

# **Lunenburg County Planning Commission**

## **Agenda for September 7, 2023, at 7:00 p.m.**

***If anyone desires to speak during Citizen Time or a Public Hearing, please approach the lectern prior to the start of the meeting to provide your name and your address. Please place it under the appropriate section (Citizen Time or corresponding Public Hearing).***

1. Call to Order
2. Roll Call of Members
3. Requests for Additions or Modifications to the Agenda\*
4. Declaration of Conflict-Of-Interest Statements
5. Approval of Minutes
6. Planning and Economic Development Update
  - a. Director of Planning and Economic Development August Monthly Report
7. Citizen Time\*(**Public Speaking Guidelines are to be followed**)
8. Public Hearing\* for the following:
  - a. **15.2-2232 Hearing for CUP 1-23 Conditional Use Permit** for Oral Oaks Solar, to construct and operate a twelve-megawatt (12 MW), utility-scale solar array located on tax parcel 058-0A-0-29, which has road frontage on Oral Oaks Road and surrounds 5844 Oral Oaks Road, Kenbridge, VA 23944 on three (3) sides. The parcel consists of 128.239 acres in an A-1 (Agricultural) zone. The 15.2-2232 process is required by the Code of Virginia prior to any request for a zoning amendment regarding specified projects to be considered. The process determines if the request is in compliance with the Lunenburg-Kenbridge-Victoria Comprehensive Plan.
9. Other Business
  - a. Discussion on the Solar Facility Study (examining potential Comp Plan, Zoning Ordinance, and/or Solar Facility Ordinance Amendments)
10. Attorney Update—if needed
11. Announcement of the Next Meeting Date
  - a. **October 5, 2023, at 7:00 p.m. (time may change to 6:00 p.m. depending on the agenda)**
12. Adjournment

***3\* To the extent necessary to consider items requiring Commission action, the order of the agenda for a regular Commission meeting shall be as followed, unless by majority vote and the Commission shall confine discussions to matters contained on the agenda. The Chairman may allow any agenda items to be called out of sequence.***

***7\*Any member(s) of the public may speak on any item not on the current agenda under the Public speaking guidelines found in item 9\*\*. At the beginning of the comments by a citizen, additional time may be requested by the speaker. The Chairman shall decide on the amount of time to be provided.***

***8\*Any member(s) of the public addressing the Planning Commission shall approach the lectern, give his or her name and address in an audible tone of voice for the record, and address the Commission as a body rather than speak to any member. Unless further time is granted by the Commission, any member of the public shall address the Commission for a maximum of five (5) minutes, regardless of the number of issues he or she desires to discuss. The proponent of any application, petition, or plan that is the subject of the public hearing shall be allowed to address the Commission for a maximum of fifteen (15) minutes.***

# Declaration of Conflict- Of-Interests



**DECLARATION OF PERSONAL INTEREST**

Pursuant to Virginia Code Section 2.2-3116, I have the following personal interest in Agenda Item# \_\_\_\_\_, on tonight's meeting agenda: I reside at \_\_\_\_\_, which is located in the immediate vicinity of the activities considered in the proposed agenda item.

Therefore, I am a member of a residential area that is affected by this item on tonight's agenda. However, I am able to participate in this matter fairly, objectively, and in the public interest.

\_\_\_\_\_  
Lunenburg Planning Commission

\_\_\_\_\_  
Date

**DECLARATION OF PERSONAL INTEREST**

Pursuant to Virginia Code Section 2.2-3116, I have the following personal interest in Agenda Item# \_\_\_\_\_ on tonight's meeting agenda: I am a family member of an applicant or proponent of this agenda item.

- ☐ I am able to participate in this matter fairly, objectively, and in the public interest; **or**
- ☐ I choose not to participate in any discussion or vote of the indicated agenda item.

\_\_\_\_\_  
Lunenburg Planning Commission

\_\_\_\_\_  
Date

**DECLARATION OF PERSONAL INTEREST**

Pursuant to Virginia Code Section 2.2-3116, I have the following personal interest in Agenda Item # \_\_\_\_\_ on tonight's meeting agenda: I have a personal business interest in \_\_\_\_\_, which may be discussed during this agenda item.

Because of that interest, I will not participate in any discussion or vote of that agenda item.

\_\_\_\_\_  
Lunenburg Planning Commission

\_\_\_\_\_  
Date



# Approval of Minutes

## MINUTES OF THE LUNENBURG COUNTY PLANNING COMMISSION

August 3, 2023, AT 7:00 PM

The Lunenburg County Planning Commission held its meeting on August 3, 2023, at 7:00 p.m. in the 2<sup>nd</sup> floor courtroom, Lunenburg Courts Bldg., Lunenburg, VA. Commissioners Drummond, Garrett, Jennings, Pennington, Shell, Tharpe, Thompson, and Trent were present. Also, in attendance was Clerk of the Planning Commission, Taylor N. King, and Assistant County Attorney, Drew DiStanislao.

The meeting was called to order at 7:00 p.m. by Chairman Tharpe. Mrs. King conducted a roll call of the members. All the members were present.

Chairman Tharpe asked if there were any additions or modifications to the agenda. Mrs. King requested “Preliminary Discussion of Comp Plan” to be added as 9C. No other items were added.

Chairman Tharpe called for the Declaration of Conflict-Of-Interests. None were brought forth.

Chairman Tharpe called for a motion for approval of the June 2023 Planning Commission Minutes. Commissioner Pennington made the motion to approve, which was seconded by Commissioner Thompson. The minutes were approved unanimously.

Chairman Tharpe advised the Director of Planning and Economic Development’s monthly report for June and July is in the packet. Mrs. King added an update about the Planning Commission iPads.

Chairman Tharpe called for Citizen Time. No citizens came forward to speak.

Chairman Tharpe called the public hearing for **Lunenburg County Siting of Wireless Telecommunications Facilities** amendments and revisions. A copy of the full text of the ordinance is available for review in the County Administration Office, 11413 Courthouse Road, Lunenburg, VA 23952, and on the Lunenburg County website pursuant to Virginia Code § 15.2-1427.

Commissioner Shell made the motion to enter into the public hearing, which was seconded by Commissioner Pennington, and was unanimously approved.

Attorney DiStanislao provided an overview as to why the ordinance needed to be revised, what needed to be replaced, and the definitions that needed to be added. He highlighted the primary definition addition was “Substantial Change”, which would have previously required the applicant to go through the full Conditional Use Permit Application process; however, with this definition, it delineates that a “Substantial Change” is considered a 20 foot increase in height or expansion of 30% beyond the compound. Additionally, Attorney DiStanislao highlighted:

- I. Co-Location
- II. The County’s right of first refusal for co-location on towers.
- III. Process that a new application will be required to go through:
  - a. Pre-Application Meeting

- b. Community Meeting
  - c. 15.2-2232 Public Hearing
  - d. Planning Commission Public Hearing
  - e. Board of Supervisors Public Hearing
- IV. Timeline Restrictions
  - a. The County has 10 days to deem the application complete or incomplete.
  - b. If the application is not deemed complete or incomplete within 10 days, then the application is automatically deemed complete.
- V. Delineates timeframes for Co-Location Applications
- VI. Addresses New Technology
  - a. Small Cell Facility
- VII. Mirrors the process of the Solar Ordinance and provides more clarification to reduce the number of questions received.
- VIII. Removes the requirement for proprietary information.
- IX. The County Planning Department is working on a new application and fee schedule for Cell Towers and Co-Location.
- X. Following the recommendation by the Wireless Telecommunications Facility Ordinance Committee's recommendation to the Planning Commission, a letter was received from Verizon, which commented on:
  - a. CUP Validity—24 month per code and not 12 months like what is stated in the County's draft ordinance,
  - b. Clarification on Administrative Review—Eligible Site Plan Amendments, and
  - c. Rewording of several items.

Chairman Tharpe questioned if it would be the Commission's pleasure to take the recommendation from the committee with the revisions that Attorney DiStanislao discussed. Attorney DiStanislao advised that the Commission has the option to:

- I. Recommend Approval to the Board of Supervisors with the requested revisions,
- II. Deny the recommendation and send the ordinance back to the committee with an explanation, or
- III. Defer the decision on the ordinance to another meeting with an explanation.

Commissioner Pennington made the motion to exit the public hearing, which was seconded by Commissioner Drummond and was unanimously approved.

Commissioner Drummond made the motion to recommend approval of the Wireless Telecommunications Facility Ordinance with the modifications requested by Attorney DiStanislao to the Board of Supervisors, which was seconded by Commissioner Jennings. A roll call vote with explanation was conducted with the following votes:

- Commissioner Drummond: Yah—We need cell service in the community because there are some areas where the service is terrible.
- Commissioner Jennings: Yah—We need it in Lunenburg because right now, service is scattered.
- Commissioner Garrett: Yah—It should be recommended with the requested modifications.

- Chairman Tharpe: Yah—It should be recommended with the requested modifications because it is definitely needed.
- Commissioner Pennington: Yah—It should be recommended with the requested modifications. The update was needed.
- Commissioner Shell: Yah—It should be recommended with the requested changes. Cell service is needed in the County.
- Commissioner Trent: Yah—It should be recommended with the requested modifications. We need to stay in line with the Virginia Code.
- Commissioner Thompson: Yah—It should be recommended with the requested changes. We need to abide by the State Code.

Unanimously recommended to the Board of Supervisors for approval, with modifications, by the Commissioners present.

Chairman Tharpe called for Other Business— Attorney DiStanislao advised the Commission about the resolutions that was passed by the Board of Supervisors, which tasked the Solar Facilities Committee, Planning Commission, and Board of Supervisors to conduct a study pertaining to possible amendments that could be made to the Zoning Ordinances, Solar Facility Ordinance, and Comp Plan. He advised that the Commissioners should look at other localities ordinances pertaining to solar, see what has and has not worked for other localities, what would be beneficial to the County, allow for the County to reflect on what has or has not worked in the past, so we can determine what should be implemented for the future, and he highlighted the following topics that the Commission should study, which would be discussed at the September meeting:

- I. Project location
- II. Distance between projects
- III. Size of projects
- IV. Radius around the Towns
- V. Prime Farmland and Prime Timberland
- VI. Percentage of the County's Farmland for Solar

Chairman Tharpe noted that the newspaper reported it incorrectly and the County has not put a halt to all solar, it is simply a pause to conduct a study and the applications that are currently in the queue will continue to be worked on. Attorney DiStanislao noted that Charlotte and Mecklenburg recently passed similar resolutions and that there is no designated time frame for the study completion, but it provides the County to be in a position that all applications are thoroughly reviewed to ensure that no mistakes are made. Commissioner Garrett questioned as to what projects have been approved and/or are in progress. Mrs. King advised: Red Brick Solar, Dogwood Lane Solar, Wheelhouse Solar, Laurel Branch Solar, Laurel Branch Switchyard, and Oral Oaks Solar.

Commissioner Pennington questioned if there would be a problem with placing a cap on solar. Attorney DiStanislao advised that it needed to be reasonably calculated i.e., fair share of energy used for the County, but the amount could not be arbitrary because it needs to be reasonably calculated to improve the process. Commissioner Trent questioned if it would be a permanent cap total or cap per year. Attorney DiStanislao clarified that he is not recommending a cap, but he was just providing an item to review because that is something that Mecklenburg recently did,



where they did a total and if the projects were all built, then the cap would be met. However, the Commission needs to consider all options and see what would be most suitable for Lunenburg County. Mrs. King advised that if there was a cap on the number of projects based on megawatts, then it may not necessarily benefit the County because it could mean numerous small projects that could apply rather than one or two large projects. She also reiterated that every time the ordinance is opened, it does allow the public to comment, which could lead to other aspects of the ordinance to be questioned.

Commissioner Shell questioned if the total acreage and size of projects need to be reviewed. Chairman Tharpe advised that several localities have implemented 500-acre totals for projects. Attorney DiStanislao noted that DEQ is pushing a house bill that is looking at setbacks and buffers, so that is something the County should consider. Chairman Tharpe noted that the Commission has been given this task. Commissioner Thompson noted that whatever amendments the County chooses to pursue, then it should be considered as to whether the County Attorney can defend the County. Chairman Tharpe noted that the Commission needed to be reasonable with that is reviewed and recommended to be amended.

Commissioner Drummond questioned the total acreage of solar in the County currently. Chairman Tharpe advised that it is difficult to determine at this time because it needs to be clarified whether the acreage is totaled by what is under option or just the project area. Mrs. King then noted that the definition of “project area” needed to be thoroughly reviewed because as the ordinance currently stands, there is some confusion on the definition.

Attorney DiStanislao advised that technology is ever changing, so since the ordinance was adopted, it has already changed drastically, so during the study, factors pertaining to items approximately 30 years from now should be considered. Chairman Tharpe reiterated that there is not a specific timeline for the study, but it needs to be done thoroughly. Commissioner Shell noted that the Commission needs to look and see what other localities have done, which has worked and what has not worked. Mrs. King highlighted the County’s membership of the Rural Solar Development Coalition (RSDC).

Commissioner Drummond questioned if the study would occur during meetings or how it would be handled. Attorney DiStanislao advised that the Commission and the committee would discuss the topics and bring recommendations to the Board of Supervisors. Commissioner Shell noted that the Commission needed to do their research and ensure that they are not hasty with any decisions. Chairman Tharpe reiterated how valuable the RSDC is for the County because of the access to information and support. Attorney DiStanislao that if the information is in the ordinance, then the conditions are not a surprise when the applicant receives the conditions. Mrs. King concluded the discussion by advising the Commissioners if they need a new copy of the Solar Ordinance, to let her know.

Mrs. King provided an overview of the Preliminary Floodplain Maps, which the Commission was requested to review. She advised that periodically the maps are updated, so it requires community input on the maps. She also reviewed the links to view the Preliminary Floodplain Maps, which the Commission had reviewed prior to the meeting. Mrs. King advised that due to the various professions that the Commissioners currently or previously possessed, they were able

to provide a variety of different aspects on the preliminary maps. The Commissioners did not have any questions or comments following the review of the maps. Mrs. King then advised them that soon, the Floodplain Ordinance would be coming before the Commission for review following proposed amendments.

Mrs. King then advised that the Joint Comprehensive Plan Review and Update would be starting soon. An overview of the possible working committee was provided, then she requested that the Commissioners think about whether they would be willing to serve on the committee if they are approached and if they know of anyone that would be a good candidate for a citizen representative. The Commissioners were asked if they knew of a possible citizen representative, then to let Mrs. King know. Lastly, Mrs. King advised that once the Joint Comprehensive Plan comes before the Planning Commission for recommendation to the Board, then it provides another opportunity for the Commission to thoroughly review the portion that pertains to solar.

Chairman Tharpe questioned Assistant County Attorney DiStanislao if he had an update. Attorney DiStanislao advised that he did not have an update.

Chairman Tharpe made the announcement that the next meeting would be Thursday, September 7, 2023, at 7:00 p.m.—pending agenda items, which could change the start time of the meeting. On a motion made by Commissioner Thompson and seconded by Chairman Tharpe, the meeting was adjourned at 7:50 p.m.

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James “Buck” Tharpe, Chairman  
Lunenburg County Planning Commission

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Taylor N. King, Clerk  
Lunenburg County Planning Commission

# Planning and Economic Development Monthly Report

## **Planning Commission Meeting—September 7, 2023**

### **Director of Planning and Economic Development's Monthly Report**

#### **Events in August:**

August 3<sup>rd</sup>: *Short-Term Rentals Can Fund Marketing and Tourism—Virtual Mtg*  
August 3<sup>rd</sup>: *Planning Commission Mtg*  
August 4<sup>th</sup>: *PTO*  
August 5<sup>th</sup>: *Ribbon Cutting/Grand Opening for Funky Fungi Foods/Fun Guy Market—Meherrin*  
August 7<sup>th</sup>: *CRC REDO Working Committee—Virtual Mtg*  
August 9<sup>th</sup>: *Centra Health Needs Assessment Team Retreat—Farmville*  
August 10<sup>th</sup>: *PTO*  
August 11<sup>th</sup>: *VATI Project Management Team Mtg*  
August 16<sup>th</sup>: *CRC Meeting—Keysville*  
August 21<sup>st</sup>: *PTO/Work Remotely (Son's First Day of School and Dr.'s Appt)*  
August 24<sup>th</sup>: *VGA Presentation to VEDP—Richmond*  
August 28<sup>th</sup>: *CRC REDO Working Committee—Virtual Mtg*  
August 28<sup>th</sup>: *Planning for the Infrastructure of the Digital Age (APA)—Virtual*  
August 28<sup>th</sup>: *VEDA ImpactED—Virtual*  
August 29<sup>th</sup>: *Mtg at Parrish View Farms*  
August 30<sup>th</sup>: *RSDC/Del. Rip Sullivan Discussion—Virtual Mtg*  
August 30<sup>th</sup>: *USDA Rural Development & University of Kentucky Quarterly Placemaking Webinar—Virtual*  
August 31<sup>st</sup>: *BEAD Initial Proposal Volume 2 Input Session—Virtual*  
August 31<sup>st</sup>: *Chamber of Commerce Membership Mtg—Simonas*

#### **Planning Commission**

- There was a meeting held on August 3, 2023, where the Planning Commission:
  - o Recommended the amended Wireless Telecommunications Facility ordinance to the Board of Supervisors with modifications,
  - o Discussed the Solar Facility study and research to be conducted by Commissioners prior to the September meeting, and
  - o Reviewed the Preliminary Floodplain Maps.
- The Planning Commission transitioned to iPads for the September meeting.

#### **Broadband**

- 911 Fiber (County Owned)
  - o Continue to respond to Miss Utility tickets to mark the fiber.
  - o Will be working to get the survey of the fiber route and easements with the Town of Victoria.
- VATI/RDOF
  - o Attended monthly project management meeting.
  - o August monthly report from Kinex (see attached)
  - o Responded to public questions pertaining to when they will receive broadband service.
  - o Received concerns about the crews from citizens, which have been presented to Kinex.
  - o For citizens that have questions about the status of the project and when work is anticipated to be completed in their area, they can call 434.392.4804 ext. 7 or go to <https://signup.kinextel.net>

#### **Solar**

- Red Brick Solar
  - o Monthly call cancelled due to Jeff Hammond, Apex, working in the field.

- Dogwood Lane Solar
  - o No new update currently.
- Laurel Branch Solar
  - o Continuing to work with the developer.
  - o Attended a virtual meeting to review the construction process.
- Laurel Branch Switchyard
  - o Continuing to work with the developer.
  - o Attended a virtual meeting to review the construction process.
- Wheelhouse Solar
  - o Received the first (1<sup>st</sup>) Substantial Cash Payment.
- Oral Oaks Solar
  - o 15.2-2232 public hearing scheduled for the September Planning Commission meeting.
  - o Adjacent property owner notice mailed, and advertisements placed in the newspaper.
- Solar Ordinance
  - o Discussed changes with Assistant County Attorney, Drew DiStanislao.
- Lunenburg County, Virginia Resolution Regarding Conditional Use Applications for Solar Facilities
  - o Answered citizen's questions pertaining to the resolution.
  - o Answered developer's questions pertaining to the resolution and provided a copy of the resolution to the developers that contacted.
  - o In depth discussion at the August Planning Commission meeting and the items that the Commissioners are tasked with researching and studying for a discussion at the September meeting.

#### **Wireless Telecommunications Ordinance**

- The Wireless Telecommunications Ordinance Committee recommended a draft ordinance that is before the Planning Commission at the August 2023 meeting.
  - o If the ordinance is recommended for approval, it is anticipated to be before the Board of Supervisors for a public hearing at the September 2023 meeting.

#### **Tourism**

- Determining if line items in the spending plan can be revised/removed, so funding can be utilized for a recruitment/tourism video, which would be created in partnership with the School System.

#### **Grants**

- Virginia Department of Transportation (VDOT) Transportation Alternative Program (TAP)
  - o Awaiting confirmation from Community Resource Services to determine if it is still their intent to proceed with this grant.
    - If the intend to proceed, then a resolution must be passed at the September Board of Supervisors meeting.
- Virginia Brownfields Assistance Fund (C. Garrett—Garrett's Ground Maintenance)
  - o Received the official notice that the application was granted an extension until December 31, 2023.
  - o Waiting to hear from property owners on proceeding with the building stabilization, which was added to the project's scope of work.
- PetcoLove Animal Welfare Organizations Grant
  - o Waiting to hear if the County has been awarded.
- Aided the local business owners to locate funding sources for an economic development venture.
- Aided citizens impacted by the closure of Tyson with possible opportunities.

### **Other Activities**

- Responded to public questions about cell towers and broadband.
- Met and spoke with citizens to determine if they would need a Conditional Use Permit to operate their business.
- Working with County Legal Counsel on how to proceed with questions/applications for recertification and modification of existing cell towers.
- J. Tuck and I are working on building permit fees for solar projects as it appears that \$50,000 is not comparable to other localities.
  - o This is just the permit fee for our time and does not include third-party consultant or any other costs incurred.
- Met with CRC Staff to develop the maps required for submission of the Enterprise Zone amendment.

### **UPCOMING dates of interest:**

September 1<sup>st</sup>: *PTO*

September 4<sup>th</sup>: *Office Closed—Observance of the Labor Day Holiday*

September 7<sup>th</sup>: *Planning Commission Mtg*

September 8<sup>th</sup>: *VX Mtg at The Barn at Pine View—Charlotte County*

September 12<sup>th</sup>: *Solar Site Pollinator Training*

September 14<sup>th</sup>: *South Hill LPDC Mtg—South Hill*

September 14<sup>th</sup>: *Board of Supervisors Mtg*

September 15<sup>th</sup>: *VATI Project Management Team Mtg*

September 20<sup>th</sup> through 22<sup>nd</sup>: *VAZO Fall Conference—Virginia Beach*

October 10<sup>th</sup> through October 11<sup>th</sup>: *Governor's Summit on Rural Prosperity—Blackstone*

October 18<sup>th</sup> through October 20<sup>th</sup>: *Rural Planning Caucus—Pembroke*

### **UPCOMING Community Events:**

September 15<sup>th</sup>: *Music in the Park—The Bopcats—Victoria, VA*

October 14<sup>th</sup>: *Autumn Day—Victoria, VA*

October 14<sup>th</sup>: *Victoria Fire and Rescue's Truck and Tractor Pull*

# Citizen Time



## **Statement on Public Speaking for Planning Commission Meetings**

Any member of the public addressing the Planning Commission shall approach the lectern, give his or her name and address in an audible tone of voice for the record, and address the Commission as a body rather than speak to any member. Unless further time is granted by the Commission, any member of the public shall address the Commission for a maximum of five (5) minutes, regardless of the number of issues he or she desires to discuss. The proponent of any application, petition, or plan that is the subject of a public hearing shall be allowed to address the Commission for a maximum of fifteen (15) minutes.

### **Citizen time**

Any member of the public may speak on any item not on the current agenda under the above guidelines

### **Request for additional time to speak**

At the beginning of the comments by a citizen additional time may be requested by the speaker. The Chairman shall decide on the amount of time to be provided.

### **Written comments**

Written comments are most helpful in reviewing issues under consideration. Citizen input is valuable and appreciated. The Commission encourages citizens to submit their comments in writing or any information pertaining to the issues at hand. There is not a limit on written comments; clarity and succinctness is encouraged.

# Public Hearing

## **LUNENBURG COUNTY -PUBLIC NOTICE**

**The Lunenburg County Planning Commission** will hold a public hearing on **Thursday, September 7, 2023**, beginning at **7:00 p.m.** in the 2nd floor Courtroom of the Lunenburg Courts Building, 160 Courthouse Square, Lunenburg, VA 23952 for public input on the following:

**15.2-2232 Hearing for CUP 1-23 Conditional Use Permit** for Oral Oaks Solar, to construct and operate a twelve megawatt (12 MW), utility-scale solar array located on tax parcel 058-0A-0-29, which has road frontage on Oral Oaks Road and surrounds 5844 Oral Oaks Road, Kenbridge, VA 23944 on three (3) sides. The parcel consists of 128.239 acres in an A-1 (Agricultural) zone. The 15.2-2232 process is required by the Code of Virginia prior to any request for a zoning amendment regarding specified projects to be considered. The process determines if the request is in compliance with the Lunenburg-Kenbridge-Victoria Comprehensive Plan.

It is the intention of the Lunenburg County Planning Commission to comply with the Americans with Disabilities Act. Should you need special Accommodations, please contact the County Administration office at 434-696-2142 prior to the meeting date.

**The full application is available for review at:**

**[www.lunenburgva.gov/government/planning\\_commission/pending\\_conditional\\_use\\_permit\\_applications.php](http://www.lunenburgva.gov/government/planning_commission/pending_conditional_use_permit_applications.php)** (select the “2023 Pending Conditional Use Permit Applications”). Written comments will be appreciated, in lieu of oral presentations. Please send comments to [taylor@lunenburgva.gov](mailto:taylor@lunenburgva.gov) or Lunenburg County, Department of Planning and Economic Development, 11413 Courthouse Road, Lunenburg, VA 23952.

# CUP 1-23: Oral Oaks Solar



# Kenbridge Solar

Conditional Use Permit Application  
Kenbridge, VA 23944

## PREPARED FOR

Lunenburg County Administrative  
Office  
11413 Courthouse Road  
Lunenburg, VA. 23952  
434.696.2142

## PREPARED BY



115 South 15th Street  
Suite 200  
Richmond, VA 23219  
804.343.7100

03/10/2023



Table of Contents

1. Lunenburg County Conditional Use Permit Application.....3

2. Adjoining Property Owner Location Map.....10

3. Project Narrative.....11

4. Site Plan.....22

5. Draft Grading Plan .....22

6. Decommissioning Plan .....22

7. Documentation of Right to use property .....26

8. Liability Insurance.....36

9. Archeological and Architectural Resource Reports.....37

10. Environmental Impacts Narrative .....37

11. Wildlife Impacts Narrative .....37

12. Transportation Management Plan & Ex. Pvmt Condition Inventory.....37

13. FAA Determination.....37

14. Adjoining Property Owner Map & Notifications .....37

15. ALTA Land Title Survey.....37

# 1. Lunenburg County Conditional Use Permit Application

## Lunenburg Planning Office

Application for Conditional Use Permit for **Solar Facilities**

Case Number: \_\_\_\_\_ (Office Use Only)

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### Section 1

Applicant Name: Oral Oaks Road Solar, LLC (Ameresco)

Owner Name: Virginia Wilson Hawthorne

Owner Signature: \_\_\_\_\_

Contact Name for Application: Tom Holt

Physical and Mailing Address: Ameresco Inc. – 111 Speen Street, Framingham, MA 01701

Phone Number: (508) 598-3136

Email Address: tholt@ameresco.com

Fax Number (if applicable): Not Applicable

Power of Attorney Name: \_\_\_\_\_

Power of Attorney Signature: \_\_\_\_\_

As owner or authorized agent of this property, I certify that this application is complete and accurate to the best of my knowledge, and I authorize the Lunenburg County representative(s) entry on the property for purposes of reviewing this application.

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### Section 2

### Property Information

Parcel Number(s): 058-0A-0-29

Area (ac./sq. ft.): 128.239 Acres / 5,586,093 Sq. Ft

Magisterial District: Columbian Grove

Address: 5844 Oral Oaks Road Kenbridge, VA 23944

Existing Zoning: R1 – Low Density Residential

Requested Use: Large-scale Solar Facility

Does this property have a historical designation? If yes, describe: No

Parcel number(s), acreage, magisterial district and existing zoning can be located at:

<https://lunenburggis.timmons.com/#/mw1>. The address can be typed into the “By Parcel Address” search bar followed by selecting search. This will pull up the information pertaining to the parcel.



The application deadline is the 1<sup>st</sup> of the month proceeding the month in which the public hearing by the Planning Commission is to be held. The Planning Commission meeting is held on the 1<sup>st</sup> Thursday of the month at 7:00 p.m. Applications must be submitted in completed form a minimum of forty-five (45) days prior to scheduling a public hearing by the Planning Commission. Notice of incomplete applications will be sent to the applicant at the listed address in Section 1.

The site plan must be submitted as described in the site plan requirements at the time of the application.

Application fee is \$2,500.00, which must be paid at the time of application submission. The applicant will be invoiced for any costs incurred, including but not limited to advertising, postage, legal fees, third-party consulting fees, etc.

**\*\*Incomplete applications will be returned to the applicant and not docketed for a public hearing\*\***

### Section 3

## Certification of Adjoining Property Owners, Board of Supervisors, and Planning Commissioners

### Applicants Certification:

I certify that I have notified all adjacent property owners, to the property, which is the subject of this application request, that this application is being filed. Notifications were sent via first class mail.

Adjacent property includes all property touching the project parcel, across roadways, watercourses, railroads, and/or municipal boundaries.

I further certify that the names and addresses below are those of the adjacent property owners as listed in the tax records of the Commissioner of Revenue of Lunenburg County.

Applicant's Signature: \_\_\_\_\_

State of: \_\_\_\_\_

County of: \_\_\_\_\_

Before me, Paul Allen, on this 7<sup>th</sup> day of

\_\_\_\_\_, Name of Notary Public

March, 20 23, Jonathan Mancini, personally appeared, and

\_\_\_\_\_, Applicant(s) Name

provided verification to be the person(s) whose name(s) is/are subscribed to the foregoing instrument and acknowledged to me that he/she/they executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this 7<sup>th</sup> day of March, 20 23.

\_\_\_\_\_, Notary Public's Signature

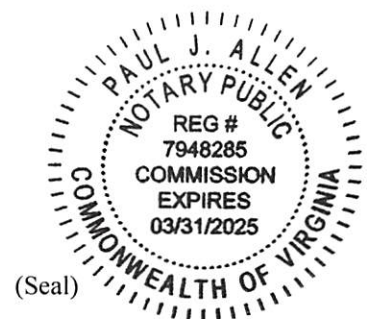
Henrico County, VA, Location of Commission

Registration #: 7948285

Commission Expiration: 3/31/2025

### Verification of Identity

- ☒ Driver's License or Govt./State Identification Card:  
State: RI Number: 8810669  
☐ U. S. Passport: \_\_\_\_\_ Number: \_\_\_\_\_  
☐ U. S. Military ID Card \_\_\_\_\_  
☐ Social Security Card \_\_\_\_\_  
☐ Birth Certificate \_\_\_\_\_  
☐ Other: \_\_\_\_\_



Adjacent Parcel (Property) Owners		
Parcel Number	Name(s)	Address
58-0A-27	Gustaf Joseph Terry II	5642 Oral Oaks Road Kenbridge, VA 23944
58-0A-29A	Wilson Virginia Hawthorne,	5844 Oral Oaks Road Kenbridge, VA 23944
58-0A-37A	Novak Robert or Lisa	1080 Unity Road Kenbridge, VA 23944
58-0A-0-28B	Gustaf Joseph Terry II	5642 Oral Oaks Road Kenbridge, VA 23944
		(Owners Address)
58-0A-31	Wilson Virginia Hawthorne,	5844 Oral Oaks Road Kenbridge, VA 23944
		(Owners Address)
58-0A-0-39A	Strebor Farms LLC	702 South Broad Street Kenbridge, VA 23944
		(Owners Address)
058-0A-0-24	Lunenburg County Virginia	1800 Gary Road Kenbridge, VA 23944
58-0A-30	Electric Power Sub-Station	Null
058-03-0-D	Phillips Jason A or Beth A	596 Saint Johns Church Road Kenbridge, VA 23944
		(Owners Address)
058-03-0-C	Langford Vernon L or Ora Regina,	443 Northview Lane Crestview, FL 32536
		(Owners Address)
058-0A-0-24A	Bledsoe Rhodessa Tisdale,	22061 Lake Jordan Drive Petersburg, VA 23803
		(Owners Address)
058-0A-0-24C	Killen Jerry W	5717 Fitztown Road Virginia Beach, VA 23457
		(Owners Address)

\*If there are additional adjacent property owners, please include them on a separate sheet. Also, the letter that follows can be completed and mailed to adjacent property owners.

# Notification of Application Submittal to Adjacent Property Owners

**To:** Adjacent Property Owner of Parcel(s) 058-0A-0-29

**From:** Ameresco

**Date:** March 9, 2023

The following application will be submitted for review to the Lunenburg County Planning Office:

☐ Rezoning

☒ Conditional Use Permit

☐ Special Exception

Requested Use or Exception:

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Ameresco is requesting a Conditional Use Permit to allow an approximately 12-megawatt solar facility to be developed on a 128.24-acre parcel (Tax Map No. 058-0A-0-29) located at 5844 Oral Oaks Road, Kenbridge, Virginia. The site is currently wooded, and the proposed development will consist of an approximately 51-acre fenced solar array field interior to the 128.24-acre parcel. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

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Ameresco intends to host a public community meeting with respect to this application to allow all interested community members to learn more about the project and ask the Applicant questions about the project, solar energy, or Ameresco. Ameresco will notify the adjacent landowners and publicize the community meeting in advance once a time and place has been determined.

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The application will be available for viewing at the Lunenburg County Planning Office. The Planning Office shall notify all adjacent property owner(s) of the time, day, and location of the public hearing(s) to be held on this application. Should you have questions and/or comments, please contact the Planning Office at 434.696.2142 or [taylor@lunenburgva.gov](mailto:taylor@lunenburgva.gov).

## Section 4 Applicant's Report

### Section 8.3(b) of Lunenburg Zoning Ordinance

*Every application for a Conditional Use Permit shall be accompanied by a report from the applicant describing the proposed Conditional Use and explaining the manner which it complies with the requirements and standards of this article.*

The following questions address the basic issues. The Planning Commission and/or Board of Supervisors may request additional information.

1.) What type of use is being requested?

Construction and operation of a large-scale ground-mounted photovoltaic solar energy generation facility. Reference Section 1.0 of attached Project Narrative.

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2.) Describe how you plan to develop the property for the proposed use and any associated uses.

Reference attached Project Narrative.

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3.) Describe why the proposed use is desirable and appropriate for the area. What measures will be taken to assure that the proposed use will not have a negative impact on the surrounding vicinity?

Reference attached Project Narrative.

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Also, address the following:

- a. Details of Operations: Reference the attached CUP Site Plan and Project Narrative.
- b. Hours of Operation: Temporary construction operations will be limited to hours of 7:00am to 8:00pm, Monday through Saturday and will be prohibited on Sunday. Completed facility operations will be automated but periodic equipment inspections and maintenance activities will be limited to hours of 7:00am to 7:00pm, Monday through Saturday and will be prohibited on Sunday.
- c. Traffic: Reference the attached Project Narrative and Transportation Management Plan in Appendix E.
- d. Noise: Once constructed, the proposed fixed-tilt solar facility will not generate mechanical noises.
- e. Dust/Smoke: The presence of smoke will be limited to initial site clearing and dependent upon County/State permitted onsite burning of removed vegetation. If onsite burning is allowed, then best management practices will be performed to ensure offsite trespass of smoke is not a nuisance or danger. Dust will also be limited to the site construction phase and will be monitored as part of the permitted Erosion & Sediment Control Plan. Best management practices will be performed to control dust until the site is stabilized with permanent vegetative cover.
- f. Runoff: Reference attached Project Narrative, Sections 5.1 and 5.5.
- g. Intensity of Use: The automated facility will be operational daily.
- h. Hazardous Materials: Onsite storage will be temporary and limited to equipment fuel and lubricants to be used during site construction. A SPCC Plan can be provided with County Site Plan review to address any related concerns.
- i. Outside Storage: There will be no required outside storage to accommodate facility operations.

4.) Is the use location on a floodplain, wetland area, or dam break inundation zone? No

5.) Are there any deed restrictions concerning the type of use proposed? If so, provide the date the said restrictions expire. No

6.) Has a survey of the parcel(s) been conducted to include project parcel, property boundaries, existing roadways and structures, and adjoining parcels, as well as the parcel owner? If so, is it included in the application packet? Yes – An ALTA survey is included in the Project Narrative, Appendix H.

7.) Has a site plan been included to note the information required on the survey, but also any new construction,

parking, clearing, planting, etc.? Yes – Reference attached CUP Site Plan.

8.) Has a business plan been established? If so, please provide it with application submittal. N/A

9.) Describe how the proposed project complies or refutes the goals and objectives noted in the Kenbridge- Victoria-Lunenburg Comprehensive Plan. This can be located the Lunenburg County, Virginia website.

Reference attached Project Narrative Section 11.0.

**Requirements for telecom site plans can be found in Section 22 Article III, items 22-81 thru 22-112 of the Lunenburg County Code.**

## **Section 5**

### **Construction Traffic Management Plan (CTMP)**

VDOT and the County have identified that the construction phase of solar energy projects have an increased impact on VDOT's secondary road network. These impacts occur as VDOT's secondary road system was not designed to accommodate large numbers of truck traffic that results from the transport of the needed materials for the solar project to the construction sites. The increase in number of employees, also, impacts the roadways. To assist VDOT and the County in mitigating the increased maintenance costs associated with the increased traffic, the County requires the submission and approval of a CTMP. The outline below includes the needed elements for the required CTMP.

#### Construction Traffic Haul Routes

- Identify the routes to be used to transport supplies to the construction site. The plan shall begin at a VDOT maintained primary route and include all secondary routes to be used to access the site.
- The plan shall, also, include any truck routes that may be used to dispose of excess materials, clearing and grubbing debris, timber harvesting, or other activities that generate truck traffic leaving the site.

#### Roadway Condition Survey

- The applicant shall document by either photos, videos, or other method acceptable to VDOT and the County, the condition of the secondary roadways identified as haul routes. This condition survey will be utilized to identify areas damaged by the construction traffic that will be required to be repaired to the pre-existing conditions or better.

#### On-Site Storage, Unloading, and Turn-Around Areas

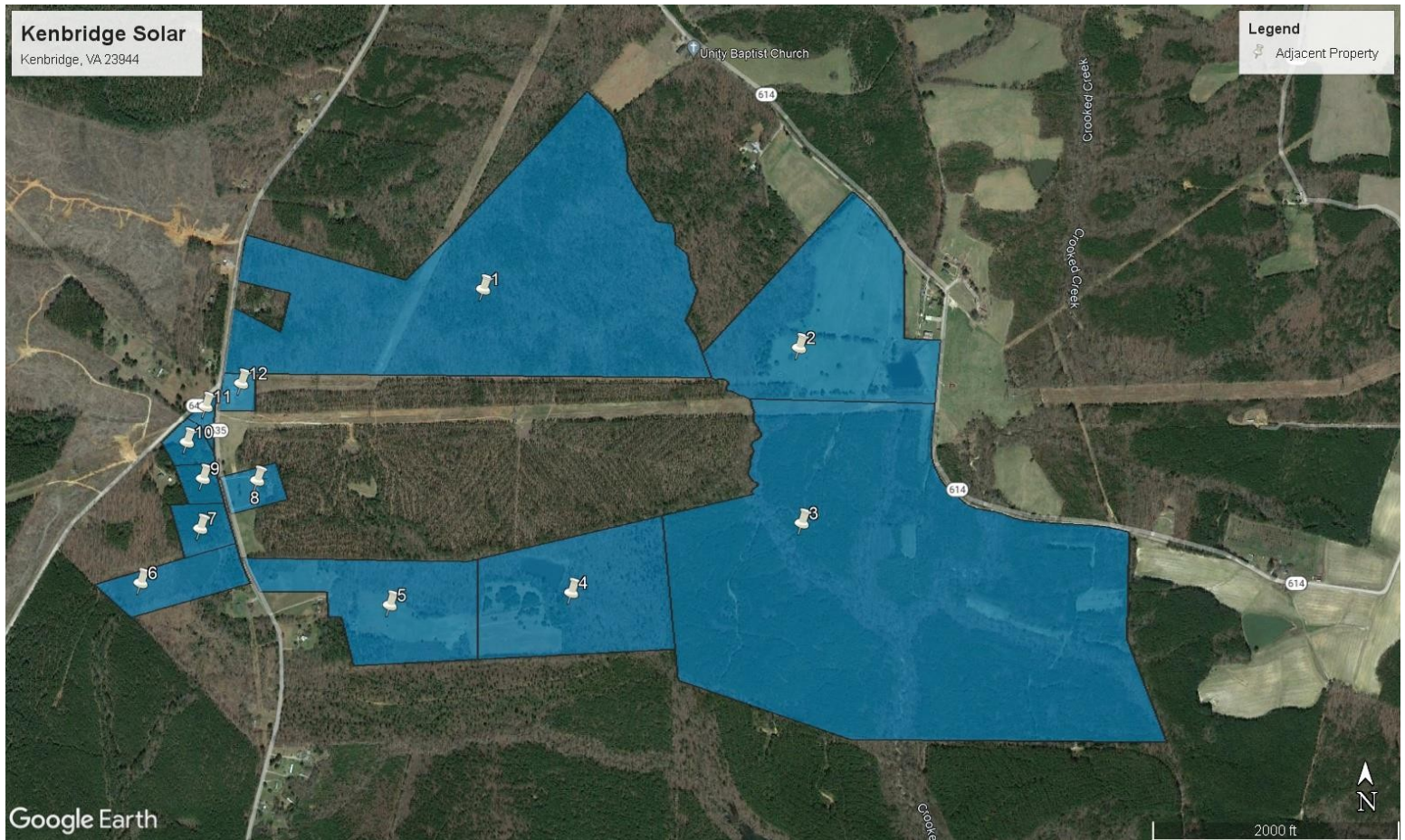
- The applicant shall demonstrate that they have adequate areas available on-site to unload trucks, store the materials on-site, and provide an area where trucks can turn around on-site prior to entering the VDOT roadway.

#### On-Site Parking Areas for Construction Employees

- The applicant shall provide an estimated number of employees to be on-site during construction and demonstrate that adequate on-site parking areas are available for the anticipated employees. Employees will not be allowed to park along roadways or within VDOT Right-of-Way (ROW) adjacent to the construction areas.



## 2. Adjoining Property Owner Location Map



#	1	2	3	4	5	6	7	8	9	10	11	12
<b>Parcel Number</b>	58-0A-31	58-0A-37A	58-0A-0-39A	58-0A-0-28B	58-0A-27	058-03-0-D	058-03-0-C	58-0A-29A	058-0A-0-24A	058-0A-0-24C	058-0A-0-24	58-0A-30
<b>Name(s)</b>	Wilson Hawthorne Virginia	Novak Robert or Lisa	Strebor Farms LLC	Gustaf Joseph Terry II	Gustaf Joseph Terry II	Phillips Jason A or Beth A	Langford Vernon L or Ora Regina,	Wilson Hawthorne Virginia	Bledsoe Rhodessa Tisdale,	Killen Jerry W	Lunenburg County Virginia	Electric Power Sub-Station
<b>Address</b>	5844 Oral Oaks Road Kenbridge, VA 23944 (Owners Address)	1080 Unity Road Kenbridge , VA 23944	702 South Broad Street Kenbridge, VA 23944 (Owners Address)	5642 Oral Oaks Road Kenbridge, VA 23944 (Owners Address)	5642 Oral Oaks Road Kenbridge, VA 23944	596 Saint Johns Church Road Kenbridge, VA 23944 (Owners Address)	443 Northview Lane Crestview, FL 32536 (Owners Address)	5844 Oral Oaks Road Kenbridge, VA 23944	22061 Lake Jordan Drive Petersburg, VA 23803 (Owners Address)	5717 Fitztown Road Virginia Beach, VA 23457 (Owners Address)	1800 Gary Road Kenbridge, VA 23944	Null



## 3. Project Narrative

### 1.0 Project Description

Ameresco (Applicant) proposes to construct and operate the Kenbridge Solar facility (Project) at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The Project will be a fixed tilt, ground-mounted photovoltaic (PV) solar facility, with electricity generating capacity of approximately 12.0 megawatts (MW) of alternating current (ac) and 13.5 MW of direct current (dc) within a fence secured area of approximately 51 acres. The 51-acre fenced development area is located within parcel Tax Map No. 058-0A-0-29 with a proposed gravel access road that connects to Oral Oaks Road (SR 635). The project parcel is 128.24 acres and is privately owned by Virginia Hawthorne Wilson (Property). The location and orientation of the solar array within the Property was designed so to minimize visibility from nearby residents and public roadways, minimize excavation and grading associated with project construction, and maximize exposure to solar radiation throughout the year. The proposed facility layout exceeds the County required setbacks for a large-scale solar facility further reducing any visual impact from Oral Oaks Road and nearby residential parcels.

### 2.0 Purpose and Need

The purpose of the proposed Project is to generate local, clean, and renewable solar power, with the electricity generation to be sold to the local utility. The interconnection study has been completed by Southside Electric Cooperative and Applicant expects a Solar Generator Interconnection Agreement (SGIA) by March 2023. Project site construction is anticipated to begin in 2023. Local solar projects are part of the energy mix, reducing the dependence on any single source of electricity generation. These projects help keep electric costs down by providing a hedge against the rising costs of commodity fuels. These local power generation projects also benefit their host communities by improving the resiliency of the local electric grid, supplying power locally and offsetting power supplies that would otherwise be required from distant power plants.

Based on its commitment to providing renewable energy, the Applicant proposes to develop the site described below to maximize its solar energy potential within the Project's secured fenced area. To best determine optimal location within the site, the following factors have been analyzed:

- Significant solar radiation (insolation)
- Site accessibility for service and construction vehicles
- Avoidance of environmentally sensitive areas
- Limited tree and vegetative clearing
- Limited visibility from offsite locations
- Required setbacks from adjacent properties and public roads

### 3.0 Site Setting

The proposed Project site is located at 5844 Oral Oaks Road in Kenbridge, Virginia. The fenced portion of the Project area is approximately 51 acres in size and will be installed within parcel Tax Map No. 058-0A-0-29 (128.24 acres) with a proposed gravel access road that connects to Oral Oaks Road (SR 635). The Property is privately owned by Virginia Wilson Hawthorne and majority of this parcel, approximately 80% (102 acres) exists as forested (timber). There is approximately 26 acres that exist as managed turf within the property, and approximately 77% (20 acres) of the turf is located within a 150-foot VEPCO easement along the northern side of the parcel. There is also approximately 5.5 acres of wetlands in the Project parcel, which is to be conserved and protected.

The proposed 51-acre fenced Project site is bordered as follows:

- Bordered to the north by a 150-foot VEPCO Easement that is internal to the project parcel. The proposed security fence runs parallel to the easement along its entire northern border.
- Bordered to the east by the centerline of the existing stream found in a field run survey prepared by VHB. Adjacent to the stream is a Residential – Low Density (R1) zoned parcel which borders the east and southeast corner of the project (Tax Map No. 058-0A-0-39A).
- Bordered to the south by two (2) R1 zoned parcels with the same owner (Tax Map No. 058-0A-0-28B and 058-0A-0-27).
- Bordered to the west by a Project participant parcel (Tax Map No. 058-0A-0-29A) with a single-family residence owned by the Project parcel owner. The north and southwest corners are bordered by the Oral Oaks Road (SR 635) right-of-way.

The specific location of the proposed solar array within this Property was carefully designed so to minimize visibility and maximize setbacks from nearby residents to the south and Oral Oaks Road to the west. The selected location is parallel and adjacent to an existing VEPCO Easement to the north and residential zoned properties to the east and south. Viewshed buffering/screening is accomplished by preserving a 50-foot or greater width buffer of existing vegetation around the perimeter of the project.

A wetland delineation was completed by VHB in April 2022 and confirmed via a Preliminary Jurisdictional Determination from the United States Army Corps of Engineers on August 29, 2022. There are waters regulated under Section 404 of the Clean Waters Act found on the Project site, however no wetland/waters impacts are proposed with this Project.

### 4.0 Key Components

The proposed Project will consist of the following key components:

- Solar Modules and Racking
- Underground Electrical Conductors
- Balance of System Equipment
- Gravel Access Road
- Security Fencing

Key components are described in the following subsections:

#### 4.1 Solar Modules and Racking

The proposed Project will utilize approximately 27,594 solar modules. The modules are manufactured offsite and will be delivered to the site by truck in wooden crates or cardboard boxes. Each module will measure approximately 3.7 feet by 7.5 feet and will be rated at 545 watts. Solar modules will be mounted onto a fixed tilt racking system. Solar modules are mounted two rows high in portrait orientation to the racking system. The racking system is oriented in rows extending in the East-West direction, and they are angled to have maximum southern exposure to the sun. The racking will be mounted on steel posts, which will be driven piles or helical ground screws embedded into the ground at a depth determined by structural analysis taking into account the soils on site, wind loading, and other site specific factors. Support posts will be driven/screwed into the ground about every 28 to 30 feet. The support structure will be designed to withstand both wind and snow loads as required per federal and state building code standards, respective of the region. The posts will be made from galvanized or corrosion-resistant metal to minimize the potential for corrosion over the lifespan of the project. The rows will be spaced approximately 16 feet apart to allow access for operations and maintenance and minimize inter-row shading. The maximum height of the solar modules above the ground will be approximately 10 feet.

#### 4.2 Underground Electrical Conductors

Underground electrical conductors will be installed in trenches at a depth in compliance with the National Electric Code. Conductors either will be buried in a polyvinylchloride (PVC) conduit or equivalent.

#### 4.3 Balance of System Equipment

Balance of System Equipment including but not limited to inverters, DC combiner boxes, and transformers will be installed near the solar array within the Project's fence line. Balance of System Equipment will be installed on H-Frames and concrete pads and in compliance with equipment manufacturer instructions. Liquid filled transformers will use FR3 fluid, which is a biodegradable, non-toxic, and carbon neutral transformer fluid made from vegetable oil. FR3 fluid in addition to its environmental benefits over traditional mineral oil also has twice the fire and flash point,

increasing safety. Full details of Balance of System Equipment will be included as part of the Project's electrical design plan set submitted for ministerial permits. A single row of power poles will be installed to connect the equipment on the Project's equipment pad to the local electric grid, at an interconnection point specified by Southside Electric Cooperative and shown on the Project site plan.

#### 4.4 Access Roads

The site will be accessed via a proposed gravel low-volume commercial entrance from Oral Oaks Road (SR 635), located adjacent to the south side of the existing transmission line easement. The proposed gravel access road will be 20 feet wide at the entrance and extending east through the proposed access gate to a truck turn-around. The balance of the proposed access road internal to the fenced facility is proposed as a 14-foot wide gravel roadway section to prevent vehicle rutting, erosion and minimize dust. The access road will have four (4) hammerhead turnarounds to accommodate maintenance and emergency vehicles. The road design will accommodate emergency vehicles and designed in compliance with County standards. The entrance from Oral Oaks Road will be designed in compliance with VDOT's low-volume commercial entrance standard. Reference the attached CUP Site Plan for the proposed access road and hammerhead turnaround locations.

#### 4.5 Fencing

The solar facility's panel array and equipment will be enclosed within a 7-foot tall chain link security fence in compliance with the National Electric Safety Code. The security fence will have at least one vehicle access gate on each end of the array boundary, which will always remain locked except during operations and maintenance activities. The lock system will accommodate access by County emergency services. Reference the attached CUP Site Plan for proposed security fence limits.

### 5.0 Summary of Construction Activities

Initial site construction will consist of installing erosion control measures, improving the access road, minimal site grading, and establishing the temporary staging/laydown area. Following this initial site preparation, the installation of the support piles, racking equipment, modules, security fencing and balance of system equipment will proceed through completion. Tree removal with grubbing will be limited to just beyond the proposed 51-acre fencing limits. Selective timbering, with no grubbing or root removal, is proposed along the south and east sides of the facility fence to reduce shading impacts. The selective timbering areas will retain the tree stumps and vegetative root structure to prevent land disturbance. Disturbed land will be stabilized with a native seed mix to ensure permanent vegetative cover with minimal irrigation needs (grow-in only) and low maintenance (mowing) needs. Buffer plantings will be added to supplement the proposed existing vegetative buffer, as determined necessary during County Site Plan review. Assuming site construction will commence by Spring 2024, then installation of supplemental buffer plantings will be scheduled for Fall 2024. The perimeter erosion control measures will not be

converted to permanent stormwater management measures until the disturbed areas have become stabilized with permanent vegetative cover.

### 5.1 Erosion Control

The Project's erosion and sediment control will be designed per state and County requirements. The first phase of site construction will be the installation of the temporary construction entrance and the minimum disturbance necessary to install silt fence along the project perimeter. Next will be the construction of the perimeter drainage ditches and the sediment basins. Land disturbance to develop the proposed facility will not begin until after the installation and operation of these erosion control measures. The perimeter erosion control measures will not be converted to permanent stormwater management measures until the disturbed project interior has become stabilized with permanent vegetative cover and approved for conversion by the County Erosion Control Inspector. This will include permanent vegetative groundcover between rows and under the solar panels.

