation along the berm to the front. A post and rail fence extends along the top of the berm, enclosing the front yard. A gravel driveway extends from the road to a parking area along the side of the house. Set at the end of the driveway are two nonhistoric storage sheds. Bordering the homesite to the sides and rear are agricultural fields.

This property is an example of a typical early-twentieth century rural dwelling in the region. Previous survey suggests it may have originally been a tenant house to the Western View property that is now located within a suburban development to the south. The house reflects a subdued Folk Victorian style as applied to an I-house with little architectural distinction. Two nonhistoric storage sheds are set in proximity to the home. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0236**

**Western View Farm, 210 Westernview Drive**



This single dwelling was built in 1830 according to local records and exhibits a transitional Greek Revival style. The two-story building has a three-bay, double-pile main block with a full-width one-story rear wing. The wood frame structural system is clad with weatherboard and rests on a continuous stone foundation. It is topped by a hipped roof covered with standing seam metal that is pierced by a pair of interior chimneys on the rear slope. The main entrance is set centrally on the front and is sheltered by a partial-width portico. Fenestration consists of nine-over-six double-hung sash windows. The building is embellished with boxed and molded cornices, window shutters, and a pedimented portico with paired Doric columns.

This dwelling is located on the north side of Westernview Drive on a small rural property. The building sits back from the road on a large grassy homesite with trees and landscaping scattered throughout. The home rests upon a raised knoll with an open grassy front lawn enclosed by a post and rail fence along the road. A gravel driveway extends from the road and makes a loop to the side of the house. Set across the driveway near the road is a large historic bank barn with a small enclosed pasture to the downhill side. Behind the barn along the driveway is a twentieth century equipment shed. Set at the end of the driveway loop to the rear of the house is a small tenant house. A previously recorded spring house on the property could not be seen at this time. Bordering the property to both sides are suburban residential lots with modern dwellings, and to the rear is a large agricultural field.

This property is an example of a typical early- to mid-nineteenth century plantation dwelling in the region. The house reflects a Vernacular form with subtle Greek Revival influences. The property also includes a historic bank barn and tenant house in addition to a later shed. Much of the associated property appears to recently have been subdivided and sold as residential lots. Overall, the property does not embody distinctive characteristics or possess significant or unique



architectural or design features and the historic setting has been compromised by modern development. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

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**VDHR# 034-0238**

**Epworth United Methodist Church, 1031 Hites Road**



This church was built circa 1875 according to previous study and exhibits no discernable style. The one-story building has a rectangular form. The wood frame structural system is clad with weatherboard and rests on a continuous stone foundation. It is topped by a front-gable roof covered with standing seam metal. The main entrance is set centrally on the front and is sheltered by a partial-width gabled portico. Fenestration consists of six-over-six double-hung sash windows. The building is modest and simply embellished with window shutters and Doric porch columns which appear to be a later addition.

This church is located on the east side of Hites Road on a small rural lot. The building sits near the road on a grassy yard with large trees scattered throughout. The remains of a gravel driveway extend from the road around the side of the building to a small parking area to the rear. Set behind the building, along the driveway is a twentieth century concrete block storage shed.

This property is an example of a typical late-nineteenth or early-twentieth century rural church in the region. The building reflects no discernable style with little architectural distinction. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0239**  
**House, 1181 Clark Road**



This single dwelling was built circa 1870 according to previous study and exhibits a Vernacular design. The two-story building has an I-house main block with a central two story rear wing and a large modern one-story addition to the side. The wood frame structural system is clad with vinyl siding and rests on a continuous stone foundation. It is topped by a side-gable roof covered with standing seam metal pierced on the ridge by a central interior brick chimney. The main entrance is set centrally on the front and is sheltered by a full-width one-story porch. Fenestration consists of six-over-six double-hung sash windows. The building is simply embellished with boxed cornices, window shutters, and Doric porch columns.

This dwelling is located on the west side of Hites Road at the intersection with Clark Road on a small rural lot. The building sits near the road on a grassy yard with large trees and landscaping scattered throughout, and faces Hites Road. A driveway extends from Clark Road to the rear of the house. Set behind the house, across the driveway, is a twentieth century, two-car garage. To the side of the garage is an early-twentieth barn. The back yard is enclosed by a picket fence.

This property is an example of a typical late-nineteenth rural dwelling in the region. The building reflects a Vernacular form with little architectural distinction. It includes a typical small collection of domestic outbuildings. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0240**  
**House, 986 Clark Road**



This single dwelling was built in 1927 according to local records and exhibits a Vernacular design with subtle Craftsman influences. The two-story building has a rectangular main block with a full-width one-story rear ell. The wood frame structural system is clad with vinyl siding and rests on an obscured foundation. It is topped by a hipped roof with central cross gable covered with standing seam metal that is pierced by interior brick chimneys on the side slopes. The main entrance is offset on the front and is sheltered by a full-width one-story porch. Fenestration consists of one-over-one double-hung sash windows. The building is simply embellished with boxed cornices and a plain frieze, a large front dormer, and turned porch posts.

This dwelling is located on the south side of Clark Road on a large rural property. The building sits back from the road on a grassy yard with large trees and landscaping scattered throughout. A thick treeline extends along the front of the property, partially screening it from the road. A gravel driveway extends past the side of the house to a parking area to the rear. Aerial photography reveals several outbuildings set in the backyard behind the house as well as a large garden area, however, these could not be seen at the time of this survey. Beyond the homesite and building complex, the rest of the property is wooded.

This property is an example of a typical early-twentieth rural dwelling and farm in the region. The building reflects a Vernacular form with subtle Craftsman influences. Several previously recorded outbuildings behind the house could not be seen at the time of survey. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0241**  
**House, 943 Clark Road**



This single dwelling was built in 1901 according to local records and exhibits a Folk Victorian style. The building appears to have been vacant for an extended period and remains in poor condition. The two-story building has an L-shaped form with a one-story ell along the rear wing. The wood frame structural system is clad with weatherboard and rests on an obscured foundation. It is topped by a side-gable roof with central cross gable covered with standing seam metal that is pierced by a pair of interior brick chimneys on the ridge, although one has mostly collapsed. The main entrance is set centrally on the front and is sheltered by a full-width one-story porch. Fenestration consists of two-over-two double-hung sash windows. The building is embellished with boxed cornices and a plain frieze, gable returns, an entry transom, and turned porch posts with scalloped brackets.

This dwelling is located on the north side of Clark Road on a large rural property. The building sits back from the road atop a slight knoll on a grassy homesite. There are several large shade trees in the front yard. A gravel driveway leads to the side of the house where a mid-twentieth century storage shed is located. Set in the backyard behind the house is a nonhistoric trailer home. Located across the driveway to the front of the house is a large, modern pole barn. Surrounding the homesite and occupying the rest of the large property are rows of apple orchard.

This property is an example of a typical early-twentieth rural dwelling and farm in the region. The building reflects a Vernacular form with subtle Folk Victorian influences. The only historic outbuilding associated with the house is a small, later storage shed. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The building is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0243**  
**House, 245 Buffalo Marsh Road**



This single dwelling was built circa 1880 according to previous study and exhibits a Vernacular design. The two-story building has an I-house main block with a one-story wraparound addition to the side and rear. The wood frame structural system is clad with weatherboard and rests on a continuous concrete foundation. It is topped by a side-gable roof covered with standing seam metal that is pierced by a pair of interior brick chimneys on the ridge. The main entrance on the front of the house could not be seen at the time of this survey. Fenestration consists of two-over-two double-hung sash windows. The building is embellished with boxed and molded cornices with gable returns and a plain frieze.

This dwelling is located on the east side of Buffalo Marsh Road on a large rural property. The building sits back from the road atop a high ridge on a grassy homesite with trees and vegetation scattered around it. The home is oriented sideways to the road and faces south. A gravel driveway leads uphill to the homesite and makes a loop to the rear of the house. Two small domestic outbuildings are set along the driveway to the rear of the house. Across the driveway within a flat grassy area is the agricultural complex. It includes a large nineteenth century bankbarn, as well as assorted smaller twentieth century barns and sheds. A post and rail fence enclosed the complex. Surrounding the agricultural complex is large open pasture. To the front of the house is a large orchard.

This property is an example of a typical late-nineteenth rural dwelling and farm in the region. The building reflects a Vernacular form with little architectural distinction. The property includes a complex of nineteenth and twentieth century barns and sheds, including a large bank barn. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0254**  
**Miller House, Marlboro Road**



This single dwelling was previously recorded as a circa 1830 structure. When previously recorded in 1989, all that remained was a brick chimney. Inspection at this time did not observe the chimney which is assumed to have collapsed or been demolished.

This former dwelling was located on a large property on the south side of Marlboro Road. It was set far back from the along a gravel farm lane within a copse of trees at the edge of a field. At present, the site is overgrown. Of the previously recorded outbuildings, only the remains of a collapsed gable roof were seen at the time of this survey.

As this resource has been demolished and no longer remains evident, it is considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-0263**  
**House, 782 Hites Road**



This single dwelling was built in 1900 according to local records and exhibits a Vernacular design. The two-story building has an L-shaped form with an offset rear wing. The wood frame structural system is clad with vinyl siding and rests on a continuous stone foundation. It is topped by a side-gable roof covered with standing seam metal that is pierced by an interior end brick chimney on the ridge. The main entrance is set centrally on the front and is sheltered by a full-width one-story porch. Fenestration consists of six-over-six double-hung sash windows. The building is embellished with boxed and molded cornices, gable returns, and window shutters.

This dwelling is located on the west side of Hites Road on a small rural property. The building sits near the road atop a slight berm on a grassy homesite. There are several large shade trees scattered throughout the yard. A gravel driveway leads past the side of the house to a complex of outbuildings set to the rear. Outbuildings include a twentieth century vehicle shed, two garages, and a modern storage shed. Bordering the building complex are agricultural fields and pasture.

This property is an example of a typical late-nineteenth/early-twentieth century rural dwelling in the region. The building reflects a Vernacular form with little architectural distinction. The property includes a complex of typical twentieth century domestic outbuildings. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. In 2009, the VDHR determined this resource to be not eligible, and at this time, it is still considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.



**VDHR# 034-0264**  
**Shiley Farm, 856 Hites Road**



This single dwelling was built circa 1870 according to previous study and exhibits a Free Classic style. The two-story building has an irregular form composed of an I-house main block with an offset two-story rear wing and a side wing attached to that. The wood frame structural system is clad with weatherboard and rests on a continuous stone foundation. It is topped by a side-gable roof covered with standing seam metal that is pierced by a pair of central interior brick chimneys on the ridge. The main entrance is set centrally on the front and is sheltered by a full-width one-story porch. Fenestration consists of two-over-two double-hung sash windows. The building is ornamented with boxed cornices, gable returns, an entry transom, and Doric porch columns.

This dwelling is located on the west side of Hites Road on a small rural property. The building sits near the road on grassy yard with shade trees and landscaping throughout. The front yard is enclosed by a stone wall with a metal fence above, along the road. A gravel driveway extends past the side of the house and makes a loop in front of a historic garage and barn in the backyard. Behind the garage and barn is a large agricultural field. Set in a treeline to the opposite side of the house from the driveway is a small nonhistoric shed.

This property is an example of a typical mid- to late-nineteenth century rural dwelling and farm in the region. The home reflects an I-house form with subtle Victorian Free Classic influences, mostly limited to the porch. It includes a small collection of typical rural outbuildings, including a nineteenth century barn. Overall, the property retains good historical integrity and architecture, and was therefore deemed potentially eligible for listing in the NRHP by the VDHR in 2009. At this time, the home and outbuildings appear to retain similar integrity as at that time and as such, D+A recommends it continue to be considered *potentially eligible for listing in the NRHP*.

As a *potentially NRHP-eligible* resource, an assessment was conducted to determine whether the project may pose any impacts to its eligibility. Improvements related to the Foxglove Solar project are proposed to take place within the landscape to the east and west of the Shiley Farm property. The property is set immediately adjacent to the project area along the rear and across the street from it to the front. The landscape surrounding the home, and between it and the project area is generally characterized by rolling terrain currently under agriculture.

To assess whether the project or any associated components may pose an impact to the resource, a viewshed assessment was conducted. Inspection was performed and photographs taken from the public right-of-way in front of the house as well as throughout the property to document existing setting, visibility, and lines of sight (Figures 8-143 through 8-148).

This assessment found that the historic rural landscape around the resource is intact although it is flanked by nonhistoric homes set on small lots. The dwelling rests atop a slight knoll on a lushly landscaped yard. The house is set centrally within a grassy yard with ornamental landscaping scattered through the front yard and a line of trees along the rear. A thicker copse of trees occupies the south side of the property. Inspection from the road in front of the property revealed unobstructed views of the project area across the street, however the ridge atop which the home rests and extends parallel to the road screens visibility of the portion of the project area behind the house. Inspection from the driveway bordering the edge of the property revealed visibility of the project area both to the front and rear of the house.

As the project area is immediately adjacent to the rear of the resource and across the road to the front, it is visible from public ROW in front of the property as well as within the property and project improvements may also be expected to be visible. Some screening may be provided by supplemental landscape buffering proposed as part of the project. While this resource was determined potentially eligible for listing in the NRHP for its architecture, its setting is not considered a primary aspect of its eligibility, however, is still an important feature of its rural character. As the project may introduce new and incompatible features into the viewshed of and from the resource, the Foxglove Solar project has the potential to pose a *moderate impact* on Shiley Farm.



Figure 8-143: Location of Shiley Farm in relation to the project area showing direction of representative and viewshed photos.



Figure 8-144: View 1- View of the Shiley Farm setting from Hites Road, facing southwest.



Figure 8-145: View 2- View from Shiley Farm towards the project area (visible across street), facing southeast.

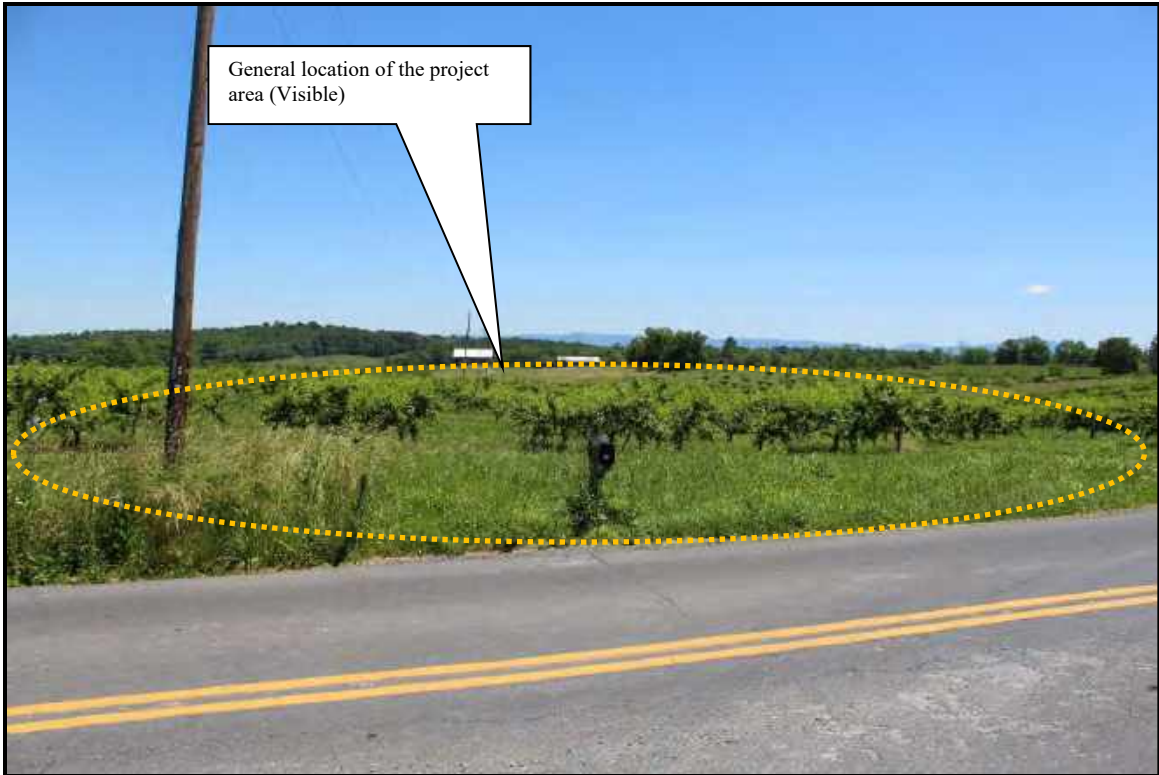
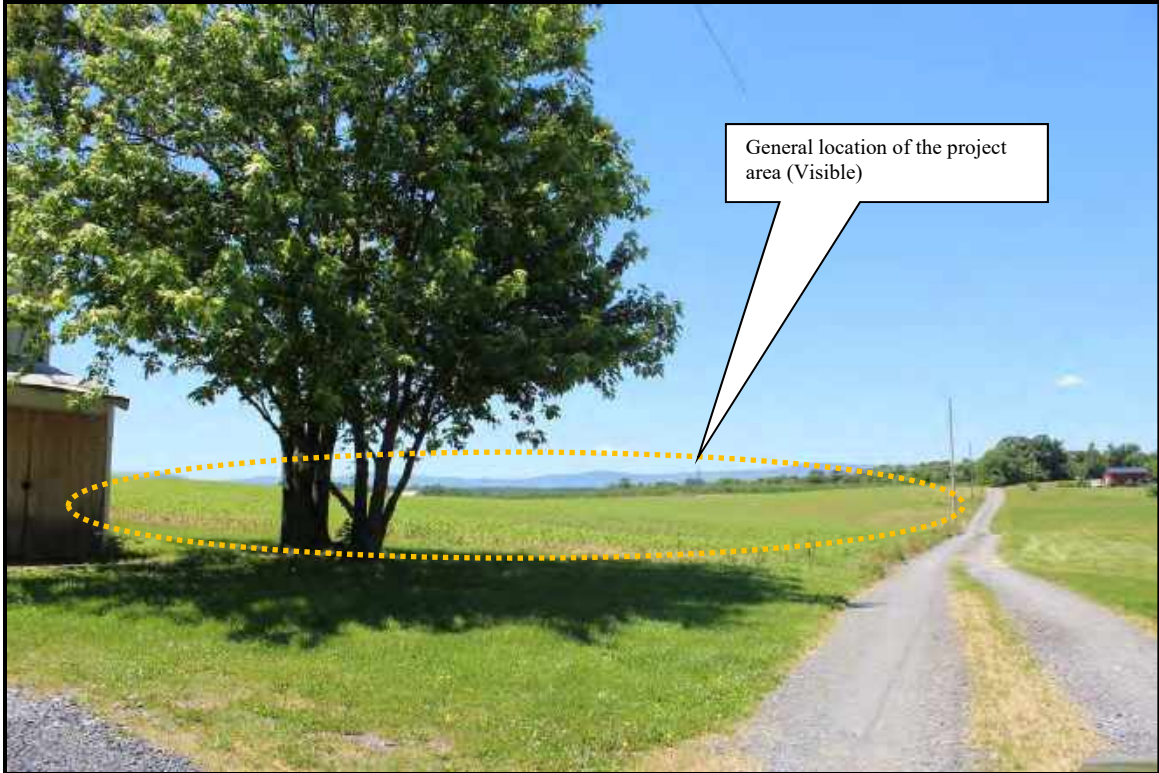


Figure 8-146: View 3- View from Shiley Farm towards the project area (Visible across street), facing east.



Figure 8-147: View 4- View from Shiley Farm towards the project area (screened by topography), facing west.



**Figure 8-148: View 5- View from Shiley Farm driveway towards the project area (Visible), facing west.**

**VDHR# 034-0269**  
**House, 660 Clark Road**



This single dwelling was built in 1891 according to local records and exhibits a Folk Victorian style. The two-story building has an I-house front block with an offset rear wing. The wood frame structural system is clad with weatherboard and rests on an obscured foundation. It is topped by a side-gable roof covered with standing seam metal that is pierced by a pair of central interior brick chimneys on the ridge. The main entrance is set centrally on the front and is sheltered by a full-width one-story porch. Fenestration consists of two-over-two double-hung sash windows. The building is embellished with boxed and molded cornices, gable returns, window shutters, and scrollwork brackets on the porch.

This dwelling is located on the south side of Clark Road on a large rural property. The building sits back from the road on an overgrown homesite. The home rests atop a slight knoll on a grassy yard. It is approached by a long gravel driveway that ends in front of the house. Set within the yard to the rear of the house are two small sheds. Set along the driveway closer to the road are a large historic bank barn and a twentieth century shed and pole barn. Beyond the building complex, the property is a mix of wooded area and treelines interspersed with open pasture.

This property is an example of a typical late-nineteenth century rural dwelling and farm in the region. The building reflects a Vernacular form with subtle Folk Victorian influences. It includes a small collection of typical rural barns and outbuildings. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR # 034-0303**  
**Cedar Creek Battlefield**



The Battle of Cedar Creek took place on October 19, 1864 following the Union army's return from Harrisonburg and the burning of the Valley. The battle resulted in nearly 3,000 killed, wounded and captured Confederates while the Union saw almost 5,700 losses. The battlefield as drawn in V-CRIS encompasses nearly 31 square miles in Frederick, Warren, and Shenandoah counties. Just southwest of Middletown is the Cedar Creek and Belle Grove National Historical Park. Here the Cedar Creek Battlefield and Belle Grove were listed on the NRHP and NHL in 1969.

As mapped, the battlefield skirts southern boundaries of the project area and encompasses a large portion of the half mile survey area to its south. The battlefield in this vicinity consists of a mix of privately owned land of fields and small areas of woodland with very light early and modern development along the transportation corridors. Hites Road, Westernview Drive, Klines Mill Road, and Darterjo Drive cross the battlefield boundaries of survey area. Though Hites and Klines Mill roads are historic, Westernview and Darterjo drives are modern and it is along these roads that many of the nonhistoric homes are built in comparatively close proximity.

In 2009, VDHR determined the Cedar Creek Battlefield to be potentially eligible for listing in the NRHP. Given the few changes that have occurred on the landscape since that time, the battlefield should continue to be considered *potentially eligible* for listing in the NRHP.

As a *potentially NRHP-eligible* resource, an assessment was conducted to determine whether the project may pose any impacts to its eligibility. Improvements related to the Foxglove Solar project are proposed to take place within the landscape to the north of the battlefield. The battlefield immediately borders the southern edge of the project area and slightly overlaps it along Hites Road and Klines Mill Road. The landscape within the portion of the battlefield in the vicinity of the



project area is generally characterized by rolling terrain with a mix of open pasture and a patchwork of wooded area and treelines.

To assess whether the project or any associated components may pose an impact to the battlefield, a viewshed assessment was conducted. Inspection was performed and photographs taken from public right-of-way and vantage points throughout the battlefield to document existing setting, visibility, and lines of sight (Figures 8-149 through 8-164).

This assessment found that the portion of the battlefield within the survey area retains a moderate level of historical integrity. It remains mostly rural, although later homes and other development line the roads that cross through it, including a neighborhood of modern suburban dwellings set on small lots. All of the battlefield within the survey area is considered Study Area and National Register-eligible by the American Battlefield Protection Program (ABPP). A small portion of the Core Area also extends into the survey area, however, is 0.22-miles away from the project area at its nearest point.

Inspection from locations throughout the battlefield in the survey area revealed that in general, views towards the project area are short and intermittent, due to the rolling topography and numerous treelines that interrupt longer vistas. Because the battlefield shares boundaries with the project area along three major roads, these public thoroughfares do allow visibility of the project area, however, the views are generally through narrow windows between hills and wooded areas, and typically include later homes and development. Inspection from vantage points away from the roads bordering the project area, and further within the boundaries of the battlefield generally do not include the project area. The rolling topography and vegetation quickly screen views of the project area from further distances.

As such, the project may introduce a new component or features into the landscape visible from public ROW immediately bordering the project area, however, visibility quickly becomes screened by terrain and development. It is mostly screened from vantage points further from the project area, and where it can be seen, it is in conjunction with and behind nonhistoric homes and other development. Further screening may be provided by supplemental landscape buffering proposed as part of the project. Additionally, none of the battlefield Core Area is within or immediately adjacent to the project area, nor can the project area be seen from any portions of the Core Area. Therefore, the Foxglove Solar project is recommended to pose a *moderate impact* overall on the Cedar Creek Battlefield.



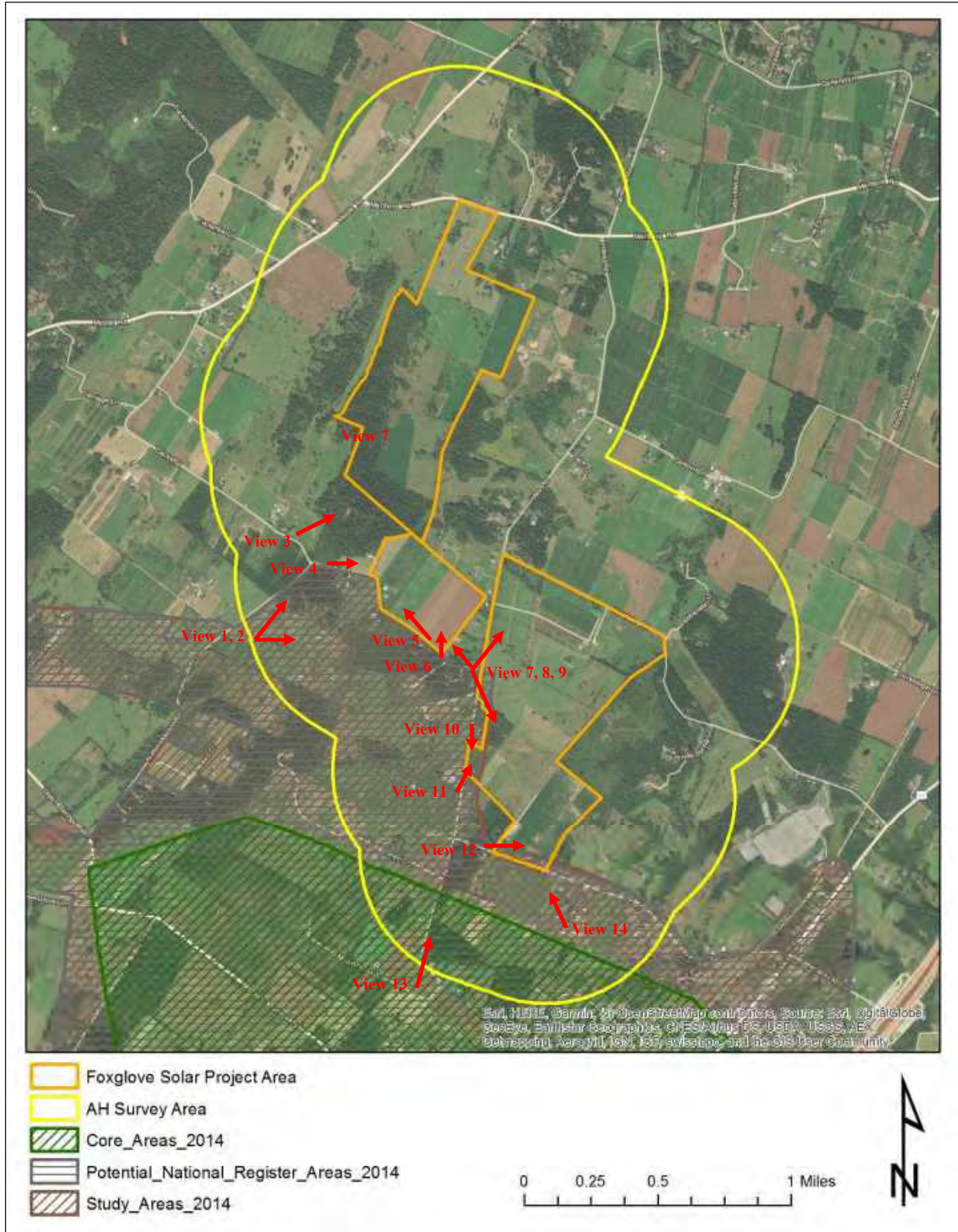
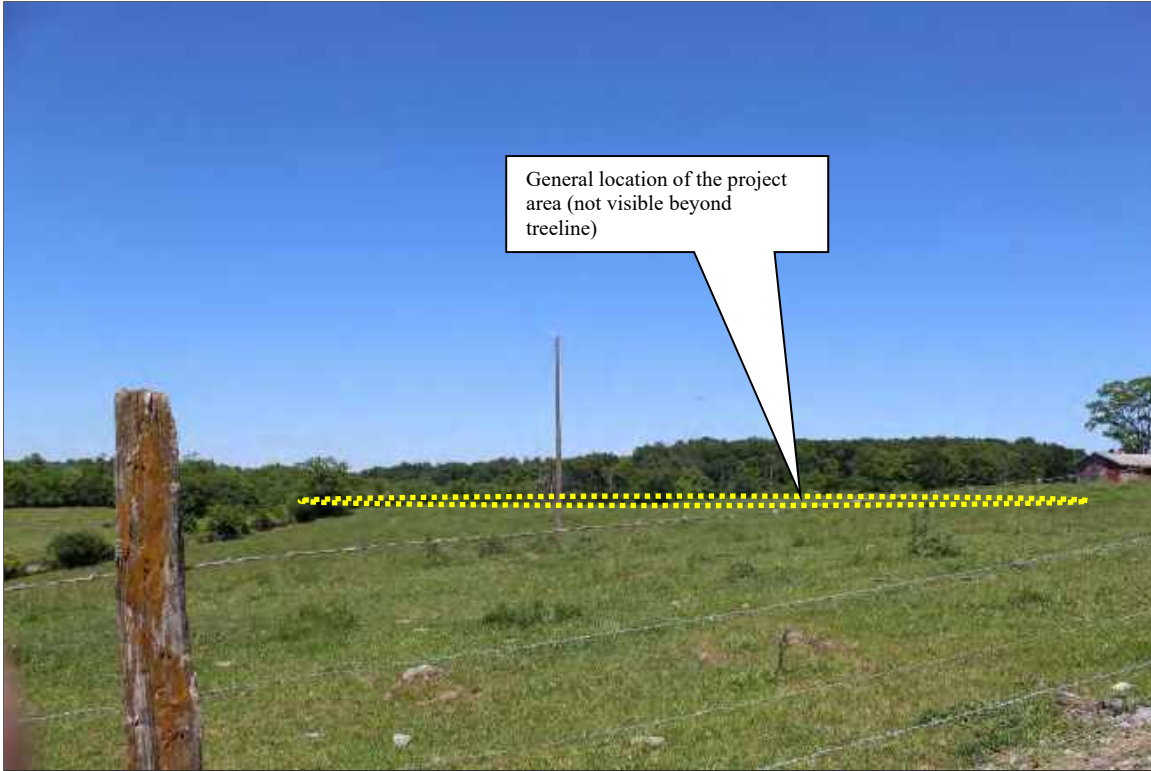


Figure 8-150: Detail of the battlefield tiers in relation to the project area with location and directions of viewshed photographs. Source: ABPP



**Figure 8-151: View 1- View from Buffalo Marsh Road towards the project area (not visible beyond treeline), facing north.**



**Figure 8-152: View 2- View from Buffalo Marsh Road towards the project area (not visible beyond ridge and treeline), facing east.**



**Figure 8-153: View 3- View from Clark Road at Buffalo Marsh Road towards the project area (not visible beyond ridge and treeline), facing east.**



**Figure 8-154: View 4- View from Clark Road towards the project area (not visible beyond ridge), facing east.**



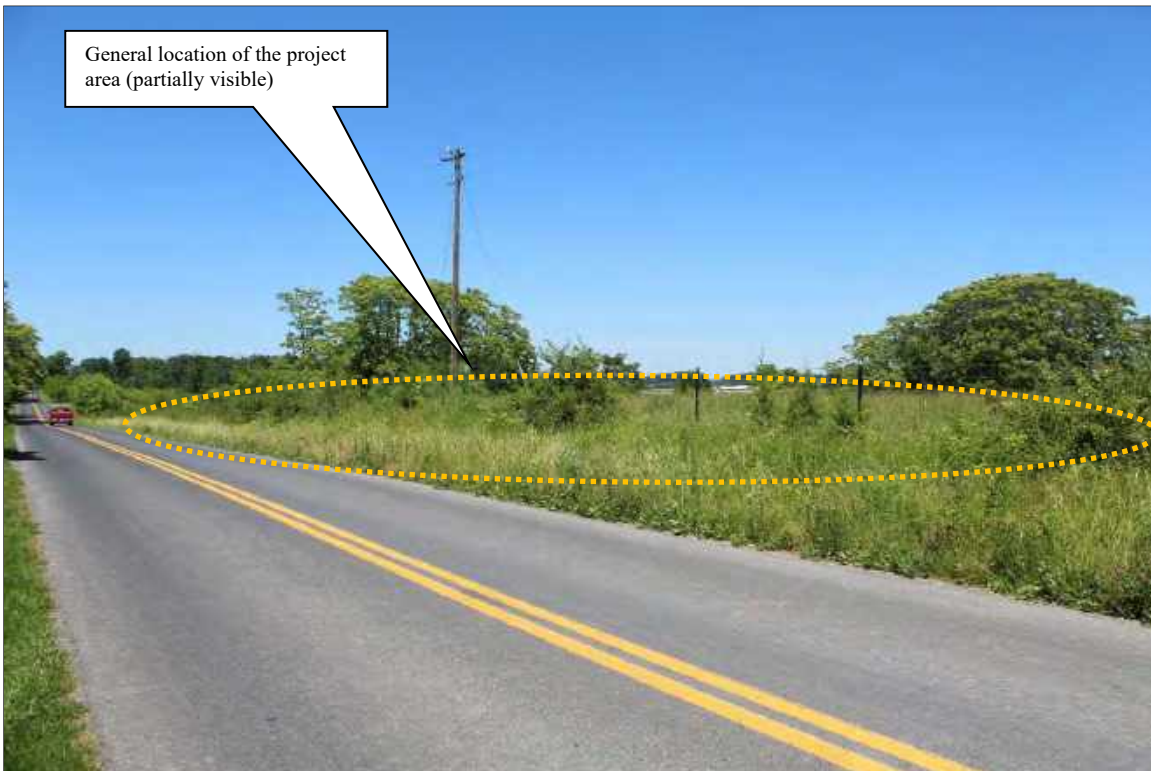
**Figure 8-155: View 5- View from Clark Road towards the project area (visible along road), facing west.**



**Figure 8-156: View 6- View from Clark Road towards the project area (partially visible along road), facing northwest.**



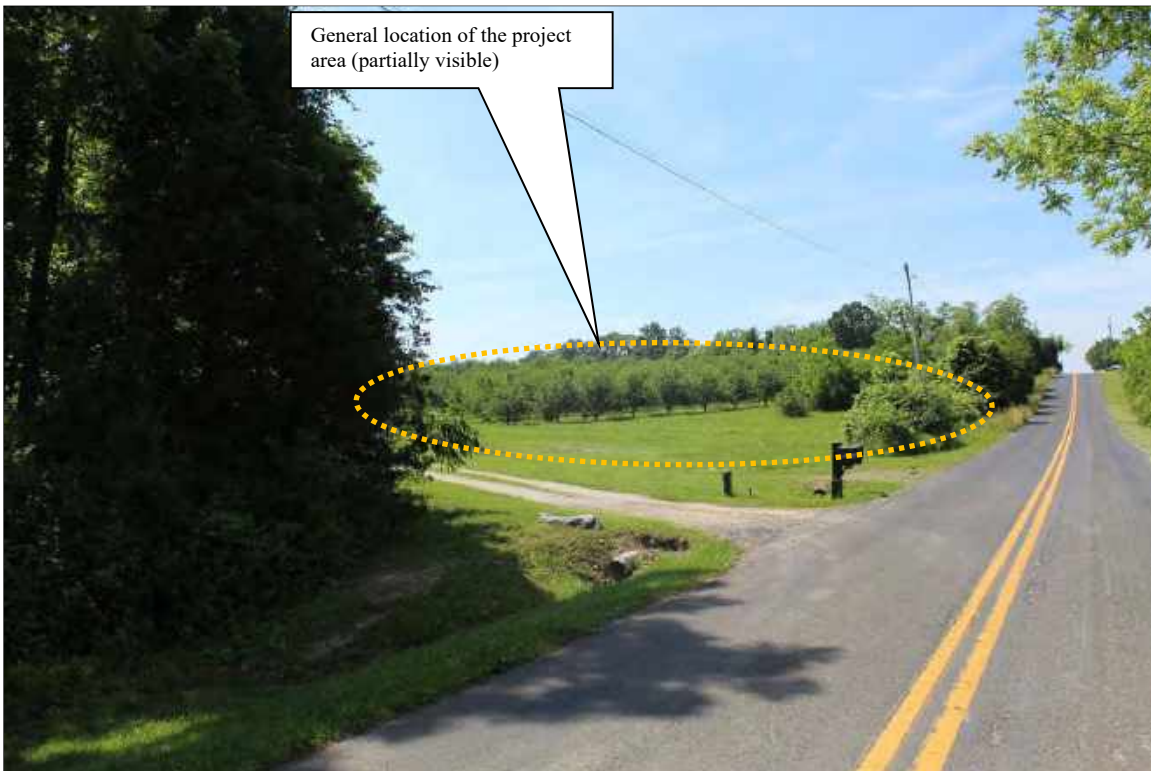
**Figure 8-157: View 7- View from Hites Road at Clark Road towards the project area (visible along road), facing southeast.**



**Figure 8-158: View 8- View from Hites Road at Clark Road towards the project area (partially visible beyond vegetation), facing northeast.**



**Figure 8-159: View 9- View from Hites Road at Clark Road towards the project area (partially visible beyond vegetation), facing northeast.**

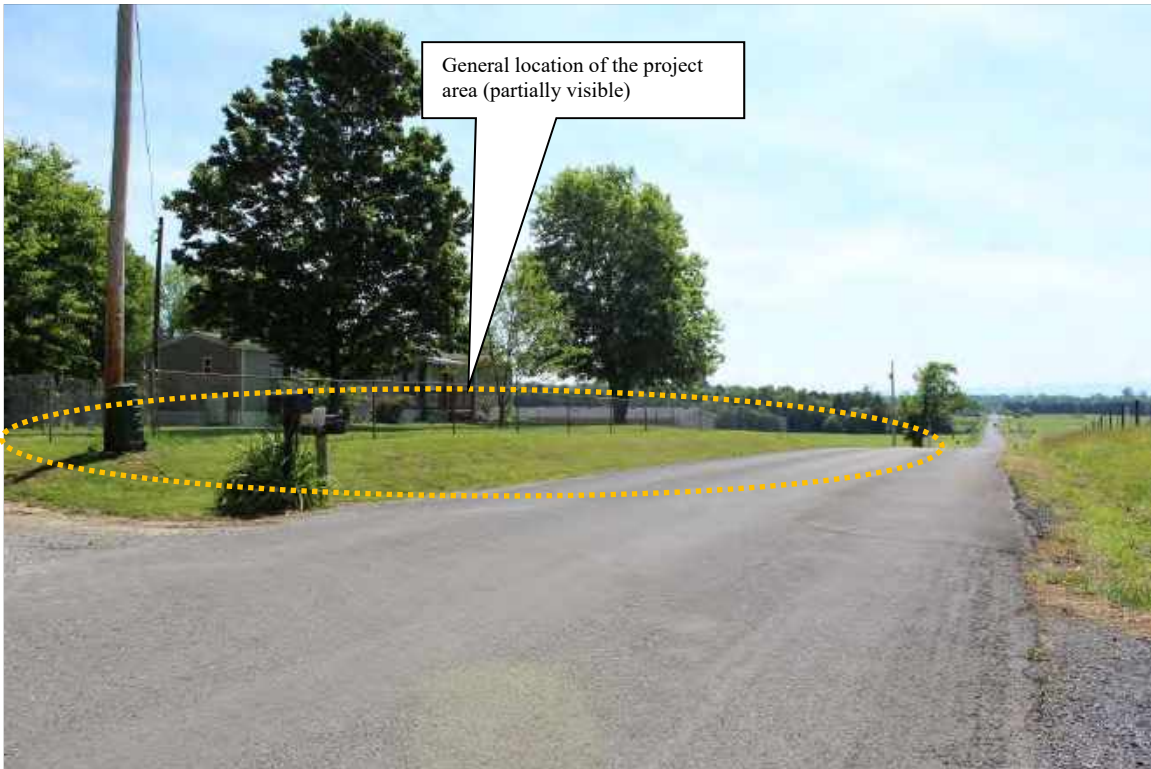


**Figure 8-160: View 10- View from Hites Road towards the project area (partially visible), facing south.**

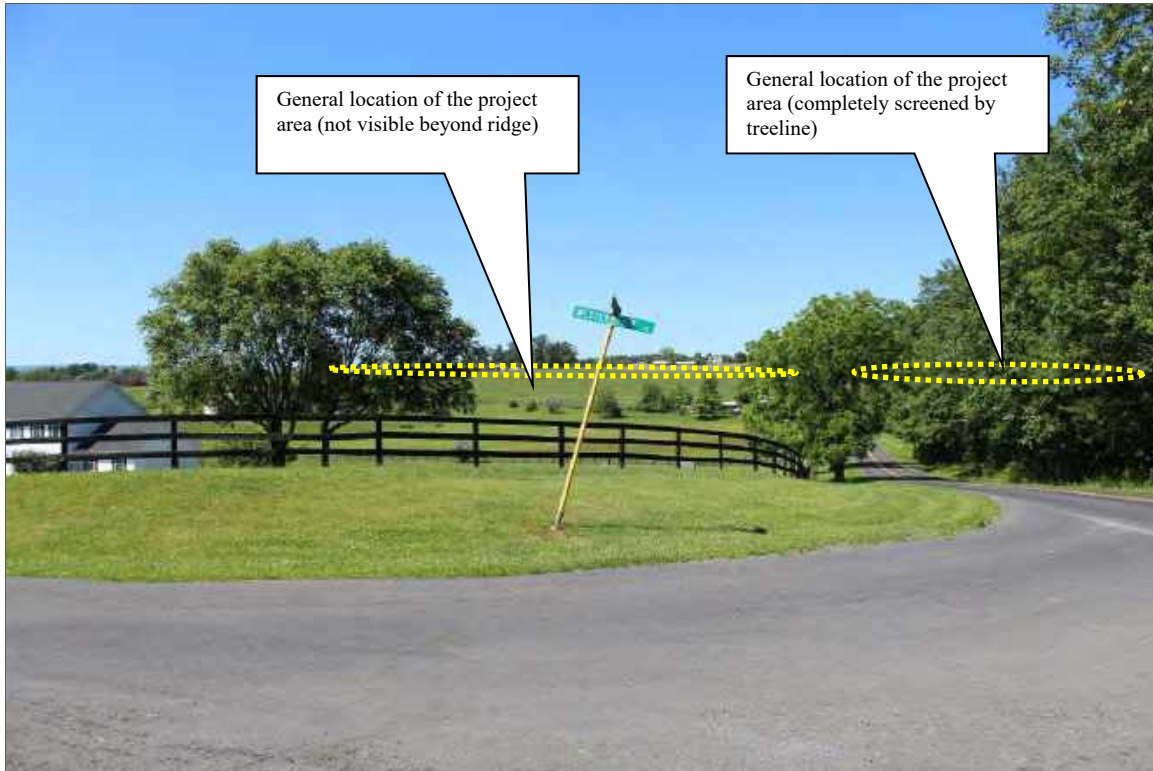




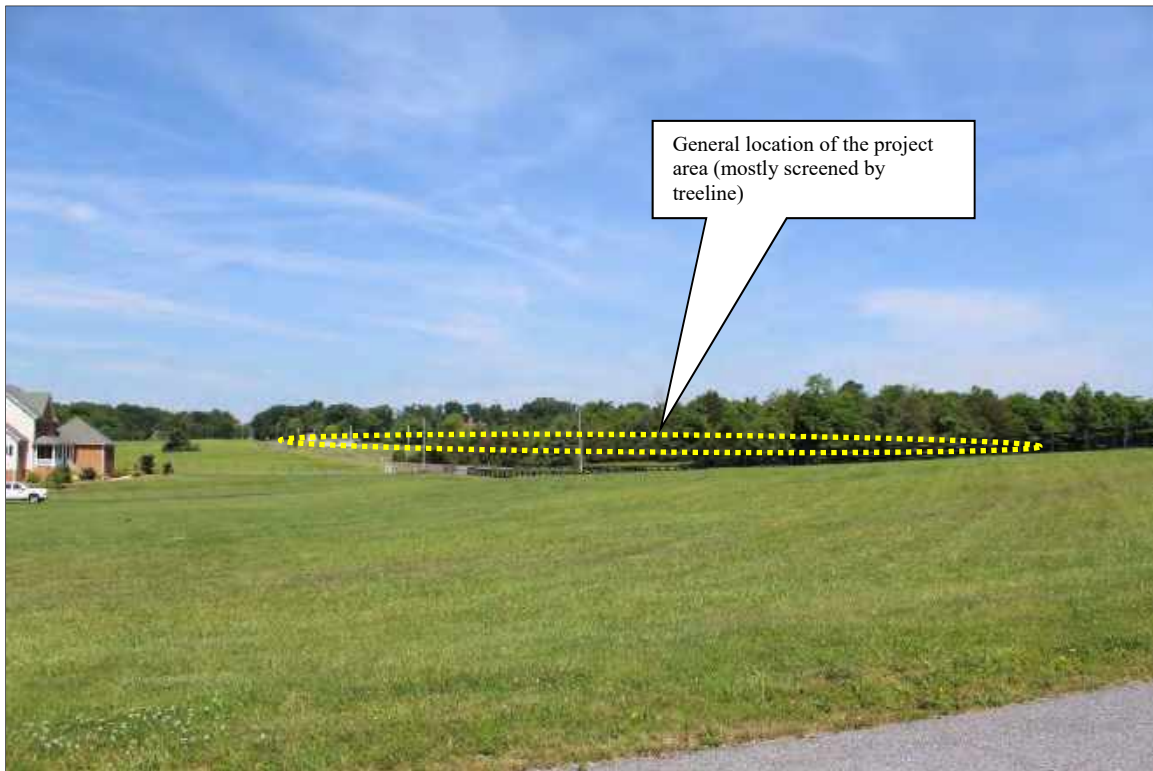
**Figure 8-161: View 11- View from Hites Road near Klines Mill Road towards the project area (partially visible), facing north.**



**Figure 8-162: View 12- View from Klines Mill Road towards the project area (mostly screened by vegetation), facing northeast.**



**Figure 8-163: View 13- View from Hites Road at Westernview Road towards the project area (not visible beyond ridge and treeline), facing north.**



**Figure 8-164: View 14- View from Klines Mill Road at Darterjo Road towards the project area (mostly screened by vegetation), facing northwest.**

**VDHR# 034-0428**  
**House, 478 Klines Mill Road**



This single dwelling was originally recorded as a circa 1830 Vernacular log structure. When resurveyed in 2008, it was found to have been demolished. At this time, inspection confirmed that no evidence of the building or associated features remain.

This dwelling was located on the north side of Klines Mill Road on a rural property. At this time, the site of the former dwelling has been cleared and a modern home is now set on the property.

This property was an example of a typical early-twentieth century Vernacular rural dwelling in the region. Since the home has since been demolished, and nothing of it remains, it is considered *not eligible* for listing in the NRHP individually or as part of a historic district.

**VDHR# 034-0429**  
**House, 718 Klines Mill Road**



This single dwelling was previously recorded as a circa 1800 log dwelling that remained in poor condition. Inspection at this time shows that the building has been demolished.

This dwelling was located on the north side of Klines Mill Road on a small rural property. The home has since been demolished and a modern trailer home is located on its former site. To the rear of the homesite, set along a gravel farm lane, are several remaining outbuildings, including a historic shed and barn, and a large nonhistoric pole barn.

This property was an example of late-eighteenth/early-nineteenth century Vernacular architecture in the region, however, because of its poor condition and integrity, was determined not eligible for listing in the NRHP by the VDHR in 2009. Since the home has since been demolished, and all that remains are several isolated barns and outbuildings set in conjunction with a modern trailer home, it is still considered *not eligible* for listing in the NRHP individually or as part of a historic district.

**VDHR# 034-1406**  
**House, 1512 Marlboro Road**



This single dwelling was previously recorded as a circa 1920 Vernacular dwelling with subtle Colonial Revival influences. Inspection at this time shows that the building has been demolished and no evidence remains on the site.

This dwelling was located on the north side of Marlboro Road on a small rural property. The home has since been demolished and cleared from the site. A modern dwelling is now set on the property uphill from the former dwelling site.

This property was an example of a typical early-twentieth century Vernacular rural dwelling in the region. Since the home has since been demolished, and nothing of it remains, it is considered *not eligible* for listing in the NRHP individually or as part of a historic district.

**VDHR# 034-1552**

**Bridge 6108, Klines Mill Road over Meadow Brook**



VDOT Bridge #6108 was previously recorded as a slab-style bridge built in 1927. That structure has since been demolished and replaced by a culvert crossing in 1994. No evidence of the original bridge remains.

This culvert is located along Klines Mill Road (Route 633) where it crosses Meadow Brook. The culvert is located within a rural area and crosses Meadow Brook as it meanders through an open pasture.

This bridge was built as a vehicular bridge to carry Klines Mill Road over Meadow Brook in 1927. The bridge was demolished in 1994 and replaced by a culvert style crossing. As the current structure is less than 50 years old and does not embody distinctive characteristics or possess significant or unique architectural or design features, it is considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district by VDHR.

**VDHR# 034-5075**  
**Woodbine Farm, 829 Vaulcuse Road**



This single dwelling was built circa 1880 according to previous study and exhibits a Vernacular design. The two-story building has an I-house front block with an offset two-story rear wing. The wood frame structural system is clad with vinyl siding and rests on a continuous stone foundation. It is topped by a side-gable roof covered with standing seam metal that is pierced by an exterior end chimney at the ridge. The main entrance is set centrally on the front and is sheltered by a full-width one-story porch. All fenestration on the building has been covered with plywood. The building is plain and unornamented.

This dwelling is located on the south side of Vaulcuse Road on a large rural property. The building sits near the road in an overgrown cluster of trees and other vegetation that screens its visibility from the road. A gravel driveway extends past the side of the house to an agricultural complex to the rear. Just across the driveway from the house is a small deteriorated barn. Set on a ridge to the rear of the house are a historic bank barn and a more recent pole barn. Set between the home and barns is orchard on one side of the driveway and open pasture on the other.

This property is an example of a typical late-nineteenth century rural dwelling and farm in the region. The home reflects an I-house form with little architectural distinction. It includes a small collection of typical rural barns and outbuildings, including a contemporary bank barn that is considered the primarily significant resource on the property. Although the home remains a poor condition, overall, the property and bank barn retains moderate historical integrity and was therefore deemed potentially eligible for listing in the NRHP by the VDHR in 2009. At this time, the home and barns appear to retain similar integrity as at that time and as such, D+A recommends it continue to be considered *potentially eligible for listing in the NRHP*.

As a *potentially NRHP-eligible* resource, an assessment was conducted to determine whether the project may pose any impacts to its eligibility. Improvements related to the Foxglove Solar project are proposed to take place within the landscape of and bordering the Woodbine Farm property. The property is set completely within the project area. The landscape of the property and the portion of the project area bordering it is generally characterized by rolling terrain currently under a mix of orchard and pasture.

To assess whether the project or any associated components may pose an impact to the resource, a viewshed assessment was conducted. Inspection was performed and photographs taken from the public right-of-way in front of the house as well as throughout the property to document existing setting, visibility, and lines of sight (Figures 8-165 through 8-172).

This assessment found that the historic rural landscape around the resource is intact. The house is set along the front edge of the property immediately adjacent to the road. A farm lane extends to the rear where the associated barns and agricultural property are set. Inspection from the road in front of the house revealed somewhat screened visibility of the project area because of a line of trees and vegetation within which the home is set. Inspection from the road beyond the homesite revealed more unobstructed views of the property and project area behind the house. Inspection from the farm lane within the property and behind the house revealed unobstructed views of the project area, however, the rolling topography and a ridge along the rear edge of the property inhibit more distant views of the project area.

As the property is located immediately within the project area and it is visible from public ROW in front of the property as well as within the property, project improvements are also expected to be visible. However, the historic bank barn on the property is considered the primary significance of the property for its distinction architecture. The barn, home, and other outbuildings on the property are planned to be retained, as a resource significant primarily for architecture, its setting is not considered a primary aspect of its eligibility. However, as the house and associated buildings are set directly within the project area, the Foxglove Solar project has the potential to pose a *moderate impact* on Woodbine Farm.