### 5.2 Smoke and Dust

The presence of smoke will be limited to initial site clearing and dependent upon County/State permitted onsite burning of removed vegetation. If onsite burning is allowed, then best management practices will be performed to ensure offsite trespass of smoke is not a nuisance or danger. Dust will also be limited to the site construction phase and will be monitored as part of the permitted Erosion & Sediment Control Plan. Best management practices (i.e. water truck) will be performed to control dust until the site is stabilized with permanent vegetative cover. Once the facility is constructed and the site is stabilized the facility will not create smoke or dust during normal operation.

### 5.3 Staging Area

A temporary staging area will be located on the Project's northwest corner, adjacent to the proposed gravel access road. This area will only be temporarily disturbed to accommodate construction personnel parking, laydown for staging construction materials, equipment, and portable sanitation station(s). This temporary staging area is located within the project parcel and to be utilized during the limited construction phase. This area will be stabilized with permanent vegetative cover following use during construction. Reference the attached CUP Site Plan, sheet C301 for the proposed temporary parking and laydown area.

### 5.4 Site Grading

Construction equipment such as tractors, backhoes, dozers, and graders may be utilized to grade the proposed perimeter drainage ditches and sediment/stormwater basins. Stripped soils are to

be spread out adjacent to the fenced project area upgradient of silt fence and immediately seeded and mulched. Excavated soils are to be conditioned as necessary and used for construction of the basin embankments and the proposed fill on the north end of the facility. This soil will remain onsite and be available in the future to accommodate filling of these excavated stormwater measures and regrading back to a predevelopment condition with decommissioning.

Existing slopes were considered when selecting the project area and advancements in solar racking have allowed installation to occur on slopes up to 20%. As shown on the Slope Analysis (sheet C400) of the attached CUP Site Plan there are very few areas that exceed 20%. Site grading design is endeavoring for minimal disturbance of the existing surface soil to ensure prompt establishment of permanent stabilizing grasses following installation of equipment. Except for an area on the north end of the project that will be filled during construction and will utilize excavated soils from stormwater measures. All grading on this site was designed to have minimal impact on existing soil conditions, with no removal of existing soils from the site. Final finish site grading will be determined with the selection of the final racking system and presented with the final construction drawings for County Site Plan and VDEQ VSMP review and approvals. Reference the attached CUP Site Plan for the proposed site grading to accommodate the stormwater management infrastructure and fill area.

## 5.5 Stormwater Management

The Project's Stormwater Management will be designed per VDEQ (state) and County requirements. Stormwater will be managed on site through permanent basins that are designed to the specifications set by VDEQ. Discharge from the site will be through a level spreader or equivalent energy dissipating device to release water as sheet flow to adjacent wetlands/streams. Once permanent vegetative covering of the site is approved by the County Erosion Control Inspector perimeter control will be converted to permanent measures. The basins will be constructed with permanent control structures, embankments and discharge piping when initially installed as sediment basins. The conversion to permanent stormwater measures will consist of the removal of the temporary dewatering orifice and baffles and uncovering/opening a low flow orifice at the bottom of the basin according to its design specifications.

The Virginia Runoff Reduction Method (VRRM) will be used to determine water quality requirements for the limits of disturbance according to 9VAC25-870-63. A VRRM spreadsheet will be included with the stormwater design modeling with the County Site Plan review submittal, following CUP approval. Reference the attached CUP Site Plan for proposed perimeter drainage ditches and stormwater management (SWM) basins.



## **6.0 Transportation and Traffic**

Materials for the proposed Project including but not limited to gravel, riprap, stormwater structures, PV modules, tracking equipment, support racks/piles, inverters, transformer, wiring and equipment pads will be delivered to the site via trucks during construction. All construction traffic will access the project site from Oral Oaks Road via the proposed access, which is to be constructed as a low volume commercial entrance. The proposed construction truck traffic will be managed to minimize impacts to existing traffic patterns. A Transportation Management Plan (TMP) was developed in accordance with VDOT Work Area Protection Manual (WAPM), the Manual on Uniform Traffic Control Devices (MUTCD) and included with this CUP application to address these concerns. Following the completion of site construction, vehicular access to the site will be limited to semi-annual operation/maintenance activities by personnel in standard two-axle vehicles. Reference the attached Appendix E for the Transportation Management Plan & Existing Pavement Condition Inventory.

## **7.0 Employment**

A typical construction workforce for a solar facility of this size consists of approximately 80 workers during the construction period, which should last approximately six (6) months. Construction personnel will be divided between civil and electrical services, respective of construction phasing. Not all workers will be present on site at the same time. Workers will commute to the site in either construction specific or personal vehicles and will park in the proposed temporary staging area or the within the proposed fenced facility limits.

## **8.0 Utility Use**

### **8.1 Water Use**

No permanent potable water service will be required for the solar facility, and therefore no water infrastructure is proposed with the Project. During construction water use will be accommodated by water trucks with use limited as necessary for moisture conditioning of soil, hydro-mulching, dust control and grow-in irrigation.

### **8.2 Sewer and Solid Waste**

No permanent sanitary sewer or solid waste services will be required for the solar facility, and therefore no sewer or solid waste infrastructure is proposed with the Project. During construction temporary sanitary facilities will be accommodated via portables and the limited solid waste will be handled via temporary dumpster(s). Both temporary measures will be serviced at regular intervals to prevent nuisance.

## **9.0 Community Outreach**

Community outreach is an important part to the overall success of this project. Informing the surrounding community of the proposed project and importance of community-scale solar in meeting renewable energy and electrical grid resiliency goals. In coordination with the landowner, nearby property owners will be notified in advance of a public meeting that will be held in the county and near the project's location. The public meeting will serve as an open house for any inquirer to learn about solar energy, the construction process, operations, and maintenance, health and safety, economic and fiscal impacts, and address other community questions.

## **10.0 Mitigation Measures**

The project is surrounded by wooded, low density residential zoned parcels as well as a VEPCO transmission easement running through the north portion of the property. The proximity of the site to an abutting substation does not require any additional land for interconnection and can be achieved in a location that already has existing utility infrastructure. There will be limited view of the project from Oral Oaks Road but from the perspective of the existing viewshed containing an existing power substation and transmission line right-of-way. The site's topography, in addition to a 50-foot buffer that will utilize and preserve existing vegetation surrounding the site, will conceal proposed facility equipment from surrounding properties. Considering the adjacent existing power infrastructure and proposed forested buffers surrounding the project, allow the siting of the project to be in an ideal location. Offsite, the proposed construction truck route has been studied and a Transportation Management Plan was created to ensure the construction activity will not impact existing road and traffic conditions.

## **11.0 Kenbridge-Victoria-Lunenburg Comprehensive Plan Compliance**

### **11.1 Solar Facilities Policy**

The construction of the Kenbridge Solar facility can be characterized as a safe development. The sequence of construction, erosion control and stormwater management measures will be incorporated into construction drawings developed and reviewed by a Professional Engineer and designed in accordance with VDEQ regulations. There are no proposed impacts to jurisdictional wetlands/waters and controlled stormwater discharges will be directed via level spreaders or energy-dissipation devices to onsite wetlands and/or streams. The offsite impact is limited to temporary construction traffic along the proposed truck route, which will be mitigated via a Transportation Management Plan. The proposed interconnection is into the existing overhead power distribution on the east side of Oral Oaks Road and also within the project parcel. The proposed facility siting preserves existing wooded buffers for buffering neighbors to the east, west and south. The adjoining parcel to the north is owned by Ms. Virginia Wilson, participant landowner for this Project. Therefore, the proposed Project will preserve the character of the surrounding community.

## 11.2 Loss of Agricultural Land and Open Space Policy

The project is on a low density residential zoned (R1) parcel that is currently undeveloped and wooded. The proposed 51-acre fenced limits of the facility exceed the required 200-foot setback from the property boundary. An existing 150-foot wide VEPCO transmission line right-of-way occupies the northern end of the parcel. Approximately 60% of the 128.24-acre project parcel will not be developed with this Project. The proposed facility's fenced limits are more than 1-mile from any existing medium to large-scale solar facilities and more than 1-mile to the nearest optioned parcel for the proposed Laurel Branch Solar project to the northeast. The proposed project also does not exceed the ordinance defined 5% solar development density within a 5-mile radius. The siting of this project aims to preserve the character of the community and prevent impact to the surrounding land and water resources.

This solar facility has a minimal development impact to approximately 51 acres of the project parcel and upon decommissioning returns the affected land back to the pre-development condition. The use of driven steel piles for support of the racking system significantly reduces impacts to surface soils when compared to the affected footprint of structural concrete foundations associated with most residential and commercial development. The site will be stabilized using native grass species and the use of native pollinators within disturbed buffer areas and array perimeter may be utilized to enhance wildlife habitat.

## 11.3 Protection of Water Resources Policy

This project is subject to the regulations and permitting of VDEQ, which will protect the water quality on the site and the watershed it will be discharged to. A wetland delineation was performed by VHB in April 2022 and a Preliminary Jurisdictional Determination was received in August 2022 confirming the location of water features on the site. There are no proposed impacts to these jurisdictional wetlands/waters. Stringent perimeter control measures on the site will prevent impairment of the onsite wetlands/waters. The Project poses no negative impact to these water resources, groundwater reserves or groundwater wells in the area.

## 11.4 Corridor Development Policy

The proposed construction traffic will travel south from the Town of Kenbridge using Route 635 (Oral Oaks Road) to access the site at a single construction entrance to be approved by VDOT. A Transportation Management Plan (TMP) is included with the CUP Application package and will demonstrate proposed mitigation measures for any potential impacts to the level of service, safety, or capacity along the proposed construction traffic route. Additionally, an Existing Pavement

Condition Inventory was performed on the proposed construction traffic route to determine suitability of existing secondary roads. A similar analysis will be performed pre and post construction for the purpose of identifying any physical impacts and repairs to pre-construction conditions made promptly. Additional TMP support and estimates for performance bonding will be conducted as deemed necessary by the County and VDOT.

## 11.5 Economy and Employment Goals, Objectives, and Strategies

Solar development will work to expand a diversified economy through the local sourcing of materials and labor needed to complete this project. Additionally, a local solar installation will diversify the energy mix in the County and further reduce dependence on single sources of electricity. Local power generation will improve the resiliency of the local electric grid, supplying locally and offsetting power supplies that would otherwise be required from distant power plants.

The applicant will coordinate further regarding a Siting Agreement and long-term revenue sharing, as directed by the County Attorney, and currently adopted requirements.

## 11.6 Land Use Goals, Objectives, and Strategies

The Project parcel has an existing 150-foot wide VEPCO transmission right-of-way along its northern boundary and an adjoining Dominion Energy power substation in the northwest corner. The proposed project facility footprint is only 40% of the 128.24-acre parcel and is directly adjacent to the previously mentioned electrical transmission infrastructure, making the project area less desirable for future low density residential development. By providing an adequate buffer and exceeding required setbacks, the proposed facility will not inhibit the promotion of future single-family development in the surrounding areas.

## 11.7 Natural Resources Goals, Objectives, and Strategies

This project requires the removal of some forested area, but it will promote the preservation of existing vegetation by retaining areas along the perimeter of the property in a minimum 50-foot-wide strip of land acting as a buffer. Areas that must be timbered to reduce array shading will not be grubbed so that the root structure will be maintained. No stripped or excavated soils will be removed from the site.

The existing use for the property is forested with no residential structures located internal to the parcel. The USDA NRCS Web Soil Survey was analyzed, and the 128.2-acre site resides on 46.3 acres (36%) of prime farmland and 81.6 acres (64%) of farmland of statewide importance. With the proposed site plan and decommissioning plan, this project serves to provide environmentally

friendly energy to the community while providing potential agricultural use in the future after the project's life.

## 4. Site Plan

See CUP Site Plan in Appendix A

## 5. Draft Grading Plan

See sheet C400 in Appendix A

## 6. Decommissioning Plan

Kenbridge Solar is proposed as a 12-Megawatt Alternating Current (AC) freestanding solar energy facility to be located on Lunenburg County Property Tax Map Number 058-0A-0-29 near 5844 Oral Oaks Road in Kenbridge as shown on the VHB CUP Site Plan dated November 2022 (the "Project"). The Project will not contain any permanent building structures after construction is complete and the Project is operational. There will be security fencing installed around the perimeter of the Project, with security gates for access. The Project has an estimated useful life of 40 years. In conjunction with the permits, the following is the decommissioning plan for the Project:

Lunenburg County will be notified by certified mail to the County Planning Commissioner office, of the proposed date of discontinuation of operations and plans for removal. Decommissioning will consist of:

- physical removal of all project elements,
- reuse, salvage, recycling, and disposal of all material in accordance with local, state, and federal regulations, and
- return of the array surface to its pre solar development condition (as can reasonably be achieved via acceptable land development practices). This consists of surface stabilization, revegetation of the site to minimize erosion and replanting of trees to similar predevelopment density.

Kenbridge Solar will obtain any required local or state permits before starting the decommissioning operation and will ensure there are no impacts on the premises and abutters.

### DECOMMISSIONING STEPS

Under the decommission and restoration process, Kenbridge Solar or a subcontractor will dismantle and remove all above ground structures, equipment, gravel roads and recondition the ground and any related temporary staging areas. Structures and equipment include panels, racking, canopy structures, inverters, transformers, wiring, pads, poles and low and medium voltage electrical equipment.



All dismantled equipment and material are categorized for reuse, salvage, recycling or disposal. Steel, aluminum, glass, copper and plastics can all be recycled. To optimize transportation and reduce costs, all materials will be collected and classified on-site before transport to the appropriate facilities.

No waste material will remain on site, other than certain underground materials as described below in items number 3 and 8.

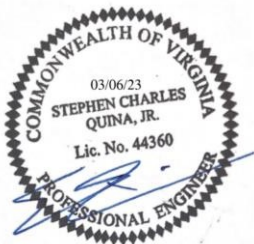
The different steps below describe the process to decommission the Photovoltaic (PV) systems.

1. **Temporary erosion controls:** Appropriate temporary and sedimentation control best management practices will be used in the decommissioning of ground mount systems.
2. **Disconnect PV system from the power grid:** System will be shut down. All inverters, combiner boxes, AC panels and medium voltage disconnects, and switches will be put in the off position.
3. **Remove electric wiring and cables:** DC and AC wire will be disconnected and removed by hand from panels, racking, combiner boxes, inverters and AC panels. Underground cables will be pulled and removed from underground conduit and overhead cables will be removed from poles and Medium Voltage (MV) equipment. Any underground cable left in place will be cut off at a minimum depth of 12-inches below the ground surface.
4. **Remove panels:** Crystalline silicon panels are considered landfill safe since they do not contain hazardous materials such as lead or cadmium. Panels contain recyclable materials such as aluminum, copper and glass. Panels will be dismantled and packaged per manufacturer or approved recycler specifications. If possible, panels will be returned to manufacturer for recycling or disposal or transported to a recycling facility where panel componentry will be recycled.
5. **Dismantle and removal of racks:** Racks include, fix tilt structures. All racking will be disassembled, broken down and shipped to the appropriate metal recycling facilities.
6. **Remove rack foundations:** Foundations include post and ground screws. All support, posts and ground screws will be pulled and removed from the ground.
7. **Remove electrical and electronic equipment:** Electrical and electronic equipment include inverters, transformers, combiner boxes, AC panels, disconnect switches and MV equipment. Equipment will be removed from supports, concrete pads and utility poles. Equipment will be transported for reconditioning and reuse or disassembled into easily transportable sections for salvage, recycling or disposal using approved techniques.

8. **Breakup and remove concrete materials:** Concrete materials include equipment pads. Pads will be excavated to remove anchor bolts, rebar and conduits and concrete will be broken into small manageable pieces. Ballast blocks will be broken into small manageable pieces and canopy concrete foundations (if applicable) will be demolished to a minimum of 12 inches below grade. Concrete material will be disposed at the appropriate facilities and rebar will be recycled, if possible.
9. **Remove power poles.** Utility poles installed to interconnect the system will be removed and reused, if possible.
10. **Remove fence:** Fencing, gates and guards will be removed and salvaged or recycled.
11. **Remove roads:** Gravel access and internal array roads will be removed. Gravel aggregate will be tested for contamination prior to salvage and disposed of or reused based on tested condition.
12. **Remove stormwater ditches and basins:** Stormwater management drainage ditches and basins will be removed. This will include removal of associated concrete discharge control structures, discharge piping and energy dissipation riprap. These excavated stormwater management features will be filled and/or re-graded to prevent excessive ponding and accommodate establishment of the prescribed predevelopment vegetation.
13. **Restoration:** Restoration includes grading, seeding and loaming of disturbed areas resulting from decommissioning activities.

**Table 1. Kenbridge Solar Decommissioning Estimate Breakdown**

<b>DECOMMISSIONING ESTIMATE BREAKDOWN</b>						
<b>Resource</b>	<b>Task</b>	<b>Task Quantity</b>	<b>Task Duration</b>	<b>Person Hours</b>	<b>Rate</b>	<b>Cost</b>
Labor	Remove modules	13,797 module pairs	10 minutes per pair	2299.5	\$35	\$80,483
Labor	Remove racking	1150 racks	40 minutes per rack	766.67	\$35	\$26,833
Labor & Equipment	Remove posts	2,300 posts	10 minutes per post	383.33	\$150	\$57,500
Labor & Equipment	Remove fencing	7,663 LF	1 minute per LF	128	\$150	\$19,158
Labor	Remove conduit	21,400 LF	2 minute per LF	713	\$35	\$24,967
Labor & Equipment	Remove pad equip.	4 xfmr, 0 combiners, 4 inverters	3 hrs per xfmr, 3 hour per inverter	24	\$150	\$3,600
Labor & Equipment	Remove pads	1200 SF of Pads	10 minutes per SF	200	\$150	\$30,000
Labor & Equipment	Remove gravel road	9,761 SY	1.5 minutes per SY	244	\$150	\$36,604
Labor & Equipment	Remove equipment poles and equipment	6 poles	5 hours per pole	40	\$150	\$6,000
Equipment	Remove scrap		40 Hours	40	\$125	\$5,000
Labor & Equipment	Fine grade the site	52 Acres	75 Hours	75	\$300	\$22,500
Labor, Equipment, and Seed	Seed site	52 Acres	-	-	\$2000 per acre	\$104,000
Labor, Equipment, and Materials	Erosion Control	52 Acres	-	-	\$2,500 per acre	\$130,000
<b>Total Cost</b>						<b>\$546,644</b>



## 7. Documentation of Right to use property

### OPTION AGREEMENT

This Option Agreement ("Option Agreement") is made as of March 31, 2021 by and between Virginia Wilson, Land Owner's with offices located at 5844 Oral Oaks Road Kenbridge, VA 23944 ("Owner") and Ameresco Solar Land Holdings, a Delaware limited liability company with offices located at 111 Speen Street, Suite 410, Framingham, MA 01701 (together with its nominee, "Optionee"). Owner and Optionee may be referred to individually as a "Party" or collectively as the "Parties".

### RECITALS

- A. Owner is the owner in fee simple absolute of certain real property, together with all improvements thereon and all rights and appurtenances thereunto pertaining, located at 5844 Oral Oaks Road Kenbridge, VA 23944 referenced Parcel ID# 058-0A-0-29 (the "Property").
- B. Optionee desires to obtain an option to lease a portion of the Property upon which to construct and install a solar photovoltaic facility ("Facility") for the sale of power to a third party, such portion of the Property shown on Exhibit A hereto (the "Leased Site") (the construction of the Facility, lease of the Leased Site and sale of electricity shall be referred to collectively as the "Project").

NOW, THEREFORE, in consideration of the purchase price and the mutual promises contained in this Agreement, the parties agree as follows:

1. GRANT OF OPTION. In consideration of the payment by Optionee to Owner of [REDACTED] Dollars paid by Optionee (the receipt of which the Owner acknowledged) and as an inducement to Optionee to pursue the development of the Project, Owner grants to Optionee and its successors and assigns, and Optionee hereby accepts, the sole and exclusive option (the "Option") to lease the Leased Site free and clear of any tenants, occupants or materials or equipment and liens but subject to encumbrances of record and otherwise upon terms and conditions to be negotiated and contained in a definitive lease agreement. The Parties agree that any lease agreement shall at a minimum contain the terms and conditions generally stated, or specifically stated, as the case may be, set forth on Exhibit B hereto, but that Exhibit B does not contain a full list of the terms of a definitive lease agreement. Additional terms may be negotiated based on due diligence performed by Optionee, requirements of lender(s) for the Project, or requirements of the local electric utility. Owner acknowledges that Optionee has not performed any studies of the suitability of the Property or the Leased Site for the Project.
2. TERM; EXERCISE OF OPTION.
  - (a) The term of this Option Agreement ("Option Term") shall commence on the Effective Date and shall expire on the one year anniversary of the Effective Date. Optionee has the right, in its sole and absolute discretion to terminate the Option and/or this Option Agreement at any time for any reason. If the Option is not terminated by Optionee as provided in this Agreement, Optionee will have the right, upon 10 days written notice to Owner and the payment of an additional non-refundable sum of [REDACTED] Dollars, to extend the Option Term for an additional period of one (1) year.
  - (b) Optionee may, in its sole discretion, exercise the Option at any time during the Option Term by giving written notice ("Notice") of such exercise to Owner which Notice shall

include a diagram of the Site for the Owner's approval which shall not be unreasonably withheld or delayed (nothing herein is intended to prevent Optionee, at its election, from providing Owner with and requesting Owner's approval of a legal description and diagram prior to giving the Notice to Owner). Optionee shall deliver with its Notice a proposed lease agreement. The Parties shall negotiate in good faith the terms of the lease agreement for a period of ninety (90) days after Owner's receipt of the Notice with the intended goal of executing a lease within such ninety-day period. The execution of a lease shall be referred to as the "Closing". Optionee may deliver the Notice on a conditional basis and Optionee may revoke the Notice prior to Closing. If the Notice is revoked, this Option Agreement and the Option shall nevertheless remain in full force and effect for the remaining Option Term.

3. CLOSING. At the Closing, the Parties shall execute a lease agreement and such other documents, instruments, certifications and confirmations as may be reasonably required to fully effect and consummate the transactions contemplated by this Option Agreement or the lease agreement, including any documents required by the local electric utility, Optionee's lenders or Optionee's title company, and any documents Optionee deems necessary to remove any liens, encumbrances or exceptions to title affecting the Leased Site.
4. RIGHT OF ENTRY. Optionee and Optionee's authorized representatives may at any reasonable time, after giving reasonable notice to Owner, enter upon the Property for the purpose of making inspections, appraisals, surveys, shading analysis, including the cutting of survey lines and putting up markers and driving stubs and stakes, site and soil, groundwater and structural analysis, engineering studies, core sampling for engineering reports, locating existing rights of way, easements, and utilities and evaluating the Property for transmission line connections to the local utility, and measuring potential access and transmission easement areas. Optionee will exercise this right of entry in such a way so as to not cause unreasonable damage to the Property and Optionee shall repair any and all damage to the Property caused by such inspections and investigations in a timely manner. Optionee agrees to indemnify Owner from all third party claims for any personal injury or property damage or otherwise to any person or property caused by any negligent or intentional action or omission of Optionee or its agents in exercising its right of entry onto the Property. Such undertaking of indemnity shall survive the termination of this Agreement for any reason for a period of one year. Notwithstanding any other provision in this Section 4, the indemnity described herein shall not extend to and in no event shall Optionee be liable to Owner for any negligence or misconduct of Owner or any agent, contractor or employee of Owner. Owner agrees to indemnify and save harmless Optionee from all claims of liability for any personal injury or property damage or otherwise to any person or property caused by action or omission of Owner or its agents before Closing.
5. PRE-CLOSING RESTRICTIONS. Owner shall not do, or cause, permit or suffer to occur, any of the following without Optionee's prior written consent: (During the term of this option)
  - (a) change or consent to any change in zoning of the Leased Site which would prohibit or place restrictions on Optionee's intended use of the Leased Site for the Project;
  - (b) subdivide the Leased Site;

- (c) create, grant, permit or suffer to exist any easement, lien, encumbrance condition or other right or interest that may burden, benefit or otherwise impede Optionee's intended use of the Leased Site for the Project; or
  - (d) construct any improvements on the Leased Site or materially change the grading or conditions at the Leased Site.
  - (e) Optionee shall leave the land in as close to the current condition as possible during the time of this option.
6. **OWNER'S AND OPTIONEE'S DOCUMENTATION.** To the extent that any of the following items exist and are in the possession of Owner and can be located through a reasonable search, Owner agrees to furnish to Optionee within 10 days from the date of this Agreement any and all building inspection reports, surveys, title reports, topographical maps, engineering and architectural drawings or plans, environmental reports, lot layouts, any plans or profiles of any roadways, easements, or utility lines. Owner further agrees to furnish to Optionee all information available to Owner concerning the environmental condition of the Property and the existence of any contract rights that Owner might hold for the service of the Property by utilities, either public or private.
7. **ENVIRONMENTAL INSPECTION AND RELATED MATTERS.**
- a. **Definitions.** As used in this Agreement, the following terms will have the following meanings:
- (i) **Contamination** means any release of a Hazardous Substance; Petroleum Substance or Product; polychlorinated biphenyl (PCB); asbestos or asbestos containing material; radon gas; or other substance considered to be a contaminant by professionals in the field of environmental assessments under standard commercial practice;
  - (ii) **Hazardous Substance** means those substances as defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9601(14), and includes any material that is toxic, flammable, explosive, or corrosive as these terms are defined by CERCLA. Petroleum Substances or Products as defined below are excluded.
  - (iii) **Petroleum Substance or Product** means any material containing refined or crude oil or any fraction thereof and includes natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel or mixtures of natural gas and such synthetic gas. Hazardous Substances as defined above are excluded.
  - (iv) **Phase I Environmental Assessment** have the meanings understood by professionals in the field of environmental assessments, which will include screening the Property for existing or threatened Contamination, be designed to avail Optionee of certain defenses under applicable federal or state law, and include such other inquiries and examinations as are considered necessary or desirable under standard commercial practice at the time the assessment is conducted.
  - (v) **Release** means such occurrences as defined by CERCLA, 42 U.S.C. 9601(10), and includes any intentional or accidental discharging, spilling, leaking, pumping, pouring, injecting, escaping, leaching, dumping, disposing, or emitting into the environment.



b. Environmental Investigations.

(i) As a condition precedent to Optionee's obligation to lease, Optionee, at Optionee's expense, may perform environmental investigations (including but not limited to Phase I Environmental Assessment) of the Leased Site by a qualified environmental consultant (the Consultant) selected by Optionee and conducted in accordance with standard commercial practice at the time of the assessment.

(ii) Owner and its successors and assigns will indemnify, defend and hold harmless Optionee and its affiliates, their directors, officers, employees, and agents from and against any and all claims, liabilities, losses, damages, including consequential damages, fines, liens, directives, penalties, loss of profits, and costs, including without limitation, reasonable attorney, environmental consultant, engineering, and expert fees that Optionee may incur or suffer or that may be asserted against Optionee that arises out of, or results, directly or indirectly from (i) the presence of any Hazardous Substance or Contamination at the Property, (ii) any violation of any environmental, health, or safety law or regulation affecting the Property, unless caused solely by Optionee, or (iii) the performance of, or requirement to perform, any remedial work at the Property.

8. REPRESENTATIONS AND WARRANTIES BY OWNER. Owner represents and warrants as of the date of this Agreement and as of the date of Closing that:

a. Owner is the fee owner of the Property and has the right, title, and authority to enter into and to perform its obligations under this Option Agreement;

b. The entry and performance of this Agreement by Owner will not breach any other agreement with any other party or create a violation of any applicable law, rule, or regulation;

c. There are no pending, and to the best of Owner's knowledge no threatened, actions, suits, arbitrations, claims or proceedings, at law, in equity or otherwise, that would adversely affect the Property or Owner's ability to perform its obligations under this Agreement or the Ground Lease, including, but not limited to, judicial, municipal or administrative proceedings in eminent domain, collection actions, claims relating to alleged building code violations or health and safety violations, federal, state or local agency actions regarding environmental matters, lease disputes, claims relating to federal environmental protection agency or zoning violations, or actions relating to personal injuries or property damages alleged to have occurred at the Property or by reason of the condition or use of or construction on the Property;

d. Owner has received no written notice of any violation of any applicable laws, ordinances, rules, requirements, regulations and building codes of any governmental agency, body or subdivision thereof bearing on the Property

e. To Owner's knowledge, (1) the Property or any portion thereof is not in violation of any environmental laws, and (2) Owner has not used, generated, manufactured, stored or disposed of on, under or about the Property or transported to or from the Property any hazardous substances in violation of any environmental laws.

f. Owner has received no written notice of any special assessments or charges which have been levied against the Property or which will result from work, activities or improvements done to or for the benefit of the Property except as may be shown on a title commitment given to Optionee as part

of the Property Information. Owner has received no written notice of any intended public improvements which will result in any charge being levied against, or in the creation of any lien upon, the Property or any portion thereof. There are no actions or proceedings threatened against the Owner to condemn all or any part of the Property.

9. Exclusivity. In recognition of the fact that investigations, inspections and due diligence review and pursuit of the Project will require significant effort and expenditure by Optionee, Owner agrees that during the Option Period, Owner shall not directly or indirectly solicit, initiate, seek, encourage or support any inquiry, proposal, offer or bid from, negotiate with, provide any information to, or enter into any agreement with any party to lease, sublease, occupy or use the Property whether for a solar project or for any other use. Owner agrees that any such negotiations in progress as of the date hereof will be terminated or suspended during such period. Owner shall promptly disclose to Optionee any unsolicited inquiry or proposal from another party regarding use of the Property or installation of a solar project at the Property.
10. NOTICES. All notices to the parties hereto will be delivered by hand or via certified mail return receipt requested or overnight delivery and will be deemed effective upon delivery and upon confirmation of receipt by other means, to the following address until the address is changed by notice in writing to the other party: 5844 Oral Oaks Road Kenbridge, VA 23944

Optionee: Ameresco, Inc., 111 Speen Street, Suite 410, Framingham, MA 01701, Attention: Sr. Vice President PV-Grid Tie with a copy to Attention: General Counsel (same address)

Owner: Virginia Wilson, 5844 Oral Oaks Road Kenbridge, VA 23944

11. SURVIVAL. The provisions contained in this agreement, including Owner's obligations and warranties and representations, will be true as of the date of this Agreement and as of the date of Closing and will survive the Closing.
12. DEFAULT AND REMEDIES. If either Party defaults in performance under this Agreement which default continues for thirty days after written notice from the non-defaulting Party, then the nondefaulting Party may pursue all remedies available at law or in equity including an action for specific performance or monetary damages.
13. ENTIRE AGREEMENT. This Agreement contains the entire agreement of the parties and will supersede the terms and conditions of all prior written and oral agreements, if any, concerning the matters it covers. The Recitals are incorporated into this Agreement. The parties acknowledge there are no oral agreements, understandings, representations, or warranties that supplement or explain the terms and conditions contained in this Agreement. This Agreement may not be modified except by an agreement in writing signed by the parties. Owner agrees to sign a short form memorandum of this Option Agreement to be recorded in the public records where the Property is located. Optionee shall pay the recording charges.
14. WAIVER. Failure to insist upon strict compliance with any of the terms, covenants, or conditions hereof will not be deemed a waiver of the terms, covenants, or conditions, nor will any waiver or relinquishment of any right or power at any one time or more times be deemed a waiver or relinquishment of the right or power at any other time or times.

15. SEVERABILITY. This Agreement will be construed in its entirety and will not be divisible, except that the invalidity or unenforceability of any provision hereof will in no way affect the validity or enforceability of any other provision.
16. CAPTIONS. Captions are used in this Agreement for convenience only and will not be used to interpret this Agreement or any part of it.
17. GOVERNING LAW. This Agreement is to be construed in accordance with the law of the Commonwealth of Virginia.
18. CHOICE OF FORUM/JURISDICTION. The Parties hereby consent to venue and to the exclusive jurisdiction of the State courts of Virginia in Lunenburg County Virginia.
19. SUCCESSOR/ASSIGNMENT. This Agreement will be binding upon and the obligations and benefits hereof will accrue to the parties hereto, their heirs, personal representatives, successors, and assigns. This Agreement is fully assignable by Optionee without Owner's consent to any affiliate of Optionee or to a third party only upon written consent of Owner, which consent will not be unreasonably withheld. This Agreement is not assignable by Owner without Optionee's consent. If the Agreement is assigned by Optionee with Owner's consent, Optionee will nevertheless remain fully liable for performance of the Agreement.
20. COUNTERPARTS. This Agreement may be executed in any number of counterparts, each will be considered an original, and together they will constitute one Agreement.
21. FACSIMILE SIGNATURES. Facsimile signatures will be considered original signatures for the purpose of execution and enforcement of the rights delineated in this Agreement.
234. CONSTRUCTION; ADVICE OF COUNSEL. The parties agree that each has consulted with an attorney who has actively participated in the drafting and negotiation of this Agreement and that the provisions of this Agreement will not be construed in favor of either party.

[signatures follow]

WITNESS the following duly authorized signatures as of the date set forth above:

OWNER:

By: Virginia H. Wilson  
Name: Virginia H. Wilson  
Title: Property Owner

OPTIONEE: Ameresco Solar Land Holdings, LLC

By: Ameresco, Inc., its sole member

By: Jonathan Mancini  
Name: Jonathan Mancini  
Title: Sr. Vice President

## EXHIBIT A (Lease Area)

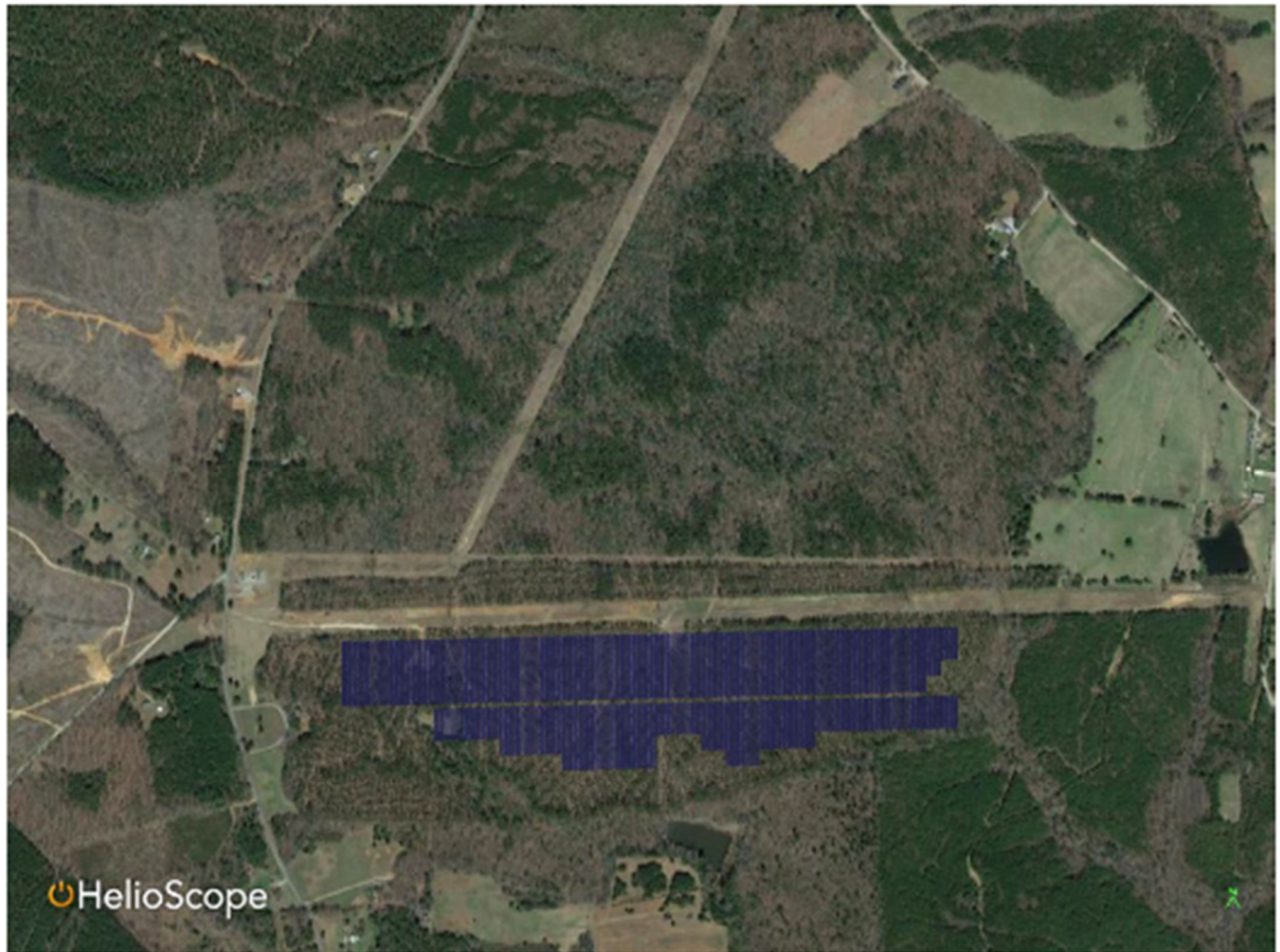


Exhibit B

### **Terms and conditions of lease agreement**

1. Term: 20 years from commercial operation date of the solar facility with three (3) five-year extension options.
2. Due Diligence: Satisfactory due diligence and site investigation provisions by Optionee.
3. Financing: Financing for the project on terms and conditions satisfactory to Optionee at its sole discretion.
4. Indemnity: Mutual general indemnity and limitation on liability. Indemnity from Owner in favor of Optionee for pre-existing conditions on the Leased Site.
5. System Size: Optionee has preliminarily designed a 15.3 MWDC project on the Property. Owner and Optionee agree that final system size will be determined by final interconnection studies and design.
6. Rent: Rent in the amount of [REDACTED] for 53.5 Acres [REDACTED] with an annual [REDACTED] escalator, subject to final Project scope and design and due diligence results.
7. Permitted Use: Construction, design, installation, maintenance, operation, removal of a solar photovoltaic system, together with all appurtenant facilities including but not limited to cables, conduits, transformers, concrete pads, poles, wiring, meters and electric lines and equipment.
8. Interconnection: Optionee shall have an easement on, in, under, or over and across the portions of the Property necessary for the purpose of constructing, reconstructing, installing, operating and maintaining wires, cables, conduits for transmission of electrical energy and/or for communication purposes, and all necessary and property foundations, footings and such other interconnection facilities as are needed to interconnect the solar system to the utility's distribution system. The users of the easement may include Optionee, its assigns, employees, agents, contractors, invitees, and the local electric utility.
9. Covenants: Owner shall give possession of the Leased Site to Optionee free and clear of all structures, tenants and occupants at commencement of the Lease. Owner shall not interfere with Optionee's use of the Leased Site. Owner shall not interfere or allow any interference with insolation to the Leased Site. Owner shall allow Optionee to perform vegetation management to prevent any shading of the Leased Site.
10. Easements. Optionee shall be granted Easements for access from public ways serving the property, and easements for Optionee's and the local electric utility's transmission facilities and infrastructure.
11. Taxes. Owner to pay all real estate taxes; Optionee to pay all personal property taxes or negotiate with the municipality other payment in lieu of taxes arrangement satisfactory to Optionee in its sole discretion.
12. Financing Provisions. Financing provisions benefitting any lender, including without limitation the ability of Optionee to collaterally assign the lease for financing without undue restrictions.



13. **Removal of Optionee's Equipment** - Within 180 days of the expiration or termination of the lease as per the lease, Optionee shall remove its solar photovoltaic system, together with all appurtenant facilities including but not limited to cables, conduits, transformers, concrete pads, poles, wiring, meters and electric lines and equipment and structures and return the property to its natural state. Optionee shall post a performance bond or other decommissioning assurance agreeable to both parties to insure compliance with this section in an amount agreed upon by the parties.

**Lease Chart**

Year	Lease Payments
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
Total	

## 8. Liability Insurance



### CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
2/1/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Arthur J. Gallagher Risk Management Services, LLC 470 Atlantic Avenue Boston MA 02210		<b>CONTACT NAME:</b> PHONE (A.C. No. Ext.): 617-261-6700 FAX (A.C. No.): 617-646-0400 E-MAIL ADDRESS:	
<b>INSURED</b> Ameresco, Inc. 111 Speen Street Suite 410 Framingham MA 01701		<b>INSURER(S) AFFORDING COVERAGE</b> INSURER A: Hartford Fire Insurance Company NAIC # 19682 INSURER B: Hartford Accident and Indemnity Company 22357 INSURER C: INSURER D: INSURER E: INSURER F:	

COVERAGES		CERTIFICATE NUMBER: 1711158376		REVISION NUMBER:			
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.							
INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:			30 CSF WQ0269	1/31/2023	1/31/2024	EACH OCCURRENCE \$2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$500,000 MED EXP (Any one person) \$50,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$4,000,000 PRODUCTS - COMP/OP AGG \$4,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRE AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			30 UEL WQ0268	1/31/2023	1/31/2024	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	30 WV WQ0267	1/31/2023	1/31/2024	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

<b>CERTIFICATE HOLDER</b>  EVIDENCE OF	<b>CANCELLATION</b>  SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

## **9. Archeological and Architectural Resource Reports**

See attached reports in Appendix B

## **10. Environmental Impacts Narrative**

See attached report in Appendix C

## **11. Wildlife Impacts Narrative**

See attached report in Appendix D

## **12. Transportation Management Plan & Ex. Pvmt Condition Inventory**

See attached report in Appendix E

## **13. FAA Determination**

See attached report in Appendix F

## **14. Adjoining Property Owner Map & Notifications**

See attached report in Appendix G

## **15. ALTA Land Title Survey**

See attached report in Appendix H



# A

## Appendix A

Kenbridge Solar CUP Site Plan

# Site Plans

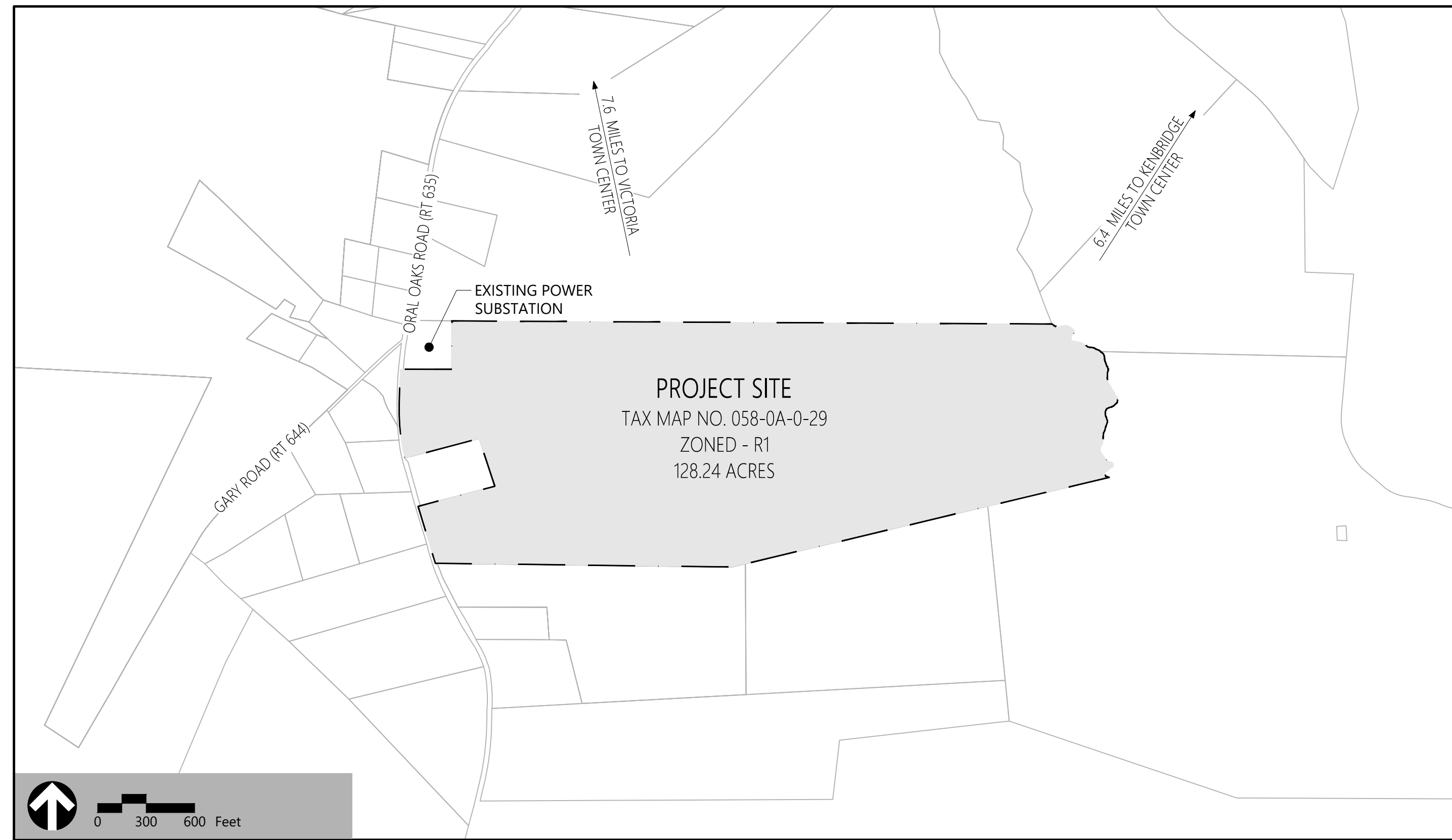
Issued for	CUP Review
Date Issued	March 6, 2023
Latest Issue	March 6, 2023

## KENBRIDGE SOLAR CONDITIONAL USE PERMIT - 12 MW AC

APPLICATION #: TBD

COLUMBIAN GROVE MAGISTERIAL DISTRICT  
LUNENBURG COUNTY

5844 Oral Oaks Road  
Kenbridge, VA 23944



Sheet Index		
No.	Drawing Title	Latest Issue
C100	NOTES AND DETAILS	March 6, 2023
C200	EXISTING CONDITIONS	March 6, 2023
C300	OVERALL SITE PLAN	March 6, 2023
C301	SITE PLAN - WEST	March 6, 2023
C302	SITE PLAN - EAST	March 6, 2023
C400	SLOPE ANALYSIS	March 6, 2023

### Land Owner:

Virginia Hawthorne Wilson  
5844 Oral Oaks Road, Kenbridge, VA 23944  
Tax Map No: 058-0A-0-29  
128.24 Acres (per ALTA)

### Applicant / Developer:

Ameresco  
12001 Sunrise Valley Drive, Suite 205  
Reston, VA 20191  
(508) 598-3033



### Civil Engineer

VHB  
115 South 15th Street, Suite 200  
Richmond, VA 23219  
Attn: Stephen Quina, PE  
Lic. No. 44360  
(804) 441-7440  
squina@vhb.com

### Environmental Consultant

VHB  
351 McLaws Circle, Suite 3  
Williamsburg, VA 23185  
Attn: Kimberly Blossom  
(757) 279-2828  
kblossom@vhb.com

### Land Surveyor

VHB  
351 McLaws Circle, Suite 3  
Williamsburg, VA 23185  
Attn: Stephen Romeo, LS  
Lic. No. 001448-B  
(757) 279-2848  
sromeo@vhb.com

KENBRIDGE SOLAR  
CONDITIONAL USE PERMIT - SITE PLAN  
CASE NUMBER TBD





115 South 15th Street  
Suite 200  
Richmond, VA 23219  
804.343.7100



PROJECT NOTES:

- THE APPLICANT REQUESTS THE GRANTING OF A CONDITIONAL USE PERMIT (CUP) TO ALLOW FOR THE INSTALLATION OF A LARGE SOLAR ENERGY SYSTEM ON THE SUBJECT PROPERTY PER SECTION 4 OF THE ORDINANCE FOR SOLAR ENERGY FACILITIES IN LUNENBURG COUNTY, VA.
- THE SUBJECT PROPERTY IS IDENTIFIED AS PARCEL TAX MAP NUMBER 058-0A-0-29 PER THE LUNENBURG COUNTY ASSESSOR AND TOTALS 128.24 ACRES PER THE VHB PERFORMED ALTA.
- THE APPLICANT IS AMERESCO, 12001 SUNRISE VALLEY DRIVE, SUITE 205 RESTON, VA 20191.
- THE DEPICTED SUBJECT PROPERTY BOUNDARY AND EASEMENT INFORMATION TAKEN FROM A FIELD RUN SURVEY PREPARED BY VHB AND COURT RECORDS. ADDITIONAL ADJOINER LINES AND EXISTING CONDITIONS INFORMATION WAS OBTAINED FROM LUNENBURG COUNTY GIS DATA.
- TOPOGRAPHY, EXISTING BUILDINGS AND DRIVEWAYS ARE DERIVED FROM A PHOTOGRAMMETRIC SURVEY PREPARED BY NVS DATED MAY 31, 2022. THE CONTOUR INTERVAL IS ONE (1) FOOT.
- WETLANDS INFORMATION OBTAINED FROM A WATERS OF THE U.S. DELINEATION PREPARED BY VHB AND CONFIRMATION VIA A PRELIMINARY JURISDICTIONAL DETERMINATION LETTER DATED 8/29/22 FROM THE UNITED STATES ARMY CORPS OF ENGINEERS.
- PER FEMA FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL 51111C01758, WITH AN EFFECTIVE DATE OF 7/20/2009, THERE ARE NO SPECIAL FLOOD HAZARD AREAS. THE PROPERTY IS LOCATED IN ZONE X, AREA OF MINIMAL FLOOD HAZARD.
- TO THE BEST KNOWLEDGE OF THE ENGINEER AND APPLICANT THIS APPLICATION CONFORMS TO ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS.
- A PHASE I CULTURAL RESOURCES SURVEY WAS PERFORMED BY JAMES RIVER INSTITUTE FOR ARCHAEOLOGY IN NOVEMBER 2022 AND WAS SUBMITTED TO BOTH VDEQ AND VDHR. BOTH AGENCIES ARE IN AGREEMENT THAT, WITHIN THE PROJECT DEVELOPMENT AREA THERE ARE NO SITES ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER. A COPY OF THE PHASE I CULTURAL RESOURCES SURVEY WILL BE INCLUDED WITH THE CUP APPLICATION.
- A PHASE I ENVIRONMENTAL SITE ASSESSMENT WAS PERFORMED IN MAY 2022 AND DID NOT INDICATE THE PRESENCE OF ANY POTENTIAL OR RECOGNIZED ENVIRONMENTAL CONDITIONS IN CONNECTION WITH THE SITE. A COPY OF THE PHASE I ESA WILL BE INCLUDED WITH THE CUP APPLICATION PACKAGE.
- THE SOLAR PANEL LAYOUT PROVIDED ON THIS CONDITIONAL USE PERMIT PLAN IS APPROXIMATE AND THE FINAL LOCATION OF THE PROPOSED SOLAR PANELS, WITHIN THE PROPOSED LIMITS OF DISTURBANCE, SHALL BE DETERMINED AT THE TIME OF SITE PLAN SUBMISSION.
- PROJECT SIGNAGE SHALL COMPLY WITH ALL APPLICABLE LUNENBURG COUNTY SIGN REGULATIONS. REQUIRED WARNING SIGNAGE SHALL BE PROVIDED AS REQUIRED BY THE ZONING ORDINANCE.
- NOISE LEVELS FROM THE SOLAR ENERGY FACILITY WILL COMPLY WITH ALL APPLICABLE LUNENBURG COUNTY NOISE REGULATIONS.
- EROSION CONTROL AND STORMWATER MANAGEMENT SHALL BE PROVIDED IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS.