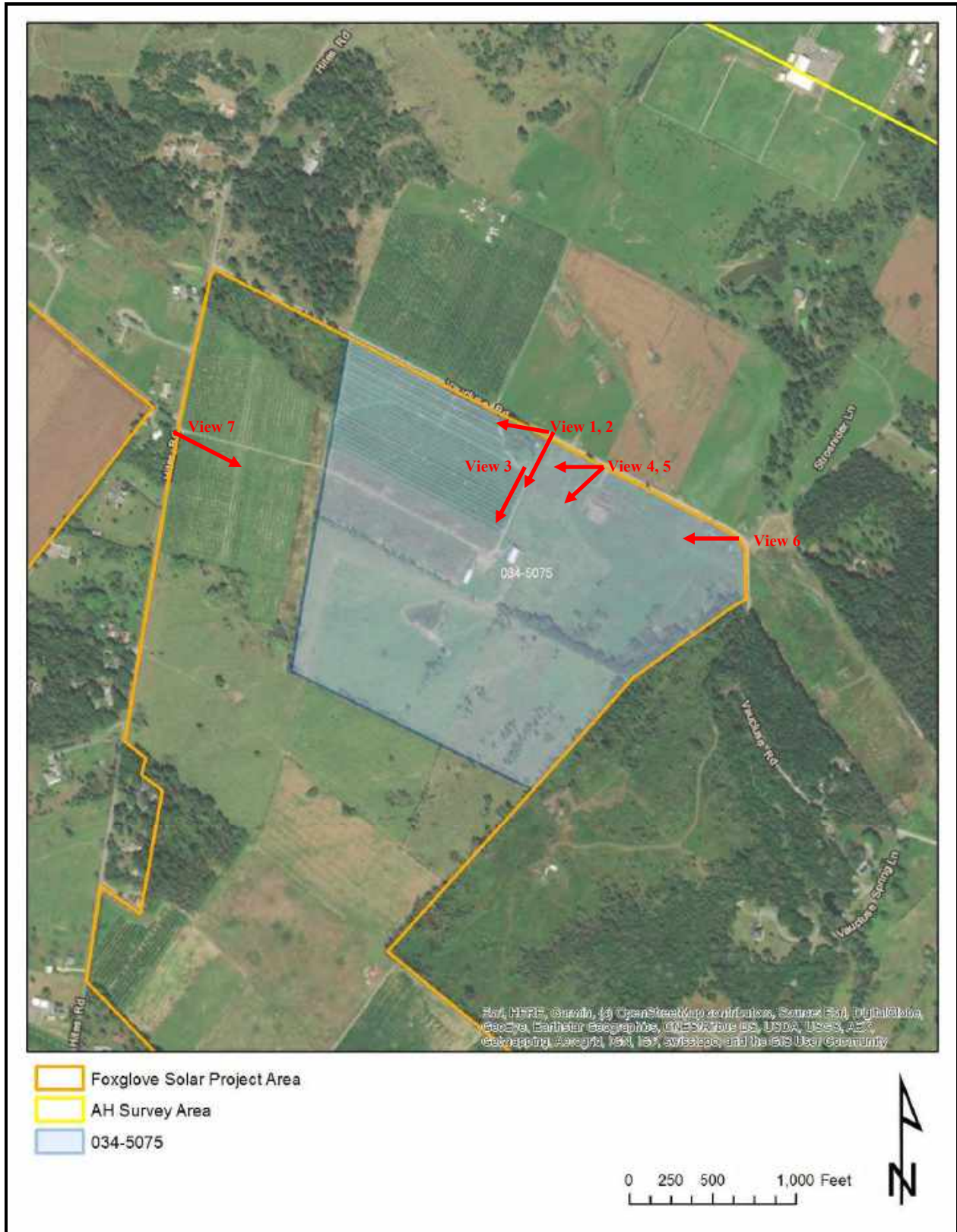
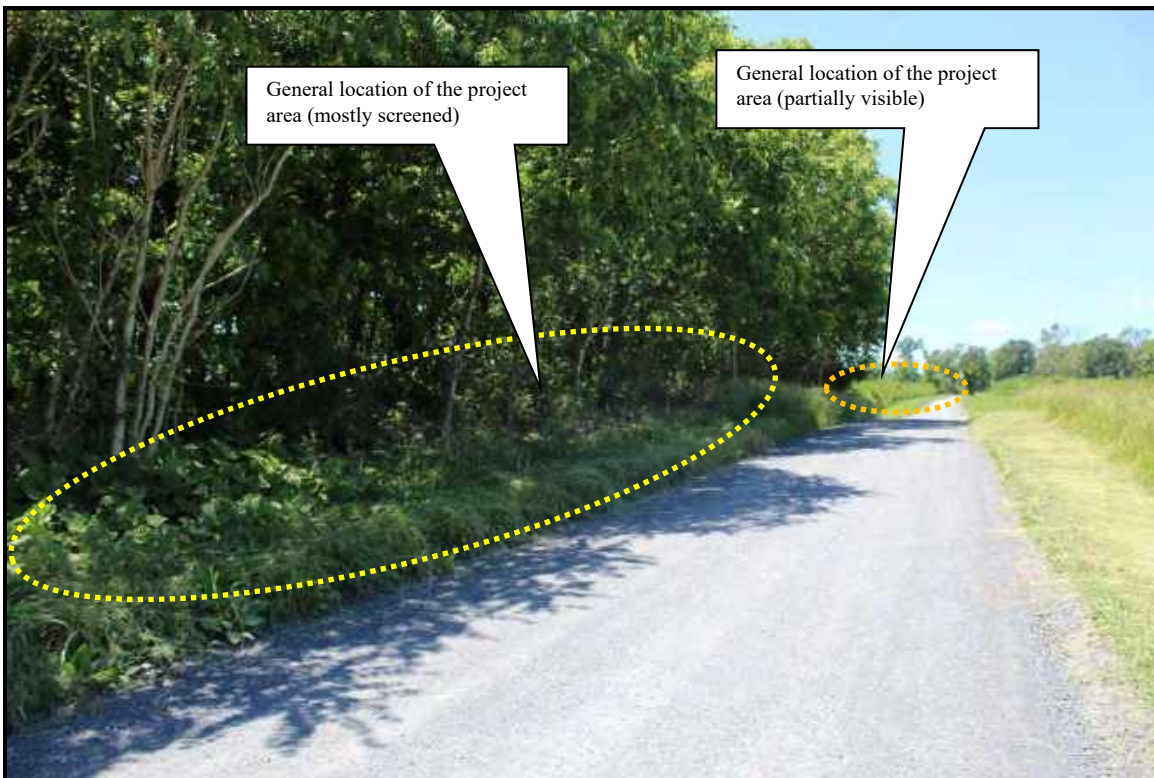


Figure 8-165: Location of Woodbine Farm in relation to the project area showing direction of representative and viewshed photos.



**Figure 8-166: View 1- View of the Woodbine Farm setting from driveway along Vaucluse Road, facing south.**



**Figure 8-167: View 2- View from the road in front of Woodbine Farm towards the project area (mostly screened by treeline), facing southwest.**



**Figure 8-168: View 3- View from the Woodbine Farm lane towards the project area (visible), facing south.**



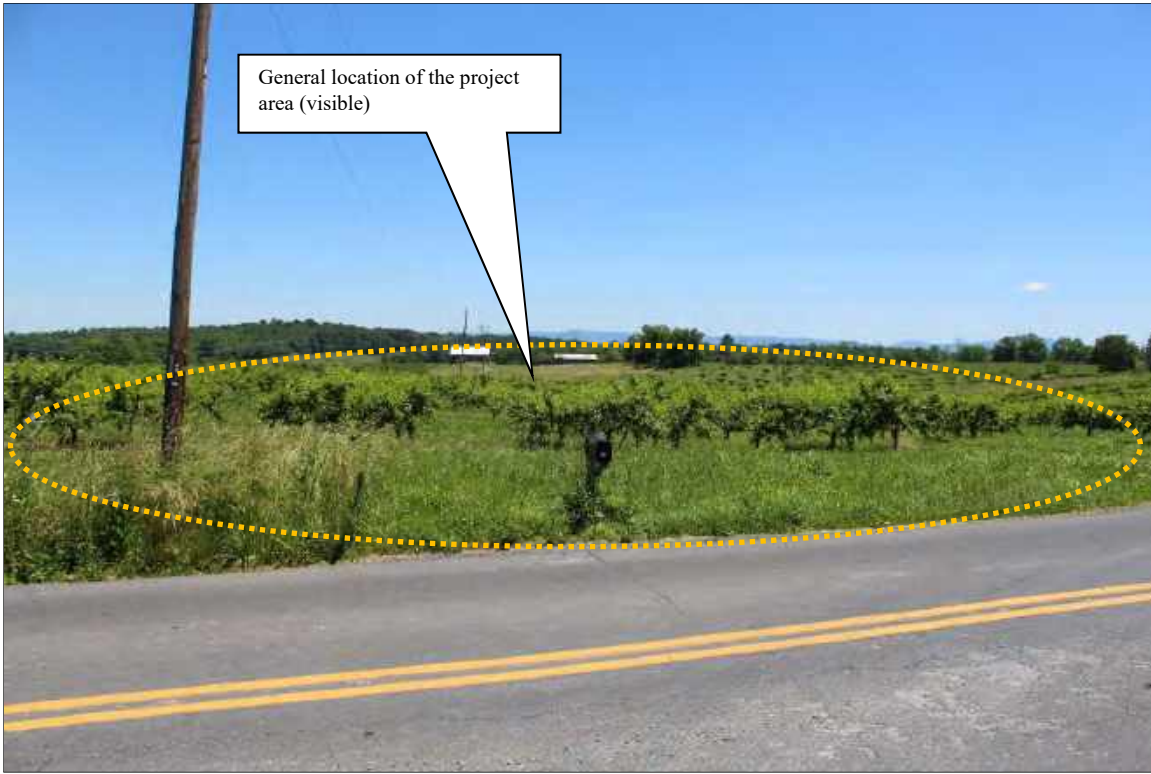
**Figure 8-169: View 4- View from the Woodbine Farm property towards the project area (visible), facing west.**



**Figure 8-170: View 5- View from the Woodbine Farm property towards the project area (visible), facing southwest.**



**Figure 8-171: View 6- View from the Woodbine Farm property towards the project area (visible), facing west.**



**Figure 8-172: View 7- View from Hites Road looking towards Woodbine Farm and the project area (visible), facing east.**

**VDHR# 034-5085**

**Miller Cemetery, Marlboro Road**



This small private family cemetery has approximately seven marked graves, in addition to a number of additional possible fieldstone markers. The seven headstones are all marble and mark burials of the Miller family. The earliest visible marker denotes an 1838 burial. The small cemetery is unmaintained and overgrown. It appears to have been enclosed by a stone fence, although much of it has collapsed.

This cemetery is located within a large pasture on the south side of Marlboro Road. It is set along the side of a gravel lane, roughly one-half mile from Marlboro Road. Just to the rear of the cemetery is a wooded ridge, and the former site of the Miller House is set nearby.

The cemetery is an example of a typical nineteenth century rural family plot in the region and does not embody distinctive characteristics or possess significant or unique architectural or design features. The cemetery therefore does not meet NRHP Criterion Consideration D and is considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5317**  
**House, 5699 Middle Road**



This single dwelling was built in 1955 according to local records and exhibits a Minimal Traditional style. The one-story building has an irregular form with a slight forward wing and an offset rear ell, in addition to an attached open-carport on the side. The masonry structural system is clad with brick laid in a stretcher bond and rests on a continuous foundation. It is topped by a cross-gable roof covered with asphalt shingles that is pierced by an interior chimney on the front slope between the main house and attached carport. The main entrance is set centrally on the front and is sheltered by a full-width roof extension. Fenestration consists of two-over-two double-hung sash windows. The building is minimally embellished with lapboard gables, window shutters, and a Neoclassical influenced entry architrave.

This dwelling is located on the east side of Middle Road on a small rural lot. The building sits back from the road on a manicured yard. The front yard is open and grassy with landscaping along the front of the house. A paved circular driveway loops past the front of the house and leads to the attached carport. The sides and rear of the property are enclosed by a post and wire fence. No outbuildings were observed on the property.

This property is an example of a typical mid-twentieth century rural dwelling in the region. The building reflects a Minimal Traditional style with little architectural distinction. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5318**  
**House, 1086 Germany Road**



This single dwelling was built in 1948 according to local records and exhibits no discernable style. The one-story building has a rectangular form with a partial-width rear ell. The wood frame structural system is clad with vinyl siding and rests on a continuous concrete foundation. It is topped by a side-gable roof covered with asphalt shingles that is pierced on the rear slope by a central interior brick chimney flue. The main entrance is set centrally on the front and is sheltered by a full-width shed roof porch. Fenestration consists of one-over-one double-hung sash windows. The building is minimally embellished with window shutters.

This dwelling is located on the west side of Germany Road on a small rural property. The building sits near the road on a grassy yard and several large shade trees around it. A gravel driveway extends past the side of the house to a historic workshop/carport set to the rear. The driveway loops to the side past a larger historic garage. Behind the garage is a historic barn. Surrounding the building complex are a mix of open pasture and wooded area to the rear.

This property is an example of a typical mid-twentieth century rural dwelling in the region. The building reflects no discernable style with little architectural distinction. It includes a typical collection of domestic outbuildings and barns. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.



**VDHR# 034-5319**  
**Farm Complex, 458 Hites Road**



This complex of barns and outbuildings appears to have been built circa 1920 according to site inspection and exhibits no discernable style. The associated dwelling or primary resource is no longer extant, so the main barn is considered the primary resource. This frame barn is two-stories tall and clad with vertical board. It is topped by a gable roof covered with standing seam metal. There are several bays of various sizes along the sides.

This complex of barns and outbuildings is set on the west side of Hites Road. It consists of a small cluster of buildings set near the road. What was likely the historic home site adjacent to the road is now occupied by a nonhistoric trailer home. A stone garage is set to the rear. A gravel driveway extends through the complex and is lined by a large frame barn, a smaller frame barn, a small domestic outbuilding of unknown function, and a larger nonhistoric pole barn.

This property is an example of a typical early- to mid-twentieth century complex of rural barns and outbuildings in the region. The historic home they were associated with is no longer extant and has been replaced by a nonhistoric trailer home. The remaining buildings reflect typical design and construction techniques with little architectural distinction and reconnaissance-level research revealed no known significant historical associations. As they remain isolated secondary resources, this complex is considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5320**  
**Commercial Building, Hites Road**



This former commercial building was constructed c.1940 according to site inspection and exhibits no discernable style. The building appears to no longer be used commercially. The one-story concrete block structure consists of two blocks with different level roof lines. The building sits on a continuous foundation. The entrance is inset on the southern block. Fenestration consists of two-over-two double-hung sash windows with a concrete lintel. A side-gable roof, with standing seam metal, covers the building. The roof is pierced by a concrete block chimney and a metal flue.

This resource is located at the northeast corner of Hites Road (Route 625) and Vaocluse Road (Route 638) on a small rural lot. It sits near the road on a mostly grassy property. A gravel drive enters the property south of the building from both roads. A grassy lawn extends from the sides and back of the building. Set to the rear of the building is a frame equipment shed.

This property is an example of a typical mid-twentieth century rural commercial building in the region. The building reflects no discernable style with little architectural distinction. It appears to no longer function as a commercial building. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5321**  
**House, 722 Hites Road**



This single dwelling was built in 1966 according to local records and exhibits a Ranch style. The one-story building has a rectangular form with an integral attached garage to the side that has been converted to living space. The masonry structural system is clad with brick laid in a stretcher bond and rests on a continuous foundation. The main entrance is on the east façade and is protected by a two-bay porch. Decorative metal posts support the shed roof of the porch. There is a second entrance at the northern end in, what appears to be, an enclosed garage. Fenestration consists of one-over-one and six-over-six double-hung sash windows and a picture window flanked by double-hung windows. A side-gable roof, with asphalt shingles, covers the house. The front slope of the roof is pierced by a brick chimney.

The property located on the west side of Hites Road on a small rural lot. It sits near the road on a grassy yard with landscaping along the front of the building. The front of the property is delineated by a low stone wall. A paved driveway extends to the former attached garage on the north end of the house. The yard is landscaped with a grass lawn, foundation plantings, and trees. There are two outbuildings in the backyard.

This property is an example of a typical mid-twentieth century rural dwelling in the region. The building reflects a Ranch style with little architectural distinction. It includes a small collection of typical domestic sheds and outbuildings. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5322**  
**House, 996 Hites Road**



This single dwelling was built in 1961 according to local records and exhibits a Ranch style. The one-story building has a T-form with an integral attached carport to one side. The wood frame structural system is clad with asbestos shingles and rests on a continuous foundation. The main entrance is set on the east façade and is protected by a small portico. Square posts support the shed roof of the porch. Fenestration consists of single and paired eight-over-eight double-hung sash windows, with faux shutters, and bay window with casement windows. A side-gable roof, with asphalt shingles, covers the dwelling. A concrete block, exterior end chimney pierces its slope.

The property sits on the southwest corner of Hites and Clark roads on a small rural lot. The house sits back from the road on a grassy yard with trees and landscaping scattered throughout. A gravel driveway extends from Hites Road to the integral carport at the north end of the house. It then curves to a garage at the northwest and exits onto Clark Road. A prefabricated gazebo is set in the backyard behind the house.

This property is an example of a typical mid-twentieth century rural dwelling in the region. The building reflects a Ranch style with little architectural distinction. It includes a small collection of typical domestic sheds and outbuildings. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5323**  
**Farm Complex, 685 Clark Road**



This complex of barns and outbuildings appears to have been built circa 1900 according to site inspection and exhibits no discernable style. The associated dwelling or primary resource is unknown, so a late-twentieth century trailer home is considered the primary resource. This is a one-story metal mobile home constructed c.1970 that is in good condition. A wood deck is located at the entrance. Fenestration consists of double-hung windows. A shallow-pitched metal roof covers the structure.

This complex of barns and outbuildings is set on the north side of Clark Road. It consists of a small cluster of buildings set near the road. A gravel driveway extends from the through the complex. Behind the dwelling is a small parking pad and a modern, metal shed. Structures within the complex consist of three silos, multiple frame buildings of varying sizes, a large metal building, and multiple concrete block buildings of varying sizes.

This property is an example of a typical early- to mid-twentieth century complex of rural barns and outbuildings in the region. The historic home they were associated with is unknown and there now appears to be a nonhistoric trailer home associated with the cluster. The remaining buildings reflect typical design and construction techniques with little architectural distinction and reconnaissance-level research revealed no known significant historical associations. As they remain isolated secondary resources, this complex is considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5324**  
**House, 609 Clark Road**



This single dwelling was built in 1960 according to local records and exhibits no discernable style. The one-story dwelling has a T-plan created by an enclosed former front porch. The wood frame structural system is clad with aluminum siding and brick veneer, and rests on a raised concrete block foundation. The main entrance is on the south façade and is approached by a wood deck. Fenestration consists of single, paired, and ribbon six-over-six double-hung sash windows. A cross-gable roof, with asphalt shingles, covers the building. A chimney pierces the slope of the roof.

The property is set on the north side of Clark Road on a large rural property. The home rests near the road in a copse of trees atop a slight berm. A paved driveway extends from the road, past the west side of the house to a large barn set to the rear. The grass yard is landscaped with shrubs and trees. Surrounding the homesite and building complex are open agricultural fields.

This property is an example of a typical mid-twentieth century rural dwelling and farm in the region. The building reflects no discernable style with little architectural distinction. It includes a single contemporary barn as the only secondary resource. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5325**  
**House, 1196 Hites Road**



This single dwelling was built in 1901 according to local records and exhibits a Vernacular design. The two-story building has an I-house front block with central rear wing. The wood frame structural system is clad with vinyl siding and rests on a continuous foundation. The main entrance is centered on the east façade and is protected by a full-width, one-story porch. The shed roof of the porch is supported by square posts with decorative brackets. There is an additional one-story porch off of the rear ell. Fenestration consists of four-over-four double-hung sash windows with faux shutters. A cross-gable roof, with standing seam metal, covers the building. A brick chimney pierces the ridge of the roof.

The property is situated on the west side of Hites Road on a large rural property. The home sits near the road on grassy homesite with trees and landscaping scattered throughout. A gravel driveway extends from the road, along the north side of the dwelling to a parking area and a garage at its rear, as well as additional outbuildings. The homesite and building complex are enclosed by a post and rail fence and a large orchard borders it the sides and rear.

This property is an example of a typical early-twentieth century rural dwelling and farm in the region. The building reflects a Vernacular design with little architectural distinction that has been nonhistorically remodeled. It includes a small collection of typical domestic and agricultural outbuildings. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.

**VDHR# 034-5326**  
**House, 1162 Hites Road**



This single dwelling was built in 1956 according to local records and exhibits a Minimal Traditional style. The one-story building has a mostly rectangular form with an offset front cross gable. The masonry structural system is clad with brick laid in a stretcher bond and rests on a continuous foundation. The main entrance is on the east façade and is protected by a partial-width one-story porch. The roof of the porch is supported by turned posts. Fenestration consists of paired one-over-one double-hung sash windows with faux shutters and brick lintels. A side-gable roof, with asphalt shingles, covers the house. A brick, exterior end chimney pierces the slope of the roof.

The property is set on the west side of Hites Road on a small rural lot. The home sits back from the road on an open grassy yard. A gravel driveway extends from the road, along the south side of the dwelling to a parking area and a garage at its rear. The grass lawn is landscaped with foundation plantings and trees. There is a large open grass yard to the side and rear of the house.

This property is an example of a typical mid-twentieth century rural dwelling in the region. The building reflects a Minimal Traditional style with little architectural distinction. It includes a single garage as a secondary resource. Overall, the property does not embody distinctive characteristics or possess significant or unique architectural or design features and reconnaissance-level research revealed no known significant historical associations. The property is located in an area of discontinuous historic resources, and is, therefore, considered *not eligible* for listing in the NRHP on an individual basis or as part of a historic district.



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## 9. CONCLUSIONS AND RECOMMENDATIONS

In August and September of 2020, Dutton +Associates, LLC (D+A) conducted a Phase I cultural resource survey (Phase I) of the ±255 hectares (±630 acres) Foxglove Solar Project Area in Frederick County, Virginia. The effort involved both archaeological and architectural investigations of the property to confirm the presence or absence of cultural resources located within the project area and assess their potential eligibility for listing in the National Register of Historic Places (NRHP).

Archaeological survey included a total of 487 shovel tests excavated throughout the project area. This subsurface testing revealed shallow soils across the project area, typical of pastoral land. Visual inspection of the project area revealed that exposed bedrock on the surfaces of the land was typical across the project area, and in many cases, shovel test pits terminated at bedrock. Approximately 36.06 hectares (89 acres) of the project area was subjected to systematic pedestrian survey in lieu of shovel testing, due to the exposed, plowed soil on the surface. Two sites were identified during subsurface testing. The first, Site 44FK1010, an early to mid-nineteenth century site consisting of domestic artifacts associated with the previously identified Miller House and its associated outbuildings (VHDR #034-0254) was identified in the northernmost parcel, east of the project area boundary. VDHR #034-5085 – The Miller Cemetery – is also located within this archaeological site. **Due to the number of artifacts, the undisturbed soils, and the amount of associated architectural resources, Site 44FK1010 is recommended as potentially eligible for inclusion in the NRHP. This site should be avoided or subjected to further archaeological excavation. D+A recommends that VDHR #034-5085 – The Miller Cemetery – should be avoided.**

Site 44FK1011 consists of a total of eight (8) collected artifacts which are concentrated in the yard space of part of a previously identified architectural resource – VDHR 034-5075 – in the northern portion of the southernmost parcel of the project area. The site identified here was located on an overgrown, in some cases impenetrable, landform on which the circa 1880 dwelling associated with VDHR #034-5075 sits. Each shovel test pit excavated in this area contained cultural material associated with this site, along with debris such as plastic. The house appears to have been occupied for an extended amount of time, and there is debris on the surface, where assessable. **Due to the disturbance as confirmed by visual inspection and by the presence of debris in the excavated shovel test pits, this site is recommended as not eligible for inclusion in the NRHP.**

The architectural resources survey for the Foxglove Solar project resulted in the identification and recordation of thirty-seven (37) architectural resources greater than 50 years of age (constructed in 1970 or earlier) located within the one-half mile architectural survey area, five of which are located directly within the project area. Of the surveyed resources, twenty-seven (27) were previously recorded (VDHR# 034-0076, 034,0077, 034-0138/0140, 034-0220, 034-0232/0236, 034-0238/0241, 034-0243, 034-0254, 034-0263/0264, 034-0269, 034-0303, 034-0248/0249, 034-1406, 034-1552, 034-5075, and 034-5085) and ten (10) were newly recorded during this Phase I Survey (VDHR# 034-5317/5326). Four of the previously recorded resources were found to have been demolished since they were last surveyed (VDHR# 034-0254, 034-0428, 034-1406, and 034-1552). The extant resources within the survey area and documented as part of this effort consist primarily of domestic buildings and farmsteads from the early-nineteenth to mid-twentieth

century, as well as a nineteenth century family cemetery, a Civil War battlefield, a twentieth century commercial building, twentieth century bridge, and assorted isolated barns and agricultural buildings. Seven of the surveyed resources are considered potentially eligible for listing in the NRHP, generally as good examples of regional forms and styles or for their representation of intact agricultural complexes. One eligible resource is the Cedar Creek Battlefield, significant for its association with Civil War in the region. The rest of the surveyed resources reflect national trends in building styles and do not appear to reflect any unique or significant design or historical associations, and as such, are recommended to be not eligible for listing in the NRHP individually or collectively.

The seven NRHP-eligible resources were assessed for impacts brought about by the project through inspection of existing conditions and viewshed analysis. This effort found that the rolling terrain and vegetation patterns within the area provide screening of the project area from three of the resources and as such, the project area will not be visible from the resources themselves or most public vantage points near them. It is therefore not anticipated to introduce any substantially different components into their viewsheds and is recommended to pose no more than a *minimal impact* to these resources. Three resources are located immediately adjacent to a portion of the project area with only minimal existing vegetative buffer between and may potentially have more uninterrupted visibility of the project area. Further screening may be provided by supplemental landscape buffering proposed as part of the project. As the project may introduce new and/or incompatible visual intrusions to the viewshed of these resources, it is recommended to pose a *moderate impact* to these properties, but should be reassess following final engineering. One final resource is located directly within a portion of the project area, however, the primary significance of this resource is derived from the design and construction of the associated bank barn which will remain extant. As setting is not considered a primary aspect of its eligibility, the project is recommended to pose a *moderate impact* to this resource.

**Table 9-1: NRHP-eligible architectural resources with recommendations of project impacts**

VDHR ID#	Resource Name/Address	Year Built	NRHP Eligibility	Project Impacts
034-0076	Ash House, 6124 Middle Road	1891	Potentially Eligible	Minimal Impact
034-0138	Vaucluse, 515 Vaucluse Spring Road	c.1810	Eligible	Minimal Impact
034-0139	Valerie Hill, 1687 Marlboro Road	1807	Potentially Eligible	Moderate Impact
034-0140	Buffalo Marsh, 697 Clark Road	1827	Eligible	Minimal Impact
034-0264	Shiley Farm, 856 Hites Road	c.1870	Potentially Eligible	Moderate Impact
034-0303	Cedar Creek Battlefield	1864	Eligible	Moderate Impact
034-5075	Woodbine Farm, 829 Vaucluse Road	1900	Potentially Eligible	Moderate Impact



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**APPENDIX A: RESUMES**

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## Dutton + Associates

CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

**J. HOPE SMITH**  
PRINCIPAL INVESTIGATOR



### Education

PhD, 2017  
Anthropology  
University of Tennessee  
Knoxville, Tennessee

Bachelor of Arts, 2005  
Historic Preservation  
University of Mary Washington  
Fredericksburg, Virginia

### Memberships

Register of Professional Archaeologists

Society for Historical Archaeology

Hope Smith holds a PhD in Anthropology, concentrating in Historical Archaeology, from the University of Tennessee and a B.A. in Historic Preservation from the University of Mary Washington. Her area of focus is eighteenth and nineteenth-century Virginia, and her research interests include material culture studies, artifacts of personal adornment, and the intersection of race and gender in plantation archaeology. She has over 12 years of experience in archaeology and has participated in both historic and prehistoric projects at all levels of investigation.

Her experience in Cultural Resource Management includes supervising fieldwork, analyzing field and artifact data, and authoring reports.

Prior to working at Dutton + Associates, she was employed as a Teaching Associate at the University of Tennessee, where she taught archaeology field schools and courses in archaeology, including a course on Cultural Resource Management law and practice.

As a project archaeologist for Dutton + Associates, Dr. Smith collaborates on all aspects of archaeological work, including supervising field work, and authoring project reports.



**Dutton + Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

**J. HOPE SMITH**  
**PRINCIPAL INVESTIGATOR**

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## Professional Experience

**Dutton+Associates, LLC, Project Archaeologist**  
 Richmond, Virginia, 2017

Conducts archaeological investigations (Phase I, II, III and monitoring), prepares research designs, manages and directs archaeological field crew, analyzes artifacts, writes reports.

**University of Tennessee, Knoxville, Graduate Teaching Associate**  
 Knoxville, Tennessee, 2011-2017

Supervised fieldwork during two archaeological field schools; taught undergraduate-level archaeology courses.

**James Madison's Montpelier Crew Chief**  
 Montpelier Station, Virginia 2008-2011

Performed fieldwork and supervised students and interns in excavation and survey projects; drew maps and coauthored site reports.

**The Louis Berger Group Field Technician, Richmond, Virginia, 2005-2007.**

Performed fieldwork at all levels of excavation on a wide variety of projects.

**The Ottery Group Field Technician, Silver Springs, Maryland, 2005.**

Performed fieldwork on a complex multi-component historic Phase III in Gloucester, Virginia.

## Example Projects and Publications

### *Phase I Surveys*

Mecklenburg Timber and Prison sites, Mecklenburg Co  
 Dranesville Rd. Development, Fairfax Co  
 Pavilion Development, Prince William Co  
 Dry Mill, Loudoun Co  
 Remington to Gordonsville Transmission Line  
 Montebello Farm, Loudoun Co.  
 Arbordale, York Co.  
 Spotsylvania Town Center, City of Fredericksburg  
 Palmer's Creek, Spotsylvania Co.

### *Phase II Evaluations*

44LD1244, Loudoun Co  
 44WM0312, Westmoreland Co

### *Museum Technical Reports*

Object Report and Museum Purchasing  
 Recommendations, The Montpelier Foundation,  
 Orange Co  
 Report of Archaeological Testing at Mount Pleasant,  
 The Montpelier Foundation, Orange Co  
 Archaeological Dataset and Context, Digital  
 Archaeological Archive of Comparative Slavery



**LAUREN GRYCTKO**  
Archaeology Field Supervisor



**Dutton + Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT



## Education

Master of Arts, 2015  
Historical Archaeology  
College of William and Mary  
Williamsburg, Virginia

Bachelor of Science, 2011  
Anthropology  
James Madison University  
Harrisonburg, Virginia

CPR and OSHA 30 Certified

Ms. Gryctko holds a B.S. in Anthropology from James Madison University and a M.A. in Historical Archaeology from the College of William and Mary. She has 8 years of Cultural Resource Management experience and has taken part in projects throughout Virginia – most notably at Thomas Jefferson’s Monticello.

Her experience in Cultural Resource Management includes conducting and supervising Phase I, II and III archaeological field excavations on 18<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup> century sites, recording data and preparing survey records through site maps, photos context forms and field notes, and contributing to reports.

As an Archaeology Field Supervisor for Dutton + Associates, Ms. Gryctko manages and conducts all aspects of Phase I, II and III field surveys on a wide variety of sites including transmission lines, solar projects, and substation projects. She has field experience in a broad array of settings including mountainous terrain. Ms. Gryctko’s knowledge of historic period archaeological sites and material culture, including Civil War archaeology, provides clients with comprehensive knowledge of complex and unique resource types.



**Dutton Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

**LAUREN GRYCKO**  
 Archaeological Field Supervisor

## Professional Experience

**Dutton + Associates, LLC**, Archaeological Field Supervisor, Richmond, Virginia, November 2017-present. Conducts archaeological investigations (Phase I, II, III and monitoring), supervises and directs archaeological field crew, maintains field records, analyzes artifacts, contributes to reporting, trains new field crew in proper field procedures, and monitors the health and safety of field crew.

**Thomas Jefferson's Monticello**, Archaeological Field Assistant, Charlottesville, Virginia, May 2015 – November 2017. Conducted archaeological testing, assisted with site research, performed lab work.

**William and Mary Center for Archaeological Research**, Archaeological Field Technician, Williamsburg, Virginia, February 2015- May 2015.

Conducted field surveys, recorded data and prepared survey records, prepared site forms.

**Thomas Jefferson's Monticello**, Archaeological Field Technician, Charlottesville, Virginia, February 2013 – May 2013. Conducted archaeological testing, assisted with site research, performed lab work.

**James Madison University's Department of Archaeology**, Archaeological Field Technician, Harrisonburg, Virginia, September 2010 – June 2012. Assembled historical research, co-authored site report, conducted Phase I field excavations.

## Example Projects and Publications

### *Transmission Line Projects*

Phase I Cultural Resources Survey of the Remington-Gordonsville Transmission Line Rebuild Project, Albemarle, Orange, Culpeper, and Fauquier Counties, Virginia

### *Solar Projects*

Phase I Survey of the Sadler Solar Center, Greensville County, Virginia

Cedar Creek Battlefield Phase I  
 Fisher's Hill Battlefield Phase I

### *Jefferson's Monticello*

Tufton Quarter Farm Phase I  
 Building E Phase III  
 Joinery Shop Phase II  
 Stables Phase III  
 North and South Dependencies Phase III  
 South Pavilion Kitchen Phase III

**ROBERT J. TAYLOR, JR**  
Senior Architectural Historian



**Dutton + Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT



## Education

Master of Arts, 2009  
Historic Preservation  
Savannah College of Art and  
Design  
Savannah, Georgia

Bachelor of Arts, 2005  
Historic Preservation  
University of Mary Washington  
Fredericksburg, Virginia

## Awards

Eagle Scout, 2001

Mr. Taylor holds a B.A. in Historic Preservation from University of Mary Washington and a M.A. in Historic Preservation from Savannah College of Art and Design. He has over 10 years of Cultural Resource Management Experience and has taken part in projects in Virginia, North Carolina, Maryland, Delaware, New Jersey, Rhode Island, Pennsylvania, Ohio, Florida, and California.

His experience in Cultural Resource Management includes working on both Architectural and Archaeological projects while participating in all phases of compliance from project initiation and development to completion. His work includes conducting field surveys, researching and documenting historic resources, completing site file forms, writing reports, preparing *NRHP* evaluations and documentation for individual resources and historic districts, compiling HABS/HAER documentation packages, preparing Cell Tower compliance packages, and conducting archaeological testing. He has a thorough understanding of the laws and regulations that govern cultural resources and has assisted with a number of Cultural Resource Management Plans, Programmatic Agreements, and Memorandum of Agreements. Outside of CRM, he has worked for the Thomas Jefferson's Monticello Foundation where he was a field archaeologist and assisted with the long-term, Plantation Survey Project on Monticello Mountain. Mr. Taylor's primary interests lie in Architectural Forensics and the study of building evolution.

As Senior Architectural Historian for Dutton + Associates, Mr. Taylor manages and conducts all aspects of historic and architectural resource projects and studies.



**Dutton Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

**ROBERT J. TAYLOR, JR**  
 Senior Architectural Historian

## Professional Experience

**Dutton + Associates, LLC**, Architectural Historian, Richmond, Virginia, March 2009-present.

Manages architectural history studies, provides regulatory and compliance consultation, conducts Historic Resources Surveys, prepares NRHP nominations, HABS/HAER packages, site forms, and other documentation packages; performs research and context development, and authors project reports.

**Thomas Jefferson Monticello Foundation**, Field Archaeologist, Charlottesville, Virginia, Winter 2008- 2009. Conducted archaeological testing, assisted with site research, performed lab work

**Janus Research, Inc**, Architectural Historian, Tampa, Florida, August 2005- May 2008.

Conducted field surveys, Prepared NRHP and HABS/HAER documentation packages, authored Cultural Resource Assessment Survey Reports

## Example Projects and Publications

### *Transmission Line Projects*

Phase I Cultural Resources Survey of the Cunningham to Elmont 500 kV Transmission Line, Multiple Counties

Phase I Cultural Resources Survey of the TL47 230kV Transmission Line Rebuild, Multiple Counties  
 SCC Pre-Application Study for the Gainesville-Haymarket Substation and Transmission Line, Prince William Co

Cultural Resources Survey of the Bearwallow-Faraday Transmission Line Rebuild Project, Tazewell County

Phase I Cultural Resources Survey of the Dominion Line 567 Wilcox Wharf to Windmill Point Rebuild Project, Charles City and Prince George County  
 Phase I Survey of the Chase City-Kerr Dam, Line 137 and 138, Mecklenburg County

SCC Pre-Application Study of the Mount Storm-Valley Rebuild Project, Rockingham County

Phase I Survey of the Hayes-Yorktown 230kV Transmission Line, Gloucester County

### *Substation Projects*

SCC Pre-Application Study of the Elclick Substation Expansion, Fairfax Co

SCC Pre-Application Study of the Roundtable Substation, Fairfax County

Phase I Survey of the Possum Point Project, Prince William County

### *Wind Power Projects*

Phase I Cultural Resources Survey of the Rocky Forge Wind Project, Botetourt County

### *Solar Projects*

Phase I Survey of the Briel Solar Farm, Henrico Co

Phase I Survey of the Puller Solar Project, Middlesex County

Phase I Survey of the Whitehouse Solar Project, Louisa County

Phase I Survey of the Hosier Road Solar Project, Suffolk County

Phase I Survey of the Twitty Creek Solar Project, Charlotte County

### *Other*

Phase III Investigations of the Spring Hill Plantation Site for the Dominion Reymet Road Expansion Project, Chesterfield County

HALS Photography for the Skiffe's Creek 500kV Transmission Line Project, Charles City County

**DARA FRIEDBERG**  
Architectural Historian



## Dutton + Associates

CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT



### Education

Master of Science, 2004  
Historic Preservation  
University of Pennsylvania  
Philadelphia, Pennsylvania

Bachelor of Arts, 1999  
Historic Preservation  
Mary Washington College  
Fredericksburg, Virginia

Ms. Friedberg holds a M.S. in Historic Preservation, concentrating in Architectural Conservation, from University of Pennsylvania and a B.A. in Historic Preservation from Mary Washington College. She has worked in historic preservation and conservation since 1999 and has taken part in projects in Virginia, Maryland, Pennsylvania, Washington, D.C., South Carolina, Georgia, Connecticut, New York, Illinois, Ohio, and Tennessee.

Her experience in Cultural Resource Management includes conducting field surveys, researching and documenting historic resources, preparing National Register of Historic Places nominations, performing archival research, assisting in Federal Tax Credit projects, and completing material analyses of historic mortar and paint.

Prior to working at Dutton + Associates, she was employed as a conservator. This allowed her to conduct multiple conditions assessments of architecture, monuments, and sculptures as well as provide treatment recommendations and project specifications. She has also physically worked on the conservation of stone, metal, and decorative painting. At the completion of each project she provided thorough documentation of each process undertaken.

As an Architectural Historian for Dutton + Associates, Ms. Friedberg collaborates on all aspects of historic and architectural projects including performing field work, conducting project research, and authoring project reports.

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**Dutton Associates**  
CULTURAL RESOURCE SURVEY, PLANNING, AND MANAGEMENT

**DARA FRIEDBERG**  
 Architectural Historian

## Professional Experience

**Dutton + Associates, LLC**, Architectural Historian, Midlothian, Virginia, 2013-Present  
 Conducts historic resources surveys, performs background research, develops historic contexts, writes National Register nominations, and authors and formats project reports

**Kreilick Conservation, LLC**, Conservator, Oreland, Pennsylvania, 2006-2012  
 Completed conditions assessments and treatment recommendations for stone and metal projects, conserved stone and metal architectural elements, monuments, and sculptures, and authored conservation reports.

**Powers & Company, Inc.**, Preservation Associates, Philadelphia, Pennsylvania, 2002-2006  
 Conducted historic resources surveys, performed background research, assisted with Federal Historic Preservation Tax Credit projects, completed mortar and historic paint analyses, completed conditions assessments and recommendations for buildings, produced reports for large scale restoration projects, and created project specifications.

**Albert Michaels Conservation, Inc.**, Conservation Technician, Harrisburg, Pennsylvania, 2001-2002  
 Conserved decorative paintings and refinished ornate wood, and authored conservation reports.

**KCI Technologies, Inc.**, Cultural Resource Specialist, Hunt Valley, Maryland, 2000-2001  
 Conducted historic resources surveys, performed background research, and authored project reports.

**Restoration Concepts**, Restoration Intern, Burlington, Vermont, 1999  
 Assisted in the restoration of a building.

## Example Projects

### *National Register of Historic Places Nominations*

- Tower Building, Richmond
- Lee Medical Building, Richmond
- Fuqua Farm, Chesterfield

### *Preliminary Information Forms*

- North Thompson Street Historic District, Richmond
- Virginia Avenue Elementary School, Petersburg

### *Interpretive Signs*

- Skiffes Creek Interpretive Signs, multiple counties
- Spring Hill Plantation Interpretive Signs, Chesterfield Co.

### *Viewshed Analyses*

- Viewshed Assessment for Fort Evans, Loudoun Co.
- Viewshed Analysis for Ellerslie, Surry Co.

### *Military Analyses and Landscape Studies*

- Phase IA Assessment and Military Terrain Analysis of the Plantation Woods Property, Spotsylvania Co.

- Phase I, Viewshed Assessment, and Military Terrain Analysis for the Potato Run Mitigation Bank, Culpeper Co.
- Assessment of Two Core Areas of the Battle of Buckland Mills, Prince William Co.

### *Cultural Resource Survey and Compliance Reports*

- Cultural Context and Thematic Study for the Proposed Revitalize RVA Project, Richmond
- Assessment of Fulton Gas Works, Richmond
- Documentary Study of the Cromley Row Project Area, Alexandria
- Study of Washington Boundary Ditches, Fairfax Co.
- Intensive Level Survey for Warehouse No. 3 of the Richmond Intermediate Terminal, Richmond
- Economic Context of Middlesex County and the Palmer House, Middlesex Co.
- Phase I Survey for the Remington-Gordonsville Transmission Line Rebuild Project, multiple counties
- Phase II Archaeological Evaluation of Site 44LD1244, Loudoun Co.

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**APPENDIX B: ARTIFACT INVENTORY**

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Provenience	Strat	Main Material, Subtype, Decoration and Color	Qty.	Part	Notes
<b>Area E (44FK1010)</b>					
<b>A3</b>	<b>I</b>	Glass, Window, Aqua	1	Pane	
<b>A6</b>	<b>I</b>	Iron, Barbed Wire	9	Fragment	
A6	I	Nail, Machine Cut	1	Whole	
<b>A6.5</b>	<b>I</b>	Nail, Machine Cut	1	Whole	
<b>B2</b>	<b>I</b>	Coarse Earthenware, Redware with red lead glaze	2	Body	
<b>B5</b>	<b>I</b>	Brick, Handmade	5	Fragment	2g
B5	I	Coarse Earthenware, Redware with red lead glaze	1	Body	
B5	I	Coarse Earthenware, Redware with brown lead glaze	1	Body	
B5	I	Refined Earthenware, Pearlware, Shell edge	6	Body	
B5	I	Refined Earthenware, Pearlware, Shell edge	2	Rim	
B5	I	Refined Earthenware, Pearlware, Embossed edge	1	Rim	Unidentifiable design
<b>B7</b>	<b>I</b>	Refined Earthenware, Pearlware	1	Body	
<b>B8</b>	<b>I</b>	Earthenware, Agateware, Doorknob	1	Knob	
B8	I	Coarse Earthenware, Redware with brown lead glaze	1	Body	
B8	I	Earthenware, Indeterminate, Burned	1	Fragment	No Glaze
B8	I	Brick, Handmade	1	Fragment	2g
<b>C8</b>	<b>I</b>	Brick	N/A	Fragment	Not Collected
<b>D8</b>	<b>I</b>	Glass, Vessel, Colorless	1	Body	
D8	I	Glass, Vessel, Colorless with molded diamond pattern	1	Body	
D8	I	Glass, Vessel, Aqua	2	Body	
D8	I	Glass, Vessel, Aqua with light patina	1	Body	

D8	I	Glass, Window, Aqua	1	Pane	
D8	I	Glass, Vessel, Milk Glass, Molded Decorations	1	Rim	Paisley decoration
D8	I	Porcelain, Chinese Porcelain, transferprint	1	Body	
D8	I	Refined Earthenware, Whiteware, Molded Rim	1	Rim	
D8	I	Refined Earthenware, Whiteware	2	Body	
D8	I	Inteterminate material	1	Fragment	Highly dense
D8	I	Nail, Wire	1	Whole	
D8	I	Nail, Machine Cut	2	Shanks	
D8	I	Nail, Machine Cut	1	Whole	Large
D8	I	Zinc jar lid	1	Fragment	
<b>D8.5</b>	<b>I</b>	Glass, Vessel, Colorless	2	Body	
D8.5	I	Glass, Window, Aqua	3	Pane	
D8.5	I	Coarse Earthenware, Redware with white interior lead glaze and brown exterior salt glaze	2	Body	
D8.5	I	Coarse Earthenware, Redware with red lead glaze	1	Body	
D8.5	I	Coarse Earthenware, Redware with red lead glaze	1	Rim	
D8.5	I	Coarse Earthenware, Redware with brown lead glaze	1	Body	
D8.5	I	Refined Earthenware, Yellowware, Molded with Exterior Green Glaze	2	Base	
D8.5	I	Nail, Machine Cut or Wrought	1	Shank	
D8.5	I	Nail, Wrought	3	Shank	
D8.5	I	Nail, Wrought	1	Whole	
D8.5	I	Iron, Sheet	2	Fragment	
<b>E4</b>	<b>I</b>	Stoneware, Albany Slip	1	Rim	
E4	I	Coarse Earthenware, Redware with black lead glaze	1	Body	
<b>E5</b>	<b>I</b>	Bone Fragment, Avian	1	Fragment	

E5	I	Plaster, White	6	Fragment	1g
E5	I	Lime	1	Fragment	<1g
E5	I	Iron Chain	1	Fragment	Modern. 28 links, welded in pairs.
<b>E5.5</b>	<b>I</b>	Glass, Window, Aqua	3	Pane	
E5.5	I	Glass, Window, Aqua	3	Pane	7mm in thickness
E5.5	I	Brass, Buckle	1	Frame	
E5.5	I	Nail, Machine Cut	1	Whole	
E5.5	I	Plaster, White	1	Fragment	Finish coat
<b>E6</b>	<b>I</b>	Brick, Handmade, Thumbprint	1	Bat	Thumbprint, 742g
E6	I	Brick, Handmade, Burnt	1	Whole	Over 2200g
<b>E6</b>	<b>II</b>	Brass, Clock	1	Gears	Clock Frame and Gears. Likely meant to be wound. No battery compartment.
E6	II	Brick, Handmade	6	Fragments	3g
E6	II	Plaster, White	3	Fragment	16g, Finish coat of plaster
E6	II	Glass, Window, Colorless	1	Pane	
E6	II	Iron fragment	1	Fragment	
<b>E7</b>	<b>I</b>	Glass, Window, Aqua with light patina	6	Pane	
E7	I	Glass, Vessel, Colorless	2	Body	
E7	I	Glass, Vessel light blue	1	Body	
E7	I	Refined Earthenware, Ironstone	1	Rim	
E7	I	Refined Earthenware, Ironstone	2	Base	Plate
E7	I	Nail, Wire	2	Whole	Plate
E7	I	Nail, Machine Cut	2	Whole	
E7	I	Nail, Wrought	1	Whole	Tack
E7	I	Plaster, White	1	Fragment	3g, Finish coat
E7	I	Iron Strap	1	Fragment	

<b>E9</b>	<b>I</b>	Iron Strap	1	Fragment	Thin
<b>E10</b>	<b>I</b>	Stoneware, American with gray salt glaze and interior brown wash	1	Base	Base
<b>EF10</b>	<b>I</b>	Refined Earthenware, Whiteware	1	Body	
<b>F6</b>	<b>I</b>	Glass, Window, Aqua	4	Pane	
F6	I	Glass, Vessel, Colorless	2	Body	
F6	I	Refined Earthenware, Whiteware	1	Body	
F6	I	Nail, Machine Cut	1	Shank	
F6	I	Brick, Handmade	6	Fragments	122g. Some with exterior rustication.
<b>F7</b>	<b>I</b>	Brick, Handmade	1	Fragments	18g, STP 30% brick
F7	I	Glass, Vessel, Colorless	5	Body	
F7	I	Glass, Vessel, Aqua	10	Body	
F7	I	Glass, Window, Colorless	5	Pane	
F7	I	Glass, Window, Aqua	5	Pane	
F7	I	Refined Earthenware, Whiteware	4	Body	
F7	I	Refined Earthenware, Whiteware	2	Base	
F7	I	Refined Earthenware, Yellowware	1	Body	
<b>F8</b>	<b>I</b>	Glass, Window, Colorless	2	Pane	
<b>F9</b>	<b>I</b>	Glass, Vessel, Aqua, Molded Letter "V"	1	Body	
F9	I	Glass, Window, Aqua	1	Pane	
F9	I	Brick, Handmade	3	Fragments	15g
<b>F10</b>	<b>I</b>	Glass, Vessel, Aqua	1	Fragments	
F10	I	Glass, Vessel, Colorless	6	Fragments	
F10	I	Glass, Window, Aqua	5	Pane	
F10	I	Glass, Vessel, Amber	1	Finish	
F10	I	Refined Earthenware, Whiteware	1	Body	
F10	I	Refined Earthenware, Black Glaze	2	Body	Utilitarian
F10	I	Nail, Machine Cut	7	Whole	
F10	I	Nail, Wrought	1	Whole	

F10	I	Iron, Strap	4	Fragments	
F10	I	Brick, Handmade	4	Fragments	9g
F10	I	Worked Stone, with circular cutout	1	Fragment	
<b>F11</b>	<b>I</b>	Nail, Machine Cut	1	Whole	
F11	I	Nail, Wire	1	Whole	
F11	I	Tack, Wire	1	Whole	
<b>F12</b>	<b>I</b>	Coarse Earthenware, Redware with brown lead glaze and yellow lead glaze	1	Body	Opposing glaze colors on opposite sides
<b>F14</b>	<b>I</b>	Glass, Vessel, Olive Green	1	Fragment	
<b>G5.5</b>	<b>I</b>	Tertiary Flake, Chert	1	Flake	
<b>G6</b>	<b>I</b>	Brick	N/A	Fragment	Not Collected
<b>G8</b>	<b>I</b>	Refined Earthenware, Whiteware	2	Body	
G8	I	Refined Earthenware, Whiteware	1	Rim	
G8	I	Coarse Earthenware, Redware clear lead glaze	1	Body	
G8	I	Mortar, unidentifiable	1	Fragment	1g
<b>G9</b>	<b>I</b>	Glass, Vessel, Amber	1	Base	Historic glass
<b>G10</b>	<b>I</b>	Refined Earthenware, Rockingham	1	Body	
G10	I	Iron, Fragment	1	Fragment	
<b>GH8</b>	<b>I</b>	Refined Earthenware, Whiteware	2	Body	
GH8	I	Leather, Strap	1	Fragment	
<b>GH10</b>	<b>I</b>	Stoneware, American gray salt glaze with brown interior	1	Body	
GH10	I	Stoneware, American gray salt glaze with brown interior	1	Base	
GH10	I	Porcelain, European hard paste	1	Body	
GH10	I	Stoneware, Metallic Black Glaze	1	Rim	Utilitarian
<b>Area R (44FK1011)</b>					

---

<b>Judgmental 1</b>	<b>I</b>	Porcelain, Indeterminate	1	Fragment	Little Glaze Remaining. Likely modern.
Judgmental 1	I	Glass, Window, Aqua	2	Pane	
Judgmental 1	I	Iron, Lockplate	1		
<b>Judgmental 2</b>	<b>I</b>	Glass, Window, Aqua	1	Pane	
Judgmental 2	I	Porcelain, European hard paste	1	Body	
<b>Judgmental 3</b>	<b>I</b>	Glass, Vessel, Colorless	1	Body	
Judgmental 3	I	Glass, Vessel, Colorless	1	Rim	

**APPENDIX C: V-CRIS FORMS**

**Snapshot**

Date Generated: October 14, 2020

**Site Name:** No Data  
**Site Classification:** Terrestrial, open air  
**Year(s):** 1830 - 1860, 1861 - 1865  
**Site Type(s):** Dwelling, single  
**Other DHR ID:** No Data  
**Temporary Designation:** No Data

**Site Evaluation Status**

**Locational Information**

**USGS Quad:** MIDDLETOWN  
**County/Independent City:** Frederick (County)  
**Physiographic Province:** Valley and Ridge  
**Elevation:** 850 feet  
**Aspect:** Facing West  
**Drainage:** Potomac  
**Slope:** 2-6%  
**Acreage:** 6.090  
**Landform:** Knoll  
**Ownership Status:** Private  
**Government Entity Name:** No Data

**Site Components**

**Component 1**

**Category:** Domestic  
**Site Type:** Dwelling, single  
**Cultural Affiliation:** Euro-American  
**DHR Time Period:** Antebellum Period (1830 - 1860), Civil War (1861 - 1865)  
**Start Year:** No Data  
**End Year:** No Data  
**Comments:** No Data

**Bibliographic Information**

**Bibliography:**  
Phase I Cultural Resource Survey of the The ±255 Hectare (±630 Acre) Foxglove Solar Project Area. D+A. 2020.