PROJECT NARRATIVE:

AMERESCO (APPLICANT) PROPOSES TO CONSTRUCT AND OPERATE THE KENBRIDGE SOLAR FACILITY (PROJECT) AT 5844 ORAL OAKS ROAD, KENBRIDGE, VIRGINIA 23944. THE PROJECT WILL BE A FIXED TILT, GROUND-MOUNTED PHOTOVOLTAIC (PV) SOLAR FACILITY, WITH AN ELECTRICITY GENERATING CAPACITY OF APPROXIMATELY 12.0 MEGAWATTS (MW) OF ALTERNATING CURRENT (AC) AND 13.5 MW OF DIRECT CURRENT (DC) WITHIN A FENCE SECURED AREA OF APPROXIMATELY 51.0 ACRES. THE 51-ACRE FENCED DEVELOPMENT AREA IS LOCATED WITHIN PARCEL TAX MAP NO. 058-0A-0-29 WITH A PROPOSED GRAVEL ACCESS ROAD THAT CONNECTS TO ORAL OAKS ROAD (SR 635). THE PROJECT PARCEL IS APPROXIMATELY 128.24 ACRES AND IS PRIVATELY OWNED BY VIRGINIA HAWTHORNE WILSON (PROPERTY). THE LOCATION AND ORIENTATION OF THE SOLAR ARRAY WITHIN THE PROPERTY WAS DESIGNED SO TO MINIMIZE VISIBILITY FROM NEARBY RESIDENTS AND PUBLIC ROADWAYS, MINIMIZE EXCAVATION AND GRADING ASSOCIATED WITH PROJECT CONSTRUCTION, AND MAXIMIZE EXPOSURE TO SOLAR RADIATION THROUGHOUT THE YEAR. THE FACILITY SETBACKS FROM ORAL OAKS ROAD AND THE SURROUNDING RESIDENTIAL PARCELS HAVE BEEN INCREASED TO EXCEED COUNTY REQUIREMENTS.

PURPOSE AND NEED

THE PURPOSE OF THE PROPOSED PROJECT IS TO GENERATE LOCAL, CLEAN, AND RENEWABLE SOLAR POWER, WITH THE ELECTRICITY GENERATION TO BE SOLD TO THE LOCAL UTILITY. THE INTERCONNECTION STUDY HAS BEEN COMPLETED BY SOUTHSIDE ELECTRIC COOPERATIVE AND APPLICANT EXPECTS A SOLAR GENERATOR INTERCONNECTION AGREEMENT (SGIA) BY MARCH 2023. PROJECT SITE CONSTRUCTION IS ANTICIPATED TO BEGIN IN 2023. LOCAL SOLAR PROJECTS ARE PART OF THE ENERGY MIX, REDUCING THE DEPENDENCE ON ANY SINGLE SOURCE OF ELECTRICITY GENERATION. THESE PROJECTS HELP KEEP ELECTRIC COSTS DOWN BY PROVIDING A HEDGE AGAINST THE RISING COSTS OF COMMODITY FUELS. THESE LOCAL POWER GENERATION PROJECTS ALSO BENEFIT THEIR HOST COMMUNITIES BY IMPROVING THE RESILIENCY OF THE LOCAL ELECTRIC GRID, SUPPLYING POWER LOCALLY AND OFFSETTING POWER SUPPLIES THAT WOULD OTHERWISE BE REQUIRED FROM DISTANT POWER PLANTS.

BASED ON ITS COMMITMENT TO PROVIDING RENEWABLE ENERGY, THE APPLICANT PROPOSES TO DEVELOP THE SITE DESCRIBED BELOW TO MAXIMIZE ITS SOLAR ENERGY POTENTIAL WITHIN THE PROJECT'S SECURED FENCED AREA. TO BEST DETERMINE OPTIMAL LOCATION WITHIN THE SITE, THE FOLLOWING FACTORS HAVE BEEN ANALYZED:

- SIGNIFICANT SOLAR RADIATION (INSOLATION)
- SITE ACCESSIBILITY FOR SERVICE AND CONSTRUCTION VEHICLES
- AVOIDANCE OF ENVIRONMENTALLY SENSITIVE AREAS
- LIMITED TREE AND VEGETATIVE CLEARING
- LIMITED VISIBILITY FROM OFFSITE LOCATIONS
- REQUIRED SETBACKS FROM ADJACENT PROPERTIES AND PUBLIC ROADS

SITE SETTING

THE PROPOSED PROJECT SITE IS LOCATED AT 5844 ORAL OAKS ROAD IN KENBRIDGE, VIRGINIA. THE FENCED PORTION OF THE PROJECT AREA IS APPROXIMATELY 51 ACRES IN SIZE AND WILL BE INSTALLED WITHIN PARCEL TAX MAP NO. 058-0A-0-29 (128.24 ACRES) WITH A PROPOSED GRAVEL ACCESS ROAD THAT CONNECTS TO ORAL OAKS ROAD (SR 635). THE PROPERTY IS PRIVATELY OWNED BY VIRGINIA WILSON HAWTHORNE AND MAJORITY OF THIS PARCEL, APPROXIMATELY 80% (102 ACRES) EXISTS AS FORESTED (TIMBER). THERE IS APPROXIMATELY 28 ACRES THAT EXIST AS MANAGED TURF WITHIN THE PROPERTY, AND APPROXIMATELY 77% (20 ACRES) OF THE TURF IS LOCATED WITHIN A 150-FOOT VEPCO EASEMENT ALONG THE NORTHERN SIDE OF THE PARCEL. THERE IS ALSO APPROXIMATELY 5.5 ACRES OF WETLANDS IN THE PROJECT PARCEL, WHICH IS TO BE CONSERVED AND PROTECTED.

THE PROPOSED 51-ACRE FENCED PROJECT SITE IS BORDERED AS FOLLOWS:

- BORDERED TO THE NORTH BY A 150-FOOT VEPCO EASEMENT THAT IS INTERNAL TO THE PROJECT PARCEL. THE PROPOSED SECURITY FENCE RUNS PARALLEL TO THE EASEMENT ALONG ITS ENTIRE NORTHERN BORDER.
- BORDERED TO THE EAST BY THE CENTERLINE OF THE EXISTING STREAM FOUND IN A FIELD RUN SURVEY PREPARED BY VHB. ADJACENT TO THE STREAM IS A RESIDENTIAL - LOW DENSITY (R1) ZONED PARCEL WHICH BORDERS THE EAST AND SOUTHEAST CORNER OF THE PROJECT (TAX MAP NO. 058-0A-0-39A).
- BORDERED TO THE SOUTH BY TWO (2) R1 ZONED PARCELS WITH THE SAME OWNER (TAX MAP NO. 058-0A-0-28B AND 058-0A-0-27).
- BORDERED TO THE WEST BY A PROJECT PARTICIPANT PARCEL (TAX MAP NO. 058-0A-0-29A) WITH A SINGLE-FAMILY RESIDENCE OWNED BY THE PROJECT PARCEL OWNER. THE NORTH AND SOUTHWEST CORNERS ARE BORDERED BY THE ORAL OAKS ROAD (SR 635) RIGHT-OF-WAY.

THE SPECIFIC LOCATION OF THE PROPOSED SOLAR ARRAY WITHIN THIS PROPERTY WAS CAREFULLY DESIGNED SO TO MINIMIZE VISIBILITY AND MAXIMIZE SETBACKS FROM NEARBY RESIDENTS TO THE SOUTH AND ORAL OAKS ROAD TO THE WEST. THE SELECTED LOCATION IS PARALLEL AND ADJACENT TO AN EXISTING VEPCO EASEMENT TO THE NORTH AND RESIDENTIAL ZONED PROPERTIES TO THE EAST AND SOUTH. VIEWSHED BUFFERING/SCREENING IS ACCOMPLISHED BY PRESERVING A 50-FOOT OR GREATER WIDTH BUFFER OF EXISTING VEGETATION AROUND THE PERIMETER OF THE PROJECT.

A WETLAND DELINEATION WAS COMPLETED BY VHB IN APRIL 2022 AND CONFIRMED VIA A PRELIMINARY JURISDICTIONAL DETERMINATION FROM THE UNITED STATES ARMY CORPS OF ENGINEERS ON AUGUST 29, 2022. THERE WERE WATERS REGULATED UNDER SECTION 404 OF THE CLEAN WATERS ACT FOUND ON THE PROJECT SITE, HOWEVER NO WETLAND/WATERS IMPACTS ARE PROPOSED WITH THIS PROJECT.

KEY COMPONENTS

THE PROPOSED PROJECT WILL CONSIST OF THE FOLLOWING KEY COMPONENTS:

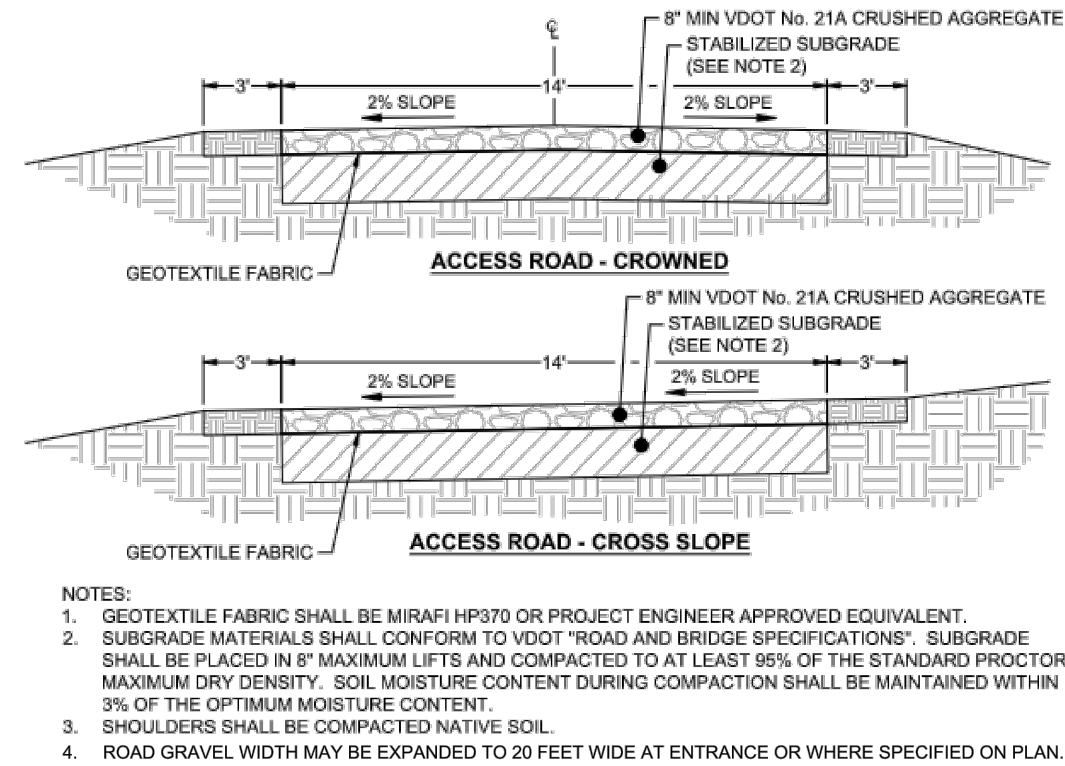
- SOLAR MODULES AND RACKING
- UNDERGROUND ELECTRICAL CONDUCTORS
- BALANCE OF SYSTEM EQUIPMENT
- GRAVEL ACCESS ROAD
- SECURITY FENCING

FOR ADDITIONAL INFORMATION PLEASE REFERENCE THE COMPLETE PROJECT NARRATIVE AND OTHER SUPPORTING DOCUMENTS THAT ACCOMPANY THIS PRELIMINARY SITE PLAN AND CUP APPLICATION.

PROJECT DEVELOPMENT DATA

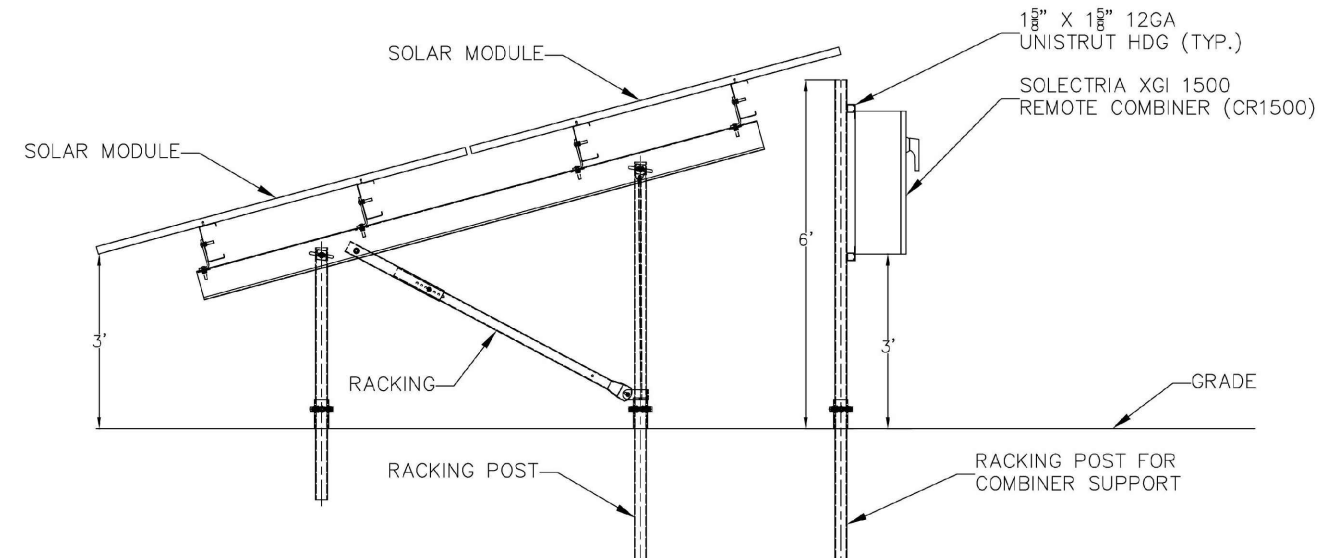
AREA CLASSIFICATION	PROJECT PARCEL AREA		LIMIT OF DISTURBANCE	
	(ACRE)	(PERCENT)	(ACRE)	(PERCENT)
WOODED AREA	41.04	32.0%	0.08	0.2%
TURF/POLLINATOR AREA	75.39	58.8%	51.88	94.3%
*TREE CLEARING AREA FOR SHADE REDUCTION	8.77	6.8%	0.00	0.0%
TOTAL IMPERVIOUS AREA	3.04	2.4%	3.04	5.5%
Gravel Roads/Riprap	2.02	-	2.02	-
PV Racking Posts	1.00	-	1.00	-
Equipment Pads	0.02	-	0.02	-
TOTAL PROJECT PARCEL	128.24		TOTAL LOD	55.00
*EXISTING TREES IN THESE SHADE REDUCTION AREAS ARE TO BE CLEARED VIA TIMBER PRACTICES THAT PRESERVE THE STUMPS/ROOTS AND PREVENT LAND DISTURBANCE.				
BUILDINGS	0 SF	0.00 AC	0.0%	
IMPERVIOUS AREA	132,430 SF	3.04 AC	2.4%	
OPEN AREA	5,453,712 SF	125.20 AC	97.6%	

ZONING TABULATIONS		
	REQUIREMENT / EXISTING	PROPOSED / PROVIDED
ZONING DISTRICT	RESIDENTIAL - LOW DENSITY (R1)	NO CHANGE
LAND USE	VACANT / FORESTED	LARGE SOLAR ENERGY FACILITY
DISTANCE TO NEAREST TOWN OF KENBRIDGE	ONE (1) MILE	5.0 MILES (SEE NOTE #1)
DISTANCE TO NEAREST AIRPORT	GREATER THAN TWO (2) MILES	5.0 MILES (SEE NOTE #1)
DISTANCE TO NEAREST MEDIUM OR LARGE SOLAR FACILITY	ONE (1) MILE	1.1 MILES (SEE NOTE #2)
SOLAR FACILITY DENSITY	5% IN A FIVE (5) MILE RADIUS	4.8% (SEE NOTE #2)
MINIMUM SETBACKS (SEE NOTE #3)		
RIGHT-OF-WAY	200 FEET	>800 FEET
ADJACENT PROPERTY LINES	200 FEET	>200 FEET
RESIDENTIAL STRUCTURES	400 FEET	>400 FEET
MAXIMUM HEIGHT	15 FEET	<12 FEET
MINIMUM BUFFER (SEE NOTE #4)	50 FOOT LANDSCAPED STRIP LOCATED WITHIN THE SETBACKS OF THE PROJECT AROUND THE PERIMETER OF THE PROJECT	EXISTING FORESTED BUFFER 50 FEET OR GREATER IN WIDTH TO BE PRESERVED AND MITIGATE VISUAL IMPACT OF SOLAR FACILITY.
NOTES:	1. THE PROJECT SITE IS LOCATED 5.0 MILES FROM THE TOWN OF KENBRIDGE AND MORE THAN 6.5 MILES FROM THE TOWN OF VICTORIA. THE PROJECT SITE IS LOCATED 5.0 MILES FROM THE LUNENBURG COUNTY AIRPORT (NEAREST). THE PROJECT SITE LOCATION IS IN ACCORDANCE WITH SECTION 5 PART D.1 OF THE COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES.  2. THE PROJECT SITE IS LOCATED MORE THAN 6 MILES FROM THE NEAREST EXISTING SOLAR FACILITY (MEDIUM-SCALE DOGWOOD SOLAR) AND MORE THAN 1.1 MILES FROM NEAREST END OF PROPOSED LARGE-SCALE LAUREL BRANCH SOLAR. THE PROJECT SITE ALSO ADHERES TO LESS THAN 5% SOLAR DEVELOPMENT DENSITY WHEN MEASURED IN RESPECT TO THE PROPOSED LAUREL BRANCH SOLAR. THE PROJECT SITE LOCATION IS IN ACCORDANCE WITH SECTION 5 PART D.2 OF THE COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES.  3. SETBACKS MAY VARY SLIGHTLY WITH FINAL PLAN BUT ARE SUBJECT TO THE MINIMUM DISTANCES AS REQUIRED BY SECTION 5 PART D.4 OF THE COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES.  4. THE PROJECT LAYOUT IS DESIGNED SO TO PRESERVE AN EXISTING FORESTED/WOODLAND BUFFER OF 50 FEET OR WIDER AROUND THE PROJECT PARCELS PERIMETER. THIS EXISTING VEGETATION IS NATIVE AND WELL ESTABLISHED/MATURE AND PRESERVES EXISTING HABITAT IN ADDITION TO VISUALLY SCREENING THE SOLAR FACILITY. THIS IS IN ACCORDANCE WITH SECTION 5 PART D.5 OF THE COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES.	



Access Road Typical Section

N.T.S.

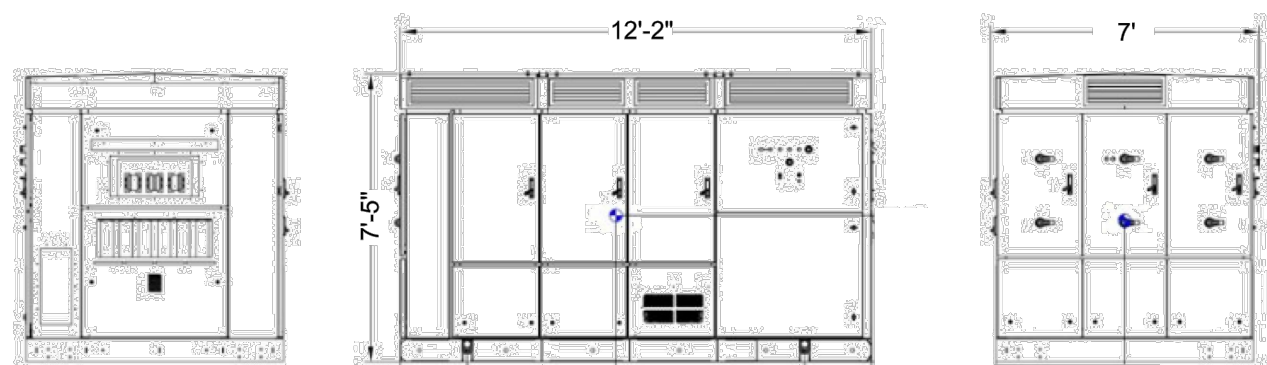


Typical Fixed-Tilt Racking and Combiner Elevations

N.T.S.

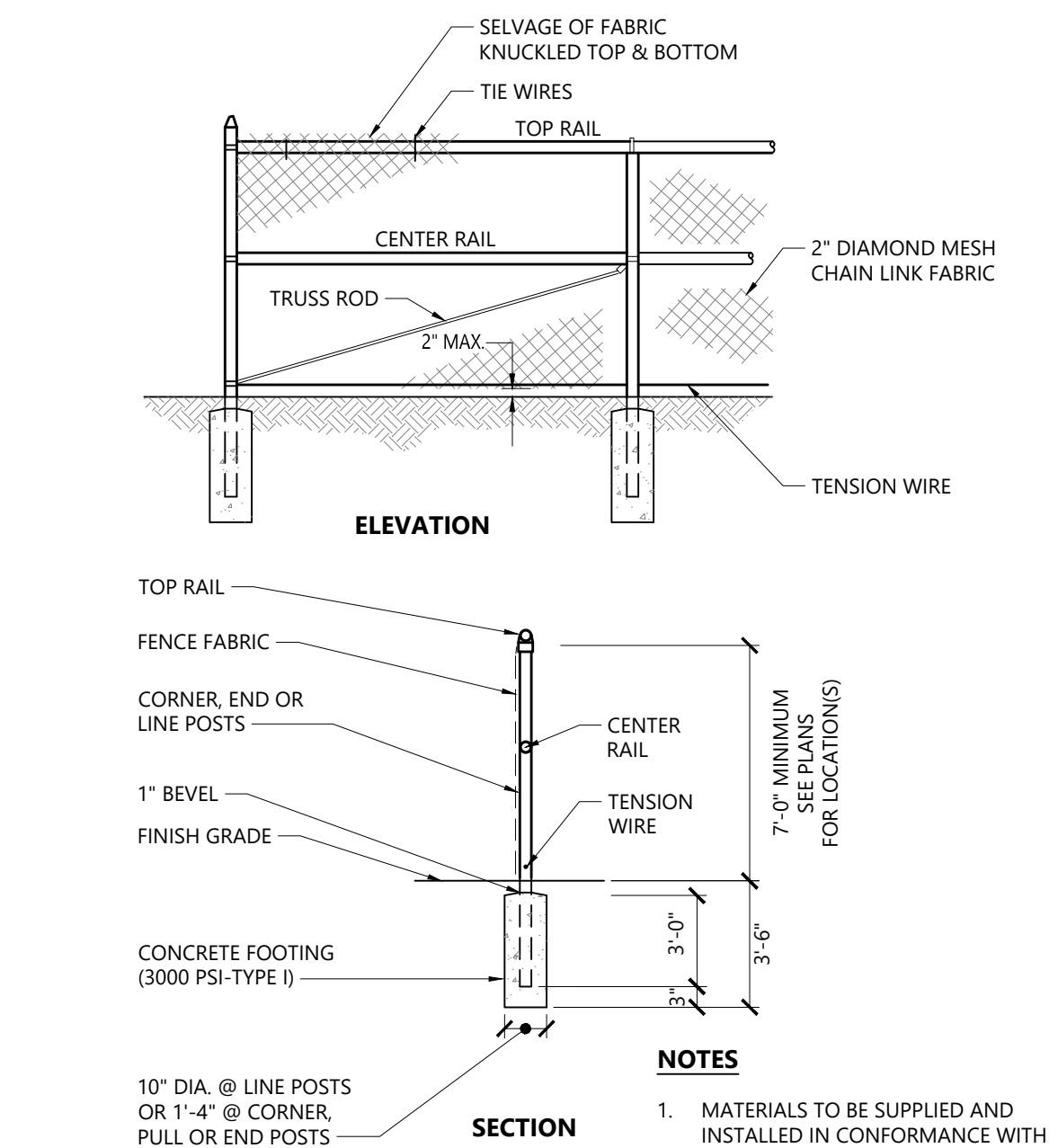
SOLAR EQUIPMENT NOTE:

TYPICAL SECTION DETAIL REPRESENTATIVES ARE SHOWN FOR THE GROUND MOUNTED FIXED-TILT PV MODULE RACKING SYSTEM AND POWER INVERTERS. THE FINAL EQUIPMENT SELECTIONS WILL BE SPECIFIED WITH THE FINAL SITE PLAN SUBMITTAL TO THE COUNTY.



Typical Power Inverter Elevations

N.T.S.



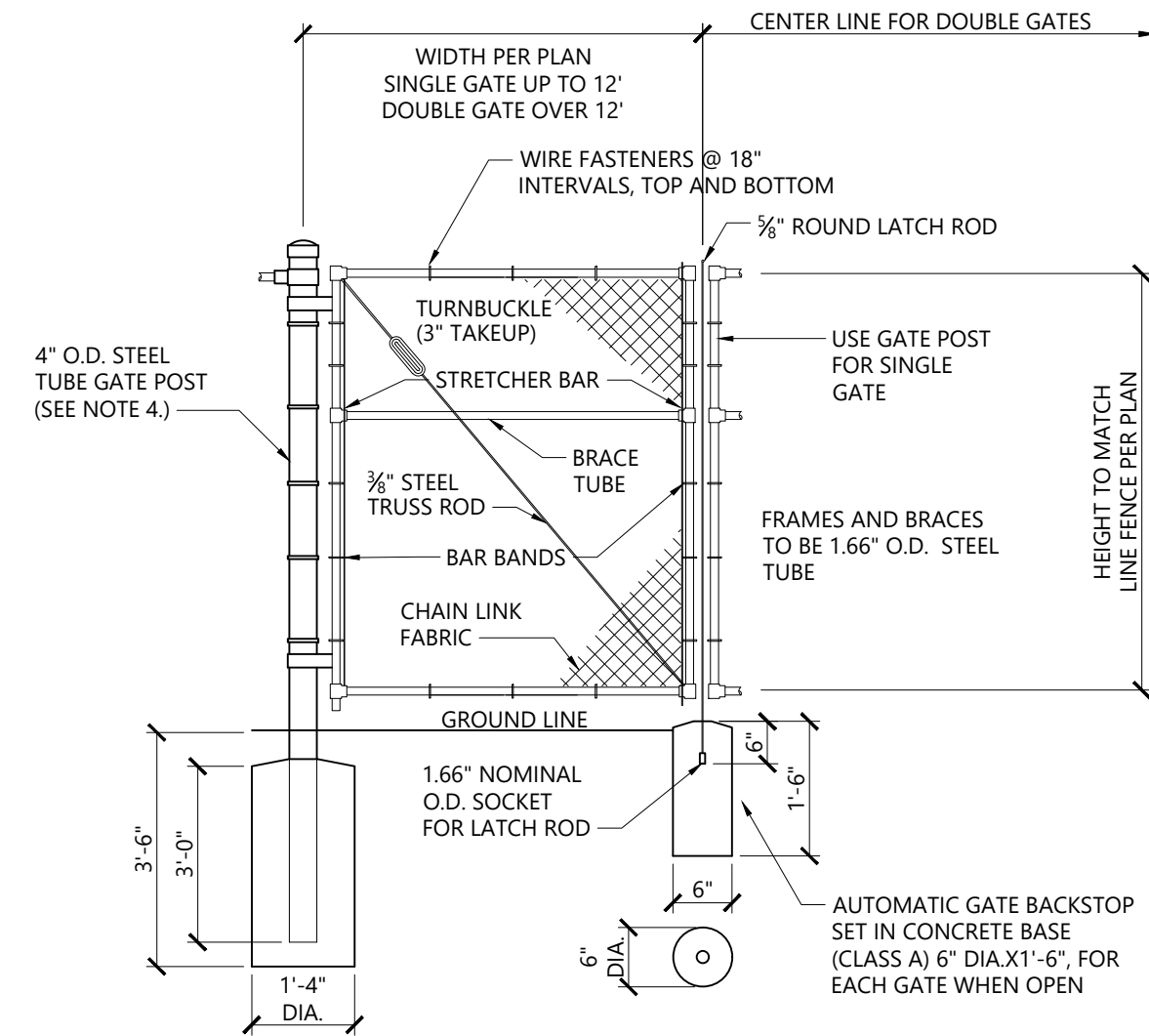
7' Chain Link Fence

N.T.S.

Source: VHB

10/20

LD\_480



NOTES

- CHAIN LINK FABRIC FOR GATES TO BE THE SAME AS REQUIRED FOR FENCE.
- GATE POST BASE-PORTLAND CEMENT CONCRETE (3000 PSI).
- FENCE FABRIC, POSTS, FRAMEWORKS, AND HARDWARE SHALL BE GALVANIZED STEEL PER SPECIFICATIONS.
- GATE POSTS TO BE USED ON EACH SIDE OF SINGLE AND DOUBLE GATE OPENINGS.

Kenbridge Solar

5844 Oral Oaks Road  
Lunenburg, Virginia 23944

No.	Revision	Date	Apprd.

Designed by	JRN	Checked by	SCQ
Issued for		Date	

Conditional Use Permit

3/6/2023

Not Approved for Construction

NOTES AND DETAILS

Drawing Number

C100

Chain Link Fence Gate

N.T.S.

Source: VHB

12/19

LD\_482

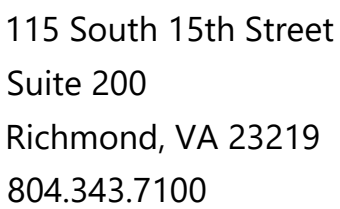
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Project Number

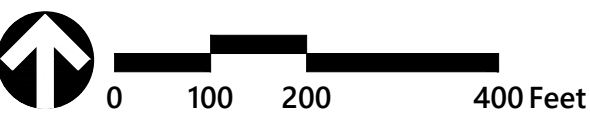
34823.00





**AMERESCO** 

EXISTING TREELINE  
 EXISTING CONTOUR (MAJOR)  
 EXISTING CONTOUR (MINOR)  
 EXISTING ADJOINING PARCELS  
 EXISTING WETLAND  
 EXISTING SOILS BOUNDARY  
 EXISTING EASEMENT  
 EXISTING STREAM CENTERLINE  
 OHW  
 EXISTING OVERHEAD POWER LINE  
 PROJECT BOUNDARY  
 FORESTED AREA

 SOIL GROUP INFORMATION

5844 Oral Oaks Road  
Lunenburg, Virginia 23944

No.	Revision	Date	Appvd
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Designed by	Checked by
JRN	SCQ
Issued for	Date

Conditional Use Permit 3/6/2023

Not Approved for Construction

Drawing Number

**C200**

Sheet 3 of 7

Project Number  
**34823.00**

Adjacent Property Owners Address		
Owner	Address	Tax Map Number
GUSTAF JOSEPH TERRY II	5642 ORAL OAKS ROAD, KENBRIDGE, VA 23944	58-0A-27
WILSON VIRGINIA HAWTHORNE	5844 ORAL OAKS ROAD, KENBRIDGE, VA 23944	58-0A-29A
LUNENBURG COUNTY VIRGINIA	1800 GARY ROAD, KENBRIDGE, VA 23944	058-0A-0-24
PHILLIPS JASON A OR BETH A	596 SAINT JOHNS CHURCH ROAD, KENBRIDGE, VA 23944	058-03-0-D
NOVAK ROBERT OR LISA	1080 UNITY ROAD, KENBRIDGE, VA 23944	58-0A-37A
LANGFORD VERNON L OR ORA REGINA,	443 NORTHVIEW LANE, CRESTVIEW, FL 32536	058-03-0-C
GUSTAF JOSEPH TERRY II	5642 ORAL OAKS ROAD, KENBRIDGE, VA 23944	58-0A-0-28B
BLEDSOE RHODESSA TISDALE,	22061 LAKE JORDAN DRIVE, PETERSBURG, VA 23803	058-0A-0-24A
WILSON VIRGINIA HAWTHORNE	5844 ORAL OAKS ROAD, KENBRIDGE, VA 23944	58-0A-31
RICHARD WILEY & JAMES JACKSON III & DAVID MARTIN ROBERTS	PO BOX 115, KENBRIDGE, VA 23944	58-0A-0-39A
KILLEN JERRY W	5717 FITZTOWN ROAD, VIRGINIA BEACH, VA 23457	058-0A-0-24C
ELECTRIC POWER SUB-STATION	NULL	58-0A-30



LEGEND

EXISTING TREELINE

EXISTING CONTOUR (MAJOR)

EXISTING CONTOUR (MINOR)

EXISTING ADJOINING PARCELS

EXISTING WETLAND

EXISTING SOILS BOUNDARY

EXISTING EASEMENT

EXISTING STREAM CENTERLINE

EXISTING OVERHEAD POWER LINE

PROJECT BOUNDARY

REQUIRED SETBACK

PROPOSED STORMWATER DITCH

PROPOSED GRAVEL ACCESS ROAD

PROPOSED SECURITY FENCE

PROPOSED SOLAR PANEL

TREE CLEARING LIMITS

FORESTED AREA

SOIL GROUP INFORMATION

0100200400 Feet

Kenbridge Solar

5844 Oral Oaks Road  
Lunenburg, Virginia 23944

No.	Revision	Date	Appr.

Designed by  
JRN

Checked by  
SCQ

Issued for

Date

Conditional Use Permit3/6/2023

Not Approved for Construction

Drawing Title

OVERALL SITE PLAN

Drawing Number

C300

Sheet 4 of 7

Project Number  
34823.00





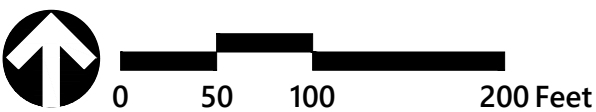
115 South 15th Street  
Suite 200  
Richmond, VA 23219  
804.343.7100



LEGEND

- EXISTING TREELINE
- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING ADJOINING PARCELS
- EXISTING WETLAND
- EXISTING SOILS BOUNDARY
- EXISTING EASEMENT
- EXISTING STREAM CENTERLINE
- EXISTING OVERHEAD POWER LINE
- PROJECT BOUNDARY
- REQUIRED SETBACK
- PROPOSED STORMWATER DITCH
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED SOLAR PANEL
- TREE CLEARING LIMITS
- FORESTED AREA

SOIL GROUP INFORMATION



Kenbridge Solar

5844 Oral Oaks Road  
Lunenburg, Virginia 23944

No.	Revision	Date	Appvd.

Designed by	JRN	Checked by	SCQ
Issued for		Date	

Conditional Use Permit 3/6/2023

Not Approved for Construction

Drawing Title  
**SITE PLAN - WEST**

Drawing Number

**C301**

Sheet 5 of 7

Project Number  
34823.00





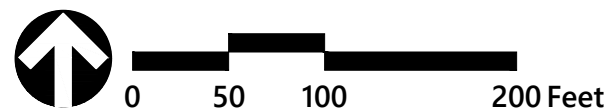
115 South 15th Street  
Suite 200  
Richmond, VA 23219  
804.343.7100



LEGEND

- EXISTING TREELINE
- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING ADJOINING PARCELS
- EXISTING WETLAND
- EXISTING SOILS BOUNDARY
- EXISTING EASEMENT
- EXISTING STREAM CENTERLINE
- EXISTING OVERHEAD POWER LINE
- PROJECT BOUNDARY
- REQUIRED SETBACK
- PROPOSED STORMWATER DITCH
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED SOLAR PANEL
- TREE CLEARING LIMITS
- FORESTED AREA

SOIL GROUP INFORMATION



Kenbridge Solar

5844 Oral Oaks Road  
Lunenburg, Virginia 23944

No.	Revision	Date	Apprv.

Designed by	JRN	Checked by	SCQ
Issued for		Date	

Conditional Use Permit 3/6/2023

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Drawing Title  
**SITE PLAN - EAST**

Drawing Number

**C302**

Sheet of

6 7

Project Number

34823.00



- LEGEND
- EXISTING CONTOUR (MAJOR)

EXISTING CONTOUR (MINOR)

PROJECT BOUNDARY

REQUIRED SETBACK

TREE CLEARING LIMITS

EXISTING WETLAND

EXISTING STREAM CENTERLINE

LIMIT OF DISTURBANCE

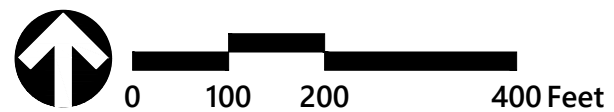
SWM GRADING AREA

AREA OF FILL

SLOPE 0 - 20%

SLOPE > 20%\*

\*EXISTING SURFACE SLOPES GREATER THAN 20% MAY REQUIRE FINISH GRADING TO ACCOMMODATE INSTALLATION OF RACKING EQUIPMENT.



## Kenbridge Solar

5844 Oral Oaks Road  
Lunenburg, Virginia 23944

No.	Revision	Date	Apprvd.

Designed by	JRN	Checked by	SCQ
Issued for		Date	

Conditional Use Permit3/6/2023

Not Approved for Construction

Drawing Title  
SLOPE ANALYSIS

Drawing Number

# C400

Sheet of

77

Project Number

34823.00





# B

## Appendix B

Archeological and Architectural Resource Reports



# COMMONWEALTH of VIRGINIA

Travis A. Voyles  
Acting Secretary of Natural  
and Historic Resources

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

Julie V. Langan  
Director  
Tel: (804) 367-2323  
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December 1, 2022

Stephen Quina  
VHB  
115 South 15th Street,  
Suite 200  
Richmond, Virginia 23219

RE:

Kenbridge Solar Facility  
Lunenburg County, Virginia  
DHR File No. 2022-5270

Dear Mr. Quina:

We have received for review the *Phase I Archaeological Survey of 21 Acres of the Proposed Kenbridge Solar Project Area, Lunenburg County, Virginia*, prepared by James River Institute for Archaeology, Inc. (JRIA). 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 Lunenburg County, Virginia.

## Archaeology

The report documents a cultural resources survey of approximately 21 acres within a 60-acre parcel. During the course of the survey one new archaeological site was identified (44LU0073). Site 44LA0073 is a low-density artifact scatter consisting of late nineteenth to mid-twentieth century artifacts. JRIA recommends that 44LU0073 is not eligible for listing in the National Register of Historic Places (NRHP) and no further investigation is warranted. DHR agrees that **44LU0073** is not eligible for listing in the NRHP. **Please send one bound copy of the archaeology report for our archives.**

## Architecture

The submitted information did not take into account the visual and indirect effects on historic architecture. For solar facility projects subject to state or federal review, DHR typically recommends a survey of all resources 45 years and older within 0.5 miles of the proposed facility. The resources should be recorded and assessed for eligibility and project impacts. DHR requires previously-recorded resources to be resurveyed if they have not been surveyed in the last five years. We generally rely on the accuracy of survey data on specific resources for no more than five years, due to possible changes to resources that may occur over the passage of time, advancements in scholarship, and rapid development that affects many parts of

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the state. At this time, DHR cannot provide meaningful comments about the potential impacts to historic properties.

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

cc. Adrienne Birge-Wilson, DHR  
Chris Egghart, DEQ  
Matthey Laird

**PHASE I  
ARCHAEOLOGICAL SURVEY  
OF 21 ACRES  
OF THE PROPOSED KENBRIDGE SOLAR  
PROJECT AREA  
LUNENBURG COUNTY, VIRGINIA**

**November 2022**

**Prepared For:**

VHB  
115 South 15<sup>th</sup> Street, Suite 200  
Richmond, Virginia 23219

**Prepared By:**

Matthew R. Laird, Ph.D., RPA  
Anthony W. Smith, M.A.  
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Williamsburg, Virginia 23185  
(757) 229-9485

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# ABSTRACT

In October 2022, the James River Institute for Archaeology, Inc. (JRIA), completed a Phase I archaeological survey of 21 acres within the 60-acre limits of disturbance for the proposed Kenbridge solar project in Lunenburg County, Virginia. The Phase I survey implemented a probability-based testing plan based on JRIA's prior archaeological assessment, which was approved by the Virginia Department of Environmental Quality (DEQ) and the Virginia Department of Historic Resources (DHR).

JRIA identified one site (44LU0073) and one archaeological location (Location 1) in the course of the investigation, which including pedestrian survey and shovel testing within the defined areas of high, moderate, and low archaeological probability. JRIA recommended that neither Site 44LU0073 nor Location 1 is eligible for listing in the National Register of Historic Places, and that no further investigation is warranted. No architectural evidence was identified in either location of two map-projected ca. 1950s-era structures, while a berm complex identified in the archaeological assessment most likely resulted from modern timbering activities.

Based on the results of the Phase I archaeological survey, JRIA recommended that no significant archaeological resources will be affected by the proposed solar project.

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# TABLE OF CONTENTS

ABSTRACT.....	ii
LIST OF FIGURES .....	iv
I. INTRODUCTION .....	1
II. CULTURAL CONTEXT.....	11
III. RESEARCH DESIGN .....	28
IV. PHASE I TESTING RESULTS .....	31
V. CONCLUSIONS AND RECOMMENDATIONS .....	40
VI. REFERENCES .....	41
APPENDIX A: ARTIFACT CATALOG .....	45
APPENDIX B: V-CRIS RECORD FOR SITE 44LU0073 .....	47

# LIST OF FIGURES

<b>Figure 1.</b> Location of the project area on detail of USGS 1:100,000 South Boston topographic quadrangle map, 1984.....	2
<b>Figure 2.</b> Location of the project area on detail of USGS 7.5' Kenbridge West topographic quadrangle map, 1981.....	3
<b>Figure 3.</b> Location of the project area on an aerial photograph with topography and identified wetlands (VHB).....	4
<b>Figure 4.</b> Defined areas of archaeological probability within the project area. ....	5
<b>Figure 5.</b> Overhead electric power line right of way, view to the west. ....	7
<b>Figure 6.</b> Typical wooded conditions within the project area.....	7
<b>Figure 7.</b> Open meadow area, view to the south. ....	8
<b>Figure 8.</b> Logging/access road, view to the north. ....	8
<b>Figure 9.</b> Mapped soil types within the project area (USDA-NRCS Soil Resource Report).10	
<b>Figure 10.</b> Location of the project area on detail of <i>Preliminary Map of Lunenburg County, Virginia</i> (Hotchkiss 1871). ....	19
<b>Figure 11.</b> Location of the project area on a 1950 USGS aerial photograph (EDR/Lightbox). ....	20
<b>Figure 12.</b> Location of the project area on USGS Kenbridge West topographic quadrangle map, 1955.....	21
<b>Figure 13.</b> Location of the project area on a 1959 USGS aerial photograph (EDR/Lightbox). ....	22
<b>Figure 14.</b> Location of the project area on USGS Kenbridge West topographic quadrangle map, 1966.....	24
<b>Figure 15.</b> Location of the project area on USGS Kenbridge West topographic quadrangle map, 1974.....	25
<b>Figure 16.</b> Location of the project area on a 1976 USGS aerial photograph (EDR/Lightbox). ....	26
<b>Figure 17.</b> Location of the project area on a 1994 USGS aerial photograph (EDR/Lightbox). ....	27
<b>Figure 18.</b> Location of the survey areas.....	32
<b>Figure 19.</b> Location of shovel tests in Survey Areas 1, 2, 7, and 8.....	33
<b>Figure 20.</b> Representative shovel test profiles, Survey Areas 1 and 2.....	34
<b>Figure 21.</b> Location of shovel tests in Survey Areas 3, 4, and 9.....	35
<b>Figure 22.</b> Representative shovel test profiles, Survey Areas 3 and 4.....	36
<b>Figure 23.</b> Location of shovel tests in Survey Areas 5 and 6.....	37
<b>Figure 24.</b> Representative shovel test profiles, Survey Areas 5 and 6.....	37
<b>Figure 25.</b> Representative shovel test profiles, Survey Areas 7 and 8.....	38
<b>Figure 26.</b> Representative shovel test profiles, Survey Area 9. ....	39



# I. INTRODUCTION

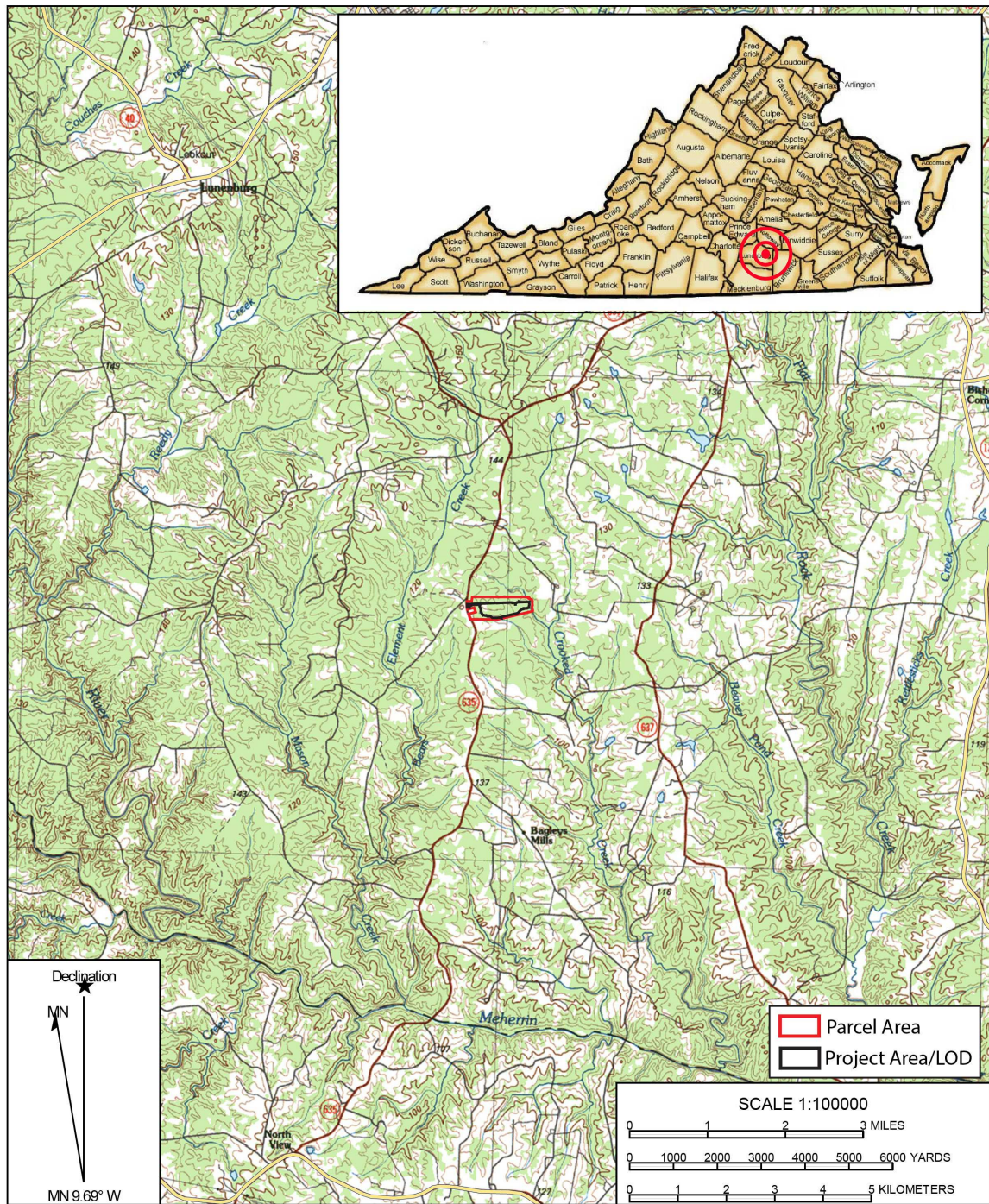
## **Project Overview**

In August 2022, the James River Institute for Archaeology, Inc. (JRIA) completed a Phase IA cultural resources assessment for the proposed Kenbridge solar project in Lunenburg County, Virginia. The approximately 128-acre project parcel is part of larger property (Parcel ID 058-0A-0-29) currently owned by Virginia Hawthorne Wilson, and is adjacent to an existing residence built in 1996 at 5844 Oral Oaks Road (State Route [SR] 635). The limits of disturbance (LOD) for the proposed solar project area comprises 60 acres within the project parcel (Figures 1-3).

Based on the results of the cultural resources assessment, JRIA prepared an archaeological probability model which divided the project area into areas of high, moderate, and low probability for significant archaeological resources, and detailed a proposed Phase I archaeological work plan with a probability-based sampling strategy. Three defined areas of high archaeological potential (one acre) would be investigated through visual inspection and the excavation of screened shovel tests at intervals of 50 feet or less (Figure 4). For the defined areas of moderate archaeological potential, JRIA recommended that a 50-percent sample of the total area (16 acres) should be tested through shovel testing along regular transects at intervals not exceeding 50 feet. The remaining areas would then be subjected to visual survey. For areas of defined low potential, shovel testing would be conducted within a 10-percent sample area (three acres), with the remainder investigated through visual survey. In areas of moderate and low potential, any potential sites identified through shovel testing and/or visual inspection and/or would then be fully investigated and defined through shovel testing at 50- and 25-foot intervals. Any wetland areas within the project area would be visually inspected, but no shovel testing would be conducted unless visible evidence of potential archaeological resources was observed.

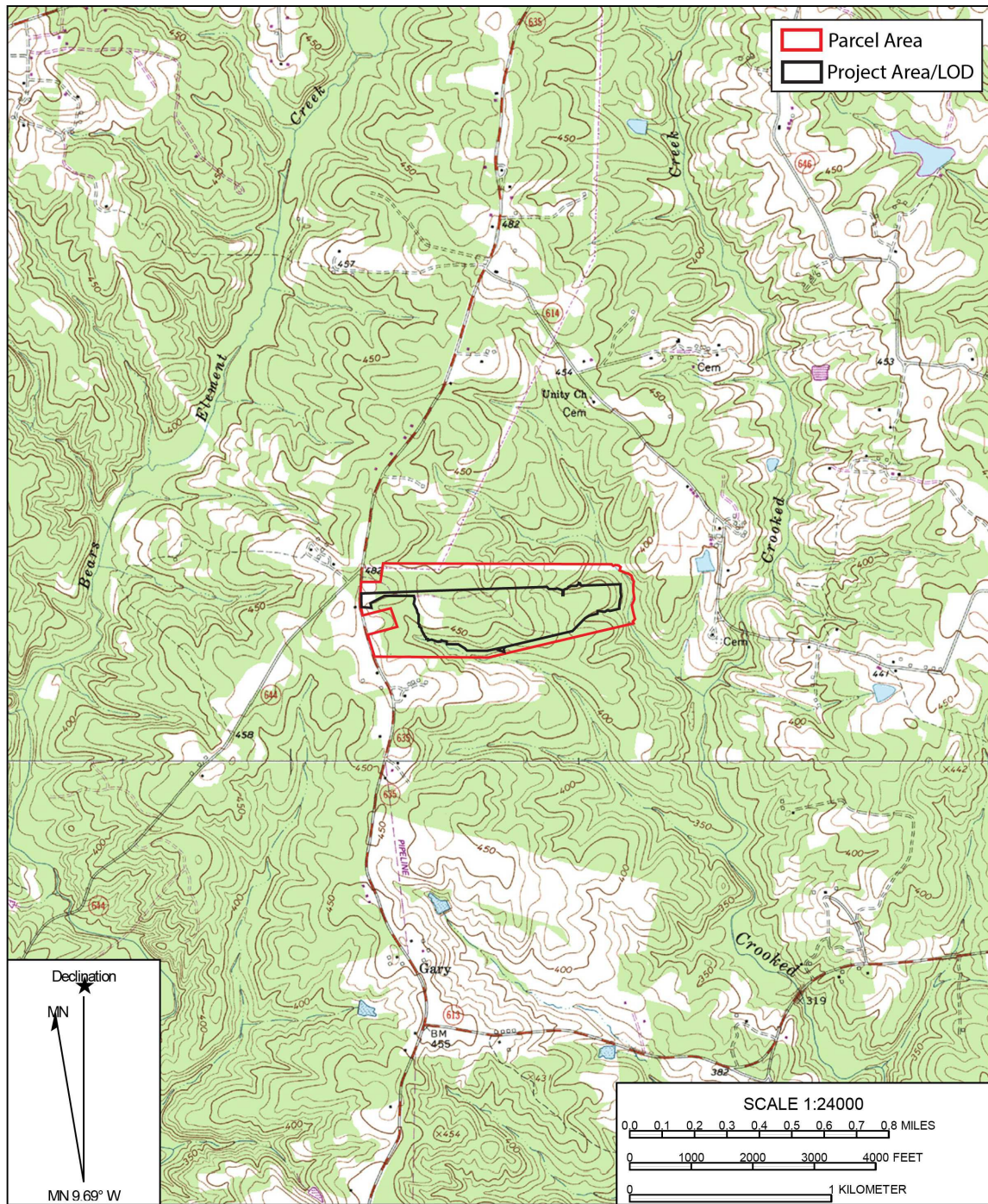
In September 2022, Cultural Resources Specialist Chris Egghart of the Virginia Department of Environmental Quality (DEQ) concurred with JRIA's proposed testing strategy, and JRIA completed the Phase I archaeological survey in October 2022. The research design for the Phase I survey was to identify all archaeological resources present within the defined testing areas and to obtain sufficient information to make recommendations concerning the potential eligibility of each resource for inclusion in the National Register of Historic Places (National Register). The documentary research and fieldwork were conducted at a level in compliance with the Secretary of the Interior's standards (Department of the Interior 1983, 48 FR 44720-44723), as well as the Virginia Department of Historic Resources (DHR) *Guidelines for Conducting Historic Resources Survey in Virginia* (2017).