**Informant Data:**  
No Data



**CRM Events**

**Event Type: Survey:Phase I**

**Project Staff/Notes:**

No Data

**Project Review File Number:**

No Data

**Sponsoring Organization:**

No Data

**Organization/Company:**

Dutton + Associates, LLC

**Investigator:**

Lauren Gryctko

**Survey Date:**

6/16/2020

**Survey Description:**

This survey was conducted in anticipation of development. Following a pedestrian reconnaissance of the project area, systematic shovel testing was conducted throughout the high potential sections, with shovel test placement avoided in areas of documented or visible significant ground disturbance, slopes in excess of 15 percent, and areas in statutory wetlands or water-saturated soils at the time of the survey. The soil excavated from all shovel tests was passed through 0.63-centimeter (1/4-inch) mesh screen and all shovel tests were approximately 0.38 meters (15 inches) in diameter and excavated to sterile subsoil or the practical limits of excavation. Isolated positive shovel tests were bracketed with radial shovel tests (half the distance to the next shovel test in all four directions) until two negative shovel tests in each direction were documented. Where possible, in areas where plowed soils were exposed with less than 80 percent surface coverage, areas were subjected to systematic pedestrian survey in lieu of subsurface testing.

Current Land Use	Date of Use	Comments
Pasture	6/22/2020	No Data

<b>Threats to Resource:</b>	Development
<b>Site Conditions:</b>	Subsurface Integrity
<b>Survey Strategies:</b>	Subsurface Testing
<b>Specimens Collected:</b>	Yes
<b>Specimens Observed, Not Collected:</b>	Yes

**Artifacts Summary and Diagnostics:**

The site consists of a total of 36 positive shovel test pits and a total of 235 artifacts, including aqua window glass, barbed wire, nail cut nails, redware with lead glaze, handmade brick, shell edge pearlware, an earthenware agateware doorknob, colorless vessel glass, window glass, milk glass with a molded decoration, Chinese porcelain with a transfer print, molded colorless vessel glass, whiteware with a molded rim, whiteware, wire nails, a zinc lid jar, wrought nails, an iron sheet, stoneware with Albany slip, plaster, lime, an iron chain, American gray salt glaze stoneware, yellowware, the inner workings of a clock, and hard paste porcelain.

**Summary of Specimens Observed, Not Collected:**

The artifacts are clustered around the ruins of a circa 1830s single dwelling – The Miller House VDHR (#034-0254) – and its associated outbuildings. The site boundaries also include The Miller cemetery (VDHR #034-5085.) Visual inspection revealed that headstones within the Miller Cemetery had been displaced and were no longer in situ. Thus, identifying the number of burials within the stone fence was not possible through visual inspection. Additionally, the cemetery has become much more overgrown since it was assessed in 2018 for a Phase IA by Circa-. The stone fence still stands, in places, and appears to significantly delineate the cemetery on all sides.

<b>Current Curation Repository:</b>	D+A
<b>Permanent Curation Repository:</b>	To be determined by the client
<b>Field Notes:</b>	Yes
<b>Field Notes Repository:</b>	to be determined by the client
<b>Photographic Media:</b>	Digital
<b>Survey Reports:</b>	Yes

**Survey Report Information:**

Phase I Cultural Resource Survey of the The ±255 Hectare (±630 Acre) Foxglove Solar Project Area

<b>Survey Report Repository:</b>	D+A
<b>DHR Library Reference Number:</b>	No Data
<b>Significance Statement:</b>	The architectural resources and surface features coupled with the collected artifacts suggest that this site dates to the early to mid-nineteenth century. Shovel test pits revealed a level of integrity within the limits of the site which suggest – if present – subsurface features should be identifiable. Based on the site’s connection to the Miller House (VDHR #034-0254) it is possible that further archaeological research will be lucrative in providing historical details pertaining to the Miller Family and the ways of life in the mid-nineteenth century in Frederick County, Virginia. This site is recommended potentially eligible for inclusion in the NRHP. D+A recommends that this site either be avoided or subject to further testing.

<b>Surveyor's Eligibility Recommendations:</b>	Recommended Potentially Eligible
<b>Surveyor's NR Criteria Recommendations:</b>	D
<b>Surveyor's NR Criteria Considerations:</b>	No Data

**Snapshot**

Date Generated: October 14, 2020

**Site Name:** No Data  
**Site Classification:** Terrestrial, open air  
**Year(s):** 1866 - 1916, 1917 - 1945, 1946 - 1991, 1992 - ?  
**Site Type(s):** Dwelling, single  
**Other DHR ID:** No Data  
**Temporary Designation:** No Data

<b>Site Evaluation Status</b>
-------------------------------

**Locational Information**

**USGS Quad:** MIDDLETOWN  
**County/Independent City:** Frederick (County)  
**Physiographic Province:** Valley and Ridge  
**Elevation:** 775 feet  
**Aspect:** Facing North  
**Drainage:** Potomac  
**Slope:** 0-2%  
**Acreage:** 0.370  
**Landform:** Knoll  
**Ownership Status:** Private  
**Government Entity Name:** No Data

**Site Components**

**Component 1**

**Category:** Domestic  
**Site Type:** Dwelling, single  
**Cultural Affiliation:** Euro-American  
**DHR Time Period:** Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991), Post Cold War (1992 - Present)  
**Start Year:** No Data  
**End Year:** No Data  
**Comments:** This site is associated with a standing structure which is within VDHR #034-5075 . The standing structure, while no longer in use, appears to have been in use up until recently, as demonstrated by the vinyl siding on the house. Modern trash litters the site and was found subsurface as well.

**Bibliographic Information**

**Bibliography:**  
Phase I Cultural Resource Survey of the The ±255 Hectare (±630 Acre) Foxglove Solar Project Area  
**Informant Data:**  
No Data

**CRM Events**

**Event Type: Survey:Phase I**

**Project Staff/Notes:**

No Data

**Project Review File Number:**

No Data

**Sponsoring Organization:**

No Data

**Organization/Company:**

Dutton + Associates, LLC

**Investigator:**

Lauren Gryctko

**Survey Date:**

6/16/2020

**Survey Description:**

This survey was conducted in anticipation of development. Following a pedestrian reconnaissance of the project area, systematic shovel testing was conducted throughout the high potential sections, with shovel test placement avoided in areas of documented or visible significant ground disturbance, slopes in excess of 15 percent, and areas in statutory wetlands or water-saturated soils at the time of the survey. The soil excavated from all shovel tests was passed through 0.63-centimeter (1/4-inch) mesh screen and all shovel tests were approximately 0.38 meters (15 inches) in diameter and excavated to sterile subsoil or the practical limits of excavation. Isolated positive shovel tests were bracketed with radial shovel tests (half the distance to the next shovel test in all four directions) until two negative shovel tests in each direction were documented. Where possible, in areas where plowed soils were exposed with less than 80 percent surface coverage, areas were subjected to systematic pedestrian survey in lieu of subsurface testing.

**Current Land Use**

Agricultural field

**Date of Use**

6/16/2020

**Comments**

The site is located in a very overgrown patch of trees and weeds which is at the northeastern corner of an apple orchard

**Threats to Resource:**

Development

**Site Conditions:**

75-99% of Site Destroyed

**Survey Strategies:**

Subsurface Testing, Surface Testing

**Specimens Collected:**

Yes

**Specimens Observed, Not Collected:**

Yes

**Artifacts Summary and Diagnostics:**

This site consists of a total of eight (8) collected artifacts which are concentrated in the yard space of part of a previously identified architectural resource – VDHR 034-5075 – Each shovel test pit excavated in this area contained cultural material associated with this site, along with debris such as plastic. Artifacts collected include porcelain, aqua window glass, an iron lock plate, European hard paste porcelain, and colorless vessel glass. Modern debris was identified on the surface and subsurface at this site.

**Summary of Specimens Observed, Not Collected:**

Modern debris suggesting that this area has been used as a modern dump was noted in this area.

**Current Curation Repository:**

D+A

**Permanent Curation Repository:**

To be determined by the client

**Field Notes:**

Yes

**Field Notes Repository:**

D+A

**Photographic Media:**

Digital

**Survey Reports:**

Yes

**Survey Report Information:**

Phase I Cultural Resource Survey of the The ±255 Hectare (±630 Acre) Foxglove Solar Project Area

**Survey Report Repository:**

D+A

**DHR Library Reference Number:**

No Data

**Significance Statement:**

Due to the disturbance as confirmed by visual inspection and by the presence of debris in the excavated shovel test pits, it is unlikely that further excavation of this site will provide any valuable historical data. This site is recommended as not eligible for inclusion in the NRHP.

**Surveyor's Eligibility Recommendations:**

Recommended Not Eligible

**Surveyor's NR Criteria Recommendations:**

No Data

**Surveyor's NR Criteria Considerations:**

No Data

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Attachment I – Preliminary Jurisdictional Determination



**DEPARTMENT OF THE ARMY**  
**U.S. ARMY CORPS OF ENGINEERS, NORFOLK DISTRICT**  
**803 FRONT STREET**  
**NORFOLK, VA 23510-1011**

January 12, 2021

Northern Virginia Regulatory Section  
NAO-2020-02222 (Buffalo Marsh Run)

Mr. James Crawford  
Foxglove Solar, LLC  
337 Log Canoe Trail  
Stevensville, Maryland 21666

Dear Mr. Crawford:

This letter is in reference to a request on your behalf from GeoEnvironmental Services Inc., for a delineation confirmation and jurisdictional determination for waters of the U.S. (including wetlands) within an approximately 673-acre study area at 943 Clark Road, Stephens City, in Frederick County, Virginia. The project is called Foxglove Solar.

The enclosed exhibit in six (6) sheets entitled "Foxglove Solar Project, Frederick County, Virginia dated November 17, 2020, provides the locations of waters and/or wetlands on the properties listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation and the presence of an ordinary high water mark.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination. This preliminary jurisdictional determination and associated wetland delineation map may be submitted with a permit application.

Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return a copy within 30 days of receipt and keep one for your records. This delineation of waters and/or wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date.

If you have any questions, please contact me at [ron.h.stouffer@usace.army.mil](mailto:ron.h.stouffer@usace.army.mil) or 757-201-7124.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Stouffer, Jr.", with a long horizontal flourish extending to the right.

Ronald H. Stouffer, Jr.  
Environmental Scientist  
Northern Virginia Regulatory Section

Enclosures

cc: GeoEnvironmental Services Inc.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

**BACKGROUND INFORMATION:**

A. COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): January 12, 2021

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

Foxglove Solar, LLC  
Attn: Mr. James Crawford  
337 Log Canoe Trail  
Stevensville, Maryland 21666

C. DISTRICT OFFICE: Norfolk District (CENAO-WRR) FILE NUMBER: NAO-2020-02222-rhs

FILE NAME: Foxglove Solar

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

State: VIRGINIA County/parish/borough: Frederick Town/City: n/a

Center coordinates of site:

Latitude: 39.0704° N Longitude: -78.2772° W

Universal Transverse Mercator: n/a

Name of nearest waterbody: Buffalo Marsh Run

Identify (estimate) amount of waters in the review area:

Non-wetland waters: ± 1610 linear feet

Cowardin Class: R3, R4

Stream Flow: n/a

Wetlands: ± 2.01 acres

Cowardin Class: PFO, PEM, POW

Name of any water bodies on the site that have been identified as Section 10 waters: Tidal: n/a

Non-Tidal: n/a

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- Office (Desk) Determination Date:
- Field Determination Date: December 3, 2020

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative



appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

3. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

**SUPPORTING DATA:**

Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below.

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

Data sheets prepared/submitted by or on behalf of the applicant/consultant.

Office concurs with data sheets/delineation report.

Office does not concur with data sheets/delineation report.

Data sheets prepared by the Corps:

Corps navigable waters' study:

U.S. Geological Survey Hydrologic Atlas:

USGS NHD data.

USGS 8 and 12 digit HUC maps.

U.S. Geological Survey map(s). Cite scale & quad name: Middletown 1:24,000

USDA Natural Resources Conservation Service Soil Survey.

Citation: Frederick County

National wetlands inventory map(s). Cite name: Frederick County

State/Local wetland inventory map(s):

FEMA/FIRM maps:

100-year Floodplain Elevation: (National Geodetic Vertical Datum of 1929)

Photographs:  Aerial (Name & Date): in report

Or  Other (Name & Date): in report

Previous determination(s):

File no. and date of response letter:

Other information (please specify):

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**



Signature  
Regulatory Project Manager

January 12, 2021  
Date

Robert T. Fleet

Digitally signed by Robert T. Fleet  
DN: cn=Robert T. Fleet, o=GeoEnvironmental  
Services, Inc., ou,  
email=rfleet@geoenvironmental.net, c=US  
Date: 2021.01.12 17:03:14 -05'00'

Signature of person requesting  
Preliminary JD  
(REQUIRED, unless obtaining the signature  
is impracticable)

Date



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
NORFOLK DISTRICT CORPS OF ENGINEERS  
FORT NORFOLK 803 FRONT STREET  
NORFOLK VIRGINIA 23510-1094

JANUARY 12, 2021

**Supplemental Preapplication Information**

Project Number: NAO-2020-02222  
Applicant: Foxglove Solar  
Project Location: Frederick County

1. A search of the Virginia Department of Historic Resources data revealed the following:

- No known historic properties are located on the property.
- Known architectural resources are located on the property:
- Known archaeological resources are located on the property:
- Known historic resources are in the vicinity of the property.

**NOTE:**





- 1) *The information above is for planning purposes only. In many cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
- 2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Wildlife Resources revealed the following:

- No known populations of threatened or endangered species are located on or within the vicinity of the subject property.
- The following federally listed species may occur within the vicinity of the subject property:  
Northern Long-eared Bat (*Myotis septentrionalis*), Indiana Bat (*Myotis sodalis*)
- The following state-listed (or other) species may occur within the vicinity of the subject property:
- Known listed species may occur in the vicinity of the subject property:

***Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.***



Explanation	
Project Area - ±673 Acres	
	Wetlands & WOUS +2.01 Acres
	Wetland Data Point
	Streams & Channels (est.) ±1,610 Feet
	Wetland Flag I.D.

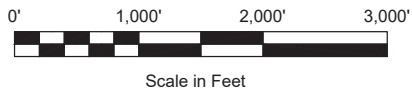


FIGURE 1  
OVERALL  
WETLANDS MAP  
1" = 1,000'

**FOXGLOVE SOLAR PROJECT**  
  
FREDERICK COUNTY, VIRGINIA

DATE: 11-17-20  
REVISED:  
  
Wetland Delineation and  
GNSS Location by  
GeoEnvironmental  
Services, Inc.

**GEOENVIRONMENTAL SERVICES**  
P.O. BOX 1555  
MECHANICSVILLE, VIRGINIA 23116  
804.730.8220  
FAX 804.730.0167

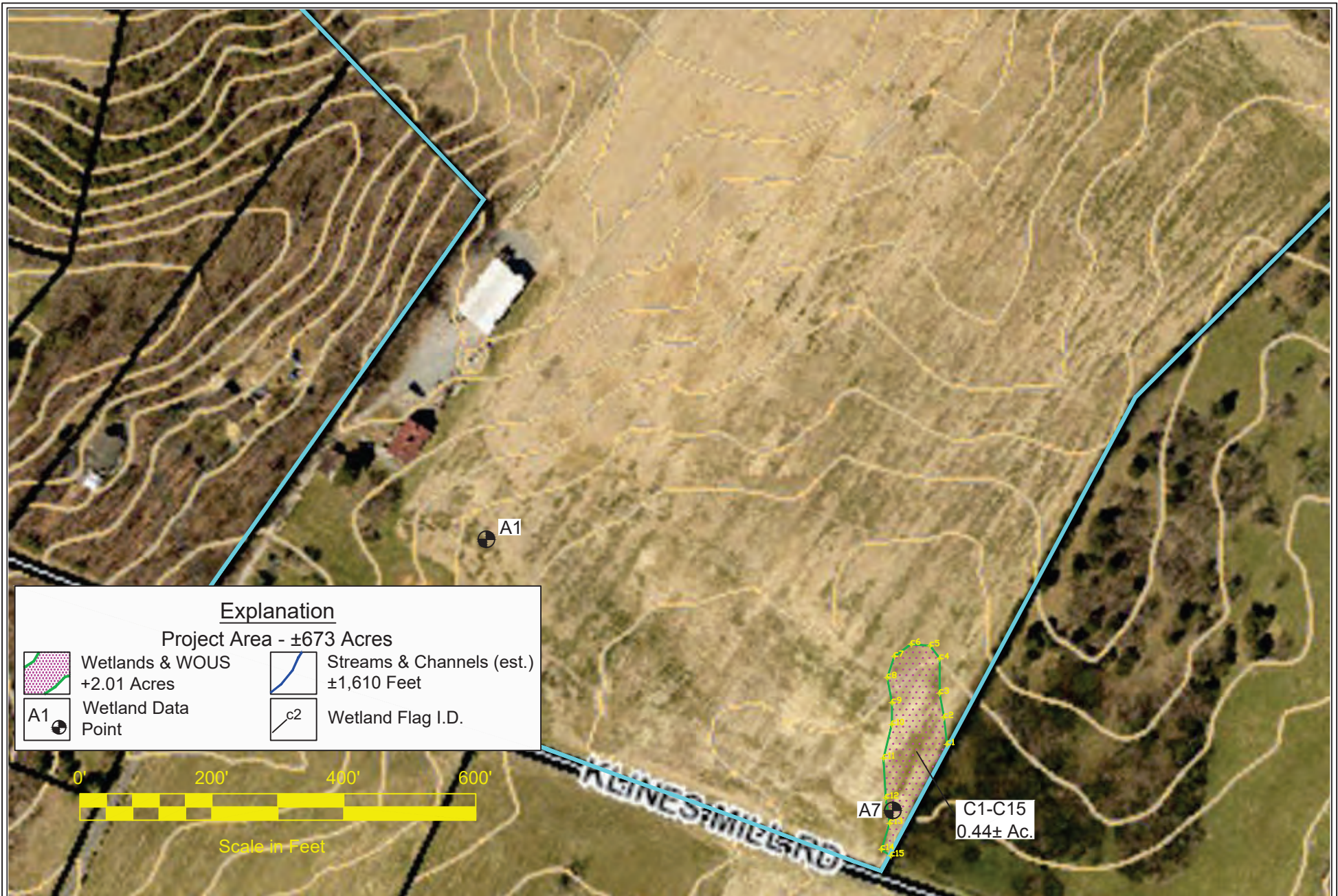


FIGURE 2

WETLAND SERIES  
C1-C15

1" = 200'

FOXGLOVE SOLAR PROJECT

FREDERICK COUNTY, VIRGINIA

DATE: 11-17-20  
 REVISED:

Wetland Delineation and  
 GNSS Location by  
 GeoEnvironmental  
 Services, Inc.

GEOENVIRONMENTAL  
 SERVICES

P.O. BOX 1555  
 MECHANICSVILLE, VIRGINIA 23116  
 804.730.8220  
 FAX 804.730.0167

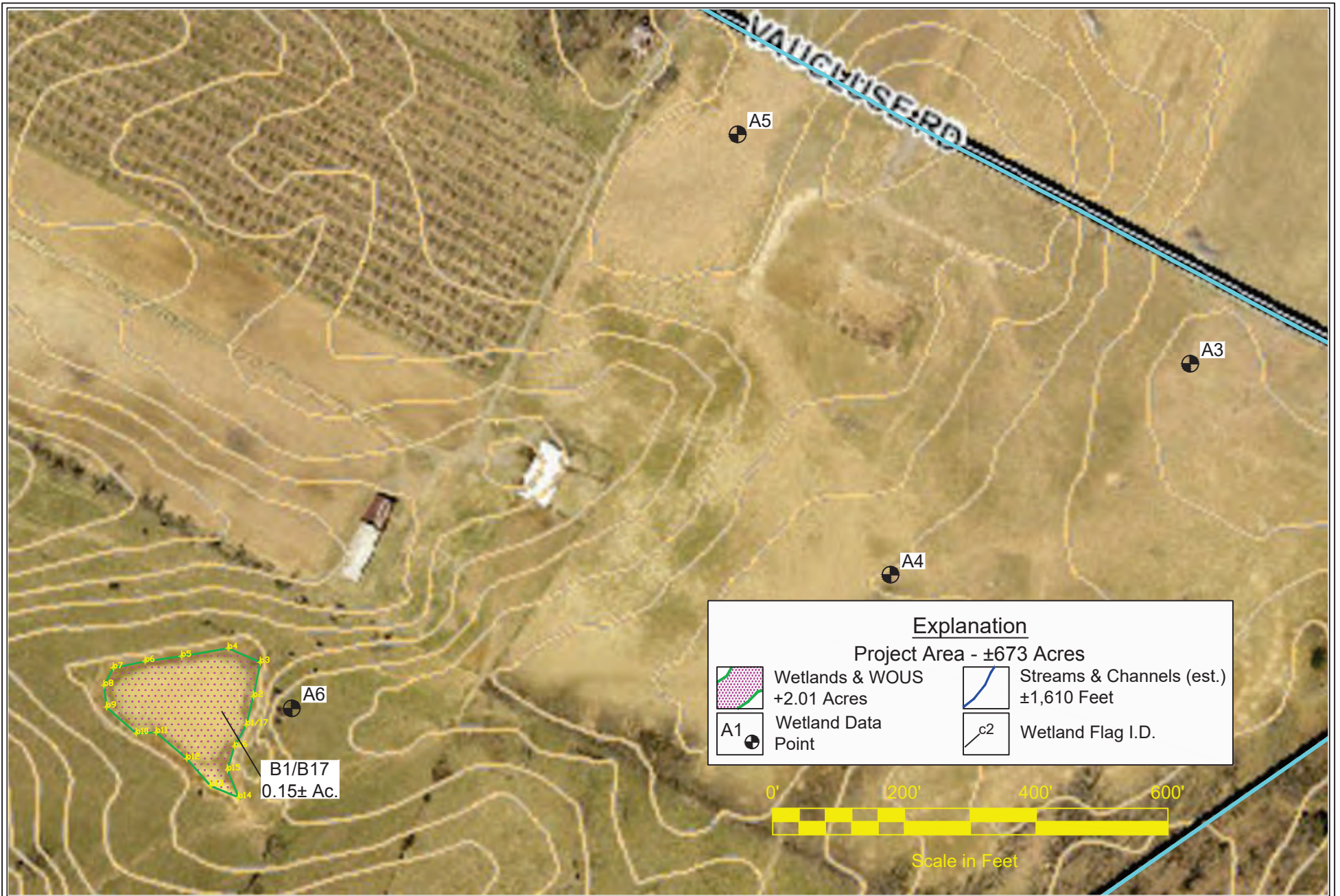


FIGURE 3

WETLAND SERIES  
 B1/B17

1" = 200'

**FOXGLOVE SOLAR PROJECT**

FREDERICK COUNTY, VIRGINIA

DATE: 11-17-20  
 REVISED:

Wetland Delineation and  
 GNSS Location by  
 GeoEnvironmental  
 Services, Inc.

**GEOENVIRONMENTAL  
 SERVICES**

P.O. BOX 1555  
 MECHANICSVILLE, VIRGINIA 23116  
 804.730.8220  
 FAX 804.730.0167

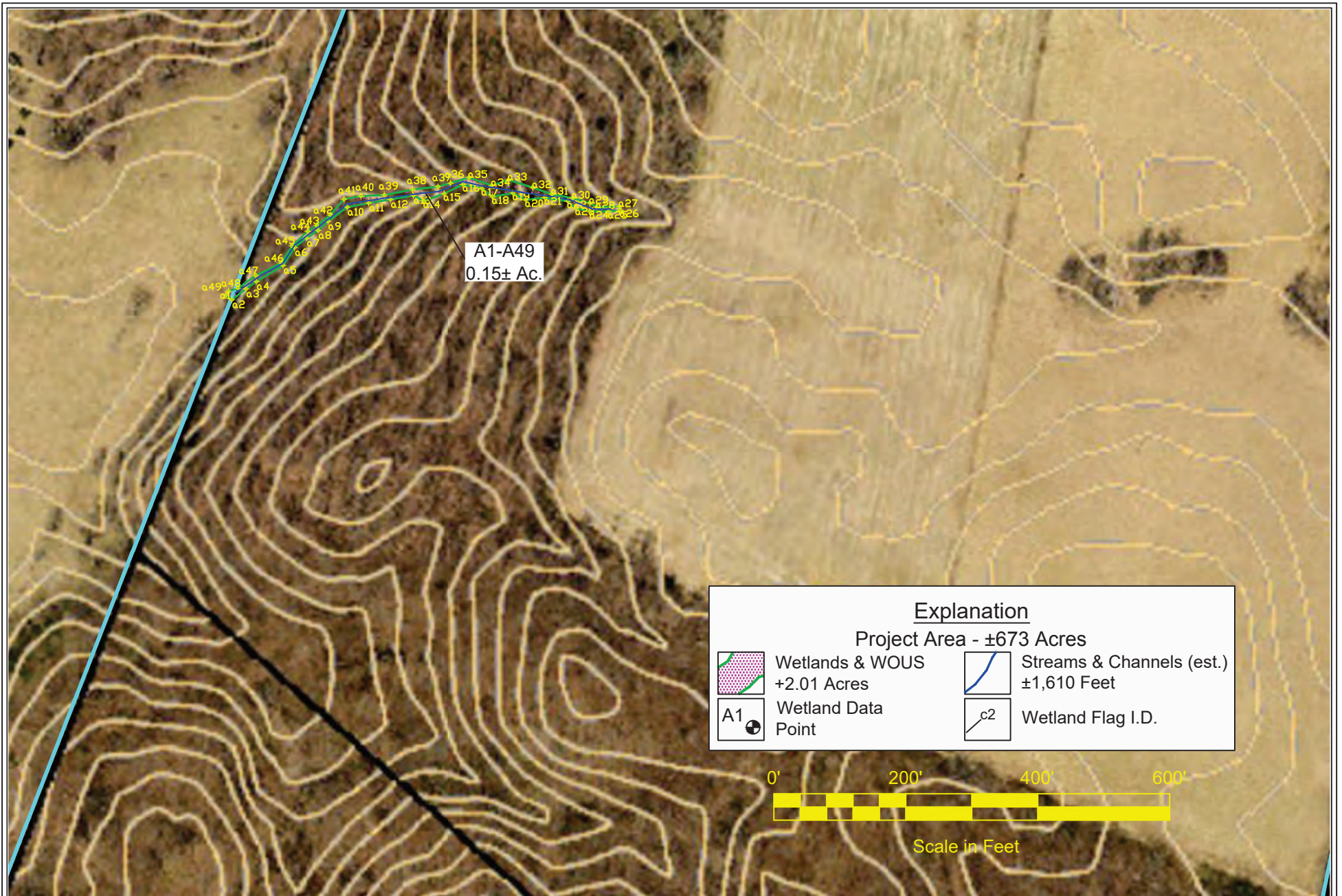


FIGURE 4

WETLAND SERIES  
A1-A49

1" = 200'

## FOXGLOVE SOLAR PROJECT

FREDERICK COUNTY, VIRGINIA

DATE: 11-17-20  
REVISED:

Wetland Delineation and  
GNSS Location by  
GeoEnvironmental  
Services, Inc.