The Principal Investigator for the project was JRIA Partner and Senior Researcher Matthew R. Laird, Ph.D., RPA. The archaeological fieldwork was conducted by Field Directors Anthony W. Smith, M.A., and Allison Romo, M.A., RPA, with the assistance of Kira Alfano, Michelle Bouquet, Chloe Scalf, and Colleen Wampler. Dr. Laird



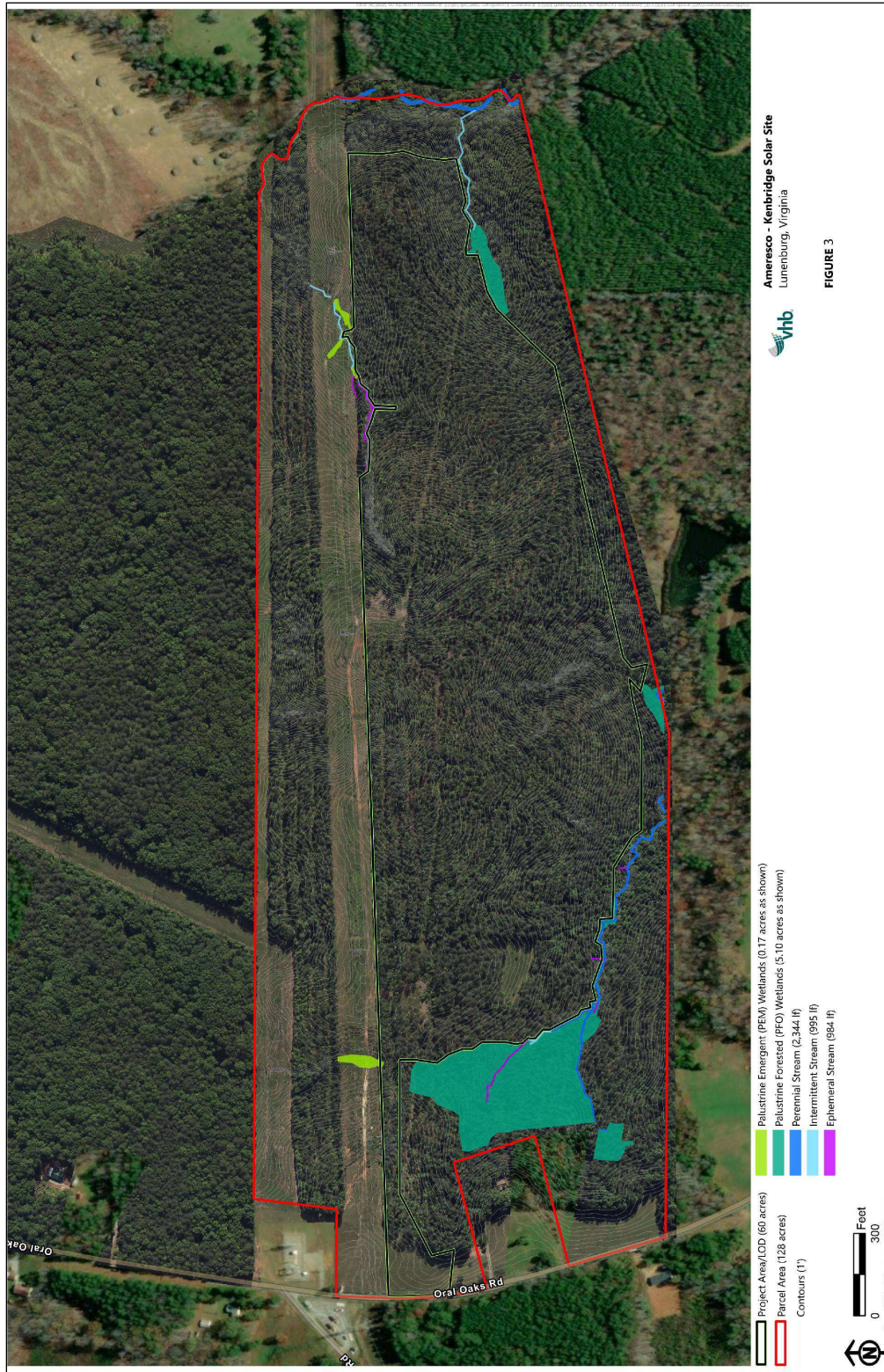
**Figure 1.** Location of the project area on detail of USGS 1:100,000 South Boston topographic quadrangle map, 1984.





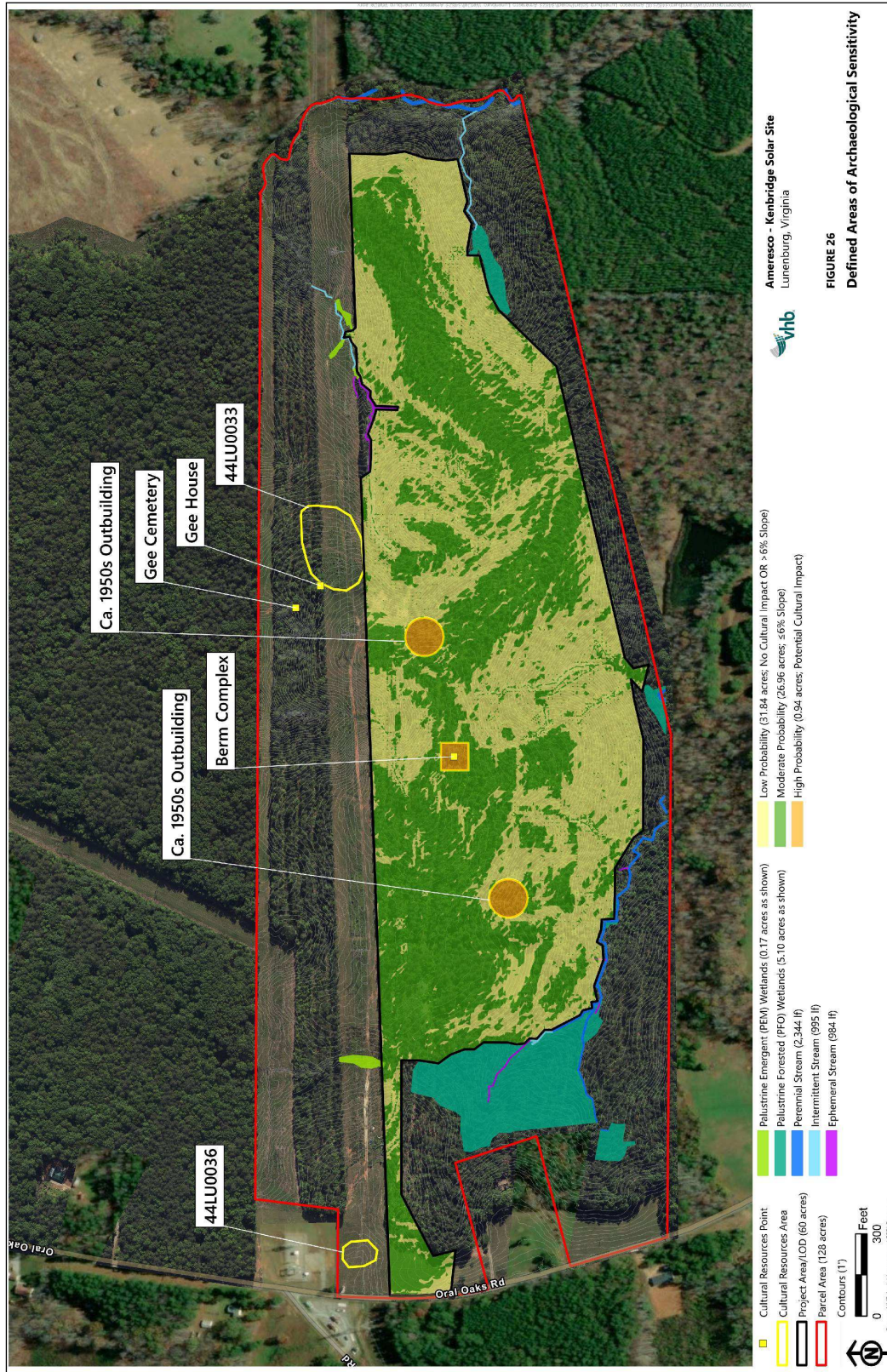
**Figure 2.** Location of the project area on detail of USGS 7.5' Kenbridge West topographic quadrangle map, 1981.





**Figure 3.** Location of the project area on an aerial photograph with topography and identified wetlands (VHB).





**Figure 4.** Defined areas of archaeological probability within the project area.

conducted the documentary research for the project and authored the final report with contributions from Mr. Smith. The artifacts were processed by Barry Phelps and cataloged by JRIA Curator Kelly Ladd-Kostro.

### **Physical Description and Environmental Setting**

The project area is located approximately seven miles southwest of the Town of Kenbridge, and is bounded to the west by Oral Oaks Road, to the south by a privately held parcel, and to the east by a tributary of Crooked Creek. The project area is situated within the southern portion of the Wilson property, and the northern boundary is a cleared overhead electric powerline right-of-way (Figure 5). The majority of the project area was clear-cut in the early 1990s, and is currently characterized by planted pine trees with a relatively dense understory (Figure 6). The only significant open portion of the project area is a grassy meadow in the west-central portion of the property (Figure 7). The project area is traversed by numerous logging/access roads, many of which are becoming overgrown (Figure 8).

The study area is situated within the Foothills subprovince of the Piedmont Province of Virginia, which is a region of broad rolling hills and moderate slopes. The project area is characterized by gently rolling terrain, and elevations range from a maximum of 470 feet above mean sea level (amsl) in its north-central portion, descending to approximately 370 feet amsl along the tributary of Crooked Creek. There is a large area (approximately 5.1 acres) of palustrine forested wetlands adjoining the project area to the west, which is drained by a perennial stream running southeast to the southern property boundary. There is a smaller area of palustrine forested wetlands adjoining the eastern portion of the project area, and two small areas of palustrine emergent wetlands along the northern boundary of the project area adjacent to the powerline right-of-way.

According to the U.S. Department of Agriculture (USDA), National Resources Conservation Service (NRCS) soil report, the study area encompasses at least six mapped soil types (Table 1, Figure 9). In general, the principal upland soil types such as Georgeville loam, 2-7 percent slopes (8B2), are relatively deep and well-drained, and are considered to be prime farmland. The agricultural capability of the more greatly sloped soils in the eastern portion of the project area are more restricted due to erosion.





**Figure 5.** Overhead electric power line right of way, view to the west.



**Figure 6.** Typical wooded conditions within the project area.





**Figure 7.** Open meadow area, view to the south.



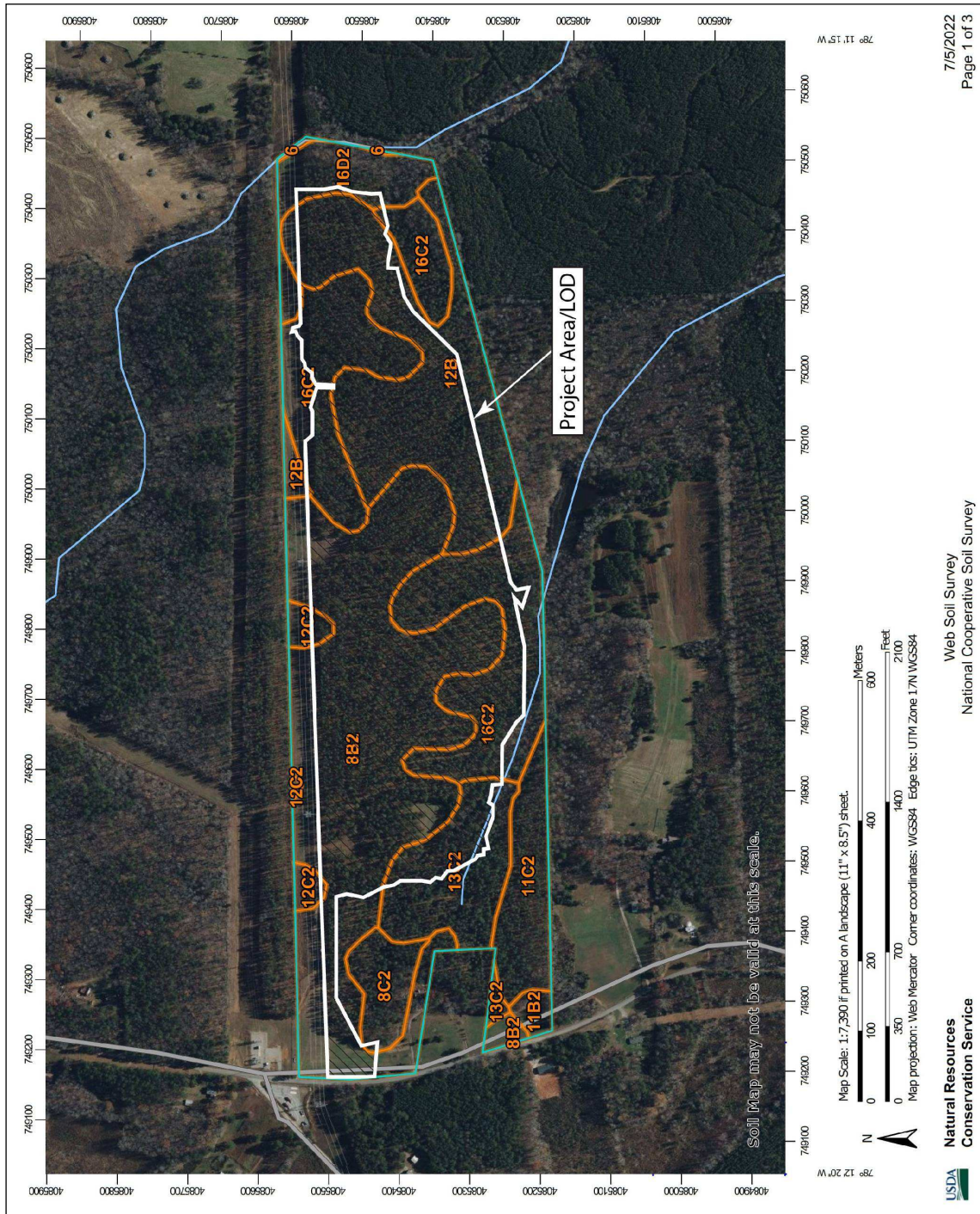
**Figure 8.** Logging/access road, view to the north.

**Table 1.** Mapped soil types within the project area (USDA-NRCS).

Soil Symbol	Soil Name	Slope	Drainage	Capability Class*
8B2	Georgeville loam, eroded (prime farmland)	2-7%	Well drained	2e
8C2	Georgeville loam, eroded	7-15%	Well drained	4e
12B	Iredell loam	1-6%	Moderately well drained	2e
12C2	Iredell loam	6-12%	Moderately well drained	4e
16C2	Mecklenburg loam, eroded	7-15%	Well drained	4e
16D2	Mecklenburg loam, eroded	15-20%	Well drained	6e

\*Soils designated as Capability Class 2-4 are all generally suited to cultivated crops, pasture, range, and woodland, with varying degrees of limitations. Class 2 soils have some limitations which reduce the choice of plants or require moderate conservation practices; Class 3 soils have severe limitations; and Class 4 have very severe limitations. Class 6 and 7 soils have severe limitations which make them generally unsuited to cultivation, and may limit their use mainly to pasture, range, or woodland. Capability limitations include shallow, droughty, or stony soils (s); erosion (e); and excess water (w).





**Figure 9.** Mapped soil types within the project area (USDA-NRCS Soil Resource Report).

## **II. CULTURAL CONTEXT**

### **PREHISTORIC CONTEXT**

Virginia's prehistoric cultural chronology is subdivided into three major time periods based on changes in subsistence as exhibited by material remains and settlement patterns. These divisions are known as the Paleoindian, Archaic, and Woodland periods. A brief summary of the regional cultural chronology follows, with comments on manifestations of each period within the vicinity of the project area.

#### **Paleoindian (Prior to 10,000 B.C.)**

Paleoindian occupation in Virginia, the first human occupation of the region, began some time before 10,000 B.C. The earliest recognized diagnostic artifacts are Clovis projectile points, typically fashioned of high-quality cryptocrystalline materials such as chert, chalcedony, and jasper. Later Paleoindian points include smaller Clovis-like and Cumberland variants, small "Mid-Paleo" points, and, at the end of the period, Dalton, Hardaway-Dalton, and Hardaway Side-notched points. Also diagnostic, though to a lesser extent, are certain types of well-made endscrapers, sidescrapers, and other formalized tools. Most current views now hold that eastern Paleoindians were generalized foragers with an emphasis on hunting. Social organization apparently consisted of relatively small bands that exploited a wide, but defined, territory (Gardner 1989: 5-52; Turner 1989: 71-94).

The majority of Paleoindian remains in Virginia are represented by isolated projectile point finds and what appear to be small temporary camps. Although some larger and very notable base camps are present in the state, they are relatively rare and usually associated with sources of preferred, high quality, lithic materials. In general, the rarity of such sites throughout the region suggests that the potential for their occurrence within the study area is low.

#### **The Archaic through Early Woodland Periods (10,000 B.C.-500 B.C.)**

The beginning of the Archaic Period generally coincided with the end of the Pleistocene epoch, marked in the region by a climatic shift from a moist, cool period to a warmer, drier climate. Vegetation also changed at this time from a largely boreal forest setting to a mixed conifer-deciduous forest. In eastern Virginia, a temperate climate was established, and the formation of the Chesapeake estuary began. Increasing differences in seasonal availability of resources brought on by post-Pleistocene changes are thought to have coincided with increasing emphasis on strategies of seasonally geared mobility (Dent 1995:147).

Archaic populations likely were characterized by a band-level social organization involving seasonal movements corresponding to the availability of resources. Settlement during this era probably involved the occupation of relatively large regions by single band-sized groups living in base camps during part of the year, and then dispersing as necessary during certain seasons, creating smaller microband camps that may have consisted of groups as small as single families. The Archaic Period saw the development of more specialized resource procurement activities and associated technologies. These

differences in material culture are believed to reflect larger, more localized populations, as well as changes in food procurement and processing methods. The Archaic Period also marked the beginning of ground stone technology, with the occurrence of ground atlatl weights and celts. New tool categories that developed during the Archaic include chipped and ground stone celts, ground stone net sinkers, pestles, pecked stones, mullers, axes, and, during the more recent end of the Late Archaic, vessels carved from soapstone quarried in the Piedmont (Custer 1990: 35-40; Geier 1990: 84-86, 93-94).

#### *Early Archaic*

Corner and side-notching became a common characteristic of projectile points during the Early Archaic Period (ca. 10,000-6500 B.C.), indicating changes in hafting technology and possibly the invention of the spear-thrower (atlatl). Notched point forms include Palmer and Kirk Corner-notched and, in localized areas, various side-notched types. The later end of the Early Archaic Period and the beginning of the Middle Archaic Period are marked by a series of bifurcate base projectile point forms that, in this area, are mainly represented by Lecroy points. As with the preceding Paleoindian period, the most common Early Archaic site locations were near the confluence of major streams and tributaries.

#### *Middle Archaic*

In Virginia, the Middle Archaic Period, ca. 6500-ca. 3000 BC, was characterized by a notable increase in the number of occupation sites over the immediately preceding Early Archaic Period, suggesting an increase in population most likely resulting from environmental stabilization. The Middle Archaic witnessed the rise of various stemmed projectile point forms. In this area of central Virginia, the most common Middle Archaic projectile point types include (from oldest to youngest): Lecroy, Stanly, Morrow Mountain, and Guilford, followed by the side-notched Halifax type which appeared at the very end of the period as it transitioned into the Late Archaic, between ca. 3500 and 3000 B.C.

#### *Late Archaic*

The Late Archaic Period, ca. 3000-1200 B.C., was dominated by stemmed and notched knife and spear point forms, including various large, broad-bladed stemmed knives and projectile points that generally diminish in size by the succeeding Early Woodland period (e.g., Savannah River points and variants). Also found, though less common, are stemmed and notched-stem forms identical to those associated more prominently with areas of Pennsylvania and adjoining parts of the northeast (Susquehanna and Perkiomen points).

Marked increases in population density and, in some areas, decreased mobility characterized the Late Archaic Period in the Middle Atlantic states and eastern North America as a whole. Locally, there is an increase in the numbers of late Middle Archaic (Halifax) and Late Archaic (Savannah River) sites over those of earlier periods, suggesting a population increase and/or intensity of use of this region between ca. 3500 B.C. and ca. 1200 B.C.

Agriculture in the Middle Atlantic region probably has its origins during this period. Yarnell (1976: 268), for example, writes that sunflower, sumpweed, and possibly goosefoot may have been cultivated as early as 2000 BC. In the lower Little Tennessee River Valley, remains of squash have been found in Late Archaic Savannah River contexts (ca. 2400 BC), with both squash and gourd in slightly later Iddins period contexts (Chapman and Shea 1981: 70).

In general, Archaic Period sites in this region are distributed throughout a variety of landforms and settings, including both interior and riverine areas, although the majority have been identified in upland settings, which is consistent with the prevailing settlement and subsistence models that posit the continued exploitation of upland resources by growing numbers of Middle and Late Archaic peoples (Moore et al. 2014: 24, 121-122).

### *Early Woodland*

The Early Woodland Period, ca. 1200-500 B.C., is generally defined by the appearance of ceramics in the archaeological record. The earliest Woodland ceramic wares, Marcey Creek Plain and variants, are rectangular or oval and resemble the preceding Late Archaic soapstone vessels. These ceramics are followed by cord-marked, soapstone-tempered Selden Island ceramics, then by sand-and-grit-tempered Elk Island (Accokeek) ceramics with both plain and cord-marked surfaces. The latter traditionally were referred to as the Stony Creek series, although this type is now known to subsume several Early, Middle, and Late Woodland ceramic wares (Egloff 1991: 243-48).

In terms of lithic technology, this period saw a transition from the broadspear and large biface types of the Late Archaic Period to smaller lanceolate, notched, and stemmed forms such as Calvert/Gypsy Stemmed, Piscataway, Vernon, and Will's Cove hafted bifaces. Increasingly, these tools were manufactured from a variety of quartz, chert, and other materials in contrast to the local coarse-grained materials that predominated in the Late Archaic (Moore et al. 2014: 63).

Early Woodland communities evidently were comprised of fairly small groups which spent only a portion of the year in settled locations alternating with mobile hunter-gathering activities. Early Woodland sites in this region typically consist of small camps in both riverine and lesser-order stream locations (Moore et al. 2014: 61-63).

### **The Middle Woodland Period (500 B.C.-A.D. 900)**

In general, the Woodland period of Virginia prehistory is broadly characterized by the introduction and development of ceramic technology, a gradually developing dependence on horticulture, and increased sedentism. Three sub-periods (Early, Middle, and Late Woodland) have been designated by archaeologists, based primarily on stylistic and technological changes in ceramic and projectile point types, as well as settlement patterns. The Early Woodland period, ca. 1200-500 B.C., has traditionally been defined by the appearance of ceramics in the archaeological record. Relatively few sites of this type have been identified in Piedmont Virginia, and it has been assumed that most represent short-term camps (Egloff 1991: 243-48).

Beginning about 500 B.C., however, there appears to have been a noticeable change in the material culture, social organization, and settlement patterns of native groups, defining a distinct “Middle Woodland” period. In general, the Middle Woodland period has been associated with subtle changes in technology; relatively sedentary residence in settlements; a steady increase in population; closer definition of group territories; interregional spheres of interaction and trade; and the emergence of ranked societies (Stewart 1992: 4; McLearen 1992: 55; Blanton 1992: 68).

By the beginning of the Middle Woodland period, ceramic technology was already at least 500 years old. During this era, however, it appears that ceramic vessels became the mainstay of container technology for cooking and storage activities, with more pots per individual than in the Early Woodland. The Middle Woodland Period in the southern Virginia Piedmont was marked by the appearance of sand-tempered and fabric-impressed ceramics, although plain, cord, and net treatments have also been identified. Stony Creek is the most commonly identified ceramic in this vicinity, although grit-/sand-tempered Vincents and Clements-like ceramics are also typical of this region (Stewart 1992: 7; Egloff 1991: 243-48).

As with ceramic styles, it appears that lithic technologies were changing as well. While the basic toolkit remained essentially unchanged, a number of new projectile point styles are associated with this period, including Yadkin, Badin, Fox Creek, Potts, and Rossville types, and the development of bow and arrow technology is believed to have occurred at this time. It has been hypothesized that the evolution of both ceramic and lithic styles was related to participation in relatively broad and wide-ranging trade and communication networks (Egloff 1991: 243-48; Stewart 1992: 2, 4, 7-9).

Subsistence strategies evidently were not markedly different from the Early Woodland period, with a reliance on hunting and gathering, and a focus on hunting deer and other land mammals, supplemented by fish, shellfish, and starchy roots, tubers, and other plant foods, which may have included some incipient domesticated species (Stewart 1992: 4). In terms of settlement patterns, archaeologists have speculated that the Middle Woodland was characterized by relatively sedentary residence in settlements, also referred to as “macroband basecamps” or nascent “villages,” which are represented archaeologically by low-density midden sites in riverine settings. These groups continued to practice “restricted wandering,” however, in which small, possibly family-sized units separated from the main settlement for several weeks at a time, establishing small interior campsites and obtaining needed materials in the site vicinity (Stewart 1992: 4; McLearen 1992: 46; Blanton 1992: 83-84).

Previous archaeological studies in the region have demonstrated the intensive use of small tributary streams as well as major river floodplains throughout the Middle Woodland Period (ca. 500 B.C.-A.D. 900). The prevalence of small procurement camps in upland inter-riverine areas suggests that played an important role in supporting larger base camps situated in low-lying areas along major streams (Stewart 1992: 12-16; Moore et al. 2014: 122).

### **The Late Woodland Period (A.D. 900-1607)**

By the Late Woodland period agriculture had assumed a role of major importance in the prehistoric subsistence system. The adoption of agriculture represented a major change in the subsistence economy and patterns of settlement. The availability of large areas of arable land became a dominant factor in settlement location, and sites increasingly were located on fertile floodplain soils or on higher terraces or ridges adjacent to them. Permanent habitation sites gradually replaced base camp habitation sites more characteristic of those of previous foragers and hunter-gatherers. Villages varied widely in spatial layout and appearance: some were highly nucleated while others were dispersed over a relatively wide area. A number of villages were completely fortified by circular or oval palisades, indicating a rise in inter-group conflict, while others contained both a fortified core area and outlying houses. The more dispersed settlements were scattered over a wide area and characterized by fluid settlements within large, sprawling, and loosely defined town or village territories (Turner 1992: 108-114).

Archaeological research in this region over the past 30 years has demonstrated a marked decrease in the number of small, temporary, interior sites occupied during the Late Woodland Period. This trend is not unexpected, given the increasing role of agriculture and accompanying development of more permanent village settlements. Even so, hunting continued to provide a large proportion of the protein in the diet of Late Woodland peoples. As early as the Late Archaic period, over-hunting had caused a significant drop in local deer and other mammal populations; so much so, in fact, that relatively few deer could be found in the vicinity of villages. In response, large-scale hunts, which typically included entire family groups, were mounted annually in the late fall and winter after the crops had been harvested. Various supporting camps and activity areas also were established in the day-to-day procurement of food and other resources (i.e., short-term hunting and foraging camps, quarries, butchering locations, and re-tooling locations). These small seasonal camps and non-seasonally based satellite camps supporting nearby sedentary villages and hamlets tended to be located along smaller streams in the interior. Archaeologically, these campsites are generally manifested by limited concentrations of lithics and ceramics (Barfield and Barber 1992: 225-26; Turner 1992: 108-114).

Diagnostic artifacts of the Late Woodland period include several triangular projectile point styles such as Clarksville, Caraway, and Jack's Reef that originated during the latter part of the Middle Woodland period and consistently decreased in size through time. The most common Late Woodland ceramics in the southern Virginia Piedmont from about A.D. 900 to the time of European contact in the late seventeenth century were characterized by simple stamping with a paddle or linear and geometric incised designs, with the most common surface treatments being plain or looped-fabric impressed. Ceramic types typically recovered from Late Woodland sites in this region include Siouan wares such as Clarksville and Gaston and Iroquoian Cashie ceramic wares such as Sturgeon Head and Branchville types (Moore et al. 2014: 64).

The adoption of agriculture represented a major change not only in the subsistence economy, but also in settlement patterns. The availability of large areas of arable land



became a dominant factor in settlement location, and sites increasingly were located on fertile floodplain soils or on higher terraces or ridges adjacent to them. Even so, most Late Woodland sites in this region have been identified in the inter-riverine uplands, suggesting that Late Woodland populations continued to exploit natural resources in interior settings (Turner 1992: 108-114; Hantman and Klein 1992: 143-45; Moore et al. 2014: 35, 41-42, 122-123, 137-140).

Ethnohistorical sources, including Binford (1967) and MacCord (1996), suggest that the Late Woodland-Contact Period populations of the Virginia Piedmont were Siouan-speaking members of the Monacan, Saponi, and Nahyssan tribes (Moore et al. 2014: 64).

## **HISTORIC CONTEXT**

### **The Development of Lunenburg County, 1746-present**

Situated between the Nottoway and Meherrin Rivers in Southside Virginia, Nottoway County was established from Brunswick County in 1746, and named in honor of King George II, whose German titles included Baron of Brunswick-Lunenburg. Known as the “Mother of Counties,” Lunenburg originally encompassed nearly 5,000 square miles, and ultimately was divided to create 10 additional counties, including Mecklenburg, Halifax, Charlotte, Campbell, Pittsylvania, Henry, Patrick, Franklin, Appomattox, and Bedford. While a handful of English fur traders passed through this area in the seventeenth century, the earliest European settlers did not reach what is now Lunenburg County until the early eighteenth century. Most of the new arrivals were Anglo-Virginians from eastern counties such as Surry, Isle of Wight, Henrico, Goochland, and Hanover. By this time, the local Native American groups—including Iroquoian-speaking members of the Nottoway and Meherrin tribes—had been depleted by warfare and disease, and had lost their land as a result of the Treaty of 1677 (Chen et al. 2005: 2-3).

When it was formed in 1746, Lunenburg County had 338 tithable residents, including White men over 16, and all “Negro, mulatto, and Indian women” 16 or older. In addition to Anglo-Virginians from eastern Virginia, new arrivals also included Scots-Irish who moved down the Shenandoah Valley from Pennsylvania, as well as Swiss, Germans, and French Protestant Huguenots. Although there were a few wealthy nonresident landowners such as William Byrd, Richard Randolph, and Lewis Burwell, most of Lunenburg’s early settlers were people of modest means seeking to improve their circumstances on what was then Virginia’s frontier. Most owned tracts of 600 acres or less, and few held enslaved African Americans (Chen et al. 2005: 4-6).

Prior to 1760, livestock provided the major source of income for Lunenburg’s residents. However, by the time of the American Revolution, just over half of the White male population had acquired enslaved African American laborers, and the agricultural economy began to change from subsistence farming to tobacco monoculture. Aside from a raid by British Colonel Banastre Tarleton’s cavalry which burned Craig’s Mill, Lunenburg’s main contribution to the Revolutionary War was its male citizenry, many of whom served in the Virginia militia, including at Valley Forge. While eastern Virginia

counties were rapidly abandoning tobacco in the post-Revolutionary era, this staple crop was becoming even more dominant in Southside, including Lunenburg County. By 1840, the region was responsible for over 60 percent of Virginia's annual tobacco production (Chen et al. 6-7).

By 1800, enslaved African Americans comprised half of Lunenburg's residents; and by 1820, Blacks outnumbered Whites by a factor of two to one. Tobacco production continued to increase throughout the first half of the nineteenth century, while local farmers also supplemented their incomes through raising corn and livestock. In 1852, Virginia passed an act to promote infrastructure improvement projects, and Lunenburg took advantage of the support to develop the Lunenburg Plank Road from Black's and White's (now Blackstone) to the Meherrin River. The Richmond and Danville Railroad was built across the county, giving rise to the village of Meherrin around the depot at Moore's Ordinary (Chen et al. 2005: 8-10).

With a high proportion of enslaved African Americans, most White Lunenburg residents supported secession, and many enlisted in local military units when Virginia joined the Confederacy in 1861. Although more than 1,000 Lunenburg men would take up arms during the war years, no actual fighting occurred in the county until June 1864, when generals James H. Wilson and August V. Kautz led a contingent of 7,000 Union troops to destroy the Southside and Danville railroads to cut off supplies to Richmond. After a fight at the Roanoke River, they returned via Lunenburg County, crossing the Meherrin River on their way to the Boydton Plank Road, and foraging for food and horses, and liberating enslaved African Americans, along the route (Chen et al. 2005: 10-11).

The immediate postwar period proved difficult for Lunenburg's White residents, as emancipation resulted in a drastic decline in available farm labor. Overall agricultural production dropped by more than half, while tobacco production was only a quarter of its peak total. In fact, it was not until 1900 that tobacco production returned to pre-war levels. Still, the population continued to increase between 1870 and 1910, with African Americans perennially exceeding White residents. In 1902, a group of investors began planning a railroad to link the coalfields of West Virginia with the port of Norfolk. Completed in 1909, the Virginian Line Railroad passed through the town of Kenbridge. Originally known as Tinkling, the town was established in 1906 around a post office and store. It was incorporated by an act of the General Assembly in 1908, and was renamed Kenbridge in honor of W.F. Kennedy and Willie Bridgforth, who owned most of the land on which the town was established. The railroad attracted considerable industrial and commercial development, and Kenbridge's tobacco warehouses accommodated the fourth-largest tobacco market in the Commonwealth (Chen et al. 2005: 11-12).

In 1920, Lunenburg had a population of 15,260 residents, and there were 2,108 farms, with 9,633 acres devoted to tobacco production. Although tobacco dominated the local economy, chickens and dairy products were also valuable commodities. However, the population and the number of farms declined steadily over the next 40 years. The largest single factor which affected the county was the loss of the Virginian Line Railroad, which merged with the Norfolk & Western to become Norfolk Southern in 1959. The

depot at Kenbridge was demolished in the 1970s, and all the former tracks had been taken up by the 1990s. During the modern era, the inmates at the Lunenburg Correctional Center have accounted for the majority of the population's growth. The correctional center, Virginia Marble Corporation, Kenbridge Construction Company, were the largest employers in the county at the turn of the millennium. The Barnes Manufacturing Company was a leading lumber processing business which represented the growing forestry industry in the area. Tobacco also remains an important fixture in the local economy (Chen et al. 2005: 13-14).

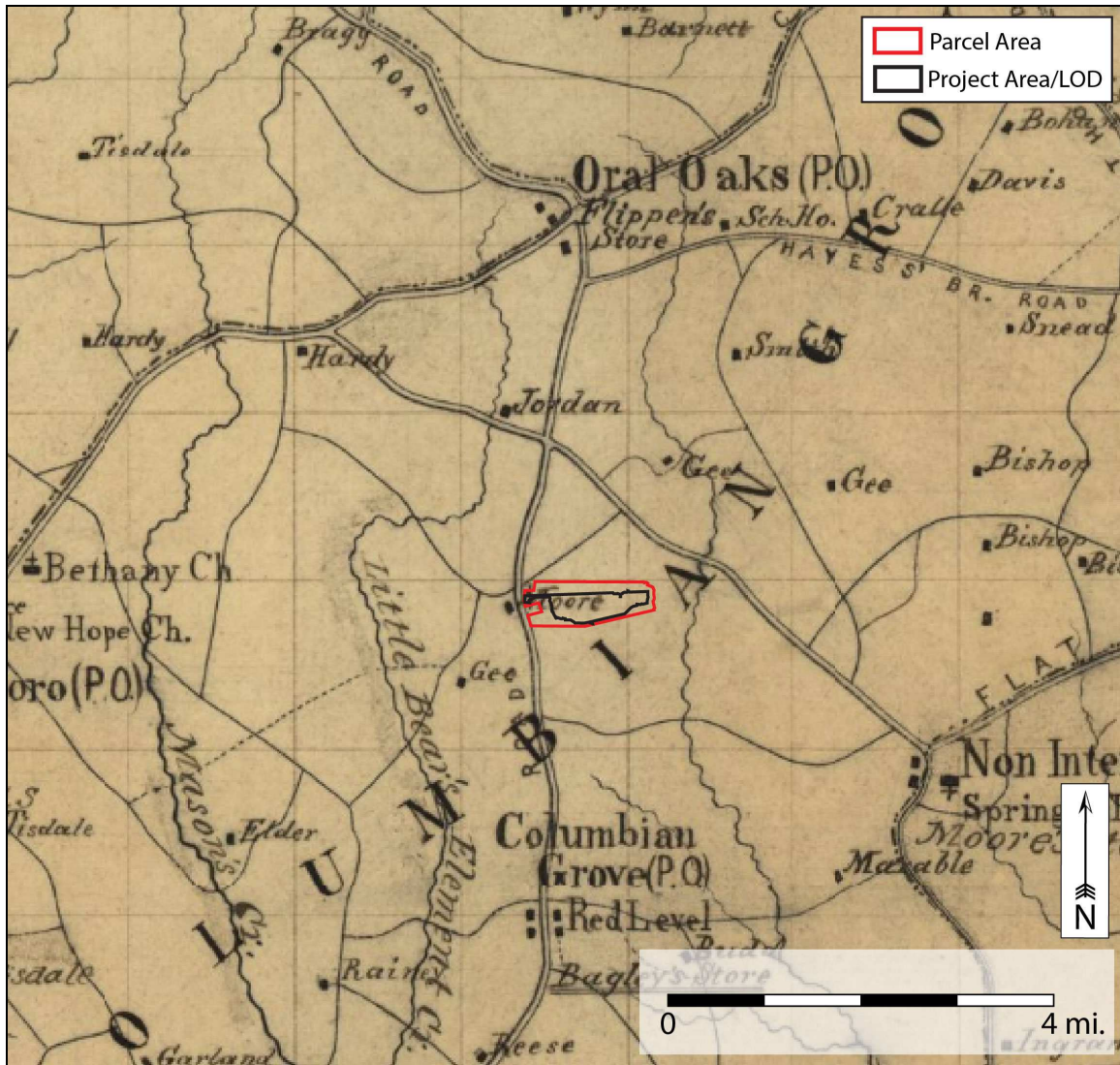
### **Site-Specific History**

During the late nineteenth and early twentieth centuries, the project area was associated with the Gee family, which had branches throughout Lunenburg County. The earliest detailed maps of the county produced during the Civil War era do not indicate any occupation of the project area (Figure 10). While there were Gee households to the north and northeast, the nearest farmstead was occupied by the Moore family on the west side of Oral Oaks Road.

Although it was never depicted on any of the available maps of Lunenburg County, it is clear that A. L. (Louis) Gee, his wife Cornelia, and their children lived in a house on the project parcel, the remains of which were recorded by WMCAR as Site 44LU0033. As described more fully in Chapter IV, this site includes the graves of A.L. and Cornelia Gee. According to the 1910 U.S. Federal Census, A.L. Gee was a 60-year-old White farmer who owned his own farm and hired laborers. At that time, his household included his wife Cornelia (53), daughter Cornelia B. (16), and son Nevil (13) (1910 U.S. Federal Census, Ancestry.com).

In January 1919, A.L. Gee deeded his property to William A. Hawthorne, William A. Hawthorne, Jr., and Lewis Hawthorne as tenants in common (Lunenburg County Deed Book [LCDB] 62: 135). The deed specifically reserved access to the family cemetery on the property, which by then included the remains of Cornelia Gee, who had died in 1916. A.L. Gee would later be buried there after his death in 1922. The property remained in the Hawthorne family throughout the twentieth century, and ultimately came into the possession of the current owner, Virginia Hawthorne Wilson, as the result of several transactions and bequests between 1986 and 2013 (Lunenburg County Will Book 26: 519; LCDB 197: 594; LCDB 371: 332).

A USGS aerial photograph dated November 1950 indicates that the majority of the project area was wooded at that time. The only cleared portions consisted of an area directly east of Oral Oaks Road in the vicinity of the current residence; an area in the west-central portion of the property; and a smaller area in the central part of the tract (Figure 11). At least two buildings or structures were visible on the property. These most likely represented agricultural buildings such as barns or sheds, as they were not depicted on the USGS 7.5' Kenbridge West topographic quadrangle map published in 1955; however, they were still there at that time, as they are also visible on a USGS aerial photograph taken in December 1959 (Figures 12-13). These buildings were not depicted

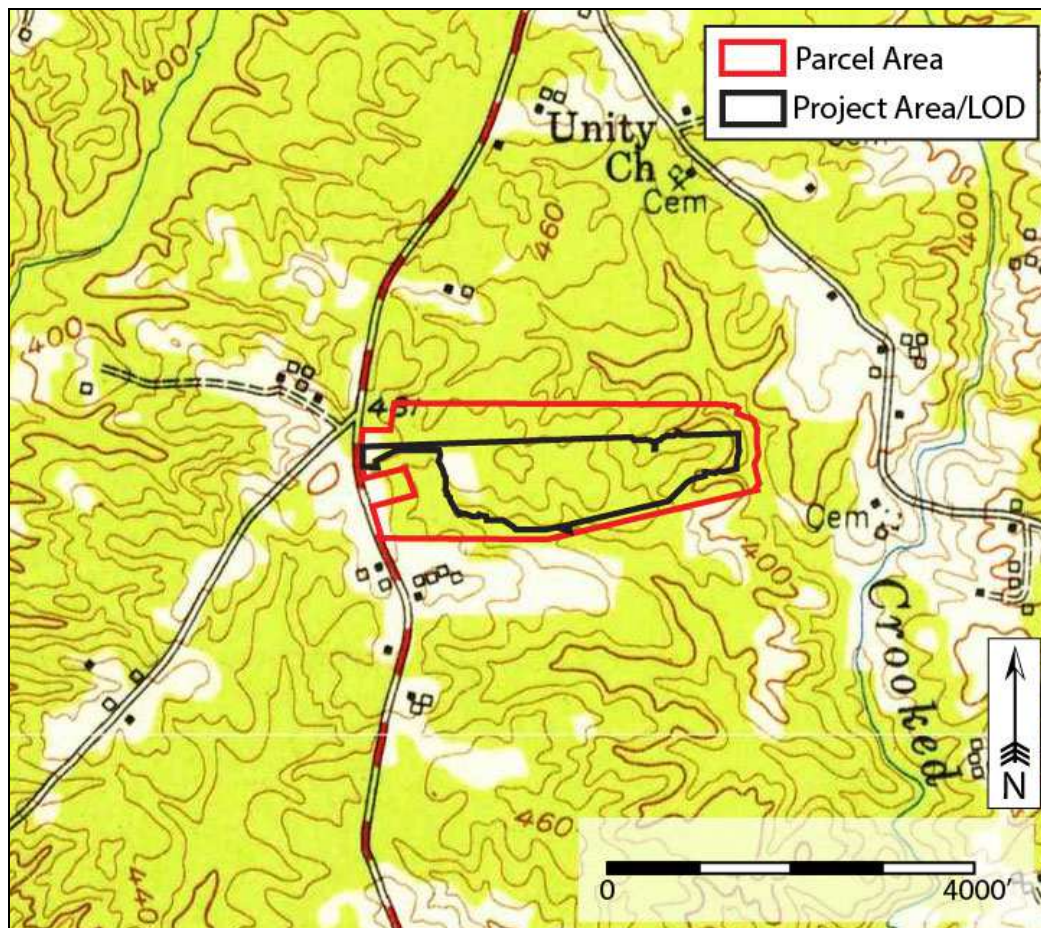


**Figure 10.** Location of the project area on detail of *Preliminary Map of Lunenburg County, Virginia* (Hotchkiss 1871).



**Figure 11.** Location of the project area on a 1950 USGS aerial photograph (EDR/Lightbox).





**Figure 12.** Location of the project area on USGS Kenbridge West topographic quadrangle map, 1955.

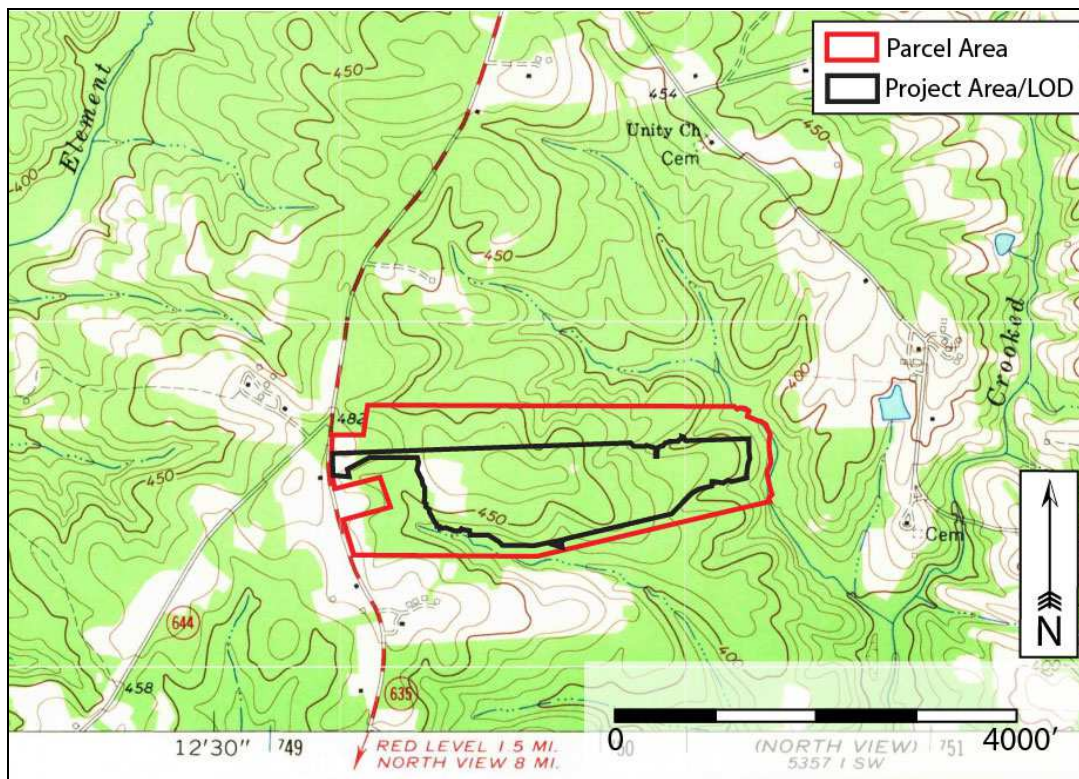


**Figure 13.** Location of the project area on a 1959 USGS aerial photograph (EDR/Lightbox).

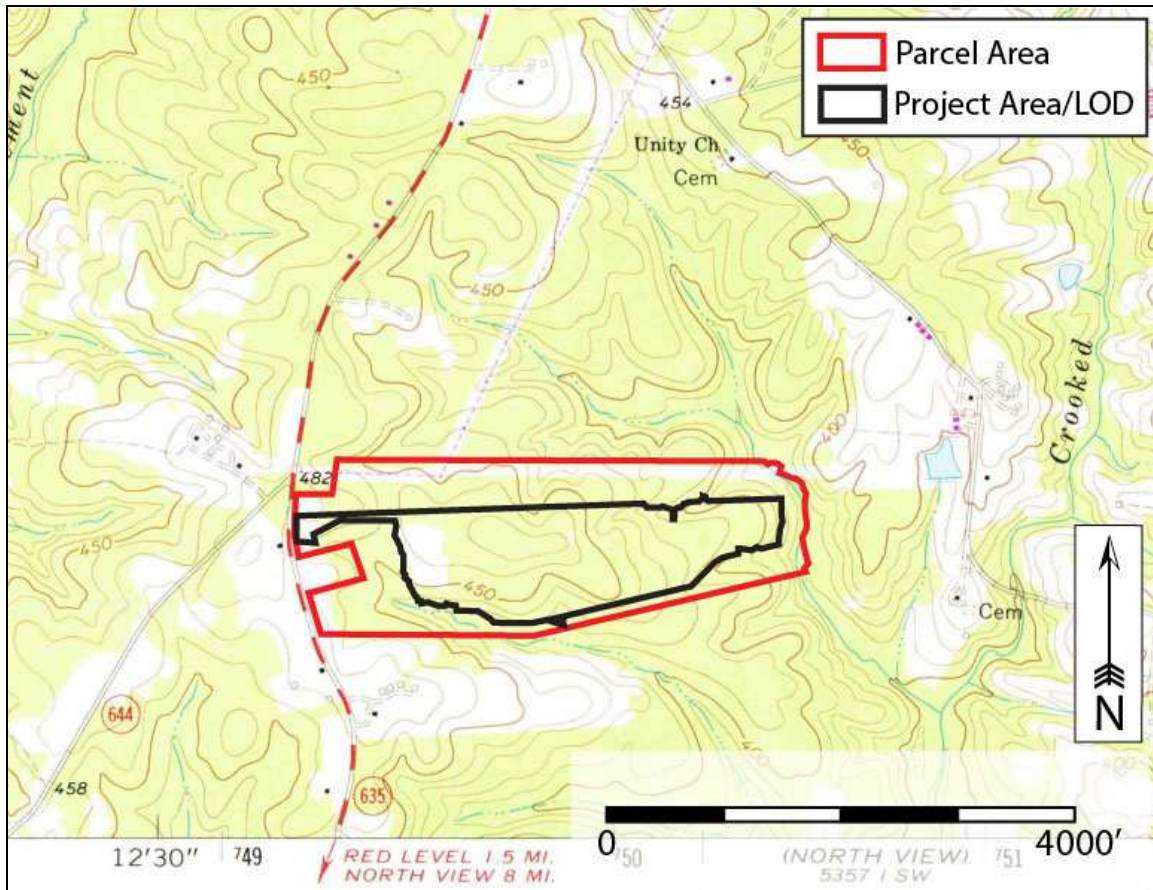
on USGS topographic quadrangle maps from the mid-1960s through the mid-1970s, nor are they visible on a USGS aerial photograph dated March 1976 (Figures 14-16).

The most significant alteration to the project area occurred in the early 1990s, when virtually the entire parcel was clear-cut. A USGS aerial photograph taken in January 1994 clearly shows several logging/access roads, with the main road traversing the property from the northwest corner towards the southeast, with smaller branches leading from it (Figure 17). Aside from the main dwelling in the western portion of the project parcel, there were no other buildings, structures, or other significant features visible within the project area after the timbering had been conducted. The property has since been reforested with planted pine.





**Figure 14.** Location of the project area on USGS Kenbridge West topographic quadrangle map, 1966.



**Figure 15.** Location of the project area on USGS Kenbridge West topographic quadrangle map, 1974.





**Figure 16.** Location of the project area on a 1976 USGS aerial photograph (EDR/Lightbox).





**Figure 17.** Location of the project area on a 1994 USGS aerial photograph (EDR/Lightbox).

### III. RESEARCH DESIGN

#### OBJECTIVES

The Phase I survey was designed to identify all archaeological resources present within the designated testing areas and to obtain sufficient information to make recommendations concerning their potential eligibility for inclusion in the National Register. An archaeological site is deemed significant if it is greater than 50 years old and meets at least one of the following criteria:

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

Criterion D—and occasionally Criterion A—typically applies to archaeological sites. In order to yield important information about the past, an archaeological site generally must possess artifacts, soil strata, structural remains, or other cultural features which make it possible to test historical hypotheses, corroborate and amplify currently available information, or reconstruct the sequence of the local archaeological record.

#### DEFINITIONS

Two designations for identified archaeological resources were used in this Phase I survey: *archaeological site* and *archaeological location*. As outlined in the DHR's *Guidelines for Conducting Historic Resources Survey in Virginia* (2017), an archaeological site is defined as the physical remains of any area of human activity greater than 50 years old for which a boundary can be established, and often is manifested by the presence of artifacts and/or cultural features. This definition does not apply to cultural material that has been recently redeposited or reflects casual discard. Any occurrence of artifacts which does not qualify for a site designation is termed an archaeological location. In application, defining these types of resources requires a certain degree of judgment in the field and consideration of a number of variables. Contextual factors such as prior disturbance and secondary deposition must be taken into account. The representative nature of the sample as measured by such factors as the degree of surface exposure and shovel test interval also must be considered.