**GEOENVIRONMENTAL  
SERVICES**

P.O. BOX 1555  
MECHANICSVILLE, VIRGINIA 23116  
804.730.8220  
FAX 804.730.0167



FIGURE 5  
 WETLAND SERIES  
 A50-A147  
 1" = 200'

FOXGLOVE SOLAR PROJECT  
 FREDERICK COUNTY, VIRGINIA

DATE: 11-17-20  
 REVISED:  
 Wetland Delineation and  
 GNSS Location by  
 GeoEnvironmental  
 Services, Inc.

GEOENVIRONMENTAL  
 SERVICES  
 P.O. BOX 1555  
 MECHANICSVILLE, VIRGINIA 23116  
 804.730.8220  
 FAX 804.730.0167

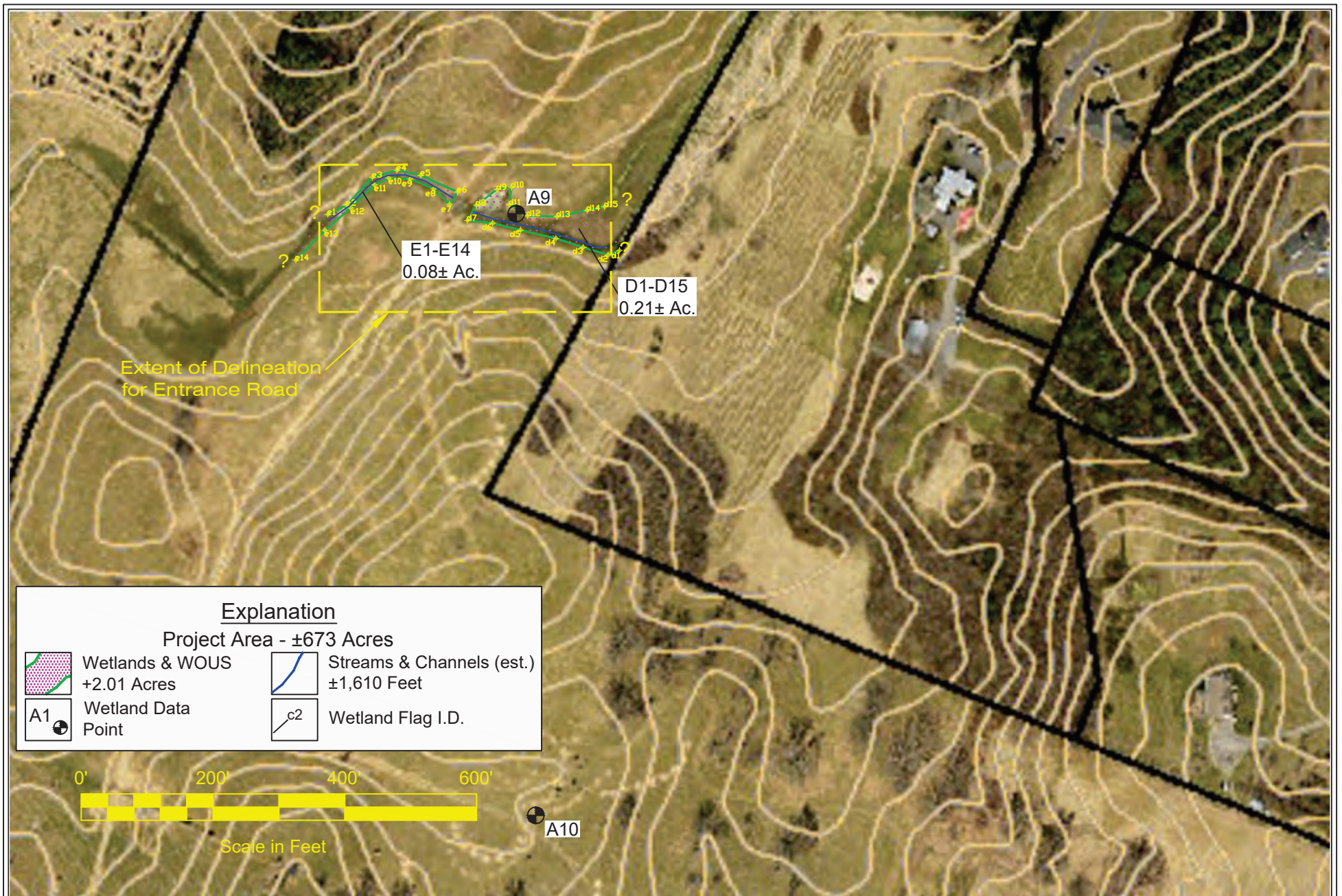


FIGURE 6

WETLAND SERIES  
D1-D15 & E1-E14

1" = 200'

**FOXGLOVE SOLAR PROJECT**

FREDERICK COUNTY, VIRGINIA

DATE: 11-17-20  
REVISED:

Wetland Delineation and  
GNSS Location by  
GeoEnvironmental  
Services, Inc.

**GEOENVIRONMENTAL  
SERVICES**

P.O. BOX 1555  
MECHANICSVILLE, VIRGINIA 23116  
804.730.8220  
FAX 804.730.0167





**NORFOLK DISTRICT REGULATORY OFFICE  
PRE-APPLICATION AND/OR JURISDICTIONAL WATERS  
DETERMINATION REQUEST FORM**

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or e-mailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. **THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.**

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District  
Regulatory Office  
803 Front Street  
Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: [CENAO.REG\\_ROD@usace.army.mil](mailto:CENAO.REG_ROD@usace.army.mil)

Additional information on the Regulatory Program is available on our website at:  
<http://www.nao.usace.army.mil/>

Please contact us at 757-201-7652 if you need any assistance with filling out this form.

---

**Location and Information about Property to be subject to a Jurisdictional Determination:**

1. Date of Request:
2. Project Name:
3. City or County where property located:
4. Address of property and directions (attach a map of the property location and a copy of the property plat):
5. Coordinates of property (if known):
6. Size of property in acres:
7. Tax Parcel Number / GPIN (if available):
8. Name of Nearest Waterway:

7. Brief Description of Proposed Activity, Reason for Preapplication Request, and/or Reason for Jurisdictional Waters Determination Request:

8. Has a wetland delineation/determination been completed by a consultant or the Corps on the property previously?  YES  NO UNKNOWN

If yes, please provide the name of the consultant and/or Corps staff and Corps permit number, if available:

**Property Owner Contact Information:**

Property Owner Name:

Mailing Address:

City: State: Zip:

Daytime Telephone:

E-mail Address:

If the person requesting the Jurisdictional Determination is **NOT** the Property Owner, please also supply the Requestor's contact information here:

Requestor Name:

Mailing Address:

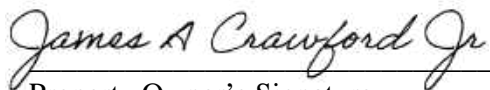
City: State: Zip:

Daytime Telephone:

E-mail Address:

Additionally, if you have any of the following information, please include it with your request: wetland delineation map, other relevant maps, drain tile survey, topographic survey, and/or site photographs.

CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:



Property Owner's Signature

\_\_\_\_\_ Date

## Attachment J – Mitigation Plan

## ATTACHMENT J - MITIGATION PLAN

The Applicant proposes the following mitigation efforts to minimize/remove the potential impacts to natural resources within and in close proximity to the Project. This information, along with two exhibits are included to show proposed mitigation for threatened and endangered species, and cultural resources constitute the Project's mitigation plan.

### **Threatened and Endangered Species Review**

There are three species identified to be potentially present within the vicinity of the Project: Little Brown Bat, Potomac/Appalachian Springsnail, and Wood Turtle.

Little Brown Bat – The Project is located approximately 70 miles from the nearest known hibernaculum, no adverse impacts are anticipated for the species. No direct or incidental take is planned or expected. Tree clearing will occur, but mostly within fields previously used as orchards, and woodlands are noted to be retained within the Project limits that will minimize ground-disturbing activities. No structures are planned to be demolished within the Project limits.

Potomac/Appalachian Springsnail - The Project proposes to minimize any potential impacts to the springsnail through avoiding disturbance to the aquatic habitat, and, where practicable, with a buffer of approximately 200 feet between ground-disturbing activities and Buffalo Marsh Run. Additionally, the Applicant will adhere to all applicable erosion and sediment control/stormwater management regulations.

Wood Turtle – The portion of the Project directly adjacent to Meadow Brook is not proposed for development. The closest area of planned ground-disturbing activities is approximately 0.25 miles (1304 feet) from the stream (see Attachment J - Mitigation Plan). Given the distance between the stream and the Project, minimal adverse impacts are anticipated.

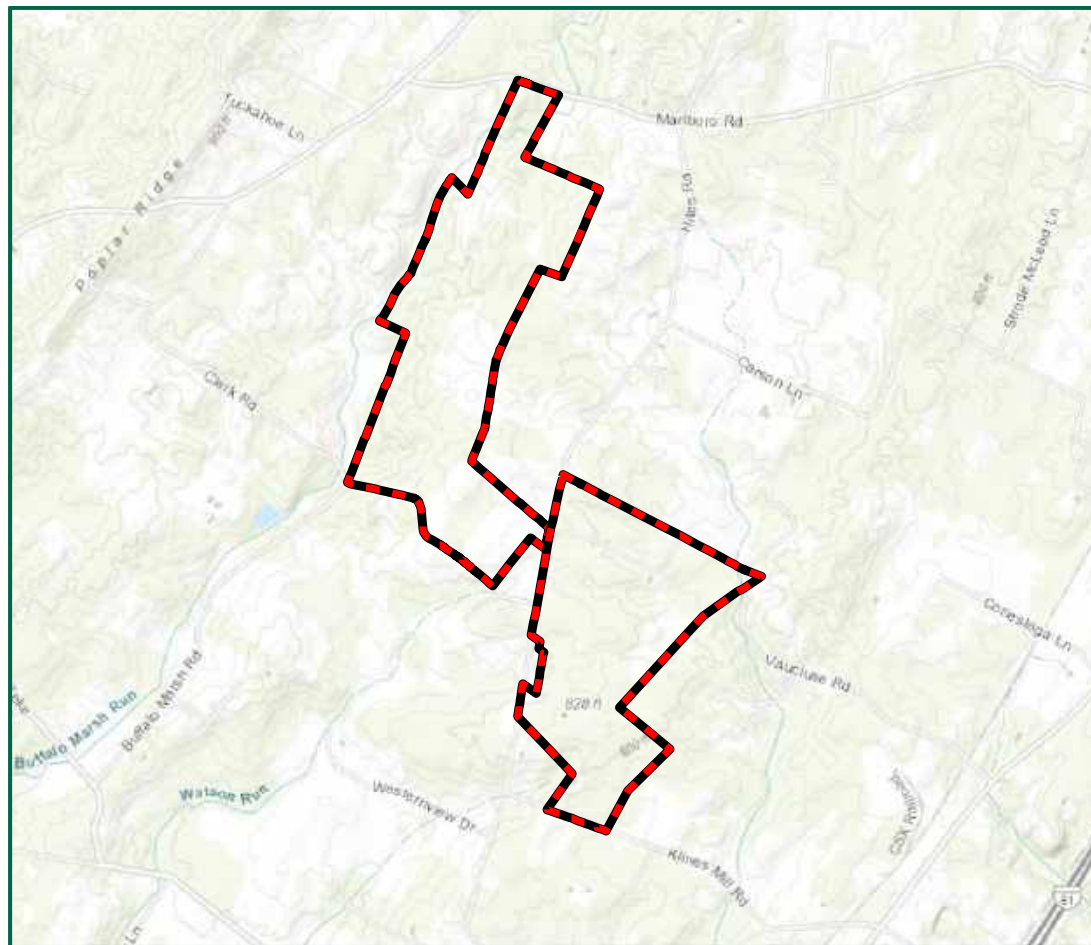
### **Cultural Resources**

Archaeological site 44FK1010, which includes architectural resources 034-0254 and 034-5085, is recommended as potentially eligible for inclusion in the NRHP and will be avoided. The remainder of the archeological resources are not considered eligible for listing in the NRHP.

Seven NRHP-eligible architectural resources were assessed for impacts from the Project through the inspection of existing conditions and viewshed analysis. The Project impacts on these resources range from minimal to moderate. The Applicant plans to utilize landscaping buffers to minimize impacts. Additionally, the Project plans to completely avoid resource 034-5075 as a means of mitigating potential effects to that resource.

### **Additional Resources**

Wetlands and streams on the Project have been delineated and will be avoided during preliminary site design. In the event wetland impacts are proposed, they will adhere to all applicable permit and regulatory requirements.



**Legend**

**Proposed Features**

- Project Limits - 671.9 Acres
- Proposed Project Entrance
- Woven Wire or Chain Link Fence (7' in height maximum)
- Development Envelope - 364.6 Acres

**Vegetative Screening**

- Proposed 10 Foot Wide Vegetative Screening
- Existing 50 Foot Wide Mature Woodland

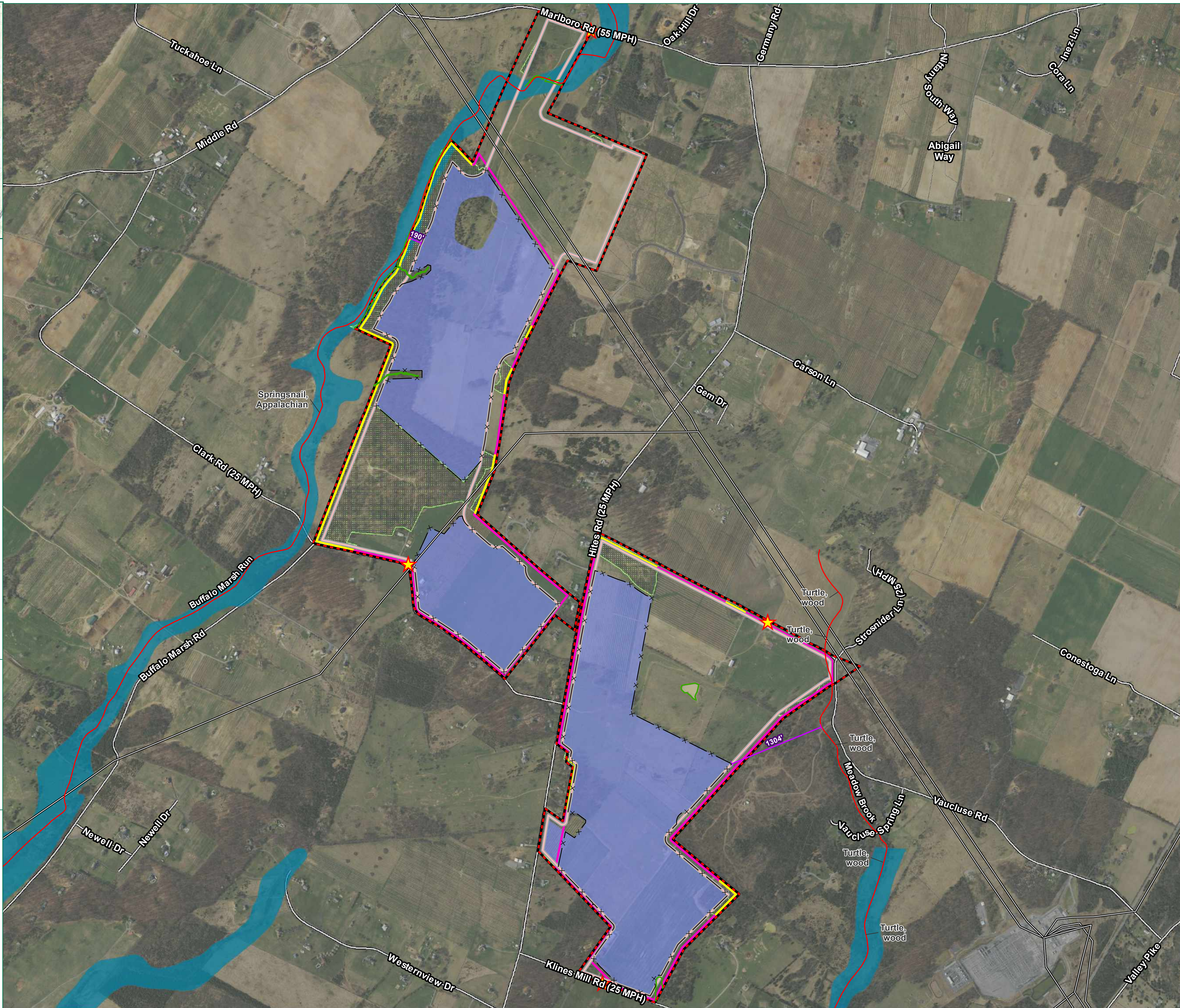
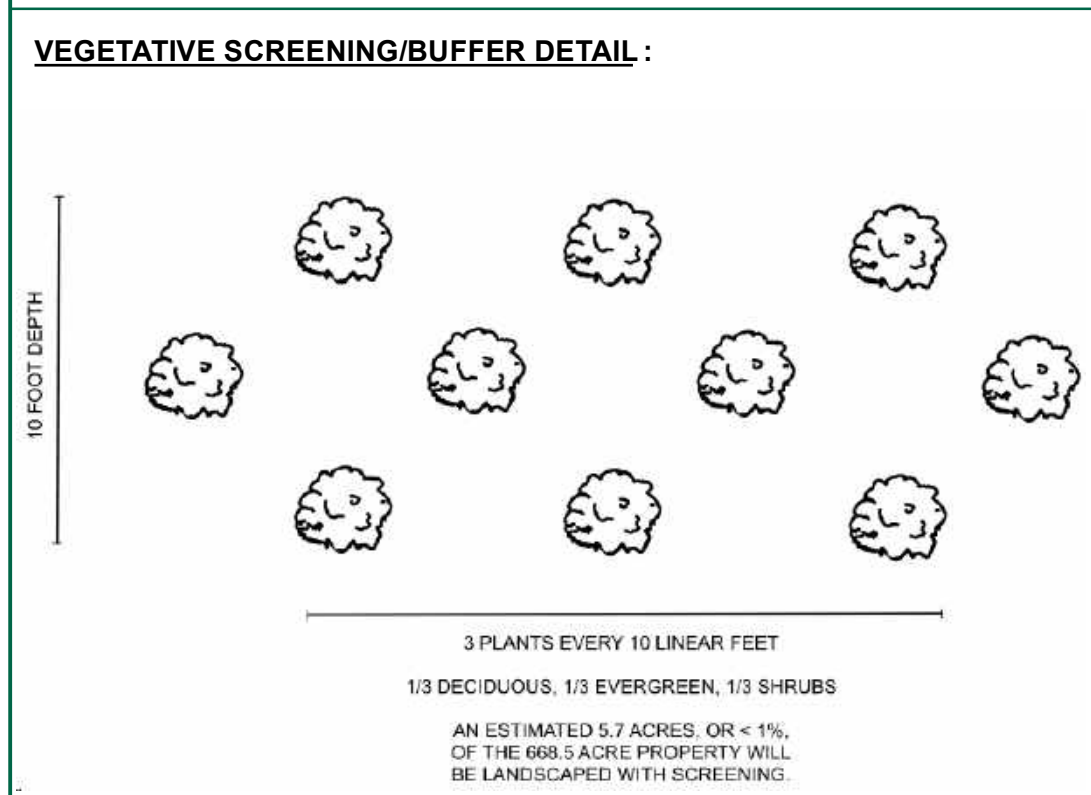
**Constraints**

- Setbacks - 50' / 60' / 75' / 100' / 200'
- Distance from Threatened and Endangered Waters

**Existing Features**

- Road Centerline
- Transmission Line
- Wetland
- Threatened/Endangered Waters
- Retained Woodlands

- NOTES:**
- PROJECT AREA HAS BEEN ALTA SURVEYED.
  - SETBACK LINES ARE 60 FEET FROM ADJACENT RIGHT OF WAYS, 50 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS LESS THAN 6 ACRES, 75 FEET FROM A PORTION OF HITES ROAD, 100 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS GREATER THAN 6 ACRES, AND 200 FEET FROM ADJACENT AGRICULTURAL AND FOREST DISTRICT PARCELS GREATER THAN 6 ACRES.
  - LANDSCAPING IS 10 FEET WIDE ALL AROUND EXCEPT WHERE 50 FEET OF MATURE WOODLAND IN WIDTH IS EXISTING.
  - EXISTING WOODLANDS WITHIN THE SETBACK WILL BE RETAINED.
  - THREATENED AND ENDANGERED WATERS FROM VDWR.



**TIMMONS GROUP**  
YOUR VISION ACHIEVED THROUGH OURS.  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23225  
TEL 804.206.6900  
www.timmons.com

**URBAN GRID**

PROJECT NAME & LOCATION  
**FOXGLOVE SOLAR PROJECT**  
**FOXGLOVE SOLAR, LLC**  
FREDERICK COUNTY,  
VIRGINIA

DATE	02/01/2021
PROJECT NUMBER	41147
PROJECT NAME	FOXGLOVE SOLAR, LLC
DESIGNED BY / DRAWN BY	L. WHEELER

FOXGLOVE SOLAR, LLC  
337 LOG CANOE CIRCLE  
STEVENSVILLE, MD 21666  
(410) 604-3603

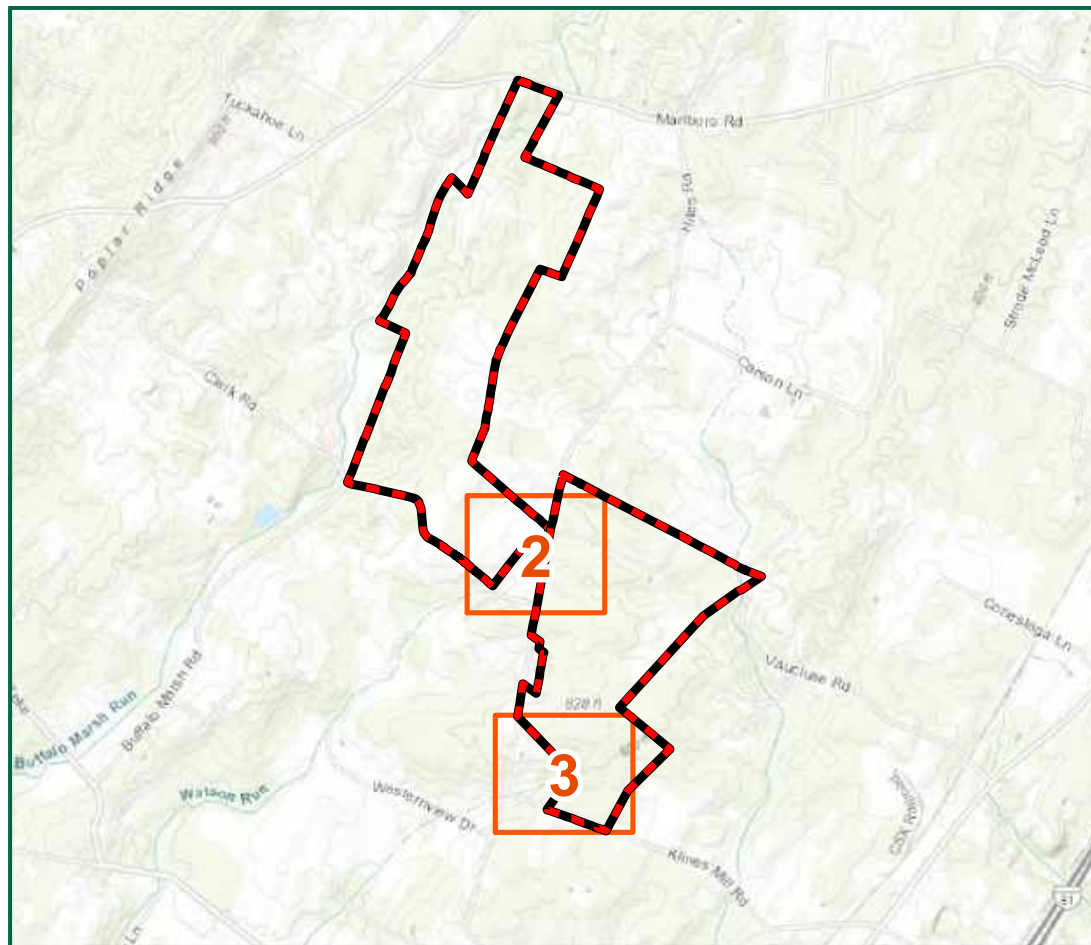
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**REVISIONS**

#	DATE	DESCRIPTION

DRAWING DESCRIPTION  
**THREATENED AND ENDANGERED SPECIES MITIGATION MAP**

SCALE (FEET)  
0 650 1,300  
PLANS PRINTED AS 11X17 ARE HALF SCALE  
SCALE SHEET NUMBER  
H:1" = 650' 1



**Legend**

**Proposed Features**

- Project Limits - 671.9 Acres
- Proposed Project Entrance
- Woven Wire or Chain Link Fence (7' in height maximum)
- Development Envelope - 331.5 Acres
- Solar Panels
- Internal Roads

**Vegetative Screening**

- Proposed 10 Foot Wide Vegetative Screening
- Existing 50 Foot Wide Mature Woodland