## METHODS

### Field Methods

All Phase I archaeological fieldwork was conducted according to the DHR's *Guidelines for Conducting Historic Resource Survey in Virginia* (2017), under the direct supervision of a qualified archaeologist who meets the Secretary of the Interior's *Professional Qualifications Standards* (48 FR 44738-9). The survey included pedestrian survey of the project area, followed by the excavation of screened shovel tests along regular transects at 50-foot intervals within the designated testing areas. Four radial shovel tests were excavated at 25 feet in the four cardinal directions around each isolated positive shovel test yielding cultural materials. Each shovel test measured approximately 16 inches in diameter or larger and was excavated into sterile subsoil. The backfill was sifted through ¼-inch screen mesh. Representative soil profiles were drawn at 1 inch = 1 foot scale and recorded on standardized forms using Munsell color designators and U. S. Department of Agriculture soil texture terminology. The location of each shovel test was recorded on a 1 inch = 100 feet scale map, and all shovel tests were assigned an individual Shovel Test (ST) number. Representative shovel test and surface feature locations were recorded with a handheld Trimble GPS unit.

### Laboratory Analysis and Curation

All archaeological data and specimens collected during the Phase I survey were transported to JRIA's laboratory in Williamsburg, Virginia, for processing and analysis. Prior to washing, artifacts from a given provenience were first emptied into a screened basket and sorted. Next, the provenience information from the field bags were confirmed with the bag catalog and transferred onto bag tags. Stable objects were washed with tap water using a soft brush. Edges of ceramics and glass were thoroughly cleaned to aid in the identification of body type and to assist in mending. Washed items then were placed by provenience on a drying rack.

Once dry, the artifacts were re-bagged by provenience and material type. Artifacts of a given provenience were placed in clean 2 ml thick polyethylene zip-lock bags that have been perforated to allow air exchange. Each grouped material type was placed in a separate plastic bag (i.e., all glass in one bag, all brick fragments in one bag, etc.) and each of these individual type bags were then placed in a larger bag with the bag tag noting the provenience.

After processing and re-bagging, the entire artifact assemblage was cataloged for analysis. Stylistic attributes of diagnostic artifacts were described using current terminology and were recorded by count into a database for analysis. Non-diagnostic artifacts such as brick and oyster shell were weighed, not counted. Once all the artifacts were cataloged, ceramics were pulled from their bags and marked with correct provenience information. Diagnostic ceramics were sorted and grouped together based on type or ware and/or vessel or function and checked for crossmends. Analysis of historic artifacts was aided by reference works such as *The Parks Canada Glass Glossary* (Jones and Sullivan 1989), the *Guide to Artifacts of Colonial America* (Noël Hume

1969), and the *Colonial Williamsburg Foundation Laboratory Manual* (Pittman et al. 1987).

At the conclusion of the investigation, all artifacts and other associated project materials were returned to the property owner.



## IV. PHASE I TESTING RESULTS

As stipulated in the Phase I archaeological testing plan, JRIA archaeologists first conducted a pedestrian survey of the project area to identify potential surface features, and to determine the testing locations within the defined areas of moderate and low archaeological potential. The pedestrian survey was hampered to some extent by the current conditions throughout much of the project area. As a result of past logging and clearing activities, the property is characterized by an understory of young pines, hardwoods, and opportunistic vines, and offers virtually no surface visibility. Movement was also hampered by fallen timber throughout. No landscape features, artifact concentrations, or other potentially significant cultural resources were identified during the pedestrian survey.

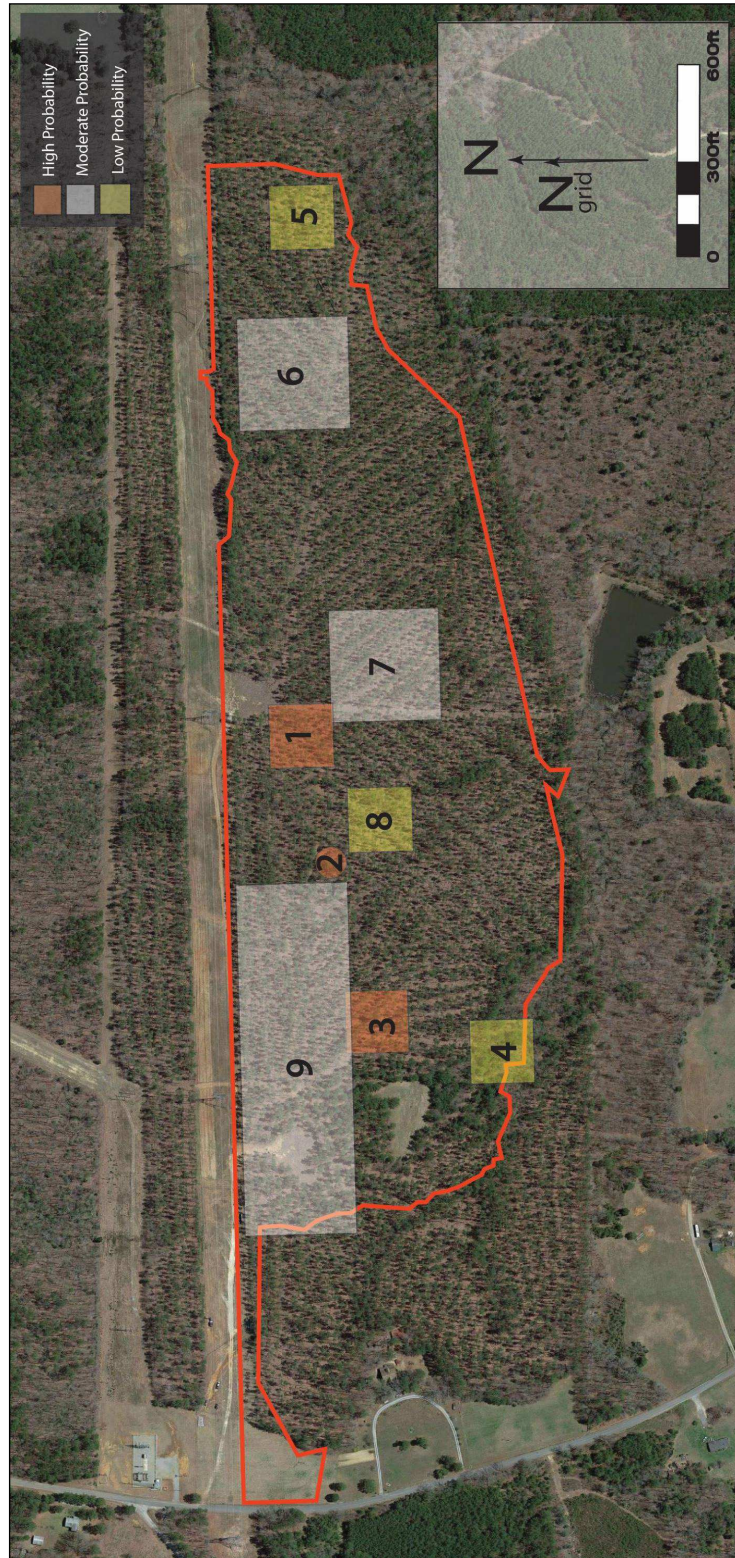
The JRIA Field Director then designated the specific testing areas to include 21 acres, expanding slightly on the originally proposed 20-acre total to address specific site conditions (Figure 18). The three high-potential areas included Survey Area 1 (one acre), Survey Area 2 (0.2 acre), and Survey Area 3 (one acre). The moderate potential areas included Survey Area 6 (2.9 acres), Survey Area 7 (2.9 acres), and Survey Area 9 (nine acres). Finally, the low probability areas included Survey Areas 4, 5, and 8, each encompassing one acre. The subsequent shovel testing confirmed that soil stratigraphy throughout the project area was significantly deflated, and some areas had little to no remaining topsoil.

### *Survey Area 1*

Survey Area 1 was situated within the central portion of the project area, approximately 200 feet south of the overhead power line easement and immediately southwest of a small cleared area. Testing focused on the map-projected location of a possible outbuilding depicted in 1950s aerial photographs. JRIA archaeologists excavated 16 shovel tests within this area, none of which was positive (Figure 19). Significant portions of this area had been disturbed by past logging and clearing activities, and no surface or subsurface evidence of the map-projected structure were identified. Typical soil stratigraphy within this area consisted of approximately 0.5 foot of dark grayish brown (10YR 4/2) sand over strong brown (7.5Y 5/8) culturally sterile clay subsoil (Figure 20).

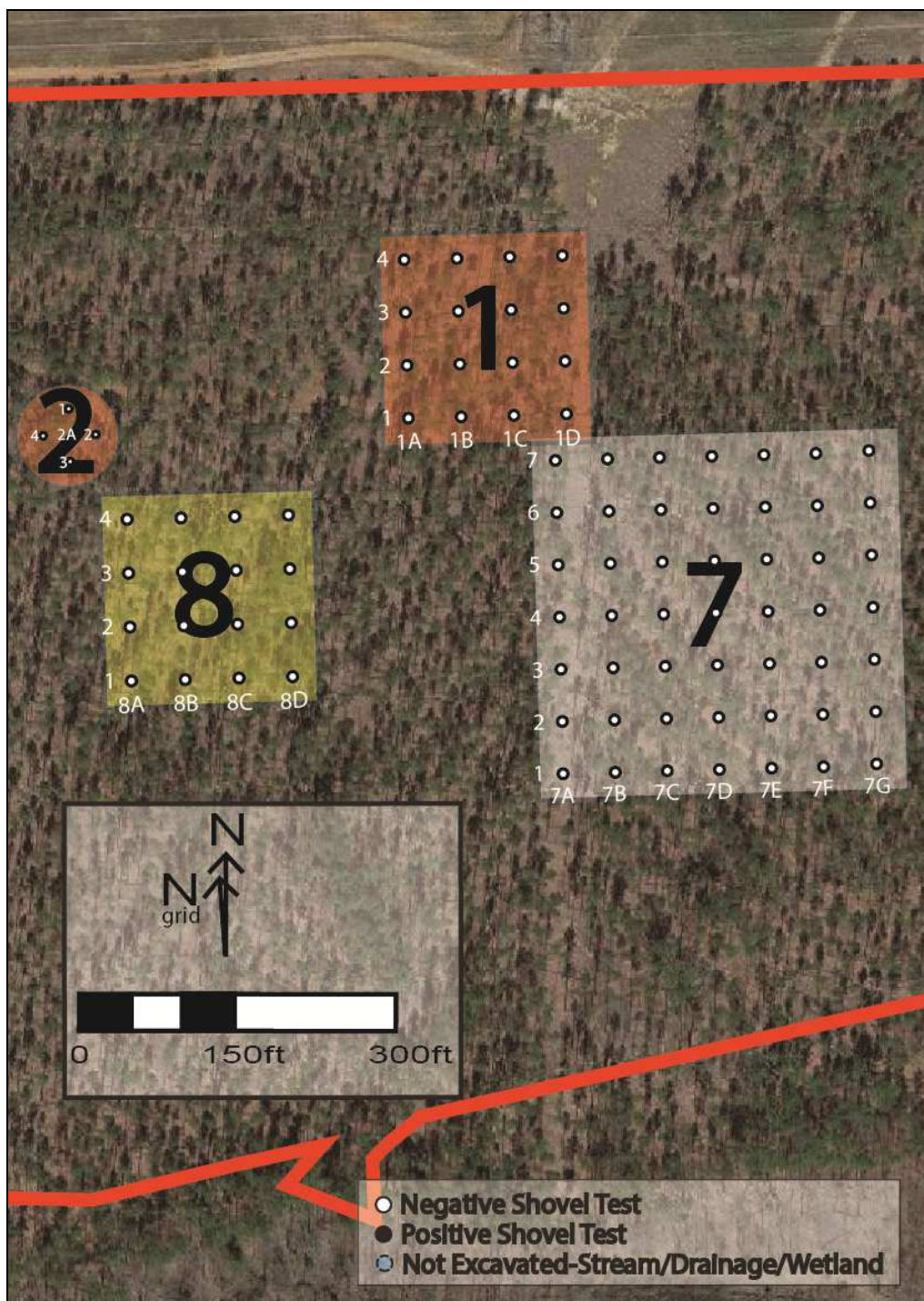
### *Survey Area 2*

Survey Area 2 was centered on a berm complex located just south of an east-west trail, and 300 feet south of the overhead power line easement. Four shovel tests were excavated radially around the center point of the complex, none of which was positive (See Figure 19). Closer examination of the berm complex identified a deep logging road running along its southern edge, with several push piles adjacent to it. Given its evident association with the logging road and push piles, it appears likely that these berms represent modern features resulting from timbering activities. Typical soil stratigraphy within this area was highly deflated, and consisted of approximately 0.1 foot of very dark grayish brown (10YR 3/2) sand over strong brown (7.5Y 5/8) culturally sterile clay subsoil (see Figure 20).



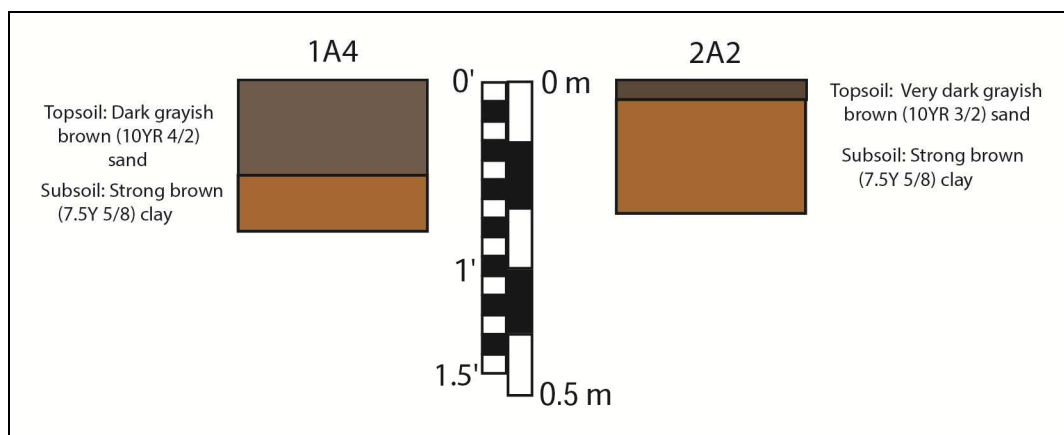
**Figure 18.** Location of the survey areas.





**Figure 19.** Location of shovel tests in Survey Areas 1, 2, 7, and 8.





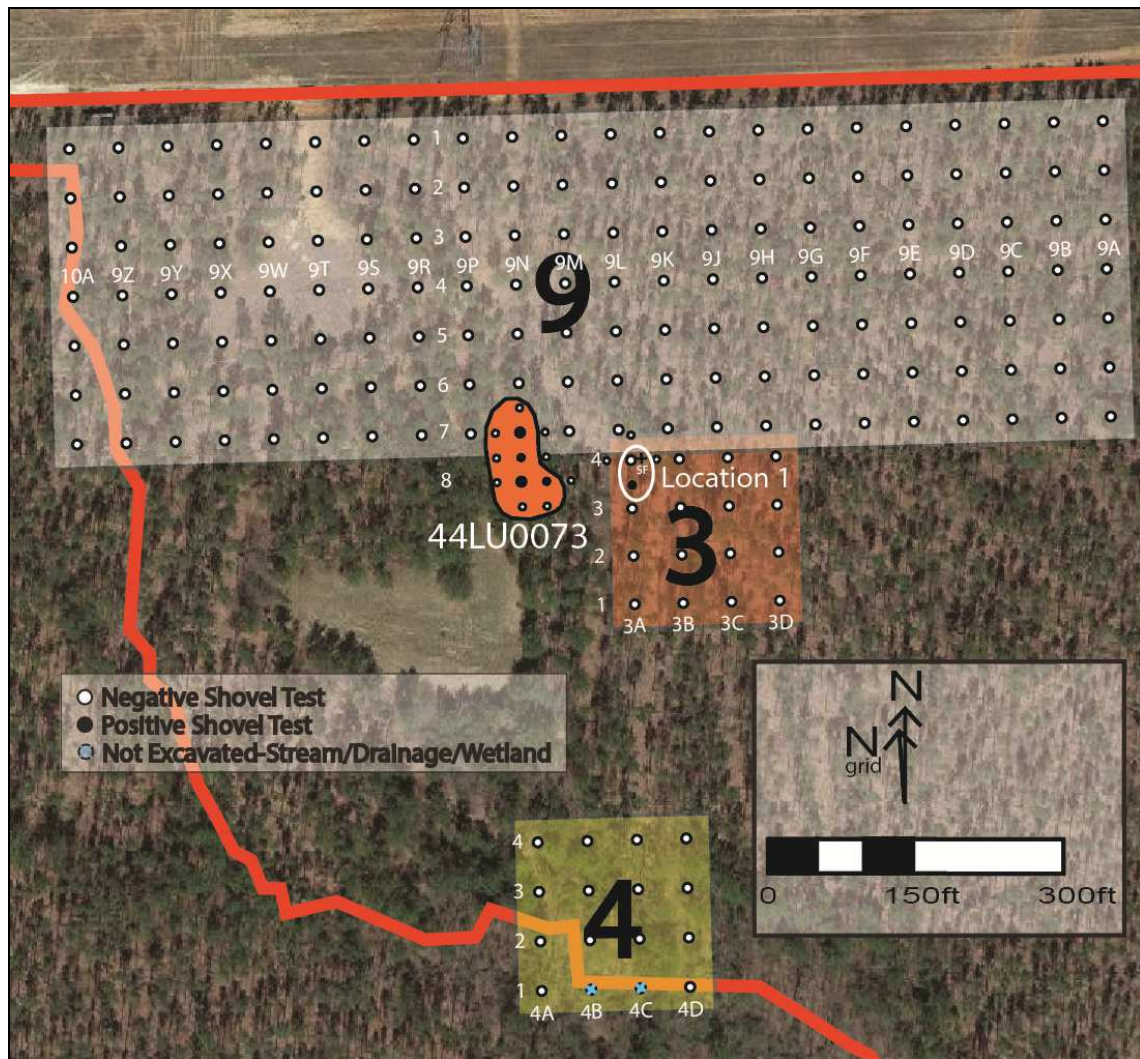
**Figure 20.** Representative shovel test profiles, Survey Areas 1 and 2.

### *Survey Area 3*

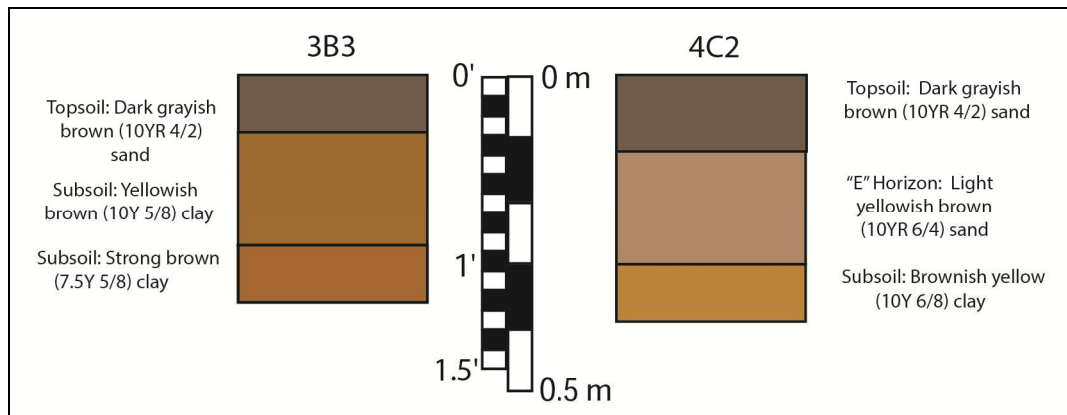
Survey Area 3 was located approximately 200 feet east of a maintained clearing, and was centered on the projected location of a possible outbuilding depicted in 1950s aerial photographs. JRIA archaeologists initially excavated 16 shovel tests within this area, none of which was positive (Figure 21). In the course of shovel testing, two fragments of twentieth-century, colorless, non-leaded, machine-molded glass, most likely from a bowl, were recovered on the ground surface just east of Shovel Test 3A4 (Appendix A). Four radial shovel tests were then excavated around Shovel Test 3A4, one of which (3A4S) yielded two fragments of twentieth-century colorless non-leaded hollowware glass. There was no surface or subsurface evidence of a structure in this location, and the handful of non-architectural artifacts recovered most likely represented a single episode of casual loss or discard of domestic refuse. As a result, these finds were designated as an archaeological location (Location 1). Typical soil stratigraphy within this area consisted of approximately 0.3 foot of dark grayish brown (10YR 4/2) sand over yellowish brown (10Y 5/8) and strong brown (7.5Y 5/8) culturally sterile clay subsoil (Figure 22).

### *Survey Area 4*

Survey Area 4 was located in an area of low archaeological potential near the southwest corner of the project area, roughly 200 feet south of a maintained clearing. JRIA archaeologists excavated 16 shovel tests in this area (see Figure 21). Two of the shovel tests (4B1 and 4C1) were not completed because they were within hydric wetland soils. None of the shovel tests was positive and no surface artifacts or features were identified. Typical soil stratigraphy within this area consisted of approximately 0.4 foot of dark grayish brown (10YR 4/2) sand and 0.6 foot of light yellowish brown (10YR 6/4) sand "E" horizon over brownish yellow (10Y 6/8) culturally sterile clay subsoil (see Figure 22).



**Figure 21.** Location of shovel tests in Survey Areas 3, 4, and 9.



**Figure 22.** Representative shovel test profiles, Survey Areas 3 and 4.

#### *Survey Area 5*

Survey Area 5 was located in an area of low archaeological potential near the southeast corner of the project area, on a slope of approximately ten percent leading down to an intermittent drainage. JRIA archaeologists excavated 16 shovel tests in this area. None of the shovel tests was positive, and no surface artifacts or features were identified (Figure 23). Typical deflated soil stratigraphy within this area consisted of approximately 0.1 foot of very dark grayish brown (10YR 3/2) sand over brownish yellow (10Y 6/6) and strong brown (7.5Y 5/6) culturally sterile clay subsoil (Figure 24).

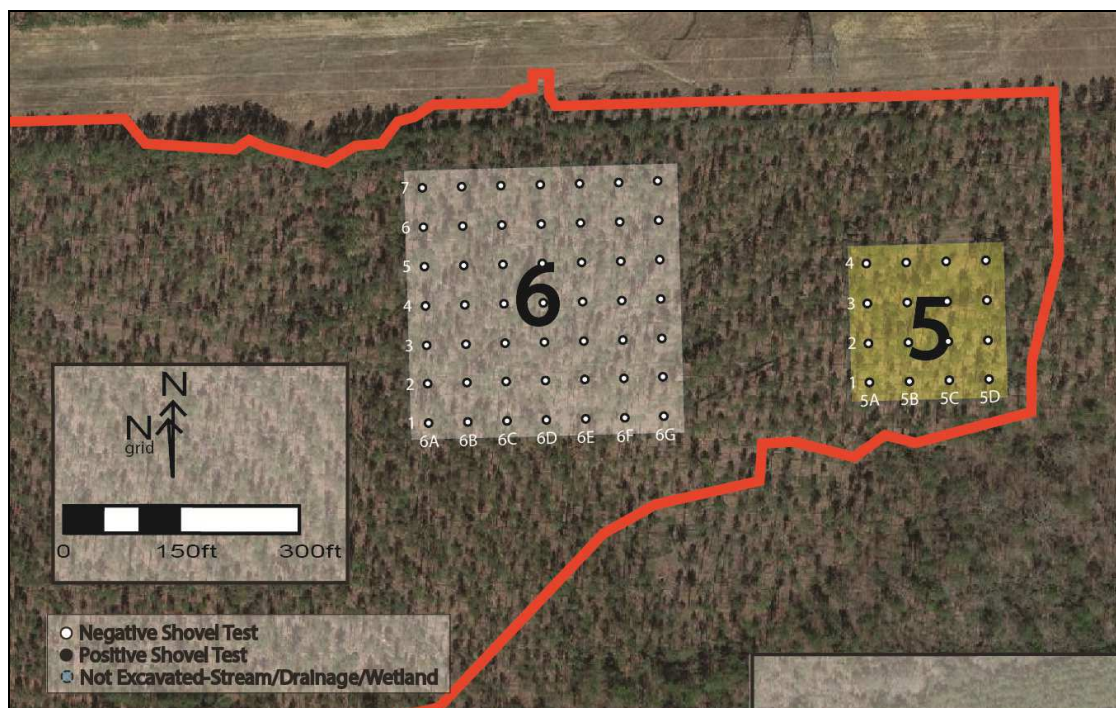
#### *Survey Area 6*

Survey Area 6 was situated in an area of moderate archaeological potential within the eastern portion of the project area. JRIA archaeologists excavated 49 shovel tests in this area. None of the shovel tests was positive, and no surface artifacts or features were identified (see Figure 23). Typical deflated soil stratigraphy within this area consisted of approximately 0.1 foot of dark grayish brown (10YR 4/2) sand over light yellowish brown (10YR 6/6) and strong brown (7.5YR 5/8) culturally sterile clay subsoil (see Figure 24).

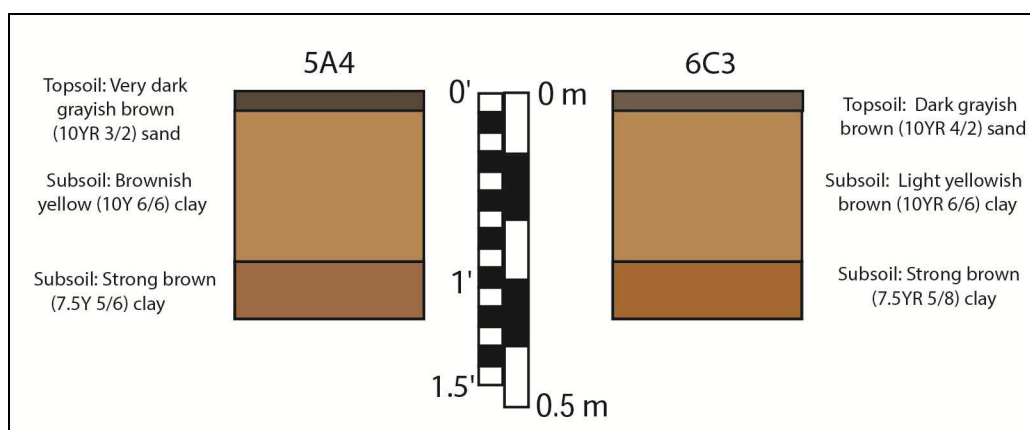
#### *Survey Area 7*

Survey Area 7 was situated in an area of moderate archaeological potential within the central portion of the project area. JRIA archaeologists excavated 49 shovel tests in this area, none of which was positive, and no surface artifacts or features were identified (see Figure 19). Significant ground disturbances were observed within the northern portion of the survey area, and along a cleared trail running through its western half. Typical deflated soil stratigraphy within this area consisted of approximately 0.2 foot of dark grayish brown (10YR 4/2) sand over strong brown (7.5Y 5/8) culturally sterile clay subsoil (Figure 25).

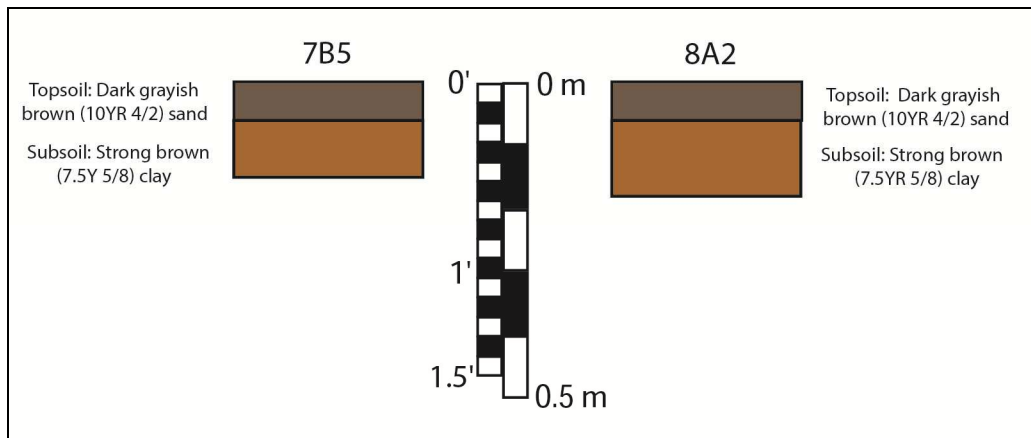




**Figure 23.** Location of shovel tests in Survey Areas 5 and 6.



**Figure 24.** Representative shovel test profiles, Survey Areas 5 and 6.



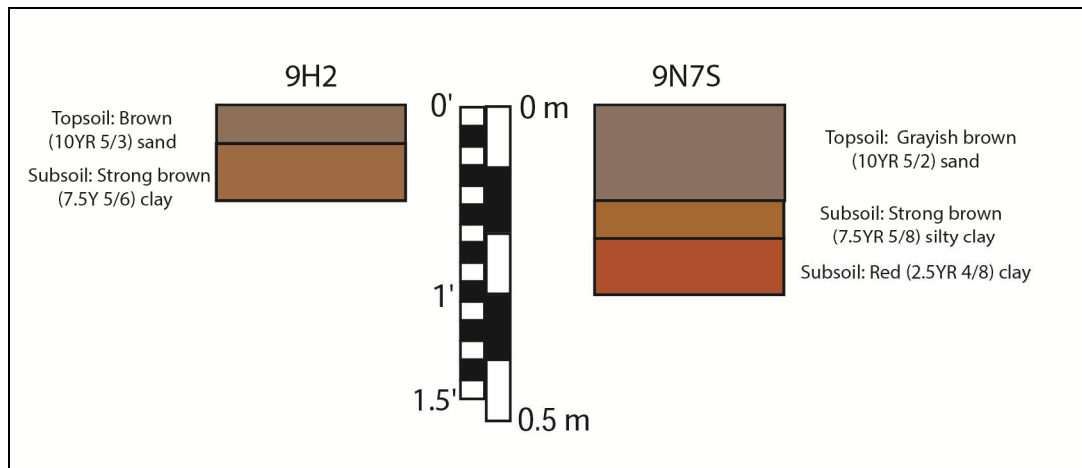
**Figure 25.** Representative shovel test profiles, Survey Areas 7 and 8.

#### *Survey Area 8*

Survey Area 8 was located in an area of low archaeological potential on a modest slope in the central portion of the project area. JRIA archaeologists excavated 16 shovel tests in this area, none of which was positive, and no surface artifacts or features were identified (see Figure 19). Typical soil stratigraphy consisted of approximately 0.5 foot of grayish brown (10YR 5/2) sand over strong brown (7.5YR 5/8) and red (2.5YR 4/8) culturally sterile silty clay/clay subsoil (see Figure 25).

#### *Survey Area 9*

Survey Area 9 was situated in an area of moderate archaeological potential within the northwest portion of the project area. JRIA archaeologists initially excavated 154 shovel tests in this area, one of which (9N7) yielded a single sherd of ironstone whiteware ceramic (ca. 1842-present) (see Figure 21). In order to further investigate this find, JRIA archaeologists excavated an additional 11 shovel tests extending beyond the defined testing area. Of these, three (9N7S, 9N8, 9N8E) were positive, yielding various domestic artifacts including colorless non-lead glass fragments (one hollowware, one flatware, one table glass, and two bottle), one amber glass bottle fragment, two solarized pressed glass hollowware fragments, 17 fragments of whiteware “Ironstone/Granite” hollowware (evidently from the same vessel), and 1.8 g of charcoal. This relatively small cluster of domestic artifacts was situated just within the wood line surrounding the maintained clearing, and was recorded in the DHR’s Virginia Cultural Resource Information System (V-CRIS) as Site 44LU0073. No surface remains or features were identified within the site area. Typical soil stratigraphy within this area varied, with brown (10YR 5/3) and grayish brown (10YR 5/2) sand topsoil with depths of 0.2-0.5 foot over culturally sterile subsoil of strong brown (7.5YR 5/6 or 7.5YR 5/8) clay/silty clay and red (2.5YR 4/8) clay (Figure 26).



**Figure 26.** Representative shovel test profiles, Survey Area 9.



## V. CONCLUSIONS AND RECOMMENDATIONS

JRIA identified one site (44LU0073) and one archaeological location as a result of the Phase I archaeological survey, which included pedestrian survey and shovel testing within 21 acres of defined areas of high, moderate, and low archaeological probability.

Site 44LU0073 was manifested by a relatively small cluster of ceramics and glasswares along the fringes of a maintained clearing. The low density of artifacts, combined with the absence of any surface or subsurface evidence of architectural remains or other significant features, suggest that these materials represent an isolated episode of refuse disposal sometime between the late nineteenth century and the mid-twentieth century, rather than a domestic occupation or some other sustained activity. Similarly, there is no documentary evidence of a significant domestic occupation in this location during that period. This site lacks interpretable artifact deposits or features which would provide meaningful data concerning the historic use and occupation of this property. As a result, JRIA recommends that Site 44LU0073 is not eligible for listing in the National Register of Historic Places, and that no further investigation is warranted.

A small cluster of artifacts identified in Survey Area 3 evidently were the result of casual loss or discard and so were designated as an archaeological location (Location 1). By definition, archaeological locations are ineligible for listing in the National Register, and JRIA recommends no further testing. No architectural evidence was identified in either location of the map-projected ca. 1950s-era structures, while the berm complex most likely resulted from modern timbering activities.

Based on the results of the probability-based sampling strategy, JRIA recommends that no significant archaeological resources will be affected by the proposed solar project.

## VI. REFERENCES

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- 1950      Aerial photograph (EDR/Lightbox).
- 1955      7.5' Kenbridge West topographic quadrangle map.
- 1959      Aerial photograph (EDR/Lightbox).
- 1966      7.5' Kenbridge West topographic quadrangle map.
- 1974      7.5' Kenbridge West topographic quadrangle map.
- 1976      Aerial photograph (EDR/Lightbox).
- 1981      7.5' Kenbridge West topographic quadrangle map.
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## **APPENDIX A: ARTIFACT CATALOG**



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# Kenbridge Ph I

## State Site # 44LU0073

Provenience:		Material 1	Material 2	Form	Portion/Element	Qty	Size	Wgt (g)	Notes	Artifact No.
Type	Context Layer	Other								
2-ST	9N7	CEARTHENWARE	WHITE IRONSTONE/GRANITE	HOLLOWWARE	RIM FRAGMENT	1		0.0		3
2-ST	9N7S	CEARTHENWARE	WHITE IRONSTONE/GRANITE	HOLLOWWARE	FRAGMENT	16		0.0		7
2-ST	9N7S	PCHARCOAL		CHARCOAL	FRAGMENT	1		1.2		4
2-ST	9N7S	SGLASS	GLASS COLORLESS NON-LEADED	FLAT GLASS	FRAGMENT	1		0.0		6
2-ST	9N7S	SGLASS	GLASS COLORLESS NON-LEADED	HOLLOWWARE	FRAGMENT	1		0.0		5
2-ST	9N8	CEARTHENWARE	WHITE IRONSTONE/GRANITE	HOLLOWWARE	FRAGMENT	1		0.0		8
2-ST	9N8E	PCHARCOAL		CHARCOAL	FRAGMENT	1		0.6		13
2-ST	9N8E	SGLASS	GLASS AMBER	BOTTLE	FRAGMENT	1		0.0		12
2-ST	9N8E	SGLASS	GLASS COLORLESS NON-LEADED	BOTTLE	FRAGMENT	2		0.0		11
2-ST	9N8E	SGLASS	GLASS COLORLESS NON-LEADED	TABLE GLASS	FRAGMENT	1		0.0		9
2-ST	9N8E	SGLASS	GLASS SOLARIZED, PRESSED	HOLLOWWARE	FRAGMENT	1		0.0		10

## State Site # AL-1

Provenience:		Material 1	Material 2	Form	Portion/Element	Qty	Size	Wgt (g)	Notes	Artifact No.
Type	Context Layer	Other								
1-SC	3A4	SGLASS	GLASS COLORLESS NON-LEADED	HOLLOWWARE	FRAGMENT	2		0.0		1
2-ST	3A4S	SGLASS	GLASS COLORLESS NON-LEADED	BOWL	BASE/BODY FRAGMENT	2		0.0	20th century machine-molded	2

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**APPENDIX B: V-CRIS RECORD FOR SITE  
44LU0073**

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## Snapshot

Date Generated: November 02, 2022

**Site Name:** No Data  
**Site Classification:** Terrestrial, open air  
**Year(s):** No Data  
**Site Type(s):** Artifact scatter  
**Other DHR ID:** No Data  
**Temporary Designation:** Site 1

### Site Evaluation Status

Not Evaluated

## Locational Information

**USGS Quad:** KENBRIDGE WEST  
**County/Independent City:** Lunenburg (County)  
**Physiographic Province:** Piedmont  
**Elevation:** 470  
**Aspect:** Facing South  
**Drainage:** Albemarle-Chowan  
**Slope:** 2 - 6  
**Acreage:** 0.150  
**Landform:** Terrace  
**Ownership Status:** Private  
**Government Entity Name:** No Data

## Site Components

### Component 1

**Category:** Domestic  
**Site Type:** Artifact scatter  
**Cultural Affiliation:** Indeterminate  
**Cultural Affiliation Details:** No Data  
**DHR Time Period:** Reconstruction and Growth, The New Dominion, World War I to World War II  
**Start Year:** No Data  
**End Year:** No Data  
**Comments:** This small scatter of domestic refuse evidently dates to the first half of the twentieth century.

## Bibliographic Information

### Bibliography:

No Data

### Informant Data:

No Data



## CRM Events

### Event Type: Survey:Phase I

#### Project Staff/Notes:

The Principal Investigator for the project was JRIA Partner and Senior Researcher Matthew R. Laird, Ph.D., RPA. The archaeological fieldwork was conducted by Field Directors Anthony W. Smith, M.A., and Allison Romo, M.A., RPA, with the assistance of Kira Alfano, Michelle Bouquet, Chloe Scaff, and Colleen Wampler. Dr. Laird conducted the documentary research for the project and authored the final report with contributions from Mr. Smith. The artifacts were processed by Barry Phelps and cataloged by JRIA Curator Kelly Ladd-Kostro.

#### Project Review File Number:

No Data

#### Sponsoring Organization:

No Data

#### Organization/Company:

James River Institute for Archaeology, Inc.

#### Investigator:

Matthew Laird

#### Survey Date:

10/4/2022

#### Survey Description:

Based on the results of a Phase IA cultural resources assessment, JRIA prepared an archaeological probability model which divided the project area into areas of high, moderate, and low probability for significant archaeological resources, and detailed a proposed Phase I archaeological work plan with a probability-based sampling strategy.

JRIA recommended that the Phase I archaeological testing plan should be organized around a probability-based testing strategy. Three defined areas of high archaeological potential (one acre) would be investigated through visual inspection and the excavation of screened shovel tests at intervals of 50 feet or less. For the defined areas of moderate archaeological potential, JRIA recommended that a 50-percent sample of the total area (16 acres) should be tested through shovel testing along regular transects at intervals not exceeding 50 feet. The remaining areas would then be subjected to visual survey. For areas of defined low potential, shovel testing would be conducted within a 10-percent sample area (three acres), with the remainder investigated through visual survey. In areas of moderate and low potential, any potential sites identified through shovel testing and/or visual inspection and/or would then be fully investigated and defined through shovel testing at 50- and 25-foot intervals. Any wetland areas within the project area would be visually inspected, but no shovel testing would be conducted unless visible evidence of potential archaeological resources was observed.

In September 2022, Cultural Resources Specialist Chris Egghart of the Virginia Department of Environmental Quality (DEQ) concurred with JRIA's proposed probability-based testing strategy, and JRIA completed the Phase I archaeological survey in October 2022. The research design for the Phase I survey was to identify all archaeological resources present within the defined testing areas and to obtain sufficient information to make recommendations concerning the potential eligibility of each resource for inclusion in the National Register of Historic Places (National Register). The documentary research and fieldwork were conducted at a level in compliance with the Secretary of the Interior's standards (Department of the Interior 1983, 48 FR 44720-44723), as well as the Virginia Department of Historic Resources (DHR) Guidelines for Conducting Historic Resources Survey in Virginia (2017).

#### Current Land Use

Forest

#### Date of Use

10/5/2022 12:00:00 AM

#### Comments

No Data

#### Threats to Resource:

None Known

#### Site Conditions:

No Surface Deposits but With Subsurface Integrity

#### Survey Strategies:

Subsurface Testing

#### Specimens Collected:

Yes

#### Specimens Observed, Not Collected:

No

#### Artifacts Summary and Diagnostics:

Artifacts recovered from the four positive shovel tests included colorless non-lead glass fragments (one hollowware, one flatware, one table glass, and two bottle), one amber glass bottle fragment, two solarized pressed glass hollowware fragments, 17 fragments of Ironstone whiteware, evidently from the same hollowware vessel, and 1.8 g of charcoal.

#### Summary of Specimens Observed, Not Collected:

No Data

#### Current Curation Repository:

JRIA

#### Permanent Curation Repository:

DHR

#### Field Notes:

Yes

#### Field Notes Repository:

DHR

#### Photographic Media:

Digital

#### Survey Reports:

Yes

#### Survey Report Information:

Matthew R. Laird and Anthony W. Smith, Phase I Archaeological Survey of 20 Acres of the Proposed Kenbridge Solar Project Area, Lunenburg County, Virginia. James River Institute for Archaeology, Inc., Williamsburg, Virginia.

#### Survey Report Repository:

DHR

#### DHR Library Reference Number:

No Data

#### Significance Statement:

This small site evidently represents an episode of refuse disposal sometime between the late nineteenth- and mid-twentieth centuries, rather than a domestic occupation or some other

	sort of sustained activity. Because it offers no further research potential, JRIA recommends that the site is not eligible for listing in the National Register of Historic Places, and that no further investigation is warranted.
<b>Surveyor's Eligibility Recommendations:</b>	Recommended Not Eligible
<b>Surveyor's NR Criteria Recommendations, :</b>	No Data
<b>Surveyor's NR Criteria Considerations:</b>	No Data



Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Labels
- DHR Easements
- County Boundaries



Feet



Title: Archaeological Resources

Date: 11/2/2022

DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.





# COMMONWEALTH of VIRGINIA

Travis A. Voyles  
Acting Secretary of Natural  
and Historic Resources

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

Julie V. Langan  
Director  
Tel: (804) 367-2323  
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[www.dhr.virginia.gov](http://www.dhr.virginia.gov)

February 3, 2023

Stephen Quina  
VHB  
115 South 15th Street,  
Suite 200  
Richmond, Virginia 23219

RE:

Kenbridge Solar Facility  
Lunenburg County, Virginia  
DHR File No. 2022-5270

Dear Mr. Quina:

We have received for review the *Ameresco – Kenbridge Solar Architectural Survey Summary Report Lunenburg County, VA*, prepared by Ameresco. 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 Lunenburg County, Virginia.

The survey identifies five historic architectural resources within the area of study. There is currently no record of this property in the Virginia Cultural Resources Information System (VCRIS), and the two previously surveyed properties in the report do not appear to have been updated.

In order to review eligibility, a survey meeting DHR's standards must be completed. The survey must be conducted by qualified professionals in accordance with DHR's, "Guidelines for Conducting Historic Resources Survey in Virginia" (October 2011, Revised 2017). [https://www.dhr.virginia.gov/wp-content/uploads/2018/06/SurveyManual\\_2017.pdf](https://www.dhr.virginia.gov/wp-content/uploads/2018/06/SurveyManual_2017.pdf) Two hardcopies and one digital copy of the resulting report should be submitted to our office for review and approval prior to any ground disturbance. Once we have the results of the survey, we will be able to advise you whether any further investigations and/or mitigative actions are warranted.

Two bound copies and one digital copy of the resulting report should be submitted to our office for review and approval prior to proceeding with the project. It should be noted that all archival material for the architectural study must be submitted and approved by our Archives before we can complete our review of the report. Once we have the results of the surveys, we will be able to advise you whether any further investigations and/or other actions are 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

cc. Adrienne Birge-Wilson, DHR  
Chris Egghart, DEQ  
Matthew Laird

# Ameresco – Kenbridge Solar Architectural Survey Summary Report

Lunenburg County, VA

---

PREPARED FOR



111 Speen Street  
Framingham, MA 01701  
508.661.2200

---

PREPARED BY



351 McLaws Circle  
Suite 3  
Williamsburg, VA 23693  
757.220.0500

June 2022



# Table of Contents

1     **Introduction.....2**

      Project Summary ..... 2

      Area of Potential Effects ..... 2

2     **Identification of Historic Properties .....4**

      Previously Identified Resources..... 4

      Field Survey Methodology ..... 4

          Desktop Review and Background Research..... 4

          Field Survey ..... 5

          National Register of Historic Places Evaluation Criteria..... 5

      Survey Results..... 6

          LU01, 1080 Unity Road (DHR ID# 055-0154) ..... 8

          LU02, 1067 Unity Road ..... 9

          LU03, Unity Road ..... 11

          LU04, 5644 Oral Oaks Road (DHR ID# 055-0145) ..... 12

          LU05, Oral Oaks Road..... 13

      Summary and Recommendations ..... 14

# Introduction

Ameresco, Inc. is proposing a potential solar farm development project on an undeveloped parcel of land at 5874 Oral Oaks Road located in Kenbridge, Lunenburg County, Virginia. On behalf of Ameresco, Inc., VHB conducted an architectural survey to identify potential historic properties within the vicinity of the potential solar farm site. This report summarized the results of that survey.

## Project Summary

The proposed solar farm would consist of an approximately 16-megawatt direct current (MWdc) ground-mounted photovoltaic facility on approximately 114 acres of land on the east side of Oral Oaks Road in Kenbridge. The project is proposed to include portions of County Parcels 058-0A-0-29 and 058-0A-0-31 located south of the bisecting transmission lines right-of-way. The equipment on the site would be no taller than 15 feet, and the solar panels used would be no-glare or low-glare. The exterior of the site would be enveloped in a vegetation buffer of at least 50 feet in width and 15 feet in height to limit the views of the solar farm from adjacent properties. Existing canopy trees would be used to create the buffer, and supplemental plantings would be added as needed to ensure a sufficient visual buffer.

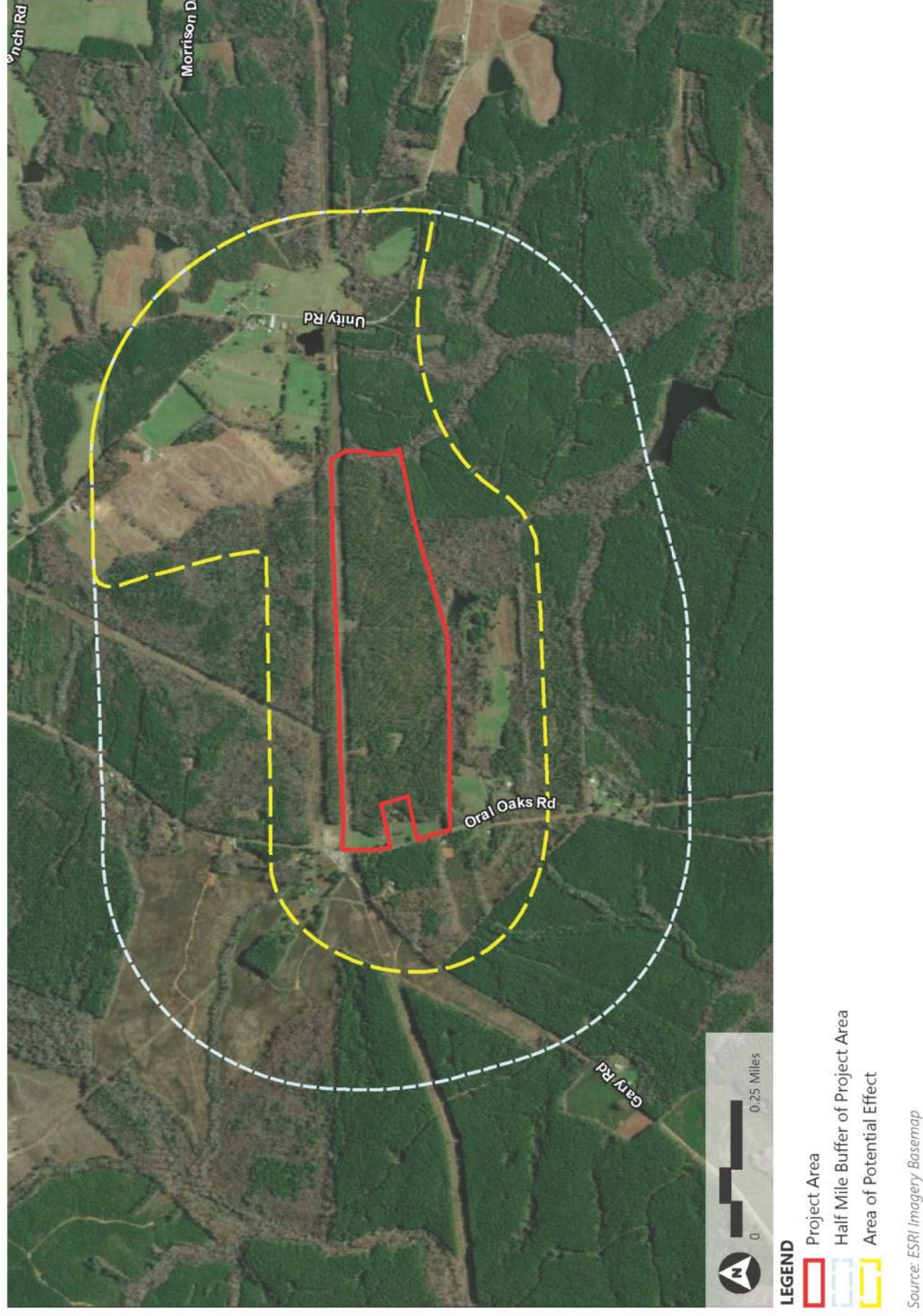
To support this project, an architectural survey was conducted on June 13, 2022, to identify any structures, buildings, or objects 50 years old or older that may be affected by the project, consistent with the Virginia Department of Environmental Quality (DEQ) Solar Permit by Rule (PBR) Guidance as well as the Virginia Department of Historic Resource (DHR) *Guidelines for Conducting Historic Resources Survey In Virginia*.

## Area of Potential Effects

Prior to conducting the field survey, an area of potential effects (APE) for historic properties was delineated. The APE defines the area in which the project may affect historic properties if any exist. The APE for this project includes the area of disturbance for the proposed solar farm development, as well as a buffer around the site to account for potential setting, visual, or other indirect impacts from construction activities. A half-mile buffer was used as a screening tool to determine from where the potential solar site would be visible. Properties within that buffer from where the potential site would not be visible due to topography or heavy vegetation were excluded from the APE, per PBR Guidance, Section II Methodology. As a result of this screening, the APE for the potential solar farm in Kenbridge is roughly 560 acres in size and is depicted on Figure 1 below.

**Figure 1: Area of Potential Effect**

Ameresco - Kenbridge Solar Site | Lunenburg County, Virginia





# Identification of Historic Properties

The following sections detail VHB's efforts to identify any potential historic properties within the APE, including resources previously identified. This was achieved through a combination of desktop review and field survey.

## Previously Identified Resources

Prior to conducting the field survey, VHB did a search of the DHR online Virginia Cultural Resource Information System (V-CRIS) to identify any previously identified historic resources within the APE. Three properties were identified in the V-CRIS system as having been previously surveyed, but all were determined to be not eligible for listing in the National Register of Historic Places (National Register).<sup>1</sup> The first (DHR ID# 055-0145) is a single-family, 2-story, I-house built circa 1870 that is typical and characteristic to the region. The second (DHR ID# 055-0154) is a mid-19th century hall-and-parlor farmhouse built circa 1846. It is associated with a farmstead that has been converted to a modern sheep farm; several outbuildings of the sheep farm are extant. The third resource (DHR ID# 055-0153) was a typical I-house constructed circa 1900 that was demolished prior to 2002.