**Constraints**

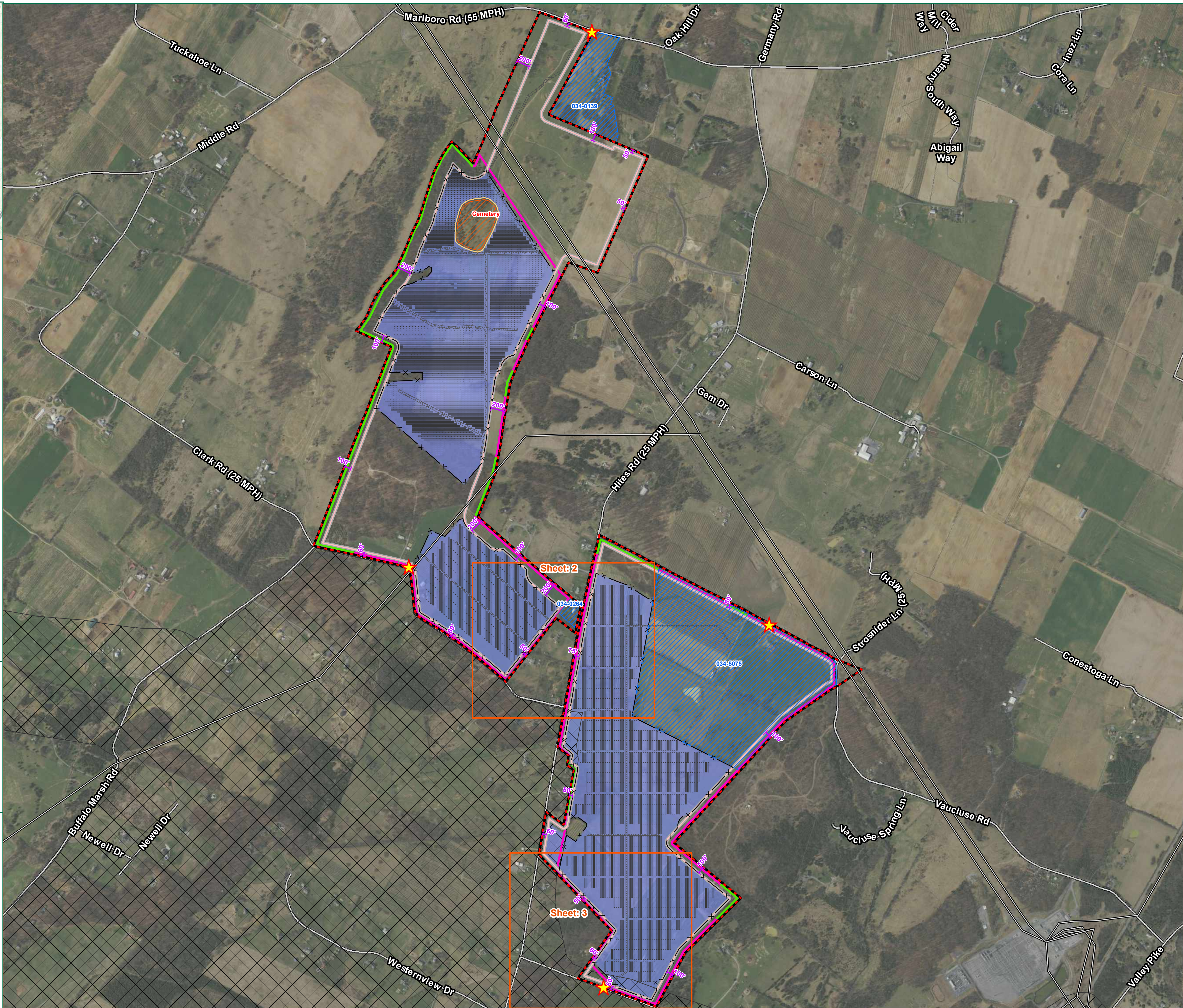
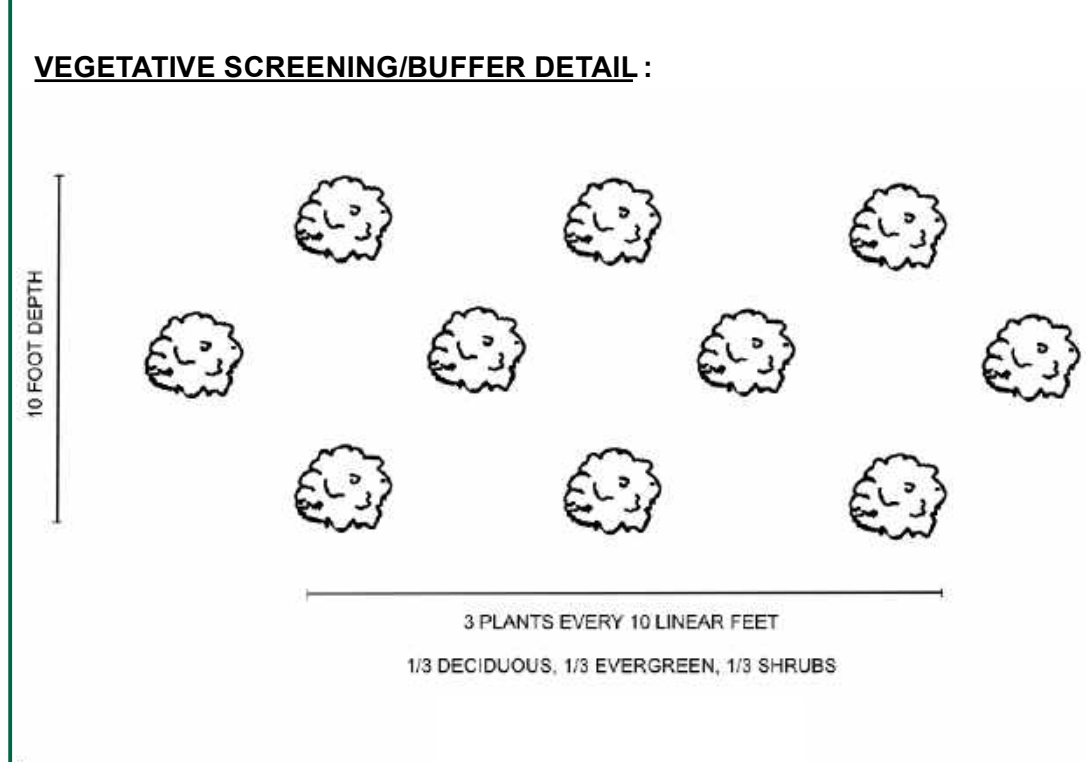
- Setbacks - 50' / 60' / 75' / 100' / 200'
- Cultural Resource - Archaeology
- Cultural Resource - Architecture
- Cultural Resource Buffer - 25'
- Cedar Creek Battlefield

**Existing Features**

- Road Centerline
- Transmission Line

**NOTES:**

- PROJECT AREA HAS BEEN ALTA SURVEYED.
- SETBACK LINES ARE 60 FEET FROM ADJACENT RIGHT OF WAYS, 50 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS LESS THAN 6 ACRES, 75 FEET FROM A PORTION OF HITES ROAD, 100 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS GREATER THAN 6 ACRES, AND 200 FEET FROM ADJACENT AGRICULTURAL AND FOREST DISTRICT PARCELS GREATER THAN 6 ACRES.
- LANDSCAPING IS 10 FEET WIDE ALL AROUND EXCEPT WHERE 50 FEET OF MATURE WOODLAND IN WIDTH IS EXISTING.
- EXISTING WOODLANDS WITHIN THE SETBACK WILL BE RETAINED.
- CULTURAL RESOURCES HAVE BEEN FIELD DELINEATED BY DUTTON ASSOCIATES.



**TIMMONS GROUP**  
YOUR VISION ACHIEVED THROUGH OURS.  
1001 Boulders Parkway, Suite 300  
Richmond, VA 23225  
TEL 804.200.6900  
www.timmons.com



PROJECT NAME & LOCATION  
**FOXGLOVE SOLAR PROJECT**  
FOXGLOVE SOLAR, LLC  
FREDERICK COUNTY,  
VIRGINIA

DATE: 12/23/2020  
PROJECT NUMBER: 41147  
PROJECT NAME: FOXGLOVE SOLAR, LLC  
DESIGNED BY / DRAWN BY: L. WHEELER

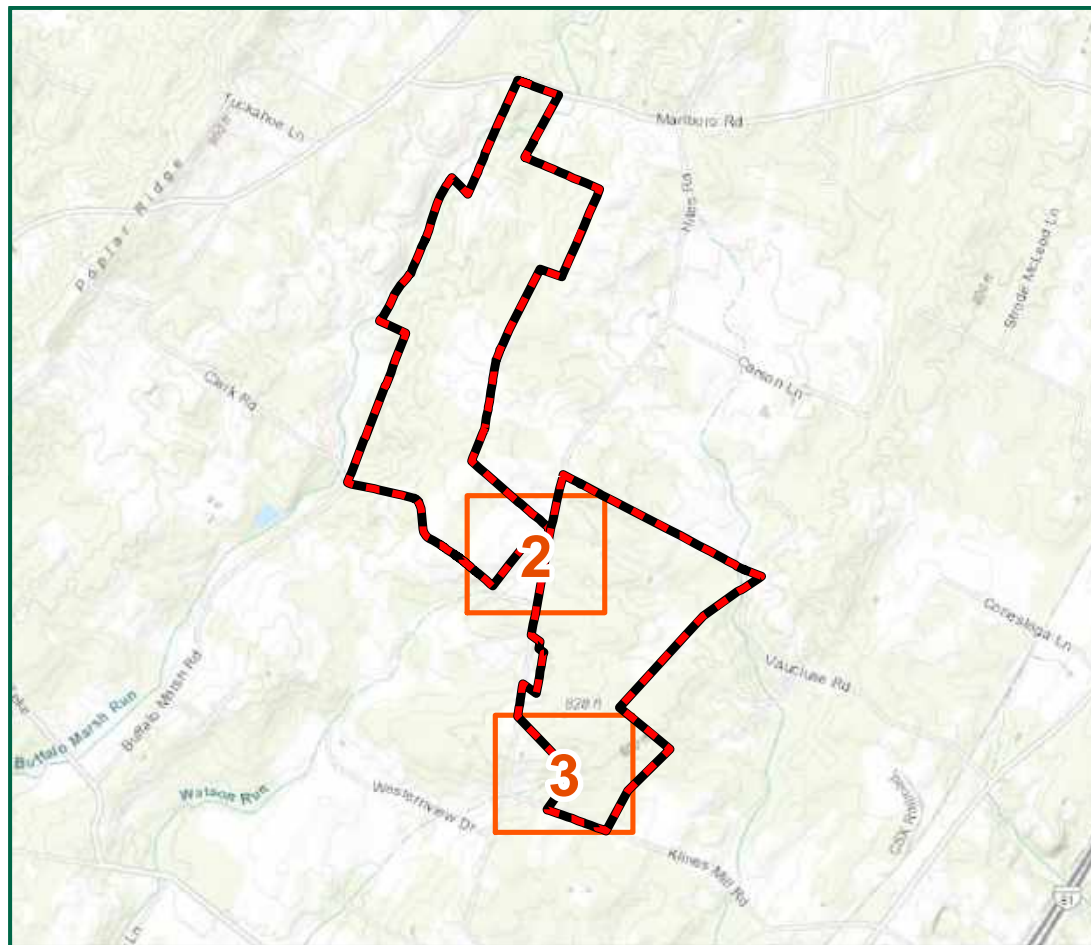
FOXGLOVE SOLAR, LLC  
337 LOG CANOE CIRCLE  
STEVENSVILLE, MD 21666  
(410) 604-3603

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REVISIONS	
#	DESCRIPTION

DRAWING DESCRIPTION  
**CULTURAL RESOURCE MITIGATION PLAN**

SCALE (FEET)  
0 650 1,300  
PLANS PRINTED AS 11X17 ARE HALF SCALE  
SCALE SHEET NUMBER  
H: 1" = 650' 1 OF 3



**Legend**

**Proposed Features**

- Project Limits - 671.9 Acres
- Proposed Project Entrance
- Woven Wire or Chain Link Fence (7' in height maximum)
- Development Envelope - 331.5 Acres
- Solar Panels
- Internal Roads

**Vegetative Screening**

- Proposed 10 Foot Wide Vegetative Screening
- Existing 50 Foot Wide Mature Woodland

**Constraints**

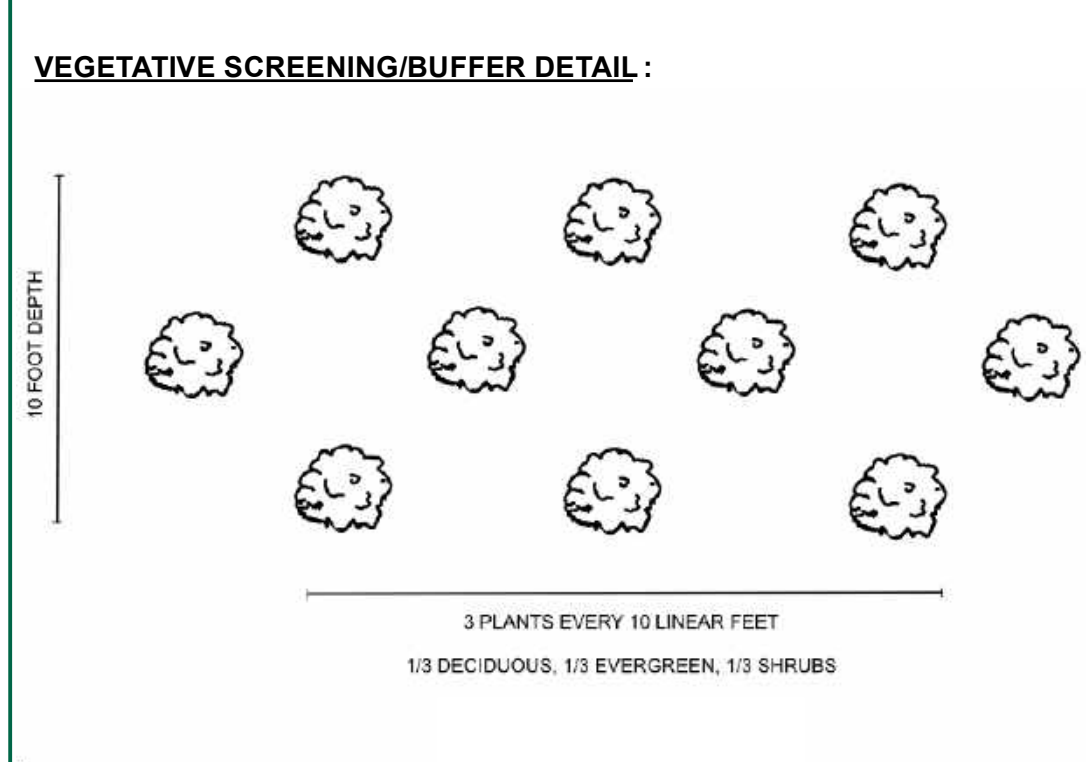
- Setbacks - 50' / 60' / 75' / 100' / 200'
- Cultural Resource - Archaeology
- Cultural Resource - Architecture
- Cultural Resource Buffer - 25'
- Cedar Creek Battlefield

**Existing Features**

- Road Centerline
- Transmission Line

**NOTES:**

- PROJECT AREA HAS BEEN ALTA SURVEYED.
- SETBACK LINES ARE 60 FEET FROM ADJACENT RIGHT OF WAYS, 50 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS LESS THAN 6 ACRES, 75 FEET FROM A PORTION OF HITES ROAD, 100 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS GREATER THAN 6 ACRES, AND 200 FEET FROM ADJACENT AGRICULTURAL AND FOREST DISTRICT PARCELS GREATER THAN 6 ACRES.
- LANDSCAPING IS 10 FEET WIDE ALL AROUND EXCEPT WHERE 50 FEET OF MATURE WOODLAND IN WIDTH IS EXISTING.
- EXISTING WOODLANDS WITHIN THE SETBACK WILL BE RETAINED.
- CULTURAL RESOURCES HAVE BEEN FIELD DELINEATED BY DUTTON ASSOCIATES.



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Richmond, VA 23225  
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**URBAN GRID**

PROJECT NAME & LOCATION  
**FOXGLOVE SOLAR PROJECT**  
FOXGLOVE SOLAR, LLC  
FREDERICK COUNTY,  
VIRGINIA

DATE	12/23/2020
PROJECT NUMBER	41147
PROJECT NAME	FOXGLOVE SOLAR, LLC
DESIGNED BY / DRAWN BY	L. WHEELER

FOXGLOVE SOLAR, LLC  
337 LOG CANOE CIRCLE  
STEVENSVILLE, MD 21666  
(410) 604-3603

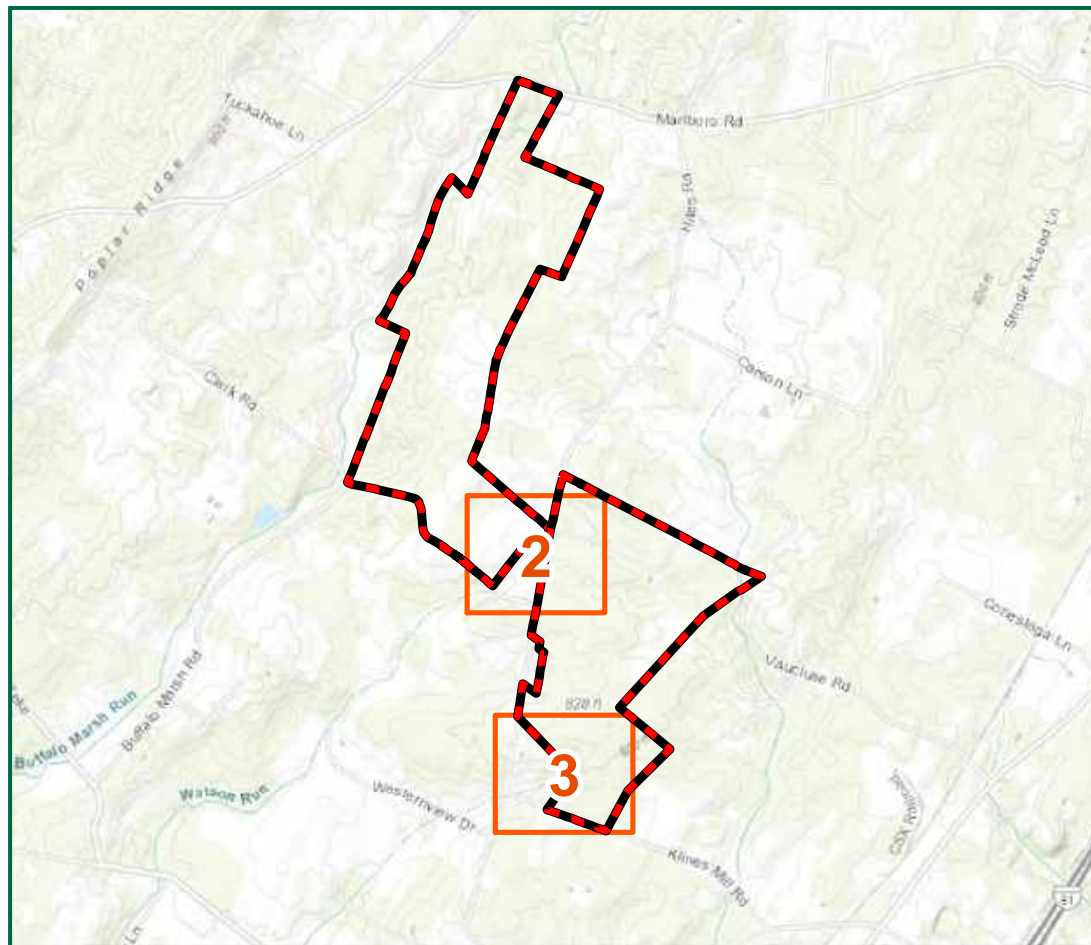
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**REVISIONS**

#	MM/DD/YY	DESCRIPTION

DRAWING DESCRIPTION  
**CULTURAL RESOURCE MITIGATION PLAN**

SCALE (FEET)  
0 100 200  
PLANS PRINTED AS 11X17 ARE HALF SCALE  
SCALE SHEET NUMBER  
H: 1" = 100' 2 OF 3



**Legend**

**Proposed Features**

- Project Limits - 671.9 Acres
- Proposed Project Entrance
- Woven Wire or Chain Link Fence (7' in height maximum)
- Development Envelope - 331.5 Acres
- Solar Panels
- Internal Roads

**Vegetative Screening**

- Proposed 10 Foot Wide Vegetative Screening
- Existing 50 Foot Wide Mature Woodland

**Constraints**

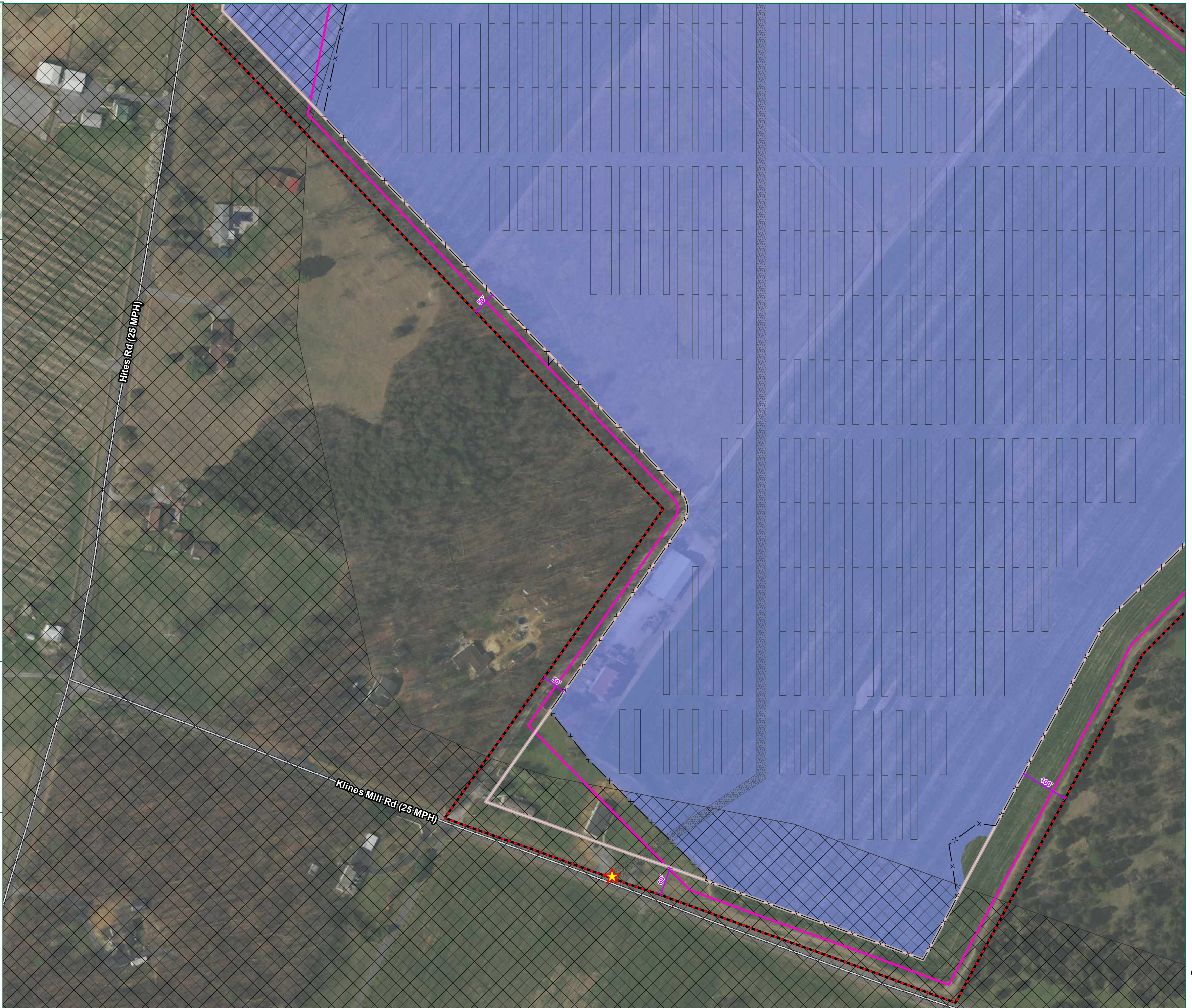
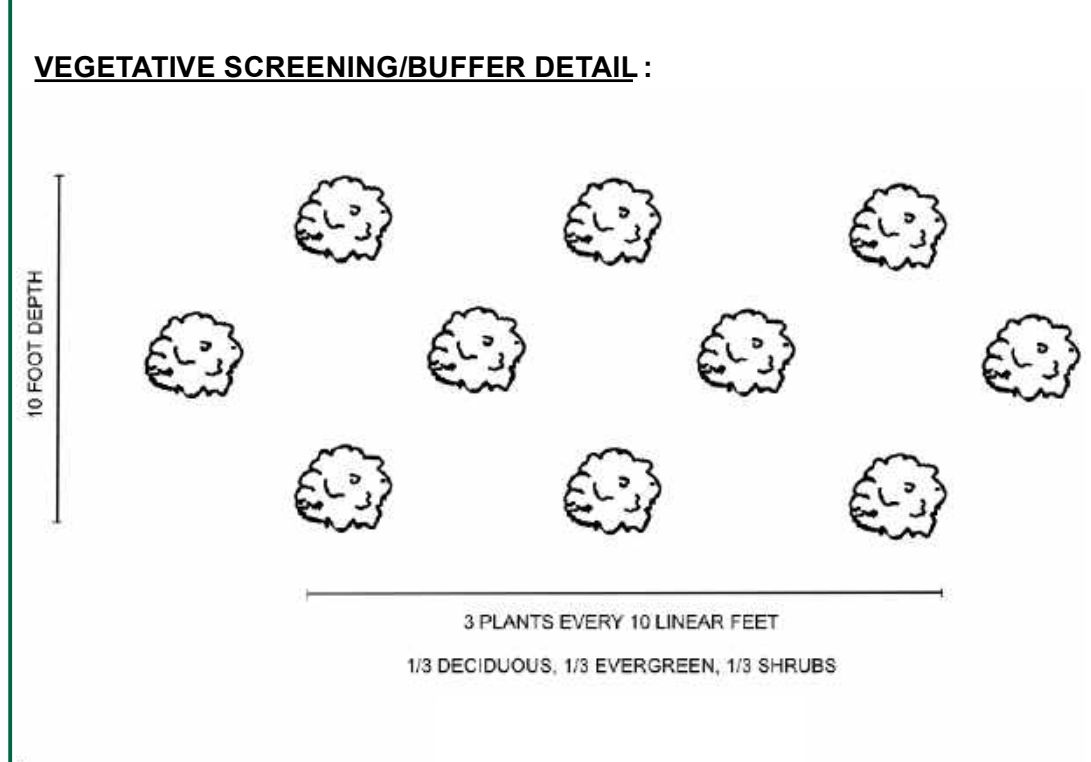
- Setbacks - 50' / 60' / 75' / 100' / 200'
- Cultural Resource - Archaeology
- Cultural Resource - Architecture
- Cultural Resource Buffer - 25'
- Cedar Creek Battlefield

**Existing Features**

- Road Centerline
- Transmission Line

**NOTES:**

- PROJECT AREA HAS BEEN ALTA SURVEYED.
- SETBACK LINES ARE 60 FEET FROM ADJACENT RIGHT OF WAYS, 50 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS LESS THAN 6 ACRES, 75 FEET FROM A PORTION OF HITES ROAD, 100 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS GREATER THAN 6 ACRES, AND 200 FEET FROM ADJACENT AGRICULTURAL AND FOREST DISTRICT PARCELS GREATER THAN 6 ACRES.
- LANDSCAPING IS 10 FEET WIDE ALL AROUND EXCEPT WHERE 50 FEET OF MATURE WOODLAND IN WIDTH IS EXISTING.
- EXISTING WOODLANDS WITHIN THE SETBACK WILL BE RETAINED.
- CULTURAL RESOURCES HAVE BEEN FIELD DELINEATED BY DUTTON ASSOCIATES.