## Field Survey Methodology

The primary objectives during this field survey were to identify any previously unrecorded resources over 50 years old within the APE, assess the integrity of any newly recorded resources, and then to evaluate those resources through the application of criteria set forth by the National Register. VHB used the DEQ Solar PBR Guidance as well as the DHR *Guidelines for Conducting Historic Resources Survey In Virginia* to develop methodology for conducting the field survey. The Virginia DEQ Solar PBR Guidance, Section II Methodology states that the architectural survey data "should be current within seven years of the submission date." As such, VHB surveyed and documented all properties 43 years old or older because they would reach the 50-year-old threshold within seven years.

## Desktop Review and Background Research

Prior to undertaking the survey, a desktop review was undertaken to identify the potential resources 43 years old or older with the APE. Historic aerial photographs were analyzed and compared to current aerial photographs, as were historic USGS topographic maps of the APE and vicinity. Field maps were created identifying those resources suspected to be 43 years old or older to be confirmed in the field. Additional background research was conducted in order to place the APE in its historical context. This research guided the field methods, provided data pertaining to changes in the natural and built landscape, and provided a context for the National Register eligibility recommendations. Numerous sources were consulted, including but not limited to, cultural and historic studies, local histories, building and tax records, previously recorded cultural surveys and recorded resources, maps, and aerial photographs.

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<sup>1</sup> Virginia Department of Historic Resources (DHR). 2022. "V-CRIS, Virginia Cultural Resources Information System." Available at <https://www.dhr.virginia.gov/v-cris/>, accessed June 27, 2022.

## Field Survey

A pedestrian and vehicular survey was undertaken to locate properties 43 years old or older within the APE, per the PBR Guidance. The survey was conducted in accordance with the *Secretary of the Interior's Standards and Guidelines for Identification and Evaluation* as well as DHR's *Guidelines for Conducting Historic Resources Survey In Virginia*.<sup>2</sup> Field maps created based on the desktop review discussed above were consulted during the survey and additional resources not identified during desktop review were surveyed and recorded. Each identified resource was photographed, mapped, and described in field notes to assist in documenting material, style, and construction details. The survey was conducted from the public right-of-way; the surveyors did not enter any private property.

## National Register of Historic Places Evaluation Criteria

Based on the information collected on each resource, VHB evaluated the resources 43 years old or older within the APE using the National Register criteria for eligibility. These criteria are specified in the Department of the Interior Regulations 36 CFR Part 60.4, Criteria for Evaluation. According to Regulation 36 CFR Part 60.4, cultural resources can be determined eligible if they:

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

In addition to the above criteria, the National Register also stipulates that in order to be considered eligible, a property must possess integrity of location, design, setting, materials, workmanship, feeling, and association. According to the National Register Bulletin, *How to Apply the National Register Criteria for Evaluation*, integrity is defined as the resource's ability to convey its significance.<sup>3</sup> Integrity is considered relative to whatever significance the cultural resource can still adequately convey. While it is possible to correlate the above aspects of integrity with historic properties, there is no universally-applied standard. Historic properties must be evaluated within their respective historic contexts. For a resource to retain sufficient historic integrity, it will always possess several, and usually most, of the following seven aspects:

- 1. *Location – The place where the historic property was constructed or the place where the historic event occurred.*
- 2. *Design – The combination of elements that create the form, plan, space, structure, and style of a property.*
- 3. *Setting – The physical environment of a historic property. Setting includes elements such as topographic features, open space, viewshed, landscape, vegetation, and artificial features.*

<sup>2</sup> Virginia Department of Historic Resources (DHR). 2011. *Guidelines for Conducting Historic Resources Survey in Virginia*. Revised September 2017. Available at [https://www.dhr.virginia.gov/wp-content/uploads/2018/06/SurveyManual\\_2017.pdf](https://www.dhr.virginia.gov/wp-content/uploads/2018/06/SurveyManual_2017.pdf), accessed June 27, 2022.

<sup>3</sup> Andrus, Patrick W. and Rebecca H. Shrimpton. 1990. *How to Apply the National Register Criteria for Evaluation*, *National Register Bulletin*. Revised 1991, 1995, and 1997. National Park Service, Interagency Resources Division, National Register Branch.

4. *Materials* – The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property,
5. *Workmanship* – The physical evidence of the labor and skill of a particular culture or people during any given period in history.
6. *Feeling* – A property's expression of the aesthetic or historic sense of a particular period of time.
7. *Association* – The direct link between an important historic event or person and a historic property. Under Criterion D, it is measured in the strength of association between data and important research questions.

## Survey Results

A total of five resources 43 years old or older were documented within the APE during the field survey. Three properties are agricultural in nature, one is residential, and one is an electrical substation. Table 1 below provides a summary of the properties surveyed within the APE. Details of each property are discussed below, accompanied by representative photographs. Heavy vegetation and topography limited visibility of some resources from the public right of way, but each resource was photographed and documented to the extent possible. Field identification numbers were given to each resource for tracking purposes (LU01-LU05) and are used in the discussion below. Figure 2 below shows the location of the surveyed properties within the APE.

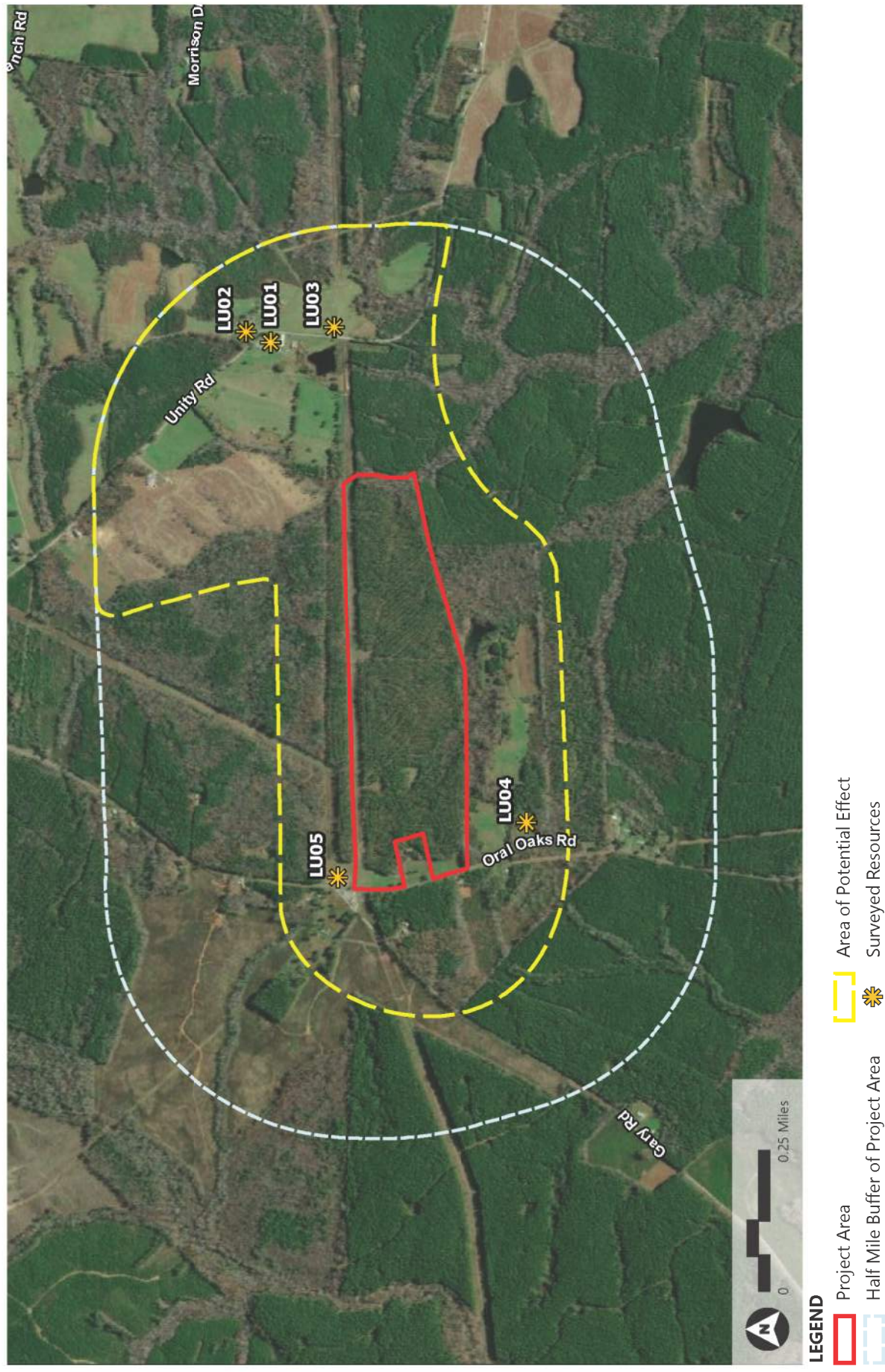
**Table 1 Summary of Properties Surveyed within APE**

Field ID No.	DHR ID No.	Address	Construction Date	Property Type	Eligibility
LU01	055-0154	1080 Unity Rd.	ca. 1846	Agricultural	Not Eligible
LU02	n/a	1067 Unity Rd.	early 20th c.	Agricultural	Not Eligible
LU03	n/a	Unity Rd.	early 20th c.	Agricultural	Not Eligible
LU04	055-0145	5644 Oral Oaks Rd.	ca. 1870	Residential	Not Eligible
LU05	n/a	Oral Oaks Rd.	ca. 1976	Electrical Substation	Not Eligible



**Figure 2: Location of Surveyed Resources**

Ameresco - Kenbridge Solar Site | Lunenburg County, Virginia



## LU01, 1080 Unity Road (DHR ID# 055-0154)

This property was previously surveyed in 1992 for the *Phase I Architectural Survey of the Proposed Clover to Carson 500KV Transmission Line* and was determined to be not eligible for listing in the National Register. It is recorded in the V-CRIS system as DHR ID# 055-0154.<sup>4</sup>

This property is agricultural in nature with a residential building and numerous outbuildings. The property is split into two county tax parcels with the same owner and address. Combined, the property comprises over 48 acres.<sup>5</sup> The property consists of a mid-19th century frame house on a farmstead that has been converted to a modern sheep farm. In addition to the dwelling, the property contains approximately eight outbuildings supporting the farm, including what appears to be a tenant house. Generally, the outbuildings are concentrated around the dwelling near Unity Road, with the exception of the tenant house which is located roughly 800 feet to the northwest. A retention pond is located at the southeast corner of the property.

The dwelling is a two-story, two-bay, hall-and-parlor house with a central brick chimney that was constructed circa 1846. The dwelling faces north towards Unity Road, and is set back approximately 120 feet from the road. The house sits on foundation of fieldstone piers infilled with concrete block. It has a side gable roof covered in asphalt shingles that replaced its standing seam metal roof sometime after the 1992 survey.<sup>6</sup> The exterior is clad in wood shingles that replaced the vinyl siding reported in the 1992 survey.<sup>7</sup> A full-width, one-story covered front porch is located on the façade with a shed roof supported by square wood posts and a wood floor. The primary entrance is located under this porch consisting of a contemporary door with decorative oval light. The windows on the house are replacement 1-over-1 double hung sash aluminum windows. Louvered shutters that were recorded in the 1992 survey are no longer extant.<sup>8</sup> A rear ell extends from the south elevation, which was enlarged after 2009, based on a review of recent aerial photographs.

The outbuildings appear to be a combination of historic (over 50 years of age) and contemporary buildings, and all are supporting structures for the working farm. They include barns, a silo, storage areas, and a carport. They are generally of wood construction clad in corrugated metal or wood siding. Many of the outbuildings were visually obscured from the roadway due to topography and vegetation. The tenant building, located to the northwest of the other structures, is a one-story, three-bay house that appears to be vacant and is in deteriorated condition. It has a side-gable roof covered in standing seam metal and the exterior is clad in a rolled asphalt siding in a faux-brick pattern. The windows are 2-over-2 wood sash with missing glass panes. The primary entrance is centralized on the façade and appears to retain the original paneled wood door, through it was dislodged from its hinges. A portion of the wall on the façade was missing, exposing the wood framing. Overgrown vegetation obscured much of the house from view.

The vernacular hall-and-parlor house is a typical and commonplace residential type in agricultural properties of Lunenburg County. The house retains its integrity of location and setting, as it remains

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<sup>4</sup> Beckett, A.S., L. McFaden, and C. McDaid. 1992. *A Phase I Architectural Survey of the Proposed Clover to Carson 500KV Transmission Line, Halifax, Charlotte, Lunenburg, Mecklenburg, Brunswick, and Dinwiddie Counties, Virginia*. The William and Mary Center for Archaeological Research, Department of Anthropology, The College of William and Mary, Williamsburg, Virginia.

<sup>5</sup> Lunenburg County. 2022. "Online Tax Parcel System." Available at [https://www.lunenburgva.org/online\\_tax\\_parcel\\_system/index.php](https://www.lunenburgva.org/online_tax_parcel_system/index.php), accessed June 27, 2022.

<sup>6</sup> Beckett, McFaden, and McDaid. 1992. p. 209.

<sup>7</sup> Beckett, McFaden, and McDaid. 1992. p. 209.

<sup>8</sup> Beckett, McFaden, and McDaid. 1992. p. 210.



in its place of construction in a rural, agricultural areas. Although the house retains and conveys its historic form, the replacement windows and large rear ell addition have resulted in a loss of integrity of design, materials, workmanship, and feeling. These substantial alterations have diminished its overall integrity and it no longer conveys the feeling and aesthetic of its period of construction. The outbuildings on the property, including the tenant house, are common and unexceptional examples of farm buildings found throughout Lunenburg County. No change is recommended for its eligibility and the property remains not eligible for listing in the National Register.



*Photo LU01-1: View of front (north) and west side elevations of the dwelling with large rear ell and outbuilding, facing S.*



*Photo LU01-2: View of outbuildings and rear of dwelling from Unity Road; note larger rear ell on dwelling, facing N.*



*Photo LU01-3: View of large barn (front) and smaller outbuilding (rear right) from Unity Road, facing W.*



*Photo LU01-4: View of front elevation of deteriorated tenant house with dense vegetation, facing S.*

## LU02, 1067 Unity Road

This property is agricultural in nature with a residential building and numerous outbuildings on a 50-acre lot.<sup>9</sup> The lot has a combination of dense woods and agricultural fields. It is currently a working sheep farm. The buildings on the lot are concentrated on the southwest end along Unity Road. The

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<sup>9</sup> Lunenburg County. 2022.



residential building was constructed in 1983 and consists of a one-story, four-bay Ranch house with a side-gable roof and integrated carport. The house faces southwest toward Unity Road and is set back approximately 100 feet from the road. The exterior is clad in brick veneer and the roof is covered in asphalt shingles. A central pediment projection creates a covered porch over the primary entrance on the façade, which is accessed up a set of brick steps. Topography and heavy vegetation visually obscured much of the house from the road.

The outbuildings appear to be a combination of historic (over 50 years of age) and contemporary structures, and all are supporting structures for the working farm. They include barns and storage buildings of various sizes. Due to topography and vegetation, some of the outbuildings were visually obscured from the road. The largest and most visually prominent outbuildings are of hewn log wood construction on concrete block foundations topped with standing seam metal roofs. Many of these structures are in deteriorated condition; several have heavily damaged or destroyed roofs. Remnants of a completely collapsed outbuilding was evident near the southeastern end of the parcel.

The property retains its integrity of location and setting as it remains in its place of construction within a rural, agricultural setting and continues to function as a working farm. Its integrity of association is somewhat diminished because it has lost its original residence, which would have been considered its “main house,” and it was replaced with a typical 20th century Ranch house in 1983. The current house on the property is less than 43 years old and is not of exceptional importance to qualify it for eligibility for listing in the National Register under Criteria Consideration G: Properties that have Achieved Significance within the Last Fifty Years. The outbuildings on the property are common and unexceptional examples of farm buildings found throughout Lunenburg County. While they do retain some integrity of materials, the high level of deterioration of the structures has resulted in a diminished integrity of design, workmanship, and feeling. The current state of the property has diminished the farm’s overall integrity and it no longer conveys the feeling and aesthetic of its period of construction. Therefore, it is recommended to be not eligible for listing in the National Register.



*Photo LU02-1: View of façade of main house, visually obscured by topography and vegetation, facing N.*



*Photo LU02-2: View of the setting of the property with the main house at left and outbuildings at right, facing N.*



*Photo LU02-3: View of several outbuildings in their setting with ruins at far right, facing SE.*



*Photo LU02-4: View of two heavily deteriorated outbuildings, facing E.*

### LU03, Unity Road

This property is agricultural in nature and consists of a former residence on a 37-acre lot. According to available Lunenburg tax records, no mailing address appears to be associated with this property.<sup>10</sup> The lot consists of a large, open agricultural field or pasture in the northern portion and dense vegetation surrounding a smaller open field in the south. A power transmission line bisects the lot running east to west. Only one structure is located on the property, and it appears to be vacant.

The building is a one-story, three-bay vernacular structure with no architectural type or style; based on its form and appearance, it was possibly used as a dwelling in the past. It sits on a concrete pier foundation and is topped with a side gable roof covered in standing seam metal. An interior brick chimney rises from the ridgeline; a few bricks are missing from the top of the chimney. The exterior is clad in wide, horizontal wood paneling that is covered in what appears to be rolled asphalt veneer. The veneer is failing and large pieces are missing. A one-story shed roof wing extends from the north side elevation. A door opening is located on this wing, but the door is missing and the door frame is falling off. A large hole through the exterior wall is visible adjacent to the door near the foundation. Another entrance door is located under the gable of the west elevation that consists of a 6-light wood door; plywood closes off the lower half of the door. Two windows consisting of 6-over-1 wood sash are located on the south elevation; other window openings are covered with standing seam metal panels.

The property retains integrity of location and setting. The property remains at its historic construction site and remains in a rural, agricultural setting. The integrity of design is retained because the historic form is evident. The integrity of materials and workmanship has been lost because although the historic materials are evident, they are in very poor condition, including deteriorated siding, damaged and missing doors, and damaged windows. The building does not appear to be in use and therefore does not retain its historic association. The disuse and deteriorated condition of the structure has resulted in an inability to convey its historic use and it no longer conveys the feeling and aesthetic of its period of construction. Therefore, it is recommended to be not eligible for listing in the National Register.

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<sup>10</sup> Lunenburg County. 2022.



Photo LU03-1: View of north and west elevations of the structure, facing SE. Note the missing door at center.



Photo LU03-2: View of south and west elevations and surrounding setting, facing NE.

### LU04, 5644 Oral Oaks Road (DHR ID# 055-0145)

This property was previously surveyed in 1992 for the *Phase I Architectural Survey of the Proposed Clover to Carson 500KV Transmission Line* and was determined to be not eligible for listing in the National Register. It is recorded in the V-CRIS system as DHR ID# 055-0145.<sup>11</sup>

This property is residential in nature and consists of a single-family home on a 5.24-acre lot. Dense vegetation is located along the side and rear of the property, visually screening the surrounding area from view of the house. Open lawn comprises the parcel in front of the house and a dirt driveway provides access to the house from Oral Oaks Road. No outbuildings were visible from the roadway.

The house is a two-story, three-bay vernacular I-house with a central front gable that was constructed circa 1870. The house faces west toward Oral Oaks Road and is set back from the road approximately 175 feet. The house sits on a concrete block foundation. The roof is covered in pressed tin and a pair of interior brick chimneys rise from the ridgeline, one at each end of the roof. The exterior is clad in wood clapboards. A one-story front porch is located on the façade (west elevation) and is covered in a hipped roof with standing-seam metal. Turned wood spindle posts support the roof, and the porch has been enclosed with plywood and mesh screening. The primary entrance is located under the porch but was visually obscured. Windows consists of 1-over-1 replacement vinyl sash; there is no fenestration on either north or south side elevations. These windows replaced 2-over-2 wood sash windows that were documented in a 1992 survey of the property.<sup>12</sup> There is a one-story frame rear addition on the east elevation. Based on available tax information from Lunenburg County, this addition was likely added around 1940.<sup>13</sup>

The vernacular I-house is a typical and commonplace residential type in the agricultural area of Lunenburg County. The house retains its integrity of location and setting, as it remains in its place of construction in a rural, agricultural areas. Although the house retains and conveys its historic form, the enclosure of the front porch and the replacement windows have resulted in a loss of integrity of design, materials, workmanship, and feeling. These substantial alterations have diminished its overall integrity

<sup>11</sup> Beckett, McFaden, and McDaid. 1992. p. 199.

<sup>12</sup> Beckett, McFaden, and McDaid. 1992. p. 199.

<sup>13</sup> Lunenburg County. 2022.



and it no longer conveys the feeling and aesthetic of its period of construction. No change is recommended for its eligibility and the property remains not eligible for listing in the National Register.



*Photo LU04-1: View of front (west) and north side elevations of the dwelling with dense vegetation, facing SE.*



*Photo LU04-2: View of façade of dwelling, facing E.*

## LU05, Oral Oaks Road

This property consists of an electrical distribution substation adjacent to a power transmission line that was constructed between 1976 and 1979, based on available historic aerials. A sign on the property identifies it as the Gary Substation, which is run by the Southside Electric Co-op, headquartered in Crewe, Virginia. Remnants of former letters on that sign indicate that the substation was formerly named the Martin Substation. Background research did not uncover any additional information regarding the construction of this substation.

The resource is located on the east side of Oral Oaks Road and is set back roughly 30 feet from the roadway. A transmission line connects to the substation, running to the east for roughly 1,000 feet before turning to the northeast. Another high-voltage transmission line is connected to the substation immediately to the south, running in an east to west alignment. This southern transmission line was constructed in the 1990s. The substation is accessed via a gravel driveway connecting to Oral Oaks Road; a metal stockade gate restricts access to the driveway. This substation provides power to properties in the area via overhead power lines that extend from the substation in several directions.

The substation consists of a gravel pad roughly 160 feet by 75 feet with transformers, switchgear, and other electrical equipment enclosed in a metal chain link fence topped with barbed wire. Additional equipment is housed on a much smaller dirt pad surrounded by a similar fence at the southwest corner of the main substation. No buildings appear to be associated with this substation. The footprint of the substation is mostly unchanged since construction, based on historic and contemporary aerial photographs; however, it is likely that system and equipment upgrades have been undertaken at some point since its initial construction to accommodate changes to the power grid, as evidenced by the high-voltage transmission line that was constructed and connected to the substation in the 1990s.

The Gary Substation retains its historic integrity of location, setting, design, materials, workmanship, feeling, and association. The substation is a typical and common example of an outdoor electrical distribution substation, and it does not possess characteristics of demonstrable significance of an infrastructure type with respect to design, construction, or use of materials. There are no indications

that this substation was associated with a significant event or person in history, and it does not appear to have led to the development of the area. The Gary Substation does not possess the individual significance and is therefore recommended as not eligible for listing in the National Register.



*Photo LU05-1: View of Gary Substation from Oral Oaks Road, facing SE.*



*Photo LU05-2: View of Gary Substation from Oral Oaks Road, facing NW.*

## Summary and Recommendations

During the course of the survey of the APE for this project, a total of five properties 43 years old or older were identified. As described above, none are recommended as eligible for listing in the National Register. As such, there would be *no historic properties affected* for architectural resources as a result of this project.



# C

## Appendix C

Environmental Impacts Narrative



## Environmental Impacts Narrative

VHB has conducted a desktop analysis of the approximately 128.2-acre site being developed for Kenbridge Solar. The study was performed in compliance with the Lunenburg County Solar Ordinance Conditional Use Permit Application requirements and aims to assist the proposed Kenbridge Solar Site. The study contains an analysis on the potential impacts and existing conditions of the surrounding water and air quality.

### I. Water Quality Review

This water quality review was conducted to assess water quality in the vicinity of the site using publicly available information from the Virginia Department of Environmental Quality (DEQ) as directed in the Lunenburg County Solar Ordinance. The *How's My Waterway?* tool was created by DEQ and designed to inform the public with information about the condition of local waters based on data that local and state agencies have provided to the EPA. Adjacent to the Site and the defining feature of the east project property boundary is an unsegmented portion of watershed CM09. The unsegmented waters of K03, see report Attachment 1, have not been evaluated for any impairments under the four categories analyzed by the EPA: Aquatic Life, Fish Consumption, Recreation and Wildlife. There are no probable sources of impairment that can be identified in this waterbody, based on review of DEQ information. Crooked Creek, which is approximately 0.3 miles downstream of the Site, is the closest evaluated waterway to the site found in in good condition when analyzed for Aquatic Life, see report Attachment 2. There were no samples taken from the site and this report utilizes publicly available resources to determine the general condition of waterways that will receive discharge from the Project Area. The condition of a waterbody is dynamic and can change at any time, and the information from the *How's My Waterway?* Tool should only be used for general reference for analyzing this Project and the larger watershed (Hydrologic Unit Code 030102040302).

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. A desktop analysis had previously been performed VHB and did not identify any conservation lands or easements within the study area. There was an additional 2-mile buffer of the site studied which identified a Virginia Department of Forestry (DOF) conservation easement. Given the distance of the identified resource from the proposed project, it is anticipated that the development of the study area as a solar generation facility would not adversely impact the identified resource.

VHB has received a Preliminary Jurisdictional Determination from the United States Army Corps of Engineers (USACE). Offsite research was conducted utilizing the Natural Resources Conservation Service (NRCS) Web Soil Survey, the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), and the U.S. geological Survey (USGS) Quadrangle Maps for Kenbridge West, VA. The results of the WOTUS Delineation indicated that there are jurisdictional aquatic resources that are present in the project area, see Attachment 3. All wetlands that are identified in the project area and confirmed by the USACE will be avoided when possible and best management practices will be implemented to minimize impacts to nearby waterbodies. The Project will prepare a SWPPP to ensure that any ground disturbing activity during construction does not negatively impact the water quality or quantity to the surrounding waterbodies.

## II. Air Quality Review

DEQ's Environmental Data Mapper was used in the air quality analysis in the vicinity of the project area. Active air sites in Virginia are facilities that adhere to the air program details and report their pollutant emissions. The Disposal and Recycling Services of Lunenburg is the closest active air site and is approximately 3.5 miles Northwest of the project area, see Attachment 5. This facility is categorized as "true minor" site which infers that the site has the potential to emit regulated New Source Review pollutants in amounts less than the major source threshold. It is unlikely that the Site would affect or be affected by any of these regulated facilities.

The proposed solar facility would have no negative impact on surrounding air quality. In comparison with traditional fossil-fuel methods of energy generation, this solar facility will avoid the release of emissions and negative air quality impacts. EPA's Avoided Emissions and Generation Tool (AVERT) was utilized to calculate the regional beneficial air quality impacts if the site was to be constructed. Annual avoided impacts were calculated using Mid-Atlantic Regional data and assuming a 12 MW project and are as follows:

<i>Pollutant</i>	<i>Annual Avoided Impacts (lb.)</i>
<i>Sulfur Dioxide (SO<sub>2</sub>)</i>	-23,540
<i>Nitrous Oxide (NO<sub>x</sub>)</i>	-16,150
<i>Carbon Dioxide (CO<sub>2</sub>)</i>	-17,700
<i>Particulate Matter (PM<sub>2.5</sub>)</i>	-2,240
<i>Volatile Organic Compounds (VOCs)</i>	-480
<i>Ammonia (NH<sub>3</sub>)</i>	-590

## III. Summary and Conclusions

This desktop review of water and air quality of the project area and within a 2.5-mile radius of the site was conducted using sources recommended in the Ordinance for Solar Energy Facilities in Lunenburg County. On-site water resources that were identified will be protected using best management practices and devices from the DEQ Erosion & Sediment Control Handbook.

### Attachments

Attachment 1 – Waterbody Report – Unsegmented Portion of Watershed CM09

Attachment 2 – Waterbody Report – Crooked Creek


Attachment 3 – Wetland Delineation Map

Attachment 4 – Active Air Site Vicinity Map

How's My Waterway?

Informing the conversation about your waters.

Waterbody Report



Unsegmented waters of K03


Assessment Unit ID: VAP-K03R\_ZZZ01A18

Waterbody Condition:

Condition Unknown

Existing Plans for Restoration:

No

 303(d) Listed:

No

Year Reported:

2020

Organization Name (ID):

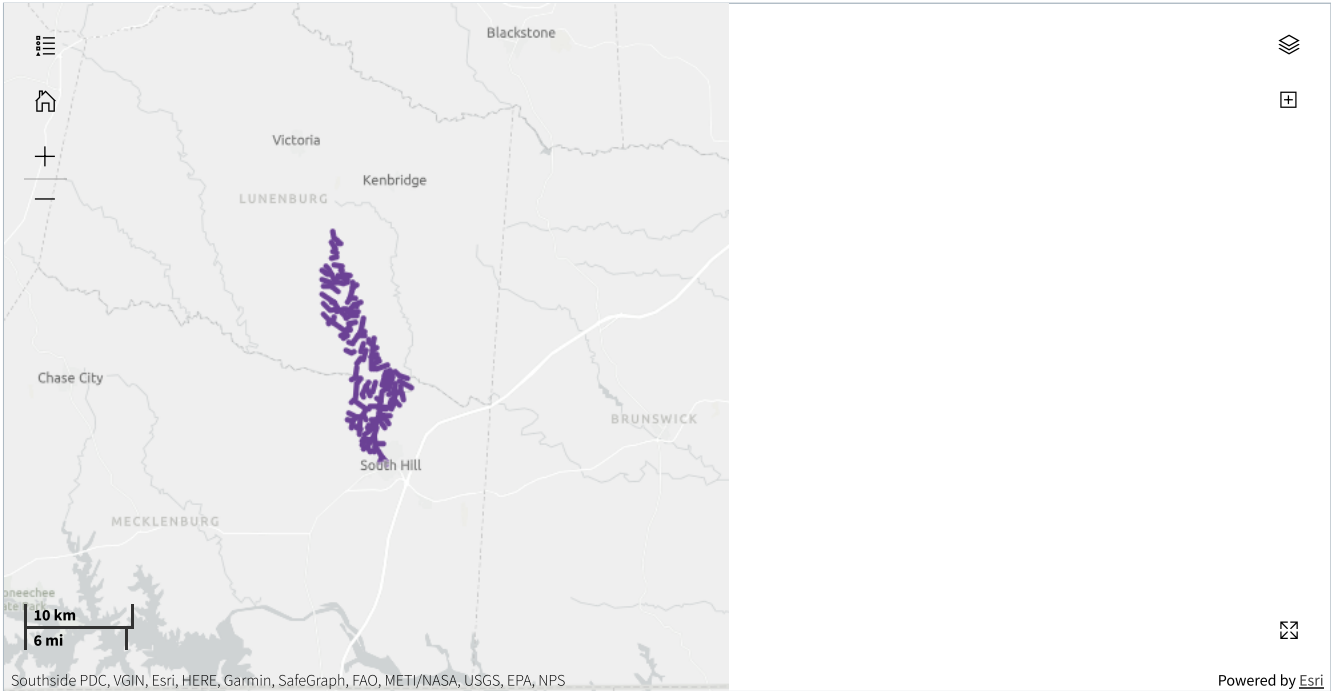
Virginia (21VASWCB)



What type of water is this?

River (62.92 Miles)

Where is this water located?

Unsegmented portion of the watershed CM09



Assessment Information from 2020	
State or Tribal Nation specific designated uses:	
Collapse All 	
Aquatic Life	Not Assessed 
Identified Issues for Use	
No impairments evaluated for this use.	



#### Other Water Quality Parameters Evaluated

No other parameters evaluated for this use.

#### **Fish Consumption**

Not Assessed



#### Identified Issues for Use

No impairments evaluated for this use.

#### Other Water Quality Parameters Evaluated

No other parameters evaluated for this use.

#### **Recreation**

Not Assessed



#### Identified Issues for Use

No impairments evaluated for this use.

#### Other Water Quality Parameters Evaluated

No other parameters evaluated for this use.

#### **Wildlife**

Not Assessed



#### Identified Issues for Use

No impairments evaluated for this use.

#### Other Water Quality Parameters Evaluated

No other parameters evaluated for this use.

#### **Probable sources contributing to impairment from 2020:**

No probable sources of impairment identified for this waterbody.

#### **Assessment Documents**

No documents are available

#### **Plans to Restore Water Quality**

##### **What plans are in place to protect or restore water quality?**

No plans specified for this waterbody.

# How's My Waterway?

Informing the conversation about your waters.

## Waterbody Report



### Crooked Creek

Assessment Unit ID: VAP-K03R\_CRK01A14

**Waterbody Condition:** Good

**Existing Plans for Restoration:** No

**303(d) Listed:** No

**Year Reported:** 2020

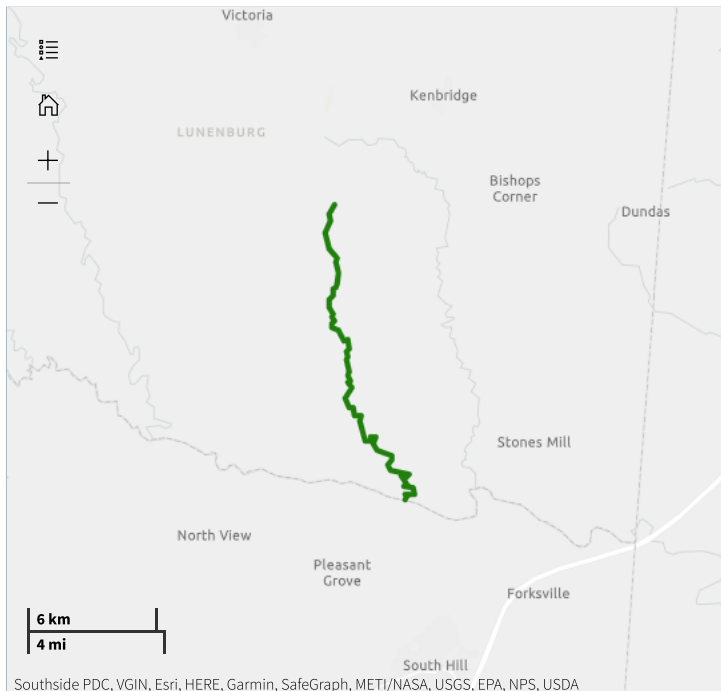
**Organization Name (ID):** Virginia (21VASWCB)

#### What type of water is this?

River (12.69 Miles)

#### Where is this water located?

From its headwaters to the mouth



Powered by [Esri](#)

### Assessment Information from 2020

#### State or Tribal Nation specific designated uses:

Collapse All

##### Aquatic Life

Good

##### Identified Issues for Use

No impairments evaluated for this use.

#### Other Water Quality Parameters Evaluated

No other parameters evaluated for this use.

#### **Fish Consumption**

Not Assessed



#### Identified Issues for Use

No impairments evaluated for this use.

#### Other Water Quality Parameters Evaluated

No other parameters evaluated for this use.

#### **Recreation**

Not Assessed



#### Identified Issues for Use

No impairments evaluated for this use.

#### Other Water Quality Parameters Evaluated

No other parameters evaluated for this use.

#### **Wildlife**

Not Assessed



#### Identified Issues for Use

No impairments evaluated for this use.

#### Other Water Quality Parameters Evaluated

No other parameters evaluated for this use.

#### **Probable sources contributing to impairment from 2020:**

No probable sources of impairment identified for this waterbody.

#### **Assessment Documents**

No documents are available

#### **Plans to Restore Water Quality**

##### **What plans are in place to protect or restore water quality?**

No plans specified for this waterbody.



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

August 29, 2022

**PRELIMINARY JURISDICTIONAL DETERMINATION**

Southern Virginia Regulatory Section  
NAO-2022-01263 (Crooked Creek)

Ms. Virginia Wilson  
5844 Oral Oaks Road  
Kenbridge, VA 23944

Dear Ms. Wilson:

This letter is in regard to your request for a preliminary jurisdictional determination of the aquatic resources (e.g., wetlands, streams, and ponds), on an approximately 105-acre property located at 5874 Oral Oaks Road, known as Kenbridge Solar, in Lunenburg County, Virginia (tax map parcel #058-0A-0-29) hereinafter referred to as project area.

The map entitled "Ameresco – Kenbridge Solar Site, Preliminary Jurisdictional Determination", by VHB received by the U.S. Army Corps of Engineers (Corps) on August 19, 2022 (copy enclosed) provides the locations of the aquatic resources within the project area referenced above. This letter is not confirming the Cowardin classifications of these aquatic resources.

These aquatic resources exhibit wetland criteria as defined in the 1987 Corps of Engineers Wetland Delineation Manual, and the Eastern Mountains and Piedmont Regional Supplement. This site also contains aquatic resources with an ordinary high-water mark (or high tide line).

This preliminary jurisdictional determination and associated aquatic resource delineation map may be submitted with a permit application.

Please be aware that you may be required to obtain a Corps permit for any discharge of dredged and/or fill material, either temporary or permanent, into a water of the U.S. In addition, you may be required to obtain a Corps permit for certain activities occurring within, under, or over a navigable water of the U.S. subject to the Section 10 of the Rivers and Harbors Act. Furthermore, you may be required to obtain state and local authorizations, including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC), and/or a permit from your local wetlands board.



This delineation and preliminary jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. Therefore, if you or your tenant are US Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

The Norfolk District has relied on the information and data provided by the requestor or agent to make this preliminary determination. If it is determined such information and data are materially false or materially incomplete, a new preliminary determination would be necessary.

This is a preliminary jurisdictional determination and is not a legally binding determination regarding whether Corps jurisdiction applies to the aquatic resources in question. To determine Corps' jurisdiction, you may request and obtain an approved jurisdictional determination.

This delineation of aquatic resources can be relied upon for no more than five years from the date of this letter. New information may warrant revision. Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return one copy to the Corps by email at [julie.s.hamilton@usace.army.mil](mailto:julie.s.hamilton@usace.army.mil).

If you have any questions, please contact the office either by telephone at (804) 436-4725 or by email at [julie.s.hamilton@usace.army.mil](mailto:julie.s.hamilton@usace.army.mil).

Sincerely,

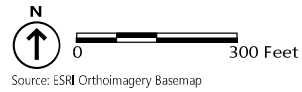
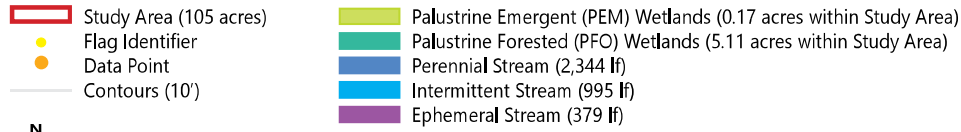
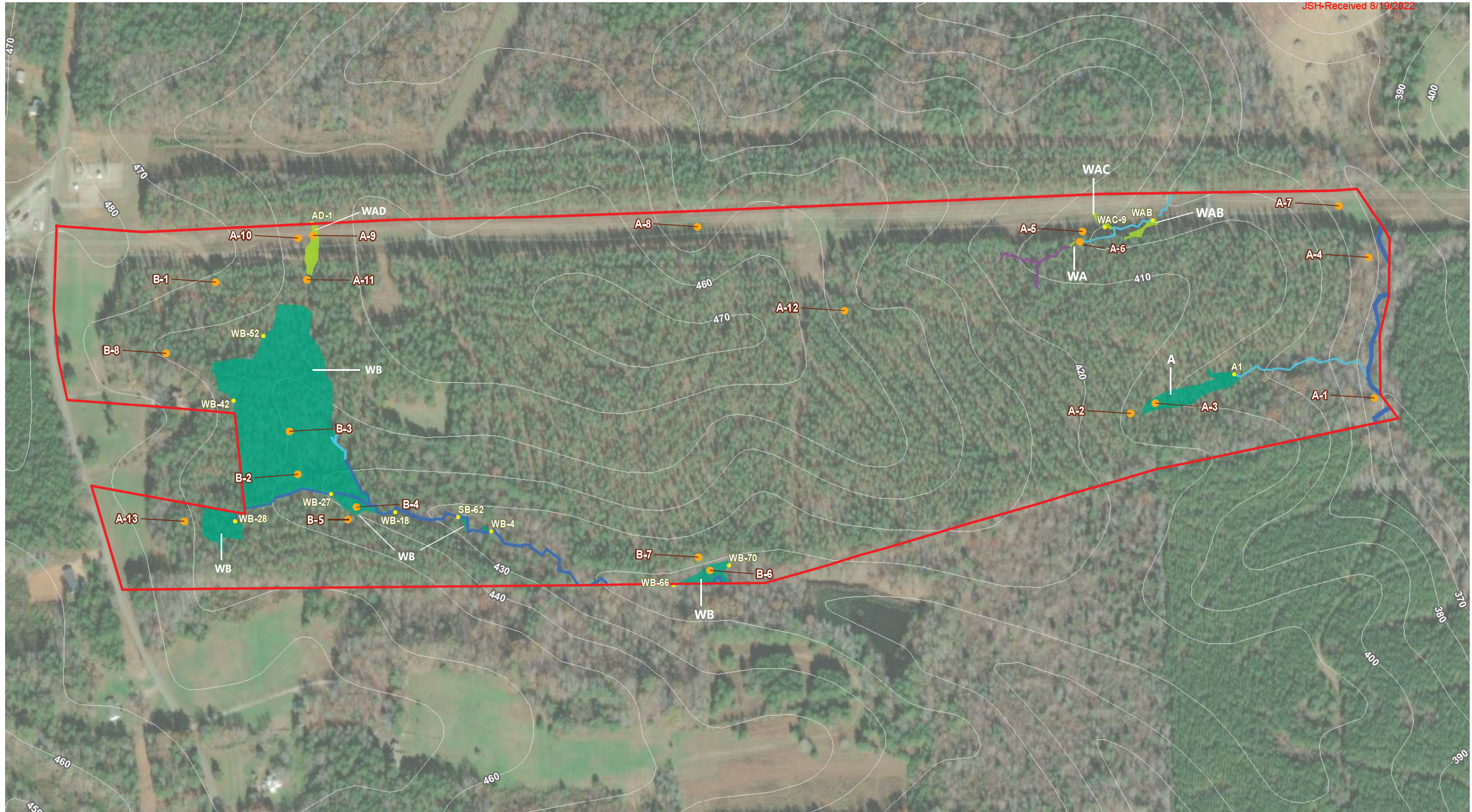
A handwritten signature in cursive script that reads "Julie S. Hamilton".

Julie S. Hamilton  
Environmental Scientist  
Southern Virginia Regulatory Section

Enclosure(s):

cc: VHB  
VDEQ-Piedmont

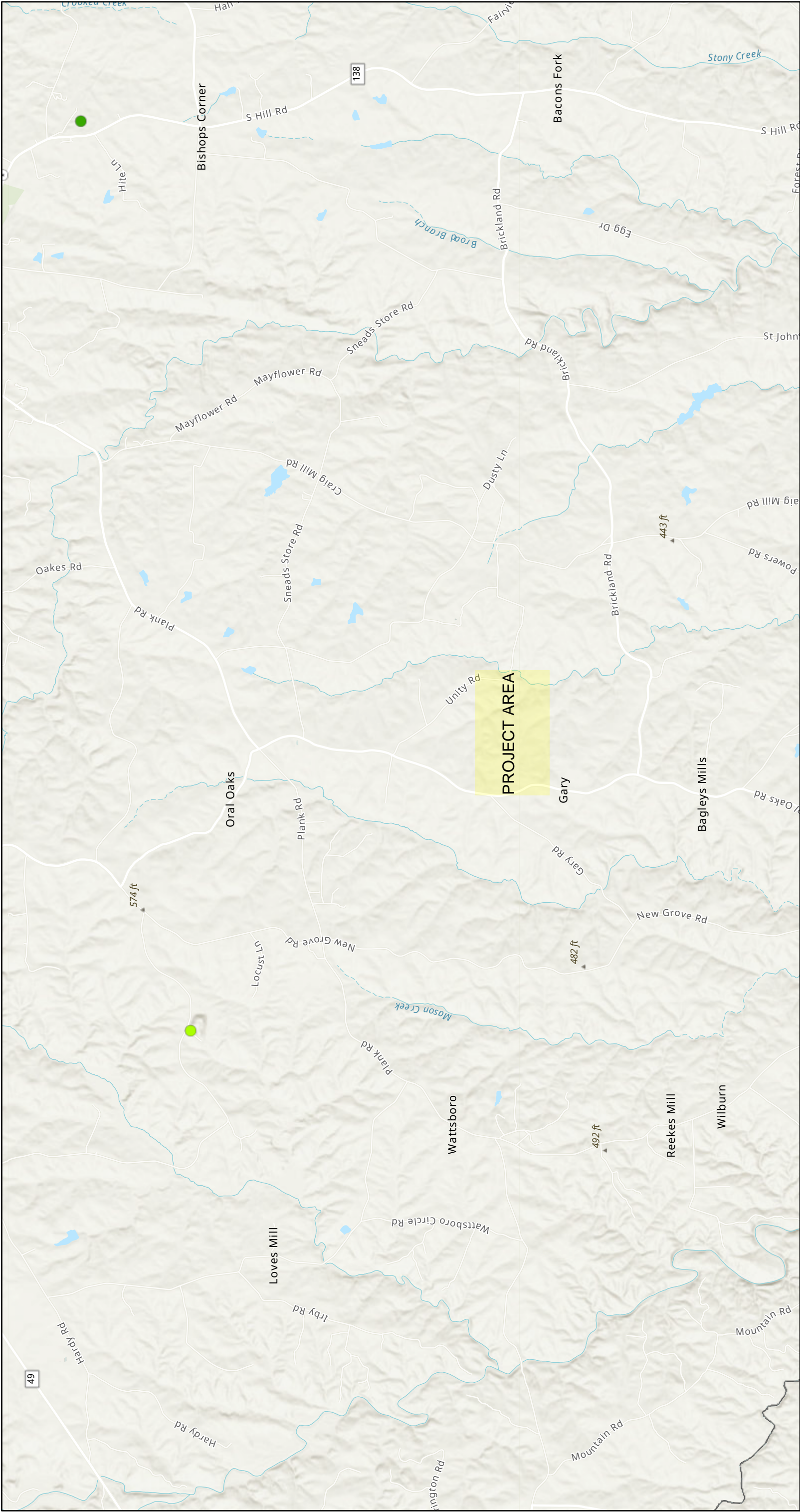




**Ameresco - Kenbridge Solar Site**  
Preliminary Jurisdictional Determination  
Lunenburg, Virginia

**FIGURE 4**  
**Wetland Delineation Map**





11/21/2022, 11:06:28 AM

Active Air Sites (Daily)

True Minor

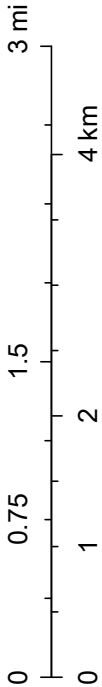
Major/Potential Major

Virginia County Boundaries

Synthetic Minor

DEQ Offices (2020)

1:72,224



Virginia Department of Environmental Quality, Esri, NASA, NGA, USGS, FEMA, This EPA Geospatial data set is generated from the following national environmental programs: Superfund National Priorities



# D

## Appendix D

Wildlife Impacts Narrative



## Wildlife Impacts Narrative

VHB performed a full desktop analysis of potential wildlife impacts in line with Lunenburg County's Solar Ordinance requirements. The desktop review of the Kenbridge Solar project, a proposed solar energy electric power generation facility, was conducted to report the potential impacts on wildlife and wildlife habitats at the site and within a two and one-half-mile (2.5) radius of the proposed facility. The 128.2-acre site is in Lunenburg County, Virginia adjacent to Oral Oaks Road. The publicly available data from the Virginia Department of Wildlife Resources was used to identify any constraints that would limit the development of the solar facility in compliance with the comprehensive plan.

### I. Threatened and Endangered Species Database Search

This endangered species report was conducted to gain information regarding the proximity of any Endangered Species Act listed species as well as state species within the project limits. The following agencies and associated databases were reviewed for threatened and endangered species:

- U.S. Fish and Wildlife Services (USFWS) – Information, Planning and Consultations system (IPaC)
- Virginia Department of Wildlife Resources (VDWR) – Virginia Fish and Wildlife Information Service (VaFWIS)
- Virginia Department of Wildlife Resources (VDWR) – Northern Long Eared Bat (NLEB) Winter Habitat & Roosts Locator
- Virginia Department of Wildlife Resources (VDWR) – Little Brown Bat and Tri-colored Bat Winter Habitat & Roosts Locator
- Virginia Department of Conservation and Recreation (VDCR) – Natural Heritage Data Explorer (NHDE)
- Virginia Department of Environmental Quality (VDEQ) – Coastal Geospatial and Education Mapping System (GEMS)
- Center for Conservation Biology (CCB) – VA Eagles Nest Locator
- U.S. Fish and Wildlife Services (USFWS) – Bald Eagle Concentration Areas

The complete database search found that there is one species that is protected at both the state and federal level. A summary of the endangered species that could be found within the project area can be found in the following table.

<i>Common Name</i>	<i>Scientific Name</i>	<i>Status</i>	<i>Agency Source</i>
<i>Northern Long-eared Bat</i>	<i>Myotis septentrionalis</i>	Federal Threatened State Threatened	USFWS
<i>Monarch Butterfly</i>	<i>Danaus plexippus</i>	Candidate	USFWS

According to the results from USFWS IPaC, there is potential for the federally and state threatened northern long-eared bat (NLEB) to exist within the project limits. Utilizing the publicly available data from the VDWR NLEB Winter Habitat & Roost Locator there were no known maternity roosts or hibernaculum located within or near the Project Site. The NLEB is being re-classified (effective 12/30/22)

and could result in impacts to project schedule as well as require both habitat and species surveys if any tree clearing is required.

According to the results from USFWS IPaC the monarch butterfly has the potential to occur on the site. The monarch butterfly is a candidate species but not currently listed as a federally or state threatened or endangered. A candidate species is a species that is under consideration for official listing but does not have sufficient information, therefore there is no further consultation with USFWS required. It is recommended that agencies take advantage of any opportunity there is to conserve the species.

According to the VDWR the Little Brown Bat and Tri-colored Bat Winter Habitat & Roosts Locator, both species do not have hibernacula within range of the Site. The locator shows that that these species are typically known to populate western Virginia and there will be no potential impacts that would have ramifications for this development.

According to the VDCR results obtained by VHB, there were no natural heritage sites found with the project limits and the project buffer. These sites are defined as the habitat of plant and animal species that are rare, threatened and endangered as well as unique natural communities and significant geologic formations. The preliminary results from this analysis do not require any further correspondence with the VDCR.

The GEMS report provides a gateway to Virginia's coastal resource values as well as a growing inventory of water and land based natural resources to serve as a planning tool to protect Virginia's coastal ecosystems. Since this project is in Lunenburg County, it does not fall within a Coastal Area Protection Zone (CAPZ) and no further consideration is needed.

The Center for Conservation Biology's Eagle Nest Locator found no nests in the vicinity of the project. Additionally, the USFWS Bald Eagle Concentration Map does not identify any areas of importance near the project area and no further actions are required.

## **II. Summary and Conclusions**

This review has utilized all the publicly available data in the planning and consideration of the wildlife impacts that could occur in the construction and facilitation of the proposed solar energy generation facility. Any work that is proposed within the limits of jurisdictional wetlands or waters of the U.S., would require Section 401 and Section 404 Clean Water Act Permits. Submittal of a Section 404 Clean Water Act Permit will provide a federal nexus that will engage a review of threatened and endangered species that could further impose timeline restrictions or reduce the developable footprint of the project. In accordance with the conceptual design plan dated 12/16/2022, the facility does not propose impacts to any Waters of the U.S. and Kenbridge Solar will be able to progress without any wildlife impact considerations.

## **Attachments**

Attachment 1 - Threatened and Endangered Species Database Searches

THREATENED AND ENDANGERED SPECIES DATABASE  
SEARCHES

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

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

## Location

Lunenburg County, Virginia



## Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

📅 (804) 693-9032

6669 Short Lane  
Gloucester, VA 23061-4410

NOT FOR CONSULTATION



# Endangered species

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

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

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

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

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

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

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

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

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

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

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Critical habitats

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

There are no critical habitats at this location.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds  
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds  
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

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

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

NAME	BREEDING SEASON
<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
<b>Chimney Swift</b> <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
<b>Eastern Whip-poor-will</b> <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20

Prairie Warbler *Dendroica discolor*

Breeds May 1 to Jul 31

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

Red-headed Woodpecker *Melanerpes erythrocephalus*

Breeds May 10 to Sep 10

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

Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

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

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

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

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

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



probability of presence score.

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

### Breeding Season (■)

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

### Survey Effort (|)

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

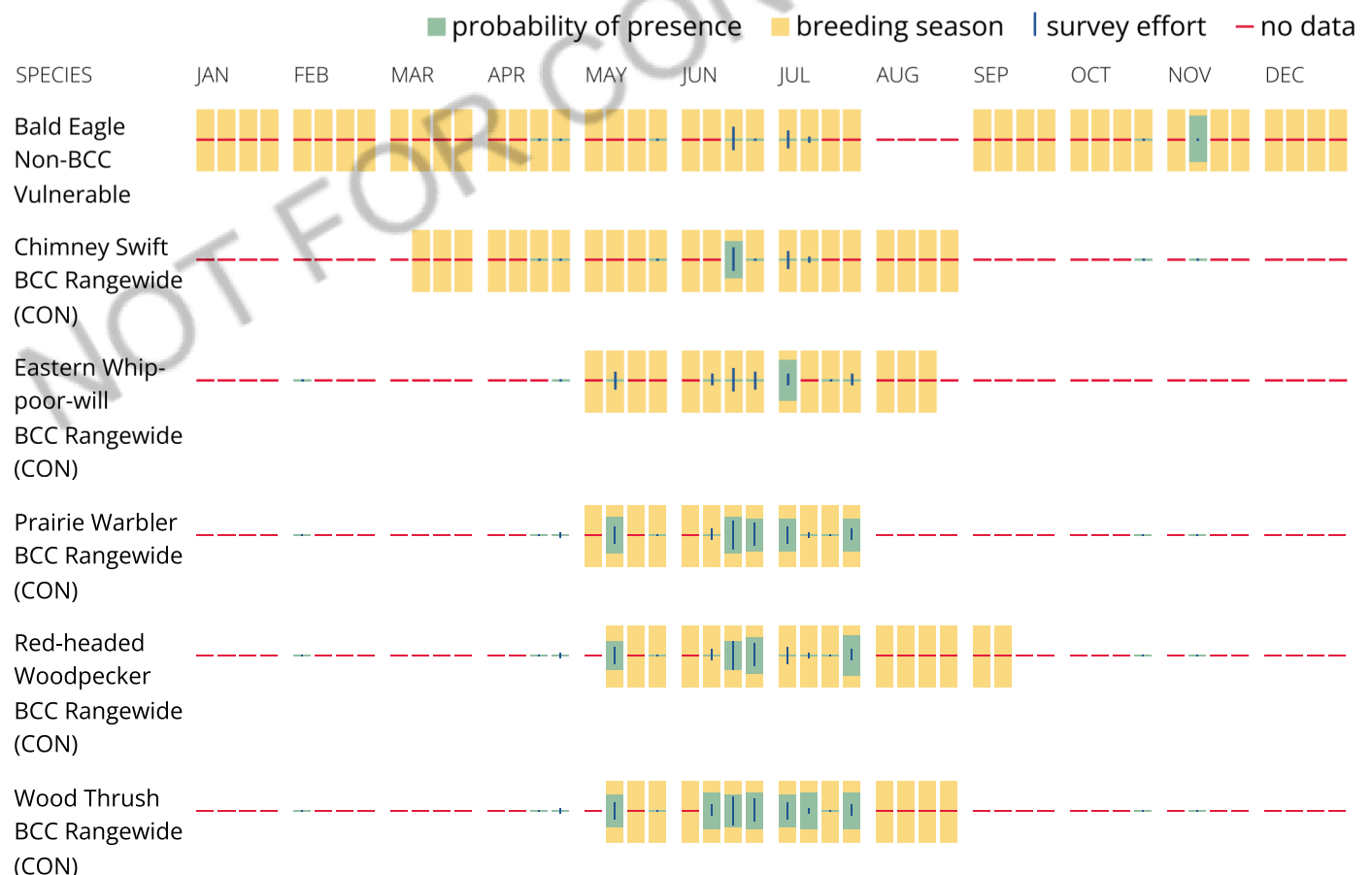
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

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

### Survey Timeframe

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



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

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

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

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

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

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

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

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

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

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

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

**What are the levels of concern for migratory birds?**

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

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

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

### **Details about birds that are potentially affected by offshore projects**

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

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

### **What if I have eagles on my list?**

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

### **Proper Interpretation and Use of Your Migratory Bird Report**

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

more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Coastal Barrier Resources System

Projects within the [John H. Chafee Coastal Barrier Resources System](#) (CBRS) may be subject to the restrictions on Federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local [Ecological Services Field Office](#) or visit the [CBRA Consultations website](#). The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

### Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the [official CBRS maps](#). The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: <https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation>

### Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact [CBRA@fws.gov](mailto:CBRA@fws.gov).

## Facilities

### National Wildlife Refuge lands

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



There are no refuge lands at this location.

## Fish hatcheries

There are no fish hatcheries at this location.

## Wetlands in the National Wetlands Inventory (NWI)

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

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

### Wetland information is not available at this time

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

### Data limitations

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

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

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

### Data exclusions

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

#### **Data precautions**

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

NOT FOR CONSULTATION

## Site Location

36,52,53.0 -78,11,47.0  
is the Search Point

### Show Position Rings

☐ Yes ☒ No

1 mile and 1/4 mile at the  
Search Point

### Show Search Area

☒ Yes ☐ No

2.49 Search distance miles  
radius

Search Point is at  
map center

### Base Map [Choices](#)

Topography

### Map Overlay [Choices](#)

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

### Map Overlay Legend

[back](#)  
Map  
Click

PanIdM

Map  
Scale

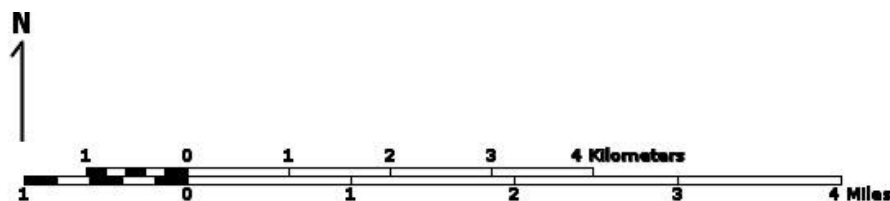
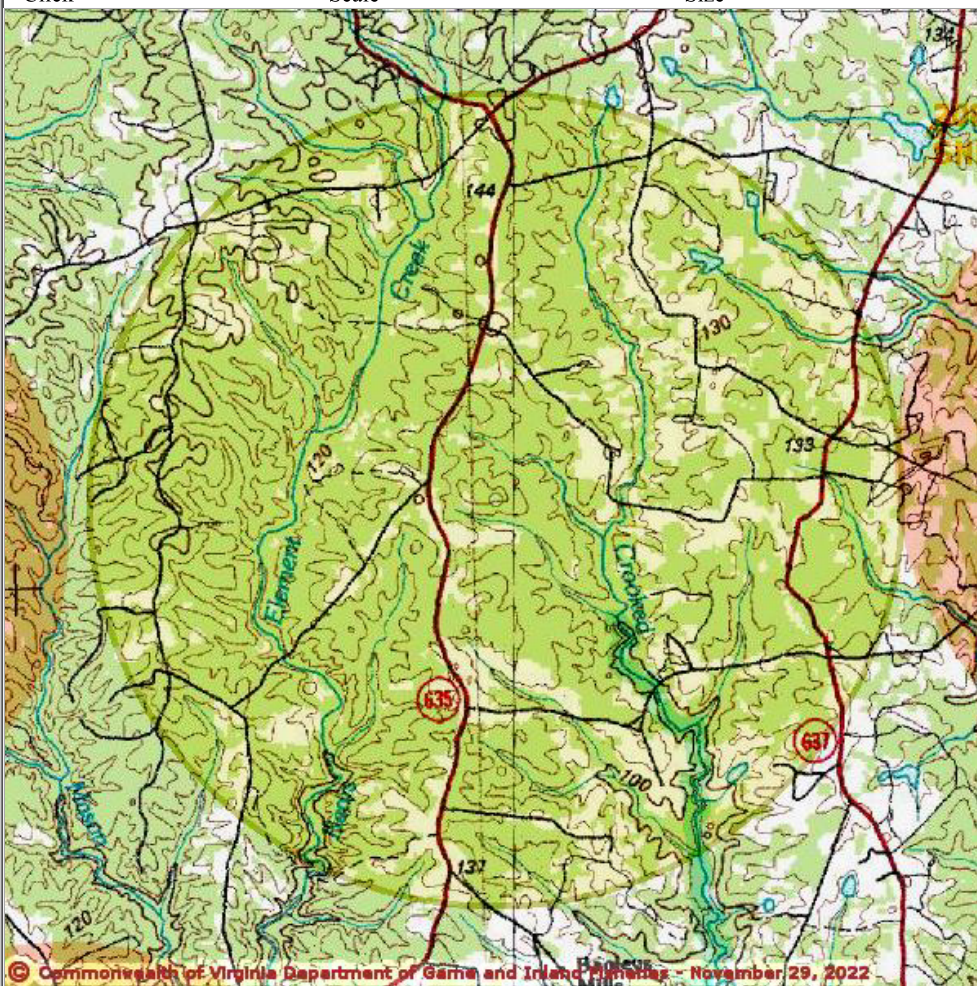
InZoomOut

Refresh Browser Page

Screen  
Size

SmallSizeBig

[Help](#)




Point of Search 36,52,53.0 -78,11,47.0

Map Location 36,52,53.0 -78,11,47.0

- 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: USGS 1:100,000 topographic maps (see [Microsoft terraser-USA](https://microsoft.com/terraser-USA) for details)

Map projection is UTM Zone 17 NAD 1983 with left 745069 and top 4090185. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5

**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 23 Impediment 2.5 mile radius  
Search Area**Bald Eagle  
Concentration Areas  
and Roosts** Bald Eagle nests  
660 and 330 foot  
management zones Data  
Observation Site

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 2022-11-29 10:04:24 (qa/qc March 21, 2016 12:20 - tn=1443180.0 dist=4022  
I )

\$poi=36.8813889 -78.1963889



# VaFWIS Initial Project Assessment Report

Compiled on 11/29/2022,  
10:07:28 AM

[Help](#)

Known or likely to occur within a **2.5 mile radius around point 36.8813889 -78.1963889**  
in **111 Lunenburg County, VA**

[View Map of  
Site Location](#)

395 Known or Likely Species ordered by Status Concern for Conservation  
(displaying first 21) (21 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>	Confirmed	Database(s)
060003	FESE	Ia	<a href="#">Wedgemussel, dwarf</a>	Alasmidonta heterodon		BOVA
010214	FESE	IIa	<a href="#">Logperch, Roanoke</a>	Percina rex		BOVA
050022	FTST	Ia	<a href="#">Bat, northern long-eared</a>	Myotis septentrionalis		BOVA
060173	FTST	Ia	<a href="#">Pigtoe, Atlantic</a>	Fusconaia masoni		BOVA,Habitat
060029	FTST	IIa	<a href="#">Lance, yellow</a>	Elliptio lanceolata		BOVA
050020	SE	Ia	<a href="#">Bat, little brown</a>	Myotis lucifugus		BOVA
050027	FPSE	Ia	<a href="#">Bat, tri-colored</a>	Perimyotis subflavus		BOVA
060006	SE	Ib	<a href="#">Floater, brook</a>	Alasmidonta varicosa		BOVA
040293	ST	Ia	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus		BOVA
040385	ST	Ia	<a href="#">Sparrow, Bachman's</a>	Peucaea aestivalis		BOVA
060081	ST	IIa	<a href="#">Floater, green</a>	Lasmigona subviridis		BOVA
010070	ST	IIc	<a href="#">Shiner, whitemouth</a>	Notropis alborus		BOVA
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	Lanius ludovicianus migrans		BOVA
030063	CC	IIIa	<a href="#">Turtle, spotted</a>	Clemmys guttata		BOVA
010174		Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons		BOVA,Habitat
020002		IIa	<a href="#">Treefrog, barking</a>	Hyla gratiosa		BOVA
040052		IIa	<a href="#">Duck, American black</a>	Anas rubripes		BOVA
040320		IIa	<a href="#">Warbler, cerulean</a>	Setophaga cerulea		BOVA
040140		IIa	<a href="#">Woodcock, American</a>	Scolopax minor		BOVA
060071		IIa	<a href="#">Lampmussel, yellow</a>	Lampsilis cariosa		BOVA
040105		IIb	<a href="#">Rail, king</a>	Rallus elegans		BOVA

To view **All 395 species** [View 395](#)

\*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

N/A

### Managed Trout Streams

N/A

### Bald Eagle Concentration Areas and Roosts

N/A

### Bald Eagle Nests

N/A

### Habitat Predicted for Aquatic WAP Tier I & II Species ( 2 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 <sup>*</sup>	BOVA Code, Status <sup>*</sup> , Tier <sup>**</sup> , Common & Scientific Name					
Crooked Creek (03010204)	FTST	010174		Ia	<a href="#">Bass, Roanoke</a>	Ambloplites cavifrons	<a href="#">Yes</a>
		060173	FTST	Ia	<a href="#">Pigtoe, Atlantic</a>	Fusconaia masoni	
Crooked Creek (03010204)	FTST	060173	FTST	Ia	<a href="#">Pigtoe, Atlantic</a>	Fusconaia masoni	<a href="#">Yes</a>
Crooked Creek	FTST	060173	FTST	Ia	<a href="#">Pigtoe,</a>	Fusconaia	<a href="#">Yes</a>

(03010204)					<a href="#">Atlantic</a>	masoni	
------------	--	--	--	--	--------------------------	--------	--

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

N/A

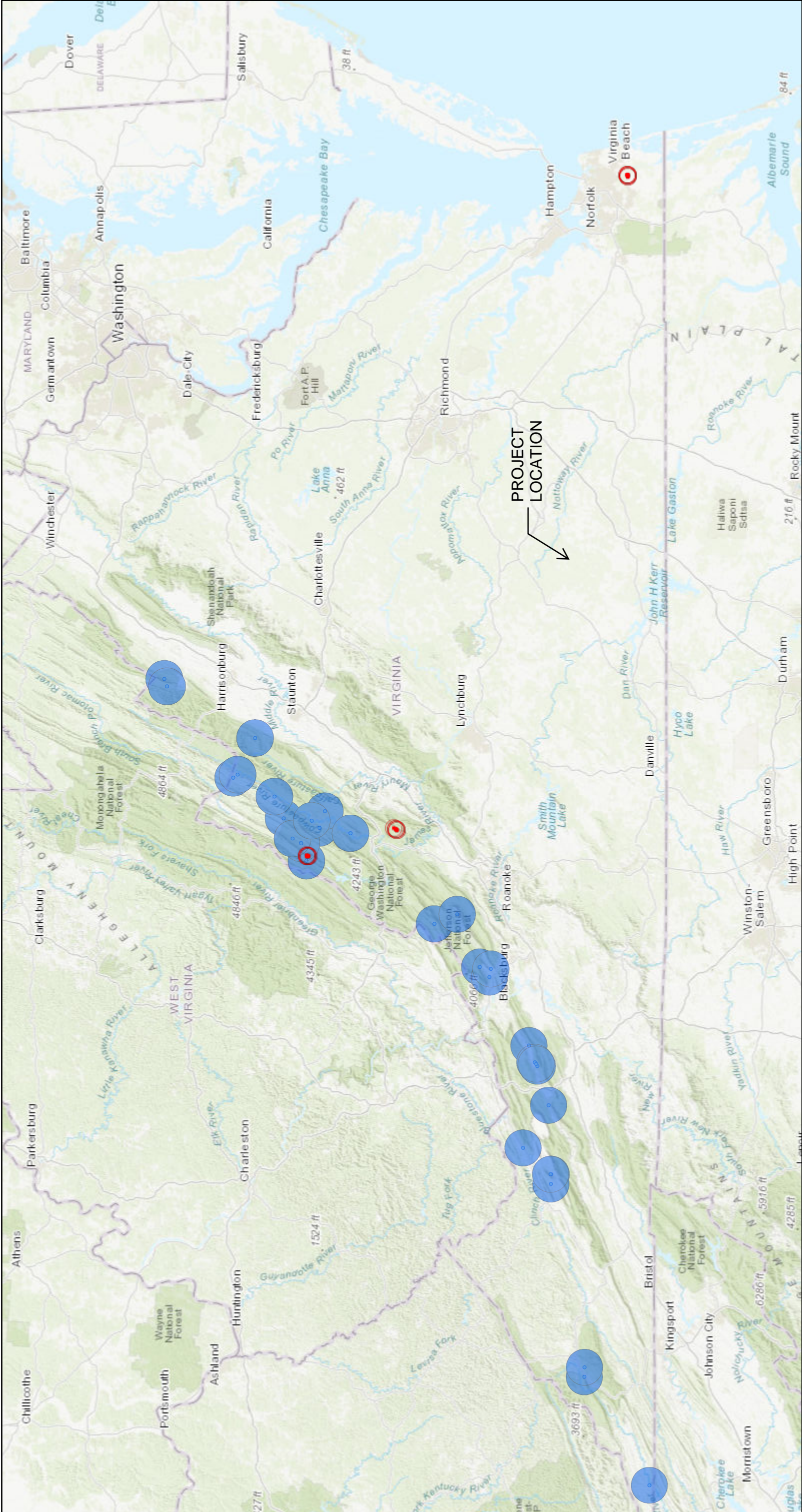
**Public Holdings:**

N/A


Compiled on 11/29/2022, 10:07:28 AM I1443180.0 report=IPA searchType= R dist= 4022 poi= 36.8813889 -78.1963889  
PixelSize=64; Anadromous=0.019047; BECAR=0.020691; Bats=0.020338; Buffer=0.097002; County=0.05816; Impediments=0.020123; Init=0.126817; PublicLands=0.02697; SppObs=0.328627;  
TEWaters=0.028264; TierReaches=0.068661; TierTerrestrial=0.091131; Total=0.987866; Tracking\_BOVA=0.149482; Trout=0.025924





# NLEB Locations and Roost Trees



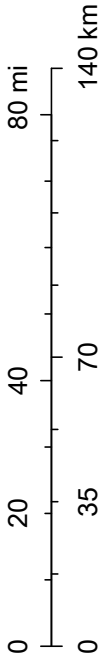
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 NLEB Known Occupied Maternity Roost (Summer Habitat)

 NLEB Hibernaculum 5.5 Mile Buffer

 NLEB Hibernaculum Half Mile Buffer

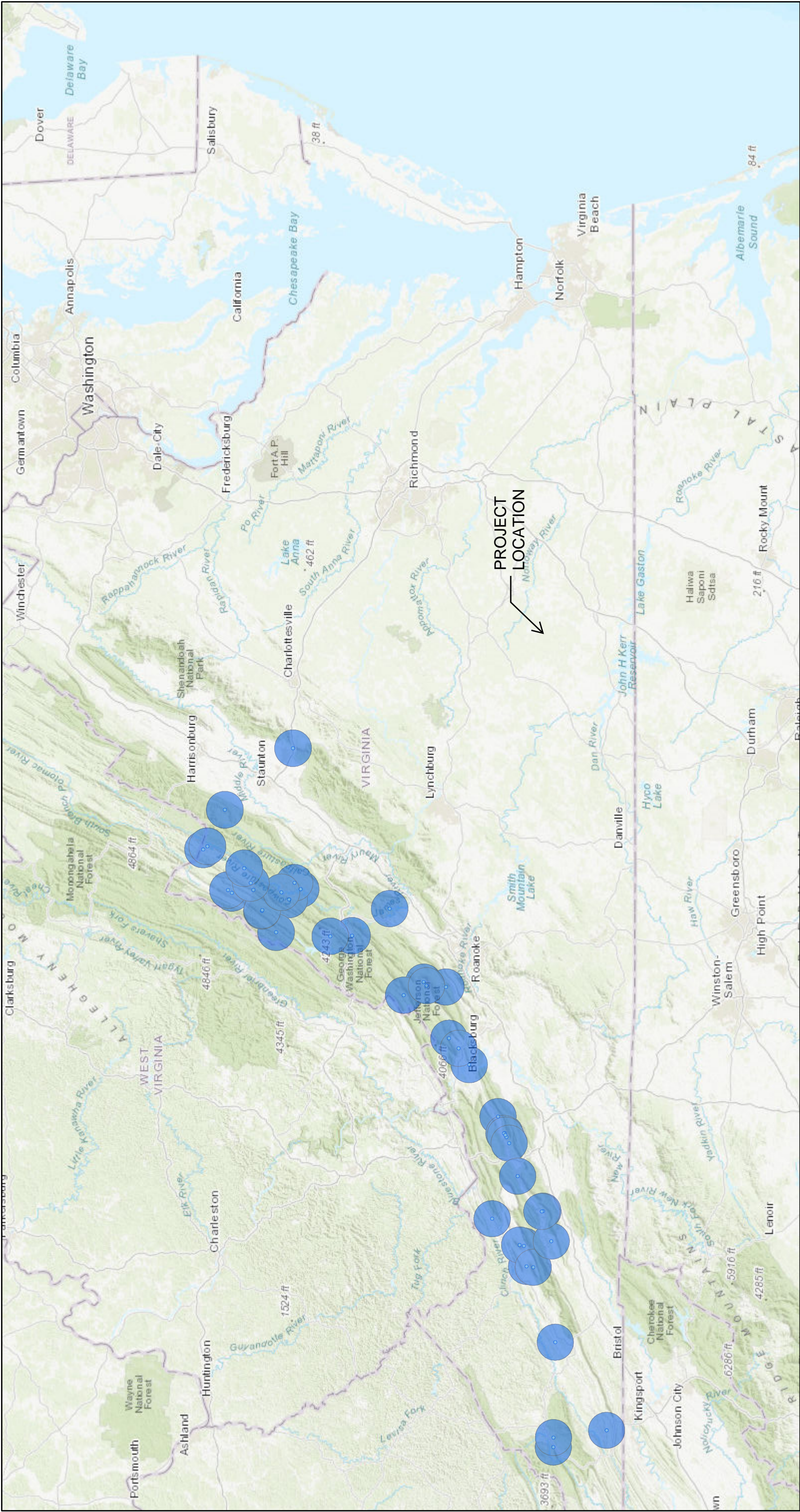
1:2,311,162



Esri, HERE, Garmin, FAO, USGS, EPA, NPS



TRI-COLORED AND LITTLE BROWN BAT LOCATIONS AND ROOST TREES



11/21/2022, 1:46:25 PM

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

Esri, HERE, Garmin, FAO, USGS, EPA, NPS





Department of Conservation & Recreation

[CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES](#)

## ***PROJECT INFORMATION***

**TITLE:** Lunenburg Solar

**DESCRIPTION:** Development of solar facility

**EXISTING SITE CONDITIONS:** Pine plantation

**QUADRANGLES:** Kenbridge West

**COUNTIES:** Lunenburg

**Latitude/Longitude (DMS):** 36° 52' 54.2954" N / 78° 11' 48.2172" W

**Acreage:** 108 acres

**Comments:**

## ***REQUESTOR INFORMATION***

**Priority:** N

**Tier Level:** Tier II Plus

**Tax ID:**

**Contact Name:** Tim Davis

**Company Name:** VHB, Inc.

**Address:** 351 McLaws Circle, Suite 3

**City:** Williamsburg

**State:** VA

**Zip:** 23185

**Phone:** 757-220-0500

**Fax:** 757-903-2794

**Email:** tdavis@vhb.com

**Web Project ID:** WEB00000019083

**Client Project Number:**

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence	Essential Conservation Site?
Natural Heritage Screening Features Intersecting Project Boundary					

Site Name	Group Name	Common Name	Scientific Name	GRANK	SRANK	Fed Status	Species of Concern	State Status	EO Rank	Last Obs Date	Precision
Natural Heritage Resources Intersecting Project Boundary											

Intersecting Predictive Models
Predictive Model Results

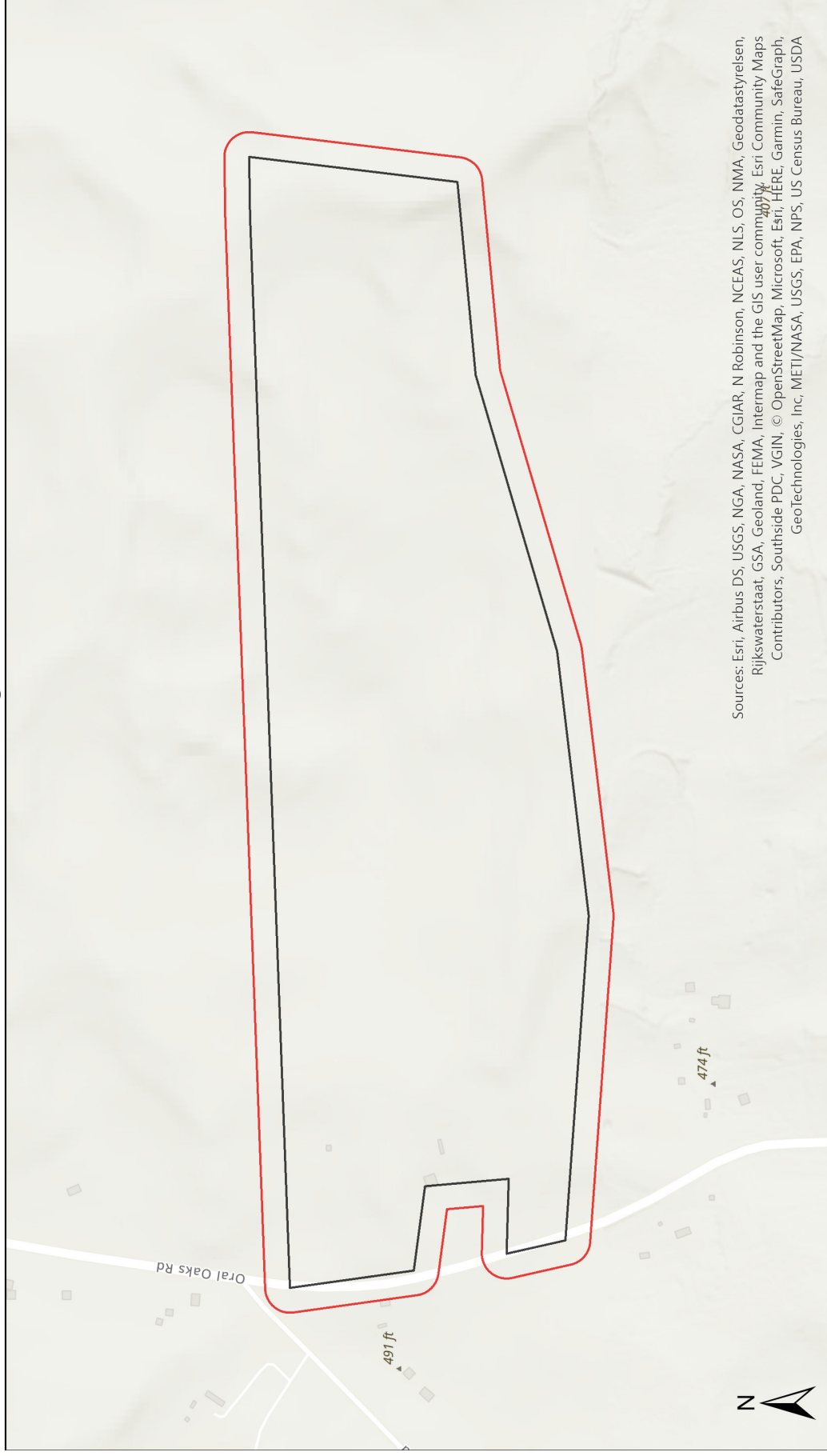
In addition, the proposed project will impact an Ecological Core(s) C3 as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Ecological Cores are areas of at least 100 acres of continuous interior, natural cover 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. Interior core areas begin 100 meters inside core edges and continue to the deepest parts of cores. Cores also provide the natural, economic, and quality of life benefits of open space, recreation, thermal moderation, water quality (including drinking water recharge and protection, and erosion prevention), and air quality (including sequestration of carbon, absorption of gaseous pollutants, and production of oxygen). Cores are ranked from C1 to C5 (C5 being the least significant) using nine prioritization criteria, including the habitats of natural heritage resources they contain.

Impacts to cores occur when their natural cover is partially or completely converted permanently to developed land uses. Habitat conversion to development causes reductions in ecosystem processes, native biodiversity, and habitat quality due to habitat loss; less viable plant and animal populations; increased predation; and increased introduction and establishment of invasive species.

DCR recommends avoidance of impacts to cores. When avoidance cannot be achieved, DCR recommends minimizing the area of impacts overall and concentrating the impacted area at the edges of cores, so that the most interior remains intact.

# Lunenburg Solar



Buffered Project  
Boundary  
Project Boundary

0 0.05 0.1 0.2 Miles  
Scale: 1:6,396

Quads: Kenbridge West  
Counties: Lunenburg

Company: VHB, Inc.  
Lat/Long: 365254 / -781148





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

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources in the vicinity of the area indicated for this project. 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.

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. In addition, the project area does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (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.

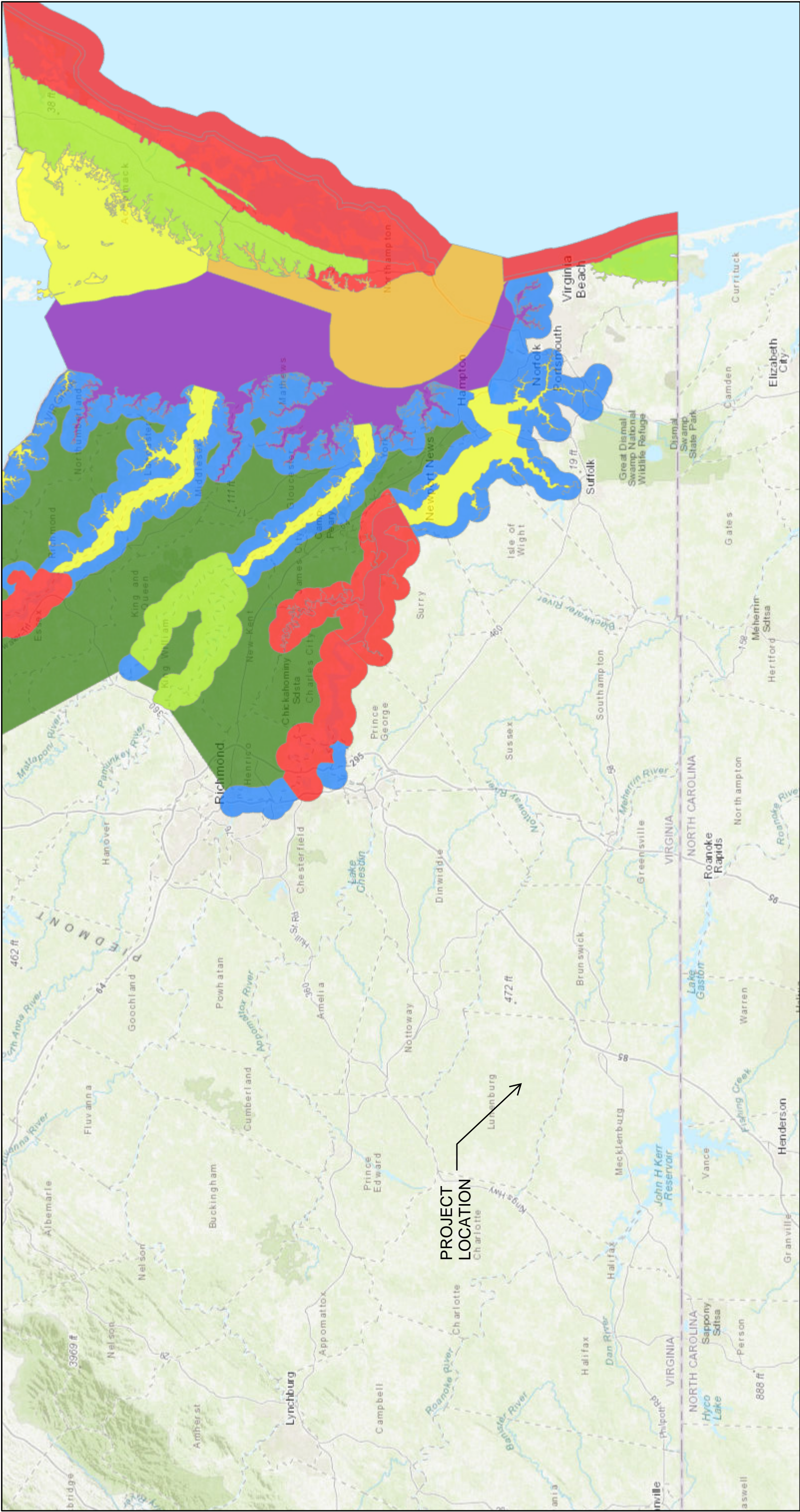
Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please revisit this website or contact DCR for an update on this natural heritage information if a significant amount of time passes (DCR recommends no more than six months) before it is utilized.

The Virginia Department of Wildlife Resources maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, that may contain information not documented in the Natural Heritage Data Explorer. Their database may be accessed from <https://services.dwr.virginia.gov/fwis/> or contact Amy Martin (804-367-2211 or [amy.martin@dwr.virginia.gov](mailto:amy.martin@dwr.virginia.gov)).

Thank you for submitting your project to the Virginia Department of Conservation and Recreation's Natural Heritage Data Explorer Web Service. **Based on the preliminary screening results for this project, no further correspondence will be sent from this office.** Should you have any questions or concerns about this report, the Data Explorer, or other Virginia Natural Heritage Program services, please contact the Natural Heritage Project Review Unit at 804-371-2708.



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (VDEQ) - COASTAL GEOSPATIAL AND EDUCATION MAPPING SYSTEM (GEMS)



11/21/2022, 1:57:02 PM

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)

1:1,155,581

0 10 20 40 mi

0 15 30 60 km

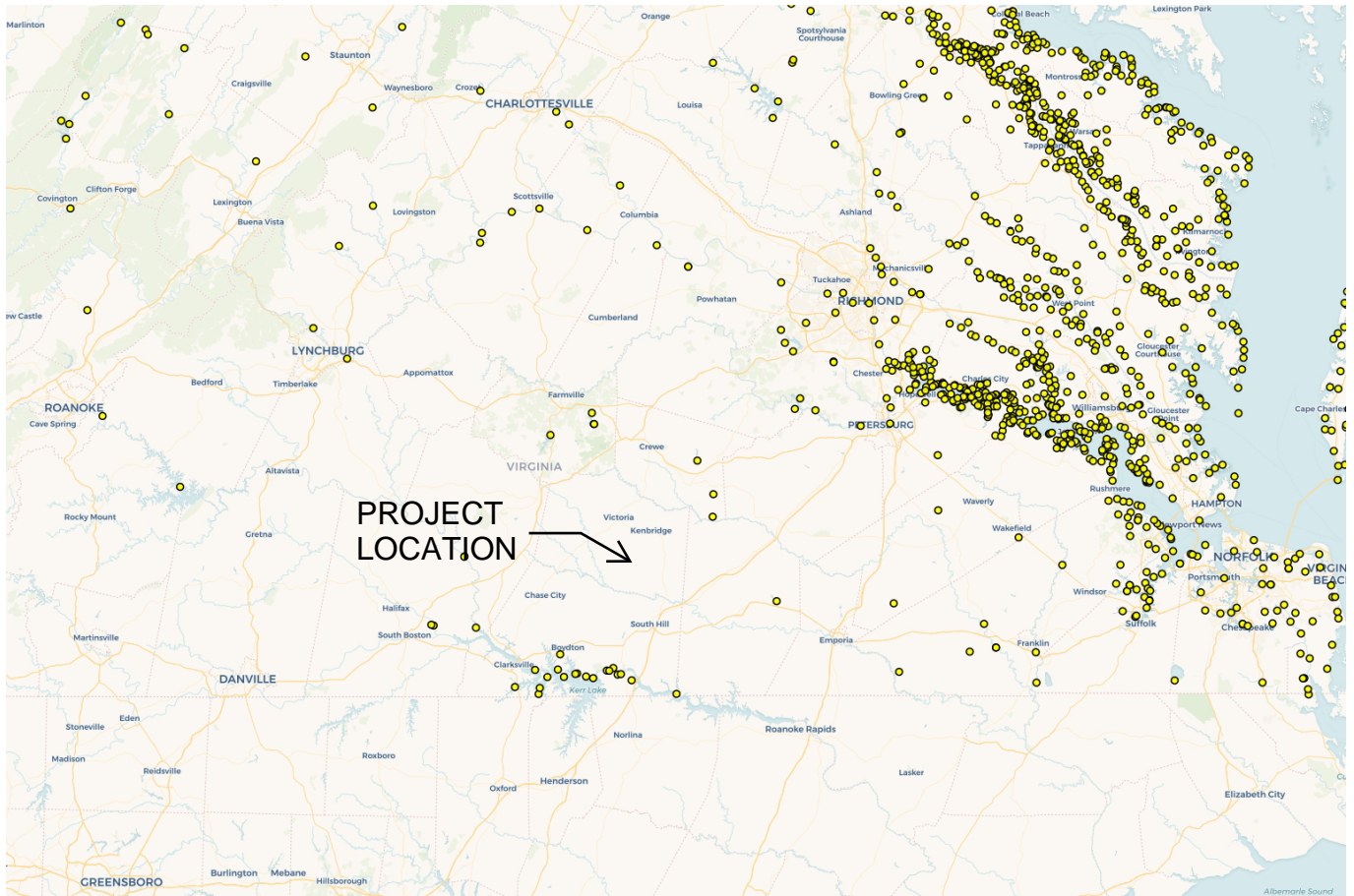
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community





The CENTER for  
CONSERVATION  
BIOLOGY

# CCB Mapping Portal



**Layers:** VA Eagle Nest Locator

**Map Center [longitude, latitude]:** [-77.9150390625, 37.08038005833324]

**Map Link:**

[https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=9&lat=37.08038005833324&lng=-77.9150390625&legend=legend\\_tab\\_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=Street+Map+%28OSM%2FCarto%29](https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=9&lat=37.08038005833324&lng=-77.9150390625&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=Street+Map+%28OSM%2FCarto%29)

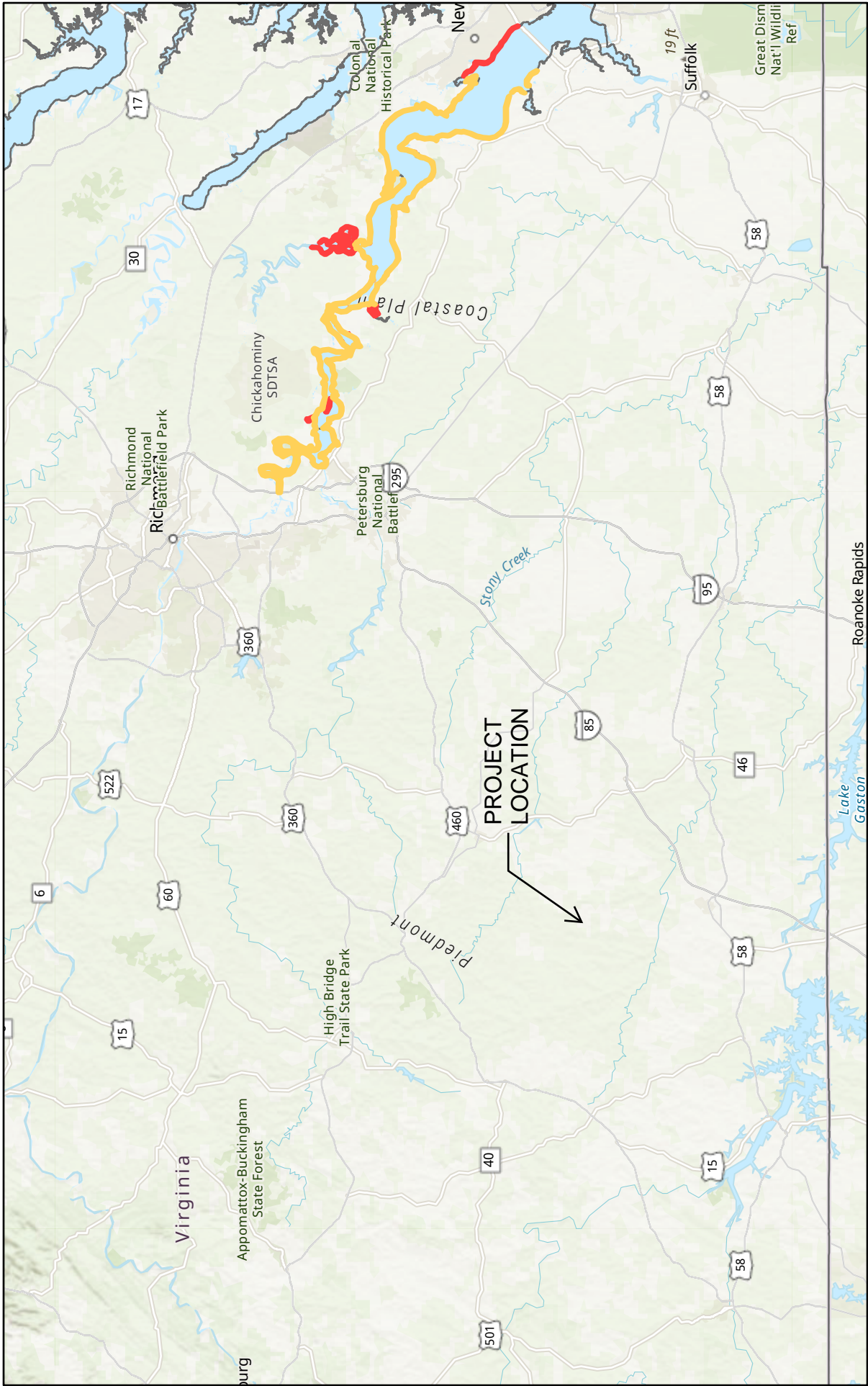
**Report Generated On:** 11/21/2022

The Center for Conservation Biology (CCB) provides certain data online as a free service to the public and the regulatory sector. CCB encourages the use of its data sets in wildlife conservation and management applications. These data are protected by intellectual property laws. All users are reminded to view the [Data Use Agreement](#) to ensure compliance with our data use policies. For additional data access questions, view our [Data Distribution Policy](#), or contact our Data Manager, Marie Pitts, at [mlpitts@wm.edu](mailto:mlpitts@wm.edu) or 757-221-7503.

Report generated by [The Center for Conservation Biology Mapping Portal](#).

To learn more about CCB visit [ccbbirds.org](http://ccbbirds.org) or contact us at [info@ccbbirds.org](mailto:info@ccbbirds.org)

# USFWS Bald Eagle Concentration Areas - Virginia



November 21, 2022

- December 15 to March 15
- May 15 to August 31 and
- December 15 to March 15

Virginia

1:1,155,581

0 5 10 12.5 20 25 50 mi

0 5 10 12.5 25 50 km

Esri, CGIAR, USGS, VGIN, Esri, HERE, Garmin, SafeGraph, FAO, METI/  
NASA, USGS, EPA, NPS





# E

## Appendix E

Transportation Management Plan &  
Existing Pavement Condition Inventory

TRANSPORTATION MANAGEMENT PLAN

1). Project Category

- A). This project is a "Type A Category I" project.
- 1) Construction will consist of the construction of a proposed solar engergy site along Rte. 635 (Oral Oaks Rd) with anticipated construction traffic utilizing the following Routes:

- Rte. 635 (Oral Oaks Rd)

- Rte. 655 (Plank Rd)

- Rte. 637 (Craig Mill Rd)

- Rte. 40 (N. Broad St)

- Rte. 40 (Blackstone Rd)

- Rte. 40 (Kenbridge Rd)

- US 460(Bus) (Cox Rd)

- UW 460 (W. Colonial Trail Hwy)
- B) The work areas are generally located within the proposed site property line except to tie proposed site entrance into existing Rte. 635 (Oral Oaks Rd). Work on entrance will remain within the existing right of way, with no disruption to adjacent properties.
- C). The traffic using the impacted facility includes a mixture of local and regional commuters, out of state travelers, local residents, as well as local and regional commercial traffic.
- D). These plans identified various areas within the proposed site property for the contractor to stage equipment and materials to support the construction activities. Outside Advanced signage in support of these traffic control plans, no other work or materials are proposed to be located within the right of way.

2). Temporary Traffic Control (TTC) Plan

- A). Major components will consist of General Notes and Special Details.
- B). Specific traffic control figures and notes from the current 2011 Virginia Work Area Protection Manual - Revision 2 (WAPM) may include, but are not limited to:

Pg. 6H-12 and 6H-13 Figure TTC-3.2 (Mobile or Short Duration Shoulder Operation)

Pg. 6H-14 and 6H-15 Figure TTC-4.2 (Stationary Operation on a Shoulder)

Pg. 6H-54 and 6H-55 Figure TTC-23.2 (Lane Closure on a Two Lane Road using Flaggers)

Pg. 6H-132 and 6H-133 Figure TTC-63.2 (Logging Operation)

C). Allowable Work Hours

For Contractor and public safety it is hereby advised that construction activities that will require lane closures or other types of limitations shall occur during non-peak daylight hours as follows:

Route	Construction Activity	Traffic Control	Time of Day
Oral Oaks Rd (Rte. 635)	Construction of Site Entrance	TTC-23.2	Monday - Friday , and Saturdays 9:00AM to 4:00PM
Oral Oaks Rd (Rte. 635)	Construction of remainder of Solar Site	TTC-63.2	Monday - Friday , and Saturdays 9:00AM to 4:00PM

3). Public Communication Strategies:

Public Communications Plan:

Contractor to coordinate with VDOT Richmond District Public Affairs Office 804-524-6179 or 804-586-4455, to provide the following information to the public:

Impacted Route Number:

- Rte. 635 (Oral Oaks Rd)

- Rte. 655 (Plank Rd)

- Rte. 637 (Craig Mill Rd)

Traffic Impacts:

- Traffic control shall consist of temporary short duration road and shoulder closures.

- Motorists should be alerted to the possibility of heavier than normal truck traffic and possible delays during working hours.

Goals:

- To inform the public about the location and schedule of the project

- To minimize disruption through proactive information dissemination

Messages provided to the public:

- Time frame and location of the proposed lane closure operations.

- Contacts for more information

4). Crisis Communications Plan:

- As with any crisis, emergency responders (911) should be notified immediately if necessary.

- Site Coordinator shall contact the VDOT Residency Area Land Use Engineer (ALUE) or his designee.

- If the emergency is traffic related, the ALUE or his designee should immediately notify the Central Regional Operations - Traffic Operations Center (CRO TOC) manager and the District Public Affairs office.

- The ALUE, public affairs, and the CRO TOC will work together to inform the traveling public, emergency responders, and the media about delays and unexpected changes in traffic patterns using the contact list on this sheet and other resources if necessary.

5). Transportation Operations (TO) Plan

- A). The following contact list of local emergency response agencies and key project personnel shall be provided to the work crews and be readily available during project activities.

Service	Contact	Phone Number
Haz-mat	911	911
Police	Virginia State Police (Area 22)	(434) 447-4121
Fire	Kenbridge Fire Department	(434) 676-2424
Hospital	Chesapeake Regional Medical Center	(757) 312-8121
Local Police	Kenbridge Police Department	(434) 676-2453
VDOT Work Zone Safety Coordinator	Reginald Patterson JR.	(804) 640-1642
VDOT South Hill Residency	Tommy Johnson	(434) 774-2300
VDOT Public Affairs Office	Bethanie Glover	(804) 524-6179
Traffic Operations Center	TOC Manager	(804) 796-4522

- B) The following procedures shall be utilized to respond to traffic incidents that may occur in the work zone:

- a. Contractor to call 911 to report incident.

b. Contractor to notify both State and Local Police.

c. Contractor to notify VDOT Work Zone Safety Coordiantor of any incident in the work zone.

d. Depending upon severity of incident, Contractor may have to shut down work.

e. Upon arrival on scene, responding officers will determine response necessary to allow traveling public around incident.

f. The responding officers will take control of the incident and direct its clearing and restoration to normal traffic conditions.

- C) Notify the Traffic Operations Center (TOC) 48 hours prior to beginning work and prior to any traffic pattern changes in order to place lane closure information on the 511 system and VA Traffic

Work Zone Certification

Plans Prepared by Jonathan Bonghi, PE who completed Advanced Work Zone Traffic Control Training (Cert. No. 120121102)



115 South 15th Street  
Suite 200  
Richmond, VA 23219  
804.343.7100



Kenbridge Solar  
Lunenburg County, Virginia

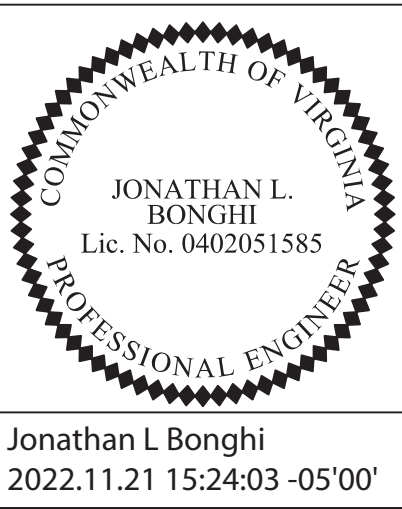
No.	Revision	Date	Appvd.

Designed by JLB	Checked by CTD
Issued for	Date

Permitting Review

Novemeber 2022








Drawing Title  
Transportation Management Plan



TMP 101  
Drawing Number

34823.00  
Project Number

TEMPORARY SIGN LEGEND

Sign	Name	Size
	W20-1	36"X36"
	W20-4	36"X36"
	W3-4	36"X36"
	W20-7	36"X36"
	G20-2(V)	48"X24"
	W11-V4	36"X36"
	R1-1	36"X36"

General Notes:

- 1). This project is to be constructed in accordance with the 2016 VDOT Road and Bridge Specifications, 2016 Road and Bridge Standards, 2009 MUTCD (revision 2), 2011 Virginia Work Area Protection Manual (Revision 2), and as amended by contract Provisions.
- 2). All traffic control devices and signs necessary for maintenance of traffic are to be provided, installed, maintained and removed by the contractor.
- 3). Trenches for utility drainage pipe installations shall be backfilled as soon as is practicable or as directed by the Engineer. Open excavation for trenches shall not be left unattended after working hours, backfilling will be required at the conclusion of each work day.
- 4). Any temporary removal or covering of existing traffic signs along the project shall be the responsibility of the contractor and be performed as directed by the Engineer, and such work shall be considered incidental to the project.
- 5). Travel lanes through the construction area shall be a minimum of 10 feet in width.
- 6). In all stages of construction, it is the contractor's responsibility to ensure that all drainage items (temporary or proposed) necessary to provide positive drainage during the construction are installed prior to construction activities.
- 7). All flaggers must have completed VDOT flagger training and be fully certified to perform flagging duties. Contractor shall have flagger certifications on site at all times to verify flaggers have completed the necessary training.

Channelizing Devices

Channelizing devices are required for all lane closures on this project. Device spacing shall follow VA Work Area Protection Manual requirements as field conditions allow. The following are the recommended device spacings:

Location	Spacing
Merging Tapers	20 Ft
Tangents	40 Ft

Required Taper, Buffer Lengths, and Sign Spacing

In accordance with the VA Work Area Protection Manual the following are the recommended merging taper and buffer lengths to be installed in advance of the active work area:

Location	Length
Merging Taper (Flagging)	100 - 120 Ft
Longitudinal Buffer	500 Ft
Downstream Taper	100 Ft
**Sign Spacing	500 Ft

\*\*Unposted Statutory Speed Limit = 55 MPH



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Kenbridge Solar  
Lunenburg County, Virginia

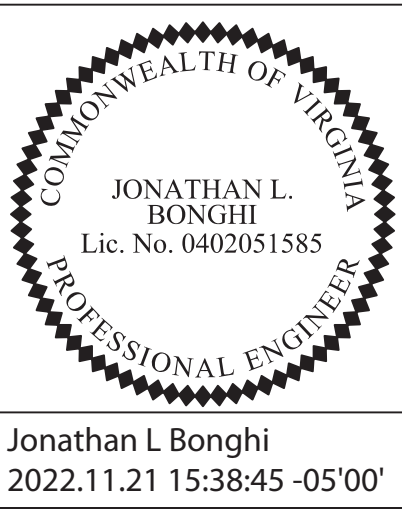
No.	Revision	Date	Appvd.