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www.timmons.com



PROJECT NAME & LOCATION  
**FOXGLOVE SOLAR PROJECT**  
FOXGLOVE SOLAR, LLC  
FREDERICK COUNTY,  
VIRGINIA

DATE: 12/23/2020  
PROJECT NUMBER: 41147  
PROJECT NAME: FOXGLOVE SOLAR, LLC  
DESIGNED BY / DRAWN BY: L. WHEELER

FOXGLOVE SOLAR, LLC  
337 LOG CANOE CIRCLE  
STEVENSVILLE, MD 21666  
(410) 604-3603

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#	DATE	DESCRIPTION

DRAWING DESCRIPTION  
**CULTURAL RESOURCE MITIGATION PLAN**

SCALE (FEET)

0 100 200  
PLANS PRINTED AS 11X17 ARE HALF SCALE  
SCALE: 1" = 100' 3 OF 3



Attachment K – Certification of Design

**Virginia Department of Department of Environmental Quality  
Small Renewable Energy Projects**

**Certification of Design**

**Facility Name and Location**

Name: Foxglove Solar, LLC

Location: Frederick County, VA

Applicant's Name: Foxglove Solar, LLC

Applicant's Mailing Address:

337 Log Canoe Circle  
Stevensville, MD 21666

Telephone Number and Email Address:

(410)604-3603  
James.crawford@urbangridco.com

**Certification Requirement:** The applicant is submitting an application for a small renewable energy Permit by Rule from the Virginia DEQ, in accordance with §10.1-1197.6 B9 of the Code of Virginia. before such permit application can be considered complete, the applicant furnishes to the department a certification signed by a professional engineer licensed in Virginia that the project is designed in accordance with 9VAC15-60-80.

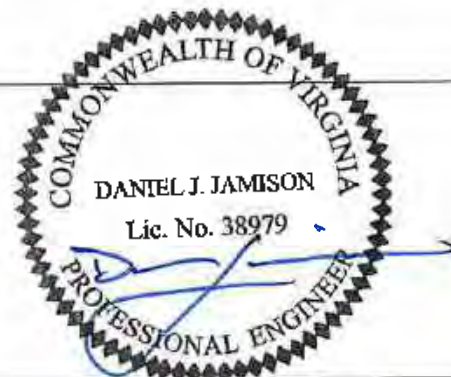
**Professional Engineer Licensed in Virginia**

Name: Dan Jamison, P.E.

License Number: 38979

Phone: 804-200-6538

Email: dan.jamison@timmons.com



I hereby certify that the site plan furnished to comply with §10.1-1197.6 B 11 submitted as part of this Permit by Rule application is correct and fulfills the requirements of §10.1-1197.6 B 9 of the Code of Virginia.

Signature

DAN JAMISON  
Name

2/26/21  
Date

Attachment L – Operating Plan

## **Foxglove Solar, LLC Facility**

### **Operations Plan**

This document details the Operations Plan for the Foxglove Solar, LLC solar facility, located south of Marlboro Road, north of Vacluse Road, and bisected by Hites View Road, and is generally west of Stephens City in Frederick County. This Operations Plan describes basic criteria for usage during routine operations at Foxglove Solar.

#### **Grounds Maintenance**

Vegetation around the solar panel modules and inverters (typically grass) will be maintained to appropriate height. When necessary, the presence of invasive herbaceous species will be managed with approved herbicides.

Buffers and screening will be maintained around the perimeter of the Project.

Areas outside of the fenced solar array will not be manicured to maintain natural conditions (typically forested).

If necessary, tree management via trimming and removal will occur periodically in areas that shade solar panels or that present a hazard to the solar array and/or related equipment.

#### **Site Access**

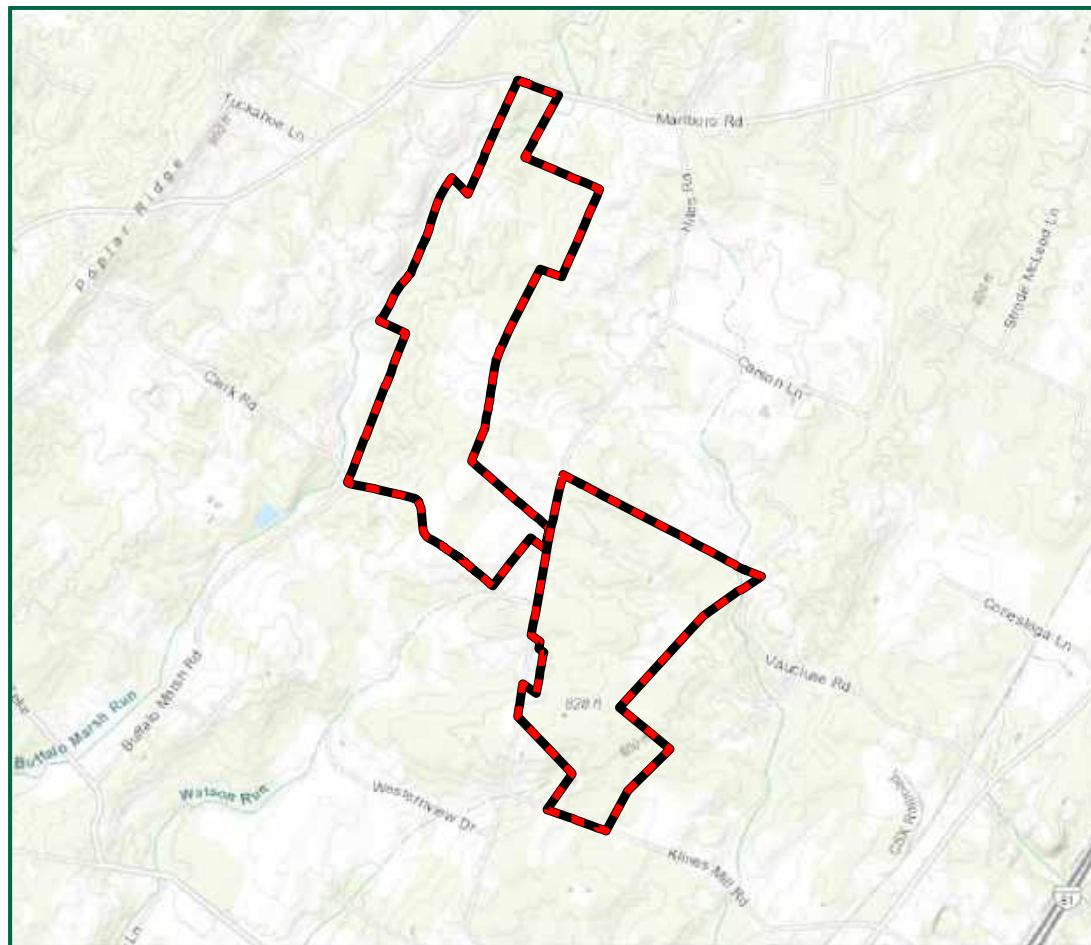
Site access will be controlled by fencing around the solar array and inverters. No trespassing signs with appropriate contact information will be posted along the fence for security.

Entrance from Hites Road (Route 635) to the Project is prohibited.

#### **Solar Equipment**

Equipment status will be monitored by Foxglove Solar, LLC personnel, or its designees. If maintenance is required, staff will be dispatched to the location to identify and correct the issue(s).

Attachment M – Site Plan, Context Map



### Legend

**Proposed Features**

- Project Limits - 671.9
- Proposed Project Entrance
- Woven Wire or Chain Link Fence (7' in height maximum)
- Development Envelope - 331.5
- Internal Roads
- Substation
- Solar Panels

**Vegetative Screening**

- Proposed 10 Foot Vegetative Screening
- Existing 50 Foot Mature Woodland

**Constraints**

- Setbacks - 50' / 60' / 75' / 100' / 200'
- Cultural Resource -
- Cultural Resource Buffer - 25'

**Existing Features**

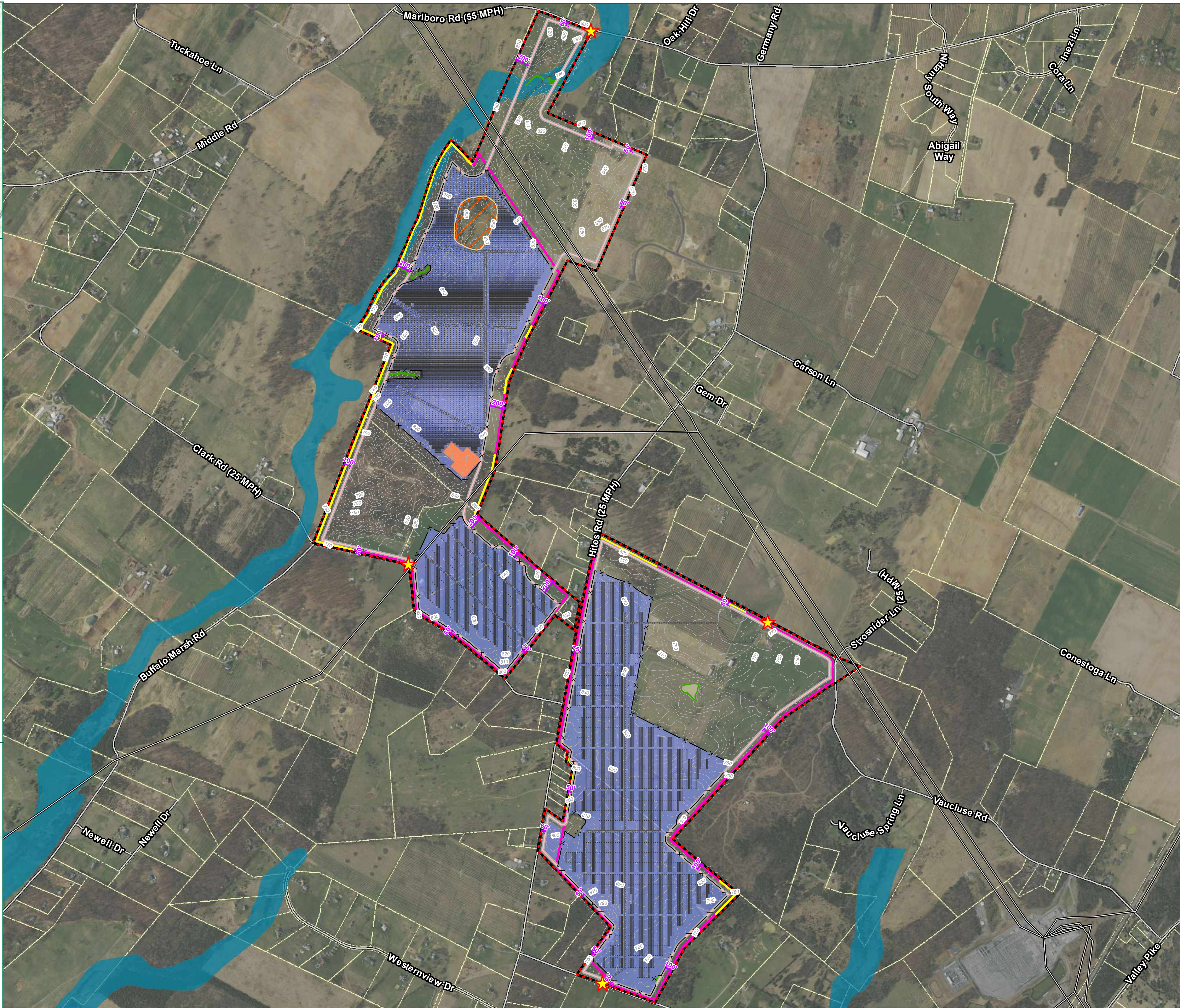
- Road Centerline
- Transmission Line
- Wetland
- 1% Annual Flood Hazard
- Frederick County Tax Parcels

**5' Topographic Contours**

- Major
- Minor

**NOTES:**

- PROJECT AREA HAS BEEN ALTA SURVEYED.
- SETBACK LINES ARE 60 FEET FROM ADJACENT RIGHT OF WAYS, 50 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS LESS THAN 6 ACRES, 75 FEET FROM A PORTION OF HITES ROAD, 100 FEET FROM ADJACENT PROPERTY OWNERS WITH PARCELS GREATER THAN 6 ACRES, AND 200 FEET FROM ADJACENT AGRICULTURAL AND FOREST DISTRICT PARCELS GREATER THAN 6 ACRES.
- LANDSCAPING IS 10 FEET ALL AROUND EXCEPT WHERE 50 FEET OF MATURE WOODLAND IS EXISTING.
- PRIMARY ZONING DISTRICT AND USE OF EACH PARCEL COMPRISING PROJECT AREA IS RA.
- ALL PARCELS ARE LOCATED IN THE BACK CREEK MAGISTERIAL DISTRICT.
- WETLANDS HAVE BEEN FIELD DELINEATED AND WILL BE CONFIRMED BY THE ACOE.
- FLOOD HAZARD DATA SOURCED FROM FEMA.
- TOTAL LAND AREA OF SUBJECT PROPERTY IS 671.9 ACRES.
- TOTAL PROPOSED LAND AREA TO BE DEVELOPED IS 331.5 ACRES.
- AERIAL IMAGERY FROM VGIN.
- TOPOGRAPHIC CONTOURS HAVE BEEN FIELD SURVEYED BY TIMMONS GROUP.



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**URBAN GRID**

PROJECT NAME & LOCATION  
**FOXGLOVE SOLAR PROJECT**  
**FOXGLOVE SOLAR, LLC**  
 FREDERICK COUNTY,  
 VIRGINIA

DATE	12/23/2020
PROJECT NUMBER	41147
PROJECT NAME	FOXGLOVE SOLAR, LLC
DESIGNED BY / DRAWN BY	L. WHEELER

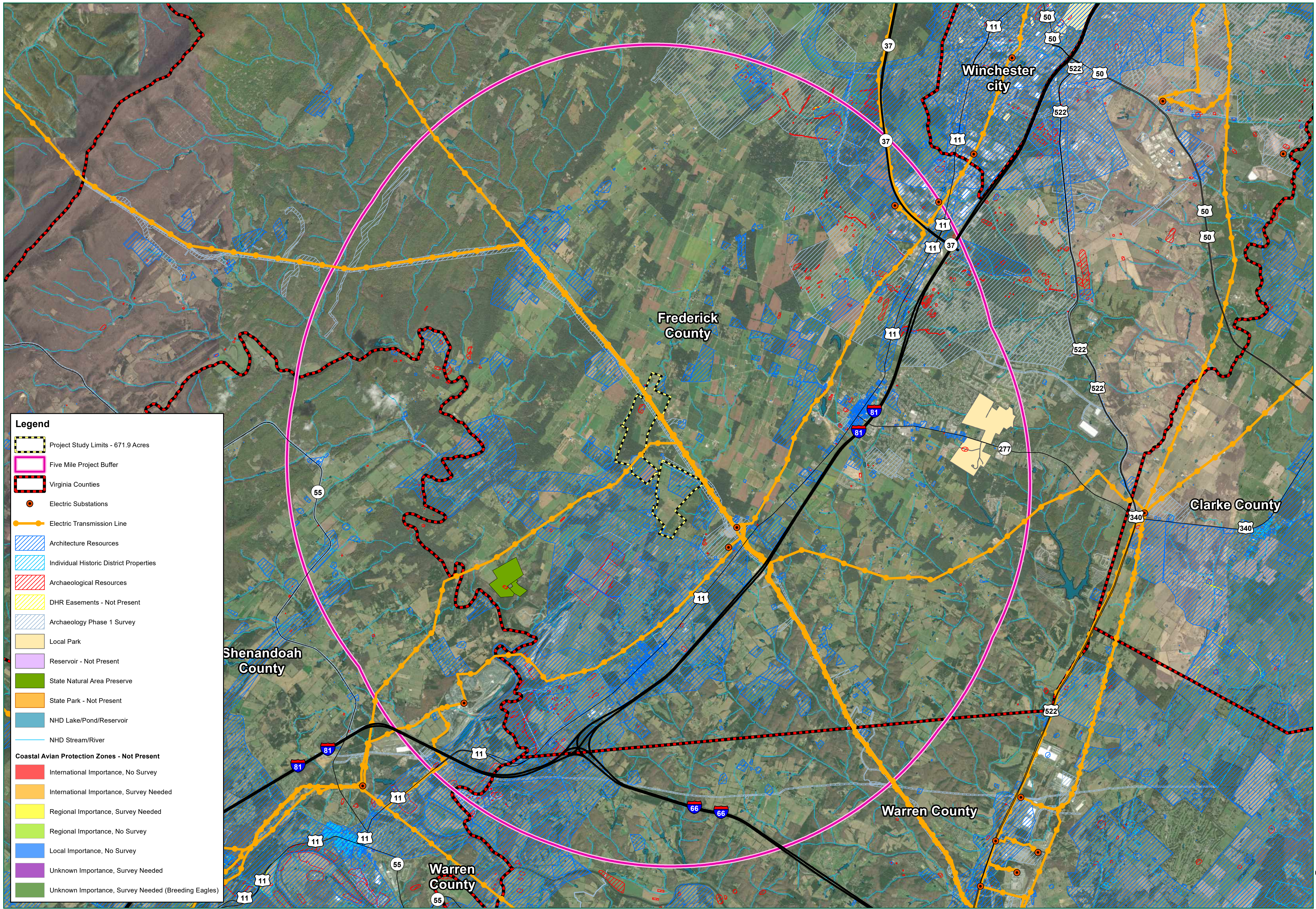
FOXGLOVE SOLAR, LLC  
 337 LOG CANOE CIRCLE  
 STEVENSVILLE, MD 21666  
 (410) 604-3603

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#	MMDDYY	DESCRIPTION

DRAWING DESCRIPTION  
**PRELIMINARY SITE PLAN - NOT FOR CONSTRUCTION**

SCALE (FEET)  
 0 650 1,300  
 PLANS PRINTED AS 11X17 ARE HALF SCALE  
 SCALE SHEET NUMBER  
 H:1" = 650' 1



**Legend**

- Project Study Limits - 671.9 Acres
- Five Mile Project Buffer
- Virginia Counties
- Electric Substations
- Electric Transmission Line
- Architecture Resources
- Individual Historic District Properties
- Archaeological Resources
- DHR Easements - Not Present
- Archaeology Phase 1 Survey
- Local Park
- Reservoir - Not Present
- State Natural Area Preserve
- State Park - Not Present
- NHD Lake/Pond/Reservoir
- NHD Stream/River

**Coastal Avian Protection Zones - Not Present**

- International Importance, No Survey
- International Importance, Survey Needed
- Regional Importance, Survey Needed
- Regional Importance, No Survey
- Local Importance, No Survey
- Unknown Importance, Survey Needed
- Unknown Importance, Survey Needed (Breeding Eagles)

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PROJECT NAME & LOCATION  
**FOXGLOVE SOLAR PROJECT**  
**FOXGLOVE SOLAR, LLC**  
 FREDERICK COUNTY,  
 VIRGINIA

DATE: 02/03/2021  
 PROJECT NUMBER: 41147  
 PROJECT NAME: FOXGLOVE SOLAR, LLC  
 DESIGNED BY / DRAWN BY: L. WHEELER

NOTES:  
 Project Limits are approximate.  
 Cultural Resource data from DHR.  
 Parks data from DCR.  
 Aerial imagery from VGIN.

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REVISIONS	
#	DESCRIPTION

DRAWING DESCRIPTION  
**CONTEXT MAP**

↑  
SCALE (FEET)

0      3,500      7,000  
 PLANS PRINTED AS 11x17 ARE HALF SCALE  
 SCALE      FEET NUMBER  
 H:1" = 3,500'      1

Attachment N – Environmental Permit Certification Form



**Virginia Department of Environmental Quality  
Small Renewable Energy Projects (Solar)  
Environmental Permit Certification Form**

Facility Name and Location: Foxglove Solar, LLC  
Frederick County, VA

Applicant's Name & Title: Foxglove Solar, LLC

Applicant's Mailing Address:  
337 Log Canoe Circle  
Stevensville, MD 21666

Telephone Number and Email Address:  
(410)604-3603  
James.crawford@urbangridco.com

The applicant is submitting an application for a small renewable energy permit by rule from the Virginia DEQ. In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, before such permit application can be considered complete, the applicant must certify that the small renewable energy project has applied for or obtained all necessary environmental permits.

**List all state and local environmental permits that are necessary for the small renewable energy project listed above. Indicate for each whether the permit has been applied for and/or obtained. If the permit has been obtained, attach either a copy of the permit or a letter from the appropriate agency staff member on agency stationery stating that the permit has been issued and the date of issuance. If a permit has not yet been obtained but has been applied for, provide the name of the permit, name and address of the receiving agency, name of the staff person at the receiving agency to whom the application was addressed (if available), and the date on which the application was submitted. If no permits are necessary, write the word "none" in the first column.**

Permit	Permitting Agency / Authority, Address, Contact Person	Applied for (Date)	Obtained (Date)
General VPDES Permit for Discharges of Stormwater from Construction Activities	Office of Stormwater Management / DEQ 1111 E Main Street Richmond, VA 23219	2/24/2021	

***I hereby certify that the information provided above (and any attached information) is correct and fulfills the requirements of § 10.1-1197.6 B 12 of the Code of Virginia and 9 VAC 15-40-30 A 12.***

Applicant's Signature

*James A Crawford Jr*

Date:

02/24/2021

Attachment O – Non-Utility Certification Form

**Virginia Department of Environmental Quality  
Small Renewable Energy Projects  
Non-Utility Certification Form**

Facility Name and Location:

Foxglove Solar, Frederick County, Virginia

Applicant's Name:

Foxglove Solar, LLC

Applicant's Mailing Address:

Urban Grid Solar  
337 Log Canoe Circle  
Stevensville, MD 21666

Telephone Number and Email Address:

410-604-3603  
[James.crawford@urbangridco.com](mailto:James.crawford@urbangridco.com)  
Robert.propes@urbangridco.com

The applicant or his authorized representative an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 -1197.6 H of the Code of Virginia, before such permit application can be considered complete, the applicant must certify the project is proposed, developed, constructed or purchase by a person that is NOT a utility regulated pursuant to Title 56 of the Code of Virginia.

**The undersigned is a responsible official for the proposed project and certifies that the project is proposed, developed, constructed or purchased by a person that is NOT a utility regulated pursuant to Title 56 of the Code of Virginia.**

Applicant's signature:



Date: 08/18/2020

Attachment P – Public Review Documents

PUBLIC NOTICE  
FOXGLOVE SOLAR LLC

A solar renewable energy project is proposed to be located on approximately 668 acres located south of Marlboro Road, north of Vacluse Road, and bisected by Hites View Road, and is generally west of Stephens City in Frederick County.

The project has been approved by the Frederick County Board of Supervisors under a Conditional Use Permit. The proposed project is now proceeding through the Virginia Permit by Rule process.

The project will have a maximum capacity of 75 Megawatts Alternating Current (AC) utilizing traditional photovoltaic solar modules which will rotate on a single axis to track the sun. Approximately 206,000 panels will be utilized with a maximum height of 12'.

We welcome the opportunity to present this project to interested parties. The purpose of the public participation is to (i) acquaint the public with the technical aspects of the proposed project and how the standards and the requirements of the Virginia Department of Environmental Quality PBR regulations will be met, (ii) identify issues of concern, (iii) facilitate communication, and (iv) establish a dialogue between the owner or operator and persons who may be affected by the project.

A 30-day comment period, in accordance with 9VAC15-60-90 C will be held commencing March 12, 2021 through April 11, 2021. Any interested parties may contact the applicant to ask questions or provide comments, view the application materials at the Frederick County Planning and Development Office or request a copy of the application materials by contacting:

Urban Grid Solar Project, LLC  
ATTN: Robert Propes  
337 Log Canoe Circle  
Stevensville, MD 21666  
443-642-1280  
[Robert.Propes@UrbanGridCo.com](mailto:Robert.Propes@UrbanGridCo.com)

A public meeting will be held in accordance with 9VAC15-60-90 C and Executive Order 72 on March 30, 2021 at 6:00 PM until 7:30 PM at Valerie Hill Winery, located at 1687 Marlboro Road, Stephens City, VA 22655. Information will be presented on poster boards in a space that will allow for social distancing. Individuals may be required to wait in their cars if capacity of the space is exceeded. Face coverings will be required. Questions and comments will be addressed and documented by Foxglove Solar, LLC representatives while maintaining required social distancing practices.

For those who would prefer to stay home or are unable to attend the meeting at the Valerie Hill Winery, a digital public hearing will be held via RingCentral Meeting teleconferencing service and in compliance with Item 4-0.01 g of Chapter 1283 of the 2020 Acts of Assembly. To participate in the virtual presentation, please email Robert Propes at [robert.propes@urbangridco.com](mailto:robert.propes@urbangridco.com) and type "Foxglove Solar, LLC, Virtual Presentation" in the subject line to receive a personalized access code for the meeting and participation instructions. The virtual presentation will be accessible fifteen minutes prior to the start of the live presentation, at 5:45 PM on March 30, 2021 until 7:30 PM.

Copies of the documentation to be submitted to the DEQ in support of the Permit by Rule application will be available for inspection on the following website: (<http://www.urbangridsolar.com/news>).