Designed by	Checked by
JLB	CTD
Issued for	Date

Permitting Review

Novemeber 2022

Drawing Title  
Transportation Management Plan

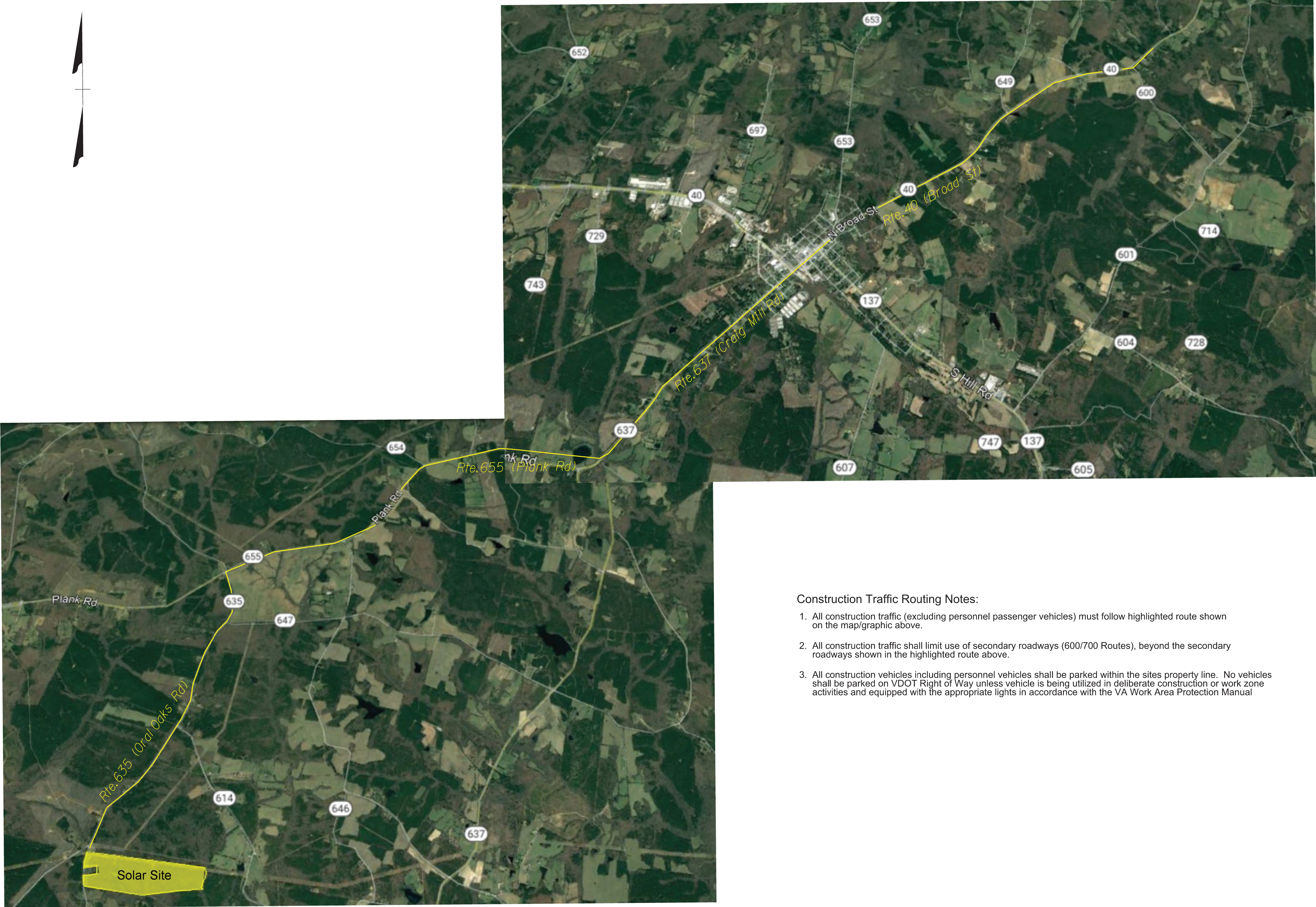


TMP 102  
Drawing Number

34823.00  
Project Number



Construction Traffic Continues Along  
Route 40 (Kenbridge Rd/Black Stone Rd) to US 460




Site located at:  
5844 Oral Oaks Rd  
Kenbridge, VA

- Construction Traffic Routing Notes:
1. All construction traffic (excluding personnel passenger vehicles) must follow highlighted route shown on the map/graphic above.
  2. All construction traffic shall limit use of secondary roadways (600/700 Routes), beyond the secondary roadways shown in the highlighted route above.
  3. All construction vehicles including personnel vehicles shall be parked within the sites property line. No vehicles shall be parked on VDOT Right of Way unless vehicle is being utilized in deliberate construction or work zone activities and equipped with the appropriate lights in accordance with the VA Work Area Protection Manual



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Suite 200  
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804.343.7100

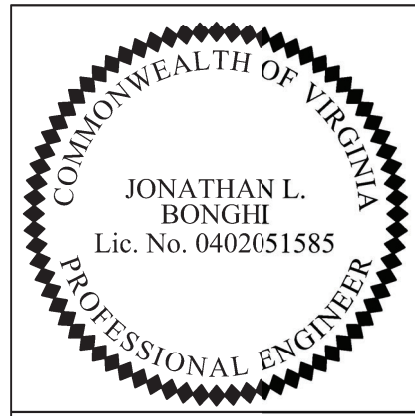


Kenbridge Solar  
Lunenburg County, Virginia

No.	Revision	Date	Appvd.

Designed by JLB	Checked by CTD
Issued for Permitting Review	Date Novemeber 2022

Drawing Title:  
Transportation Management Plan



Jonathan L Bonghi  
2022.11.21 16:04:19 -05'00'

TMP 103  
Drawing Number

34823.00  
Project Number





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Suite 200  
Richmond, VA 23219  
804.343.7100



Kenbridge Solar  
Lunenburg County, Virginia

No.	Revision	Date	Appvd.

Designed by JLB	Checked by CTD
Issued for	Date

Permitting Review      Novemeber 2022

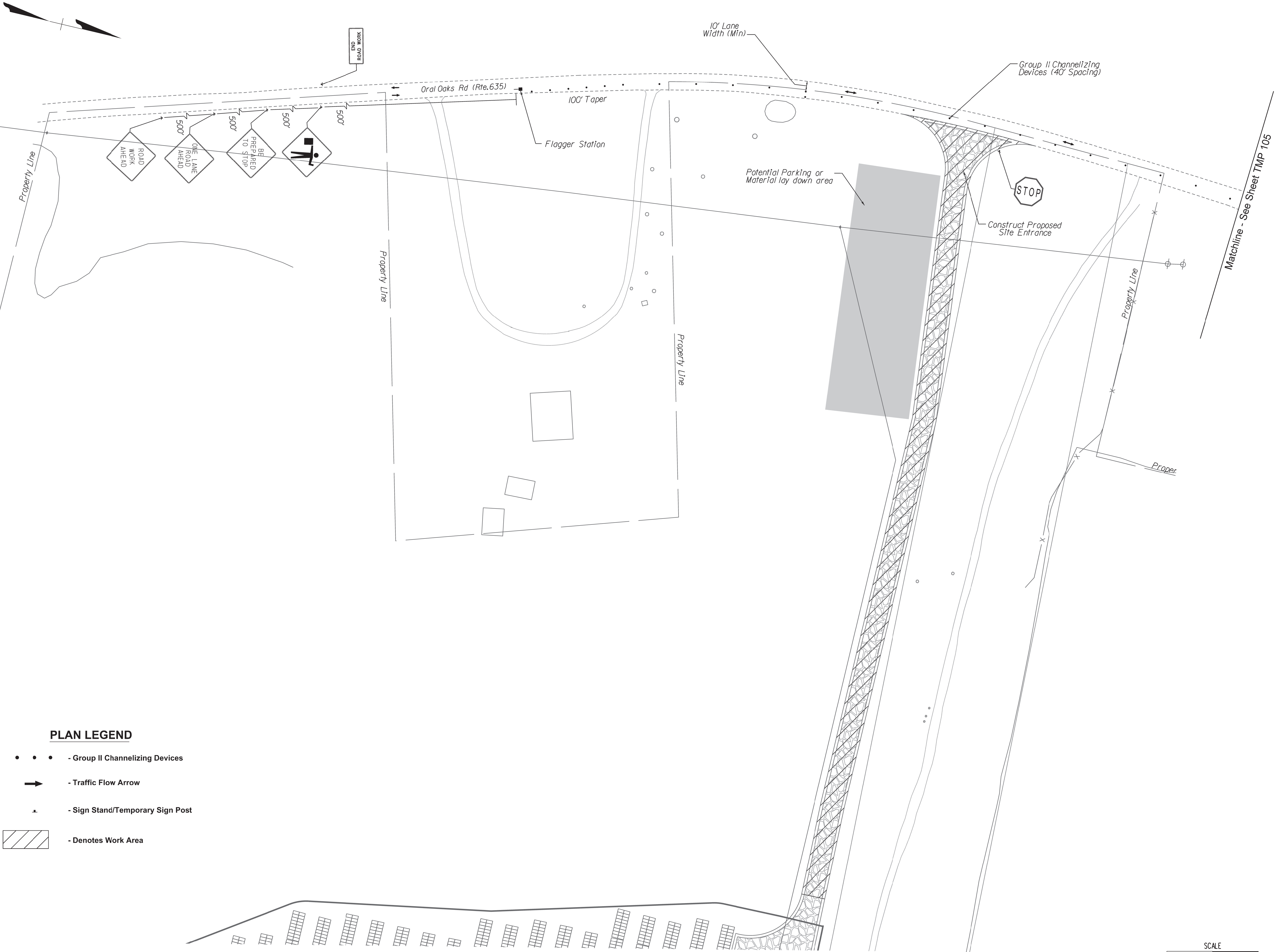
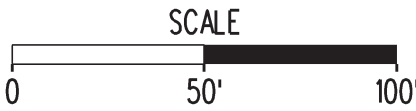
Drawing Title  
Transportation Management Plan



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Drawing Number

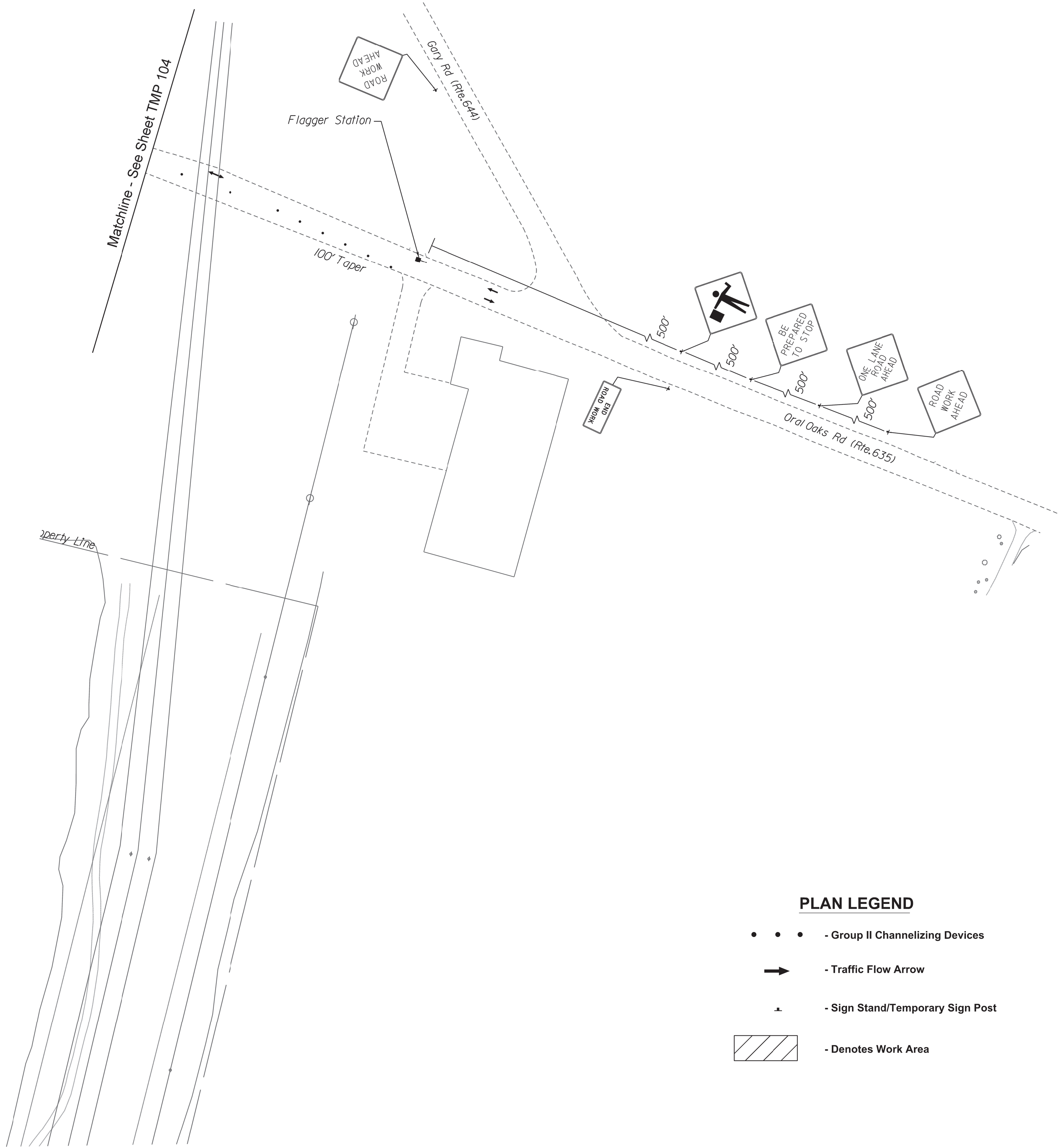
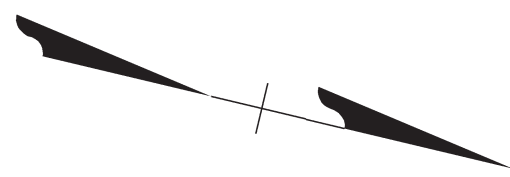
34823.00  
Project Number




PLAN LEGEND

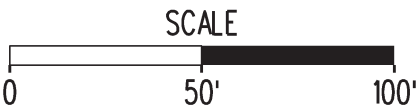
- • • - Group II Channelizing Devices
- ➔ - Traffic Flow Arrow
- ⌵ - Sign Stand/Temporary Sign Post
- ▨ - Denotes Work Area

11/21/2022  
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**PLAN LEGEND**

- • • - Group II Channelizing Devices
- ➔ - Traffic Flow Arrow
- ⊥ - Sign Stand/Temporary Sign Post
-  - Denotes Work Area



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Suite 200  
Richmond, VA 23219  
804.343.7100

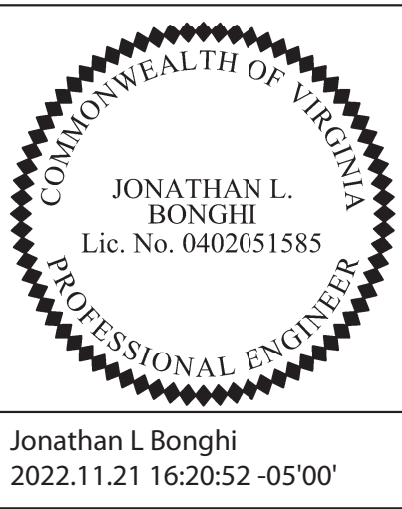


**Kenbridge Solar**  
Lunenburg County, Virginia

No.	Revision	Date	Appvd.

Designed by JLB	Checked by CTD
Issued for Permitting Review	Date November 2022

Drawing Title  
**Transportation Management Plan**



**TMP 105**  
Drawing Number

**34823.00**  
Project Number





To: Taylor Newton  
County of Lunenburg

Date: November 21, 2022

## Memorandum

From: Jonathan Bonghi, PE

Re: Kenbridge Solar Site – Existing Pavement Condition Inventory

Taylor,

VHB performed an existing conditions inventory to observe the existing roadway conditions within the project area. The goal of the inventory was to document pre-construction pavement conditions and current traffic control devices for the secondary roadways along the proposed construction traffic route between the proposed solar site and Kenbridge, Virginia, where construction traffic will continue onto primary routes VA-40 and US-460.

VHB drove the following previously defined impacted secondary routes:

Rte. 635 (Oral Oaks Rd)

Rte. 655 (Plank Rd)

Rte. 637 (Craig Mill Rd/S. Broad St)

VHB recorded video using a GPS linked GoPro to ascertain the existing roadway conditions. VHB drove the route between the project site and the nearest primary route (Route 40) at the S. Broad St/Main Street intersection and recorded two videos running the construction route in both directions. The video labeled "Kenbridge\_Direction1" is the route from north (Town of Kenbridge) to south (project site) and the video labeled "Kenbridge\_Direction2" is the route filmed from south to north. VHB is providing the GoPro videos, which can be viewed with any standard video playback software. VHB is also providing the two excel files that will display an approximate location using GPS coordinates that correspond with the elapsed time of each video in minutes/seconds. To use the excels, input the desired elapsed video time into the highlighted "Input" boxes at the top of the excel sheets. Once "Enter" is hit, the "Output" row will display the GPS coordinates in Latitude and Longitude that correspond to the inputted elapsed time. The directions indicated in the title of the excels, correlate with the directions indicated in the title of the GoPro videos (Direction 1/Direction 2).

Please review the provided videos and excel spreadsheets and note the following observations on the reviewed secondary routes:

**Route 635 (Oral Oaks Road)** – Overall the pavement along Route 635 (Oral Oaks Road) is in good conditions with limited-to-no major physical defects observed (No Cracking, Unraveling, or Spalding). The roadway provided a relatively smooth ride and limited to no vibrations were felt/heard while driving this route. Some existing pavement patching was observed; however, these patches are in good conditions and did not appear to impact the rideability of the roadway.

**Route 655 (Plank Rd)** – Overall the pavement along Route 655 (Plank Road) is in fair condition with limited-to-no major physical defects observed (No Cracking, Unraveling, or Spalding). However, the roadway provided a relatively rough ride with multiple locations causing vibrations to be heard and felt while driving this route. It was noted that there is an existing logging operation along this route, which may have caused rideability issues in the existing

pavement. Some existing pavement patching was observed; however, these patches are in good conditions and did not appear to impact the rideability of the roadway.

**Route 637 (Craig Mill Rd)** – Overall the pavement along Route 637 (Craig Mill Rd) is in excellent condition with no major physical defects observed (No Cracking, Unraveling, or Spalding). The roadway appears to have been repaved recently and the roadway provided a smooth ride. There were no vibrations felt/heard while driving this route. No existing pavement patching was observed along this roadway.

**Route 637 (S. Broad St)** – Overall the pavement along Route 637 (S. Broad St) is in good conditions with limited-to-no major physical defects observed (No Cracking, Unraveling, or Spalding). The roadway provided a relatively smooth ride and limited-to-no vibrations were felt/heard while driving this route. Some existing pavement patching was observed; however, these patches are in good conditions and did not appear to impact the rideability of the roadway.



# F

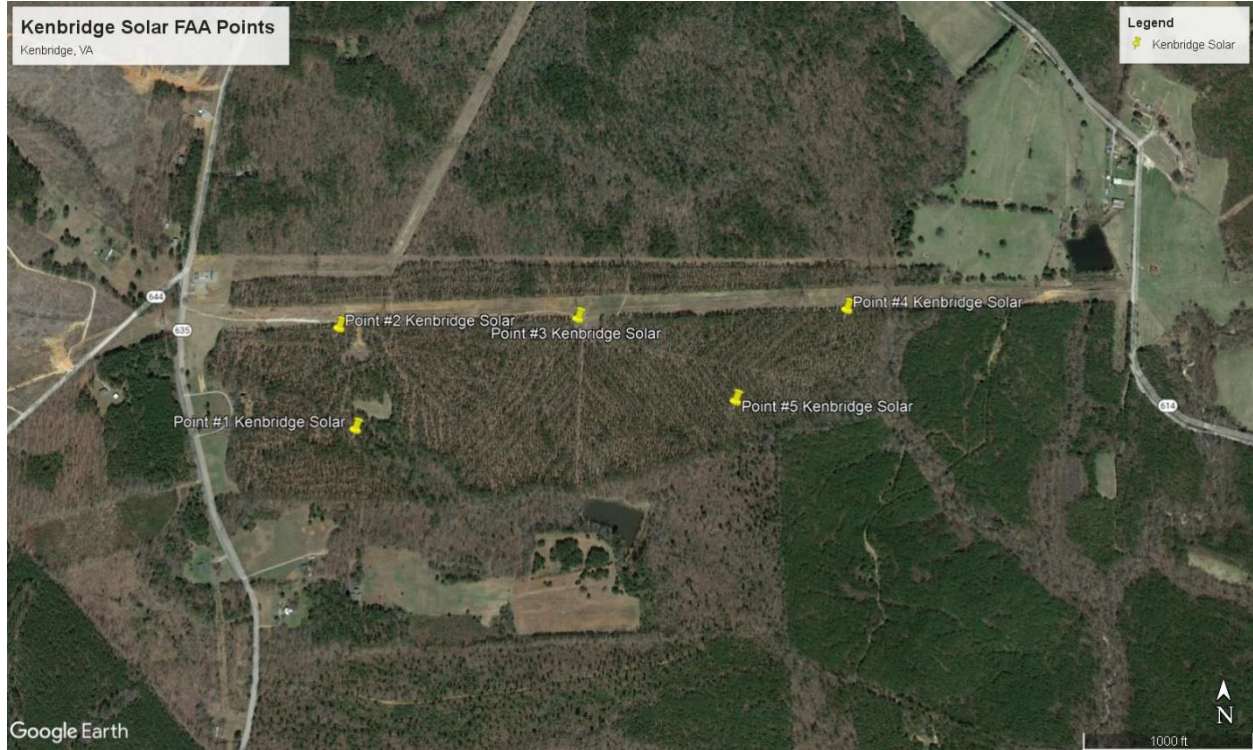
## Appendix F

FAA Determination



## FAA Determination

The Project utilized the FAA's Notice Criteria Tool to determine if the Project would exceed the Notice Criteria and potentially result in any issues with air traffic. For all five points indicated in the map below, the results were the same: "You Do Not Exceed Notice Criteria".





## Notice Criteria Tool

### Point 1

[Notice Criteria Tool - Desk Reference Guide V\\_2018.2.0](#)

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

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

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

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

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

Latitude:	<input type="text" value="36"/> Deg	<input type="text" value="52"/> M	<input type="text" value="50.98"/> S	<input type="button" value="N"/> <input type="button" value="▼"/>
Longitude:	<input type="text" value="78"/> Deg	<input type="text" value="12"/> M	<input type="text" value="1.93"/> S	<input type="button" value="W"/> <input type="button" value="▼"/>
Horizontal Datum:	<input type="button" value="NAD83"/> <input type="button" value="▼"/>			
Site Elevation (SE):	<input type="text" value="441"/> (nearest foot)			
Structure Height :	<input type="text" value="15"/> (nearest foot)			
Traverseway:	<input type="button" value="No Traverseway"/> <input type="button" value="▼"/> (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway			
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.



## Notice Criteria Tool

## Point 2

[Notice Criteria Tool - Desk Reference Guide V\\_2018.2.0](#)

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

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

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

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

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

Latitude:	<input type="text" value="36"/> Deg	<input type="text" value="52"/> M	<input type="text" value="57.08"/> S	<input type="button" value="N"/> <input type="button" value="v"/>
Longitude:	<input type="text" value="78"/> Deg	<input type="text" value="12"/> M	<input type="text" value="3.35"/> S	<input type="button" value="W"/> <input type="button" value="v"/>
Horizontal Datum:	<input type="button" value="NAD83"/> <input type="button" value="v"/>			
Site Elevation (SE):	<input type="text" value="460"/> (nearest foot)			
Structure Height :	<input type="text" value="15"/> (nearest foot)			
Traverseway:	<input type="button" value="No Traverseway"/> <input type="button" value="v"/> (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway			
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.





## Notice Criteria Tool

### Point 3

[Notice Criteria Tool - Desk Reference Guide V\\_2018.2.0](#)

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

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

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

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

Latitude:	<input type="text" value="36"/> Deg	<input type="text" value="52"/> M	<input type="text" value="57.6"/> S	<input type="button" value="N ▼"/>
Longitude:	<input type="text" value="78"/> Deg	<input type="text" value="11"/> M	<input type="text" value="45.37"/> S	<input type="button" value="W ▼"/>
Horizontal Datum:	<input type="button" value="NAD83 ▼"/>			
Site Elevation (SE):	<input type="text" value="457"/> (nearest foot)			
Structure Height :	<input type="text" value="15"/> (nearest foot)			
Traverseway:	<input type="button" value="No Traverseway ▼"/> (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway			
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.



## Notice Criteria Tool

## Point 4

[Notice Criteria Tool - Desk Reference Guide V\\_2018.2.0](#)

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

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

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

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

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

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Longitude:	<input type="text" value="78"/> Deg	<input type="text" value="11"/> M	<input type="text" value="25.11"/> S	<input type="button" value="W ▼"/>
Horizontal Datum:	<input type="button" value="NAD83 ▼"/>			
Site Elevation (SE):	<input type="text" value="402"/> (nearest foot)			
Structure Height :	<input type="text" value="15"/> (nearest foot)			
Traverseway:	<input type="button" value="No Traverseway ▼"/> (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway			
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.



## Notice Criteria Tool

## Point 5

[Notice Criteria Tool - Desk Reference Guide V\\_2018.2.0](#)

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

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

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

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

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

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Longitude:	<input type="text" value="78"/> Deg	<input type="text" value="11"/> M	<input type="text" value="33.59"/> S	<input type="button" value="W"/> <input type="button" value="▼"/>
Horizontal Datum:	<input type="button" value="NAD83"/> <input type="button" value="▼"/>			
Site Elevation (SE):	<input type="text" value="414"/> (nearest foot)			
Structure Height :	<input type="text" value="15"/> (nearest foot)			
Traverseway:	<input type="button" value="No Traverseway"/> <input type="button" value="▼"/> (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway			
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes			

### Results

You do not exceed Notice Criteria.





# G

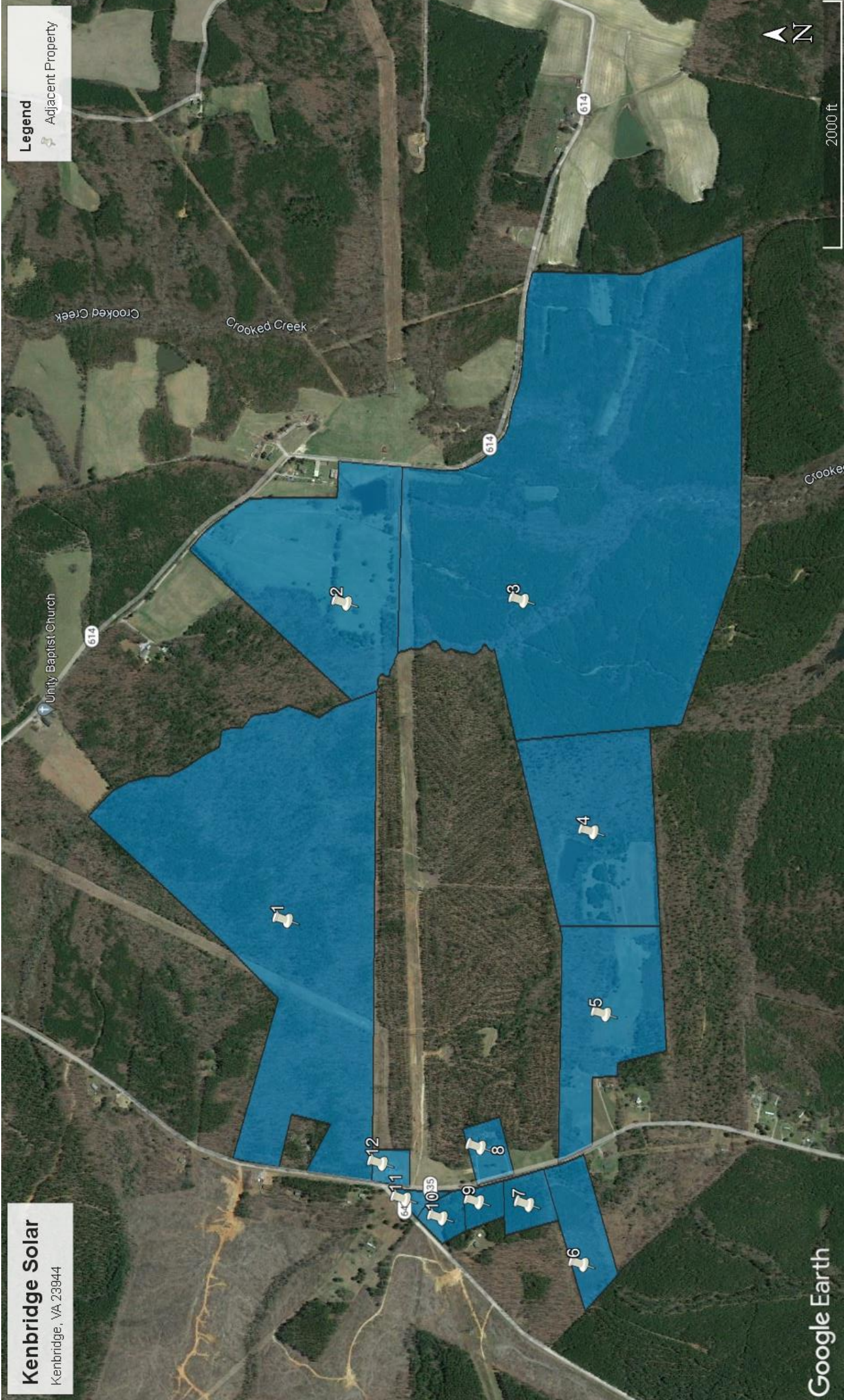
## Appendix G

Adjoining Property Owner Map & Notifications





# Kenbridge Solar: Adjacent Landowners



#	Parcel Number	Name(s)	Address
1	58-0A-31	Wilson Hawthorne Virginia	5844 Oral Oaks Road Kenbridge, VA 23944 (Owners Address)
2	58-0A-37A	Novak Robert or Lisa	1080 Unity Road Kenbridge, VA 23944
3	58-0A-0-39A	Strebor Farms LLC	702 South Broad Street Kenbridge, VA 23944 (Owners Address)
4	58-0A-0-28B	Gustaf Joseph Terry II	5642 Oral Oaks Road Kenbridge, VA 23944 (Owners Address)
5	58-0A-27	Gustaf Joseph Terry II	5642 Oral Oaks Road Kenbridge, VA 23944
6	058-03-0-D	Phillips Iason A or Beth A	596 Saint Johns Church Road Kenbridge, VA 23944 (Owners Address)
7	058-03-0-C	Langford Vernon L or Ora Regina,	443 Northview Lane Crestview, FL 32536 (Owners Address)
8	58-0A-29A	Wilson Hawthorne Virginia	5844 Oral Oaks Road Kenbridge, VA 23944
9	058-0A-0-24A	Bledsoe Rhodessa Tisdale,	22061 Lake Jordan Drive Petersburg, VA 23803 (Owners Address)
10	058-0A-0-24C	Killen Jerry W	5717 Fitztown Road Virginia Beach, VA 23457 (Owners Address)
11	058-0A-0-24	Lunenburg County Virginia	1800 Gary Road Kenbridge, VA 23944
12	58-0A-30	Electric Power Sub- Station	Null





MONTICELLO  
5219 MONTICELLO AVE  
WILLIAMSBURG, VA 23188-9998  
(800)275-8777

03/09/2023

01:51 PM

Product	Qty	Unit Price	Price
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Priority Mail®	1		\$9.65
Window FR Env			
Crestview, FL 32536			
Flat Rate			
Expected Delivery Date			
Mon 03/13/2023			
Tracking #:			
9505 5157 9941 3068 3648 06			
Insurance		\$0.00	
Up to \$100.00 included			

Total			\$9.65
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Priority Mail®	1		\$9.65
Window FR Env			
Kenbridge, VA 23944			
Flat Rate			
Expected Delivery Date			
Sat 03/11/2023			
Tracking #:			
9505 5157 9941 3068 3648 20			
Insurance		\$0.00	
Up to \$100.00 included			

Total			\$9.65
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Priority Mail®	1		\$9.65
Window FR Env			
Virginia Beach, VA 23457			
Flat Rate			
Expected Delivery Date			
Sat 03/11/2023			
Tracking #:			
9505 5157 9941 3068 3648 44			
Insurance		\$0.00	
Up to \$100.00 included			

Total			\$9.65
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Priority Mail®	1		\$9.65
Window FR Env			
Kenbridge, VA 23944			
Flat Rate			
Expected Delivery Date			
Sat 03/11/2023			
Tracking #:			
9505 5157 9941 3068 3648 68			
Insurance		\$0.00	
Up to \$100.00 included			

Total			\$9.65
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Priority Mail®	1		\$9.65
Window FR Env			
Kenbridge, VA 23944			
Flat Rate			
Expected Delivery Date			
Sat 03/11/2023			
Tracking #:			
9505 5157 9941 3068 3648 82			
Insurance		\$0.00	
Up to \$100.00 included			

Total			\$9.65
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Priority Mail®	1		\$9.65
Window FR Env			
Kenbridge, VA 23944			
Flat Rate			
Expected Delivery Date			
Sat 03/11/2023			
Tracking #:			
9505 5157 9941 3068 3649 05			
Insurance		\$0.00	
Up to \$100.00 included			

Total			\$9.65
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Priority Mail®	1		\$9.65
Window FR Env			
Kenbridge, VA 23944			
Flat Rate			
Expected Delivery Date			
Sat 03/11/2023			
Tracking #:			
9505 5157 9941 3068 3649 29			
Insurance		\$0.00	
Up to \$100.00 included			

Total			\$9.65
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Priority Mail®	1		\$9.65
Window FR Env			
Petersburg, VA 23803			
Flat Rate			
Expected Delivery Date			
Fri 03/10/2023			
Tracking #:			
9505 5157 9941 3068 3649 43			
Insurance		\$0.00	
Up to \$100.00 included			

Total			\$9.65
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Grand Total:			\$77.20
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Cash			\$80.00
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Change			-\$2.80
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In a hurry? Self-service kiosks offer  
quick and easy check-out. Any Retail  
Associate can show you how.



March 9, 2023

Vernon L. and Ora Regina Langford

443 Northview Lane

Crestview, FL 32536

**RE: Notification of Application Submission for Kenbridge Solar**

Dear Mr. and Ms. Langford,

This letter is to inform you that there is a ground-mounted photovoltaic solar facility being proposed by Ameresco (applicant/developer) in accordance with the Lunenburg County Ordinance for Solar Energy Facilities. The project is called Kenbridge Solar and will generate approximately 12 megawatts (MW) alternating current, which is enough to power approximately 2,000 homes. The proposed development will consist of an approximately 51-acre fenced solar facility, interior to the 128.24 acres of private land on Parcel Tax Map No. 058-0A-0-29, located at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

As we progress further with our application, we will be hosting an in-person community meeting in the area, and you will receive an invitation for this meeting by mail. The community meeting will provide an opportunity for the project team to meet the neighbors, answer questions and address any concerns you may have about the project, solar energy, or the developer Ameresco.

In compliance with Section 3 of the Lunenburg County Conditional Use Permit Application for solar facilities, we are notifying you of the application submission for Kenbridge Solar. Per the Lunenburg County Ordinance for Solar Energy Facilities, Section 2 (Definitions), the requested use is for a "large-scale solar energy facility" based on the rated power generating capacity being greater than five (5) MW alternating current.

Please let me know if you have any questions or would like to meet in person. You can contact me at (508) 598-3136 or via email [tholt@ameresco.com](mailto:tholt@ameresco.com).

Thank you,

Tom Holt  
Director – Solar PV Project Development  
Ameresco



## Notification of Application Submittal to Adjacent Property Owners

**To:** Adjacent Property Owner of Parcel(s) 058-0A-0-29

**From:** Ameresco

**Date:** March 9, 2023

The following application will be submitted for review to the Lunenburg County Planning Office:

☐ Rezoning

☒ Conditional Use Permit

☐ Special Exception

Requested Use or Exception:

Ameresco is requesting a Conditional Use Permit to allow an approximately 12-megawatt solar facility to be developed on a 128.24-acre parcel (Tax Map No. 058-0A-0-29) located at 5844 Oral Oaks Road, Kenbridge, Virginia. The site is currently wooded, and the proposed development will consist of an approximately 51-acre fenced solar array field interior to the 128.24-acre parcel. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

Ameresco intends to host a public community meeting with respect to this application to allow all interested community members to learn more about the project and ask the Applicant questions about the project, solar energy, or Ameresco. Ameresco will notify the adjacent landowners and publicize the community meeting in advance once a time and place has been determined.

The application will be available for viewing at the Lunenburg County Planning Office. The Planning Office shall notify all adjacent property owner(s) of the time, day, and location of the public hearing(s) to be held on this application. Should you have questions and/or comments, please contact the Planning Office at 434.696.2142 or [taylor@lunenburgva.gov](mailto:taylor@lunenburgva.gov).



March 9, 2023

Robert and Lisa Novak

1080 Unity Road

Kenbridge, VA 23944

**RE: Notification of Application Submission for Kenbridge Solar**

Dear Mr. and Ms. Novak,

This letter is to inform you that there is a ground-mounted photovoltaic solar facility being proposed by Ameresco (applicant/developer) in accordance with the Lunenburg County Ordinance for Solar Energy Facilities. The project is called Kenbridge Solar and will generate approximately 12 megawatts (MW) alternating current, which is enough to power approximately 2,000 homes. The proposed development will consist of an approximately 51-acre fenced solar facility, interior to the 128.24 acres of private land on Parcel Tax Map No. 058-0A-0-29, located at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

As we progress further with our application, we will be hosting an in-person community meeting in the area, and you will receive an invitation for this meeting by mail. The community meeting will provide an opportunity for the project team to meet the neighbors, answer questions and address any concerns you may have about the project, solar energy, or the developer Ameresco.

In compliance with Section 3 of the Lunenburg County Conditional Use Permit Application for solar facilities, we are notifying you of the application submission for Kenbridge Solar. Per the Lunenburg County Ordinance for Solar Energy Facilities, Section 2 (Definitions), the requested use is for a "large-scale solar energy facility" based on the rated power generating capacity being greater than five (5) MW alternating current.

Please let me know if you have any questions or would like to meet in person. You can contact me at (508) 598-3136 or via email [tholt@ameresco.com](mailto:tholt@ameresco.com).

Thank you,

Tom Holt  
Director – Solar PV Project Development  
Ameresco

## Notification of Application Submittal to Adjacent Property Owners

**To:** Adjacent Property Owner of Parcel(s) 058-0A-0-29

**From:** Ameresco

**Date:** March 9, 2023

The following application will be submitted for review to the Lunenburg County Planning Office:

☐ Rezoning

☒ Conditional Use Permit

☐ Special Exception

Requested Use or Exception:

Ameresco is requesting a Conditional Use Permit to allow an approximately 12-megawatt solar facility to be developed on a 128.24-acre parcel (Tax Map No. 058-0A-0-29) located at 5844 Oral Oaks Road, Kenbridge, Virginia. The site is currently wooded, and the proposed development will consist of an approximately 51-acre fenced solar array field interior to the 128.24-acre parcel. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

Ameresco intends to host a public community meeting with respect to this application to allow all interested community members to learn more about the project and ask the Applicant questions about the project, solar energy, or Ameresco. Ameresco will notify the adjacent landowners and publicize the community meeting in advance once a time and place has been determined.

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March 9, 2023

Jason A. and Beth A. Phillips

596 Saint Johns Church Road

Kenbridge, VA 23944

**RE: Notification of Application Submission for Kenbridge Solar**

Dear Mr. and Ms. Phillips,

This letter is to inform you that there is a ground-mounted photovoltaic solar facility being proposed by Ameresco (applicant/developer) in accordance with the Lunenburg County Ordinance for Solar Energy Facilities. The project is called Kenbridge Solar and will generate approximately 12 megawatts (MW) alternating current, which is enough to power approximately 2,000 homes. The proposed development will consist of an approximately 51-acre fenced solar facility, interior to the 128.24 acres of private land on Parcel Tax Map No. 058-0A-0-29, located at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

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Thank you,

Tom Holt  
Director – Solar PV Project Development  
Ameresco



## Notification of Application Submittal to Adjacent Property Owners

**To:** Adjacent Property Owner of Parcel(s) 058-0A-0-29

**From:** Ameresco

**Date:** March 9, 2023

The following application will be submitted for review to the Lunenburg County Planning Office:

☐ Rezoning

☒ Conditional Use Permit

☐ Special Exception

Requested Use or Exception:

Ameresco is requesting a Conditional Use Permit to allow an approximately 12-megawatt solar facility to be developed on a 128.24-acre parcel (Tax Map No. 058-0A-0-29) located at 5844 Oral Oaks Road, Kenbridge, Virginia. The site is currently wooded, and the proposed development will consist of an approximately 51-acre fenced solar array field interior to the 128.24-acre parcel. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

Ameresco intends to host a public community meeting with respect to this application to allow all interested community members to learn more about the project and ask the Applicant questions about the project, solar energy, or Ameresco. Ameresco will notify the adjacent landowners and publicize the community meeting in advance once a time and place has been determined.

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March 9, 2023

Joseph Terry Gustaf II

5642 Oral Oaks Road

Kenbridge, VA 23944

**RE: Notification of Application Submission for Kenbridge Solar**

Dear Mr. Gustaf,

This letter is to inform you that there is a ground-mounted photovoltaic solar facility being proposed by Ameresco (applicant/developer) in accordance with the Lunenburg County Ordinance for Solar Energy Facilities. The project is called Kenbridge Solar and will generate approximately 12 megawatts (MW) alternating current, which is enough to power approximately 2,000 homes. The proposed development will consist of an approximately 51-acre fenced solar facility, interior to the 128.24 acres of private land on Parcel Tax Map No. 058-0A-0-29, located at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

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Please let me know if you have any questions or would like to meet in person. You can contact me at (508) 598-3136 or via email [tholt@ameresco.com](mailto:tholt@ameresco.com).

Thank you,

Tom Holt  
Director – Solar PV Project Development  
Ameresco

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March 9, 2023

Jerry W. Killen

5717 Fitztown Road

Virginia Beach, VA 23457

**RE: Notification of Application Submission for Kenbridge Solar**

Dear Mr. Killen,

This letter is to inform you that there is a ground-mounted photovoltaic solar facility being proposed by Ameresco (applicant/developer) in accordance with the Lunenburg County Ordinance for Solar Energy Facilities. The project is called Kenbridge Solar and will generate approximately 12 megawatts (MW) alternating current, which is enough to power approximately 2,000 homes. The proposed development will consist of an approximately 51-acre fenced solar facility, interior to the 128.24 acres of private land on Parcel Tax Map No. 058-0A-0-29, located at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

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Ameresco



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March 9, 2023

Rhodessa Tisdale Bledsoe

22061 Lake Jordan Drive

Petersburg, VA 23803

**RE: Notification of Application Submission for Kenbridge Solar**

Dear Ms. Bledsoe,

This letter is to inform you that there is a ground-mounted photovoltaic solar facility being proposed by Ameresco (applicant/developer) in accordance with the Lunenburg County Ordinance for Solar Energy Facilities. The project is called Kenbridge Solar and will generate approximately 12 megawatts (MW) alternating current, which is enough to power approximately 2,000 homes. The proposed development will consist of an approximately 51-acre fenced solar facility, interior to the 128.24 acres of private land on Parcel Tax Map No. 058-0A-0-29, located at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

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Director – Solar PV Project Development  
Ameresco

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**From:** Ameresco

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March 9, 2023

Virginia Wilson Hawthorne

5844 Oral Oaks Road

Kenbridge, VA 23944

**RE: Notification of Application Submission for Kenbridge Solar**

Dear Ms. Virginia Wilson,

This letter is to inform you that there is a ground-mounted photovoltaic solar facility being proposed by Ameresco (applicant/developer) in accordance with the Lunenburg County Ordinance for Solar Energy Facilities. The project is called Kenbridge Solar and will generate approximately 12 megawatts (MW) alternating current, which is enough to power approximately 2,000 homes. The proposed development will consist of an approximately 51-acre fenced solar facility, interior to the 128.24 acres of private land on Parcel Tax Map No. 058-0A-0-29, located at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

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Ameresco

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March 9, 2023

Strebor Farms LLC

702 South Broad Street

Kenbridge, VA 23944

**RE: Notification of Application Submission for Kenbridge Solar**

Dear Strebor Farms LLC,

This letter is to inform you that there is a ground-mounted photovoltaic solar facility being proposed by Ameresco (applicant/developer) in accordance with the Lunenburg County Ordinance for Solar Energy Facilities. The project is called Kenbridge Solar and will generate approximately 12 megawatts (MW) alternating current, which is enough to power approximately 2,000 homes. The proposed development will consist of an approximately 51-acre fenced solar facility, interior to the 128.24 acres of private land on Parcel Tax Map No. 058-0A-0-29, located at 5844 Oral Oaks Road, Kenbridge, Virginia 23944. The purpose of the project is to generate local, clean, and renewable power with the electricity generated to be purchased by Southside Electric Cooperative.

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Ameresco



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# H

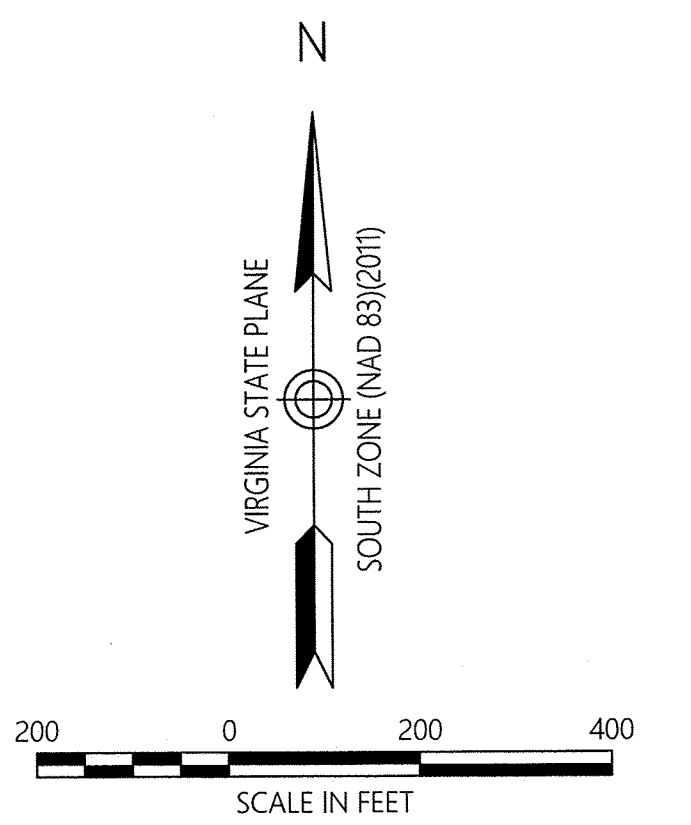
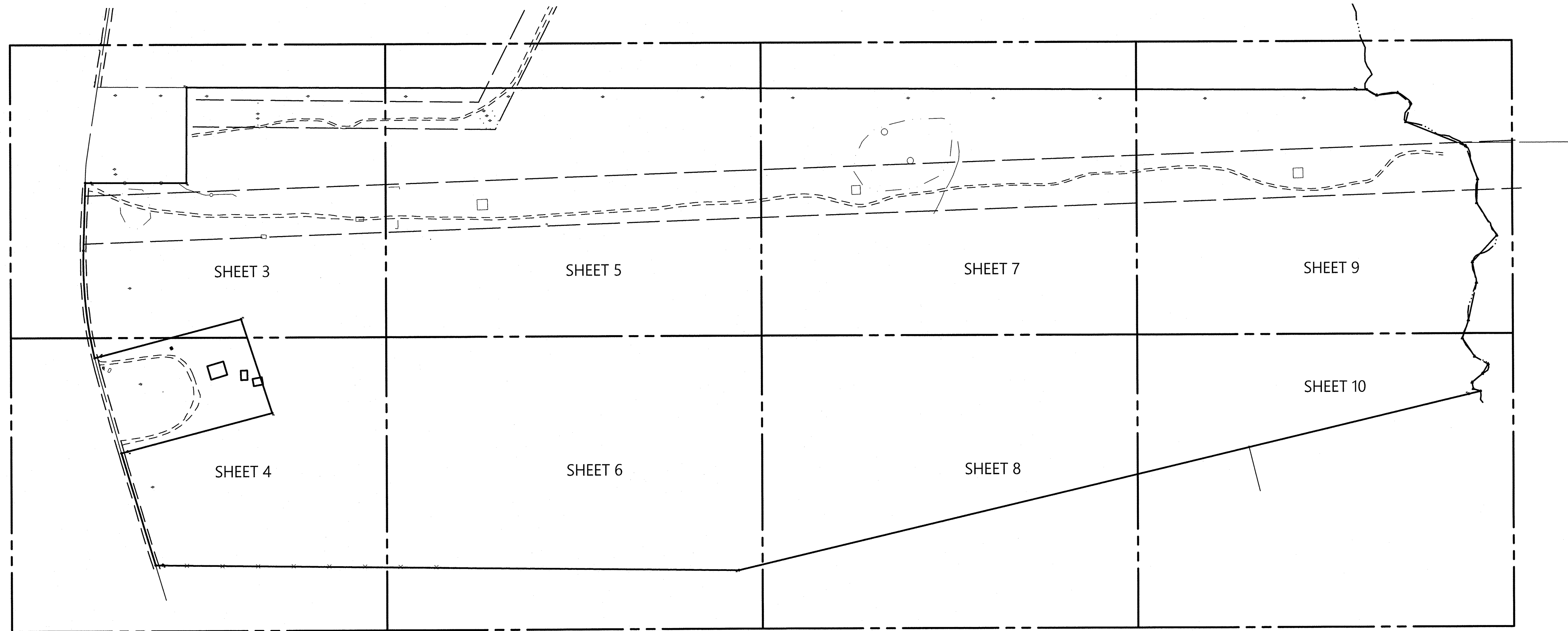
## Appendix H

ALTA Land Title Survey





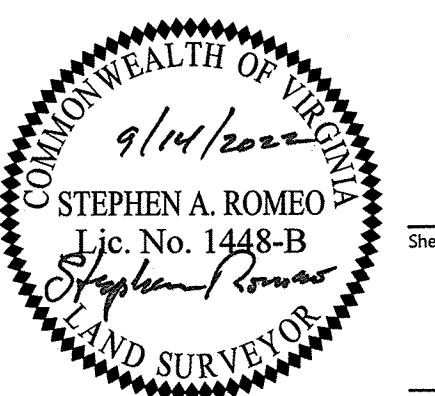
351 McLaws Circle  
Suite 3  
Williamsburg, VA 23185  
757.220.0500



**ALTA/NSPS**  
**Land Title Survey**  
**5844 Oral Oaks Road**  
**Lunenburg County**  
**Kenbridge, Virginia**

[illegible]

September 14, 2022



Project Number

**Sv-2**

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et of

**2 10**

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Project Number

**4823.00**



**vhb**  
351 McLaws Circle  
Suite 3  
Williamsburg, VA 23185  
757.220.0500

N  
VIRGINIA STATE PLANE  
SOUTH ZONE (NAD 83)(2011)  
40 0 40 80  
SCALE IN FEET

**ALTA/NSPS**  
**Land Title Survey**  
**5844 Oral Oaks Road**  
**Lunenburg County**  
**Kenbridge, Virginia**

No.	Revision	Date	Appvd.

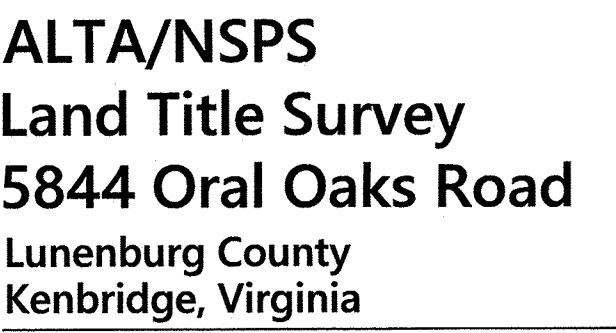
Designed by: \_\_\_\_\_ Checked by: \_\_\_\_\_  
Issued for: \_\_\_\_\_ Date: September 14, 2022

COMMONWEALTH OF VIRGINIA  
9/14/2022  
STEPHEN A. ROMEO  
Lic. No. 1448-B  
LAND SURVEYOR

Drawing Number  
**Sv-3**

Sheet 3 of 10  
Project Number  
34823.00





September 14, 2022

Drawing Number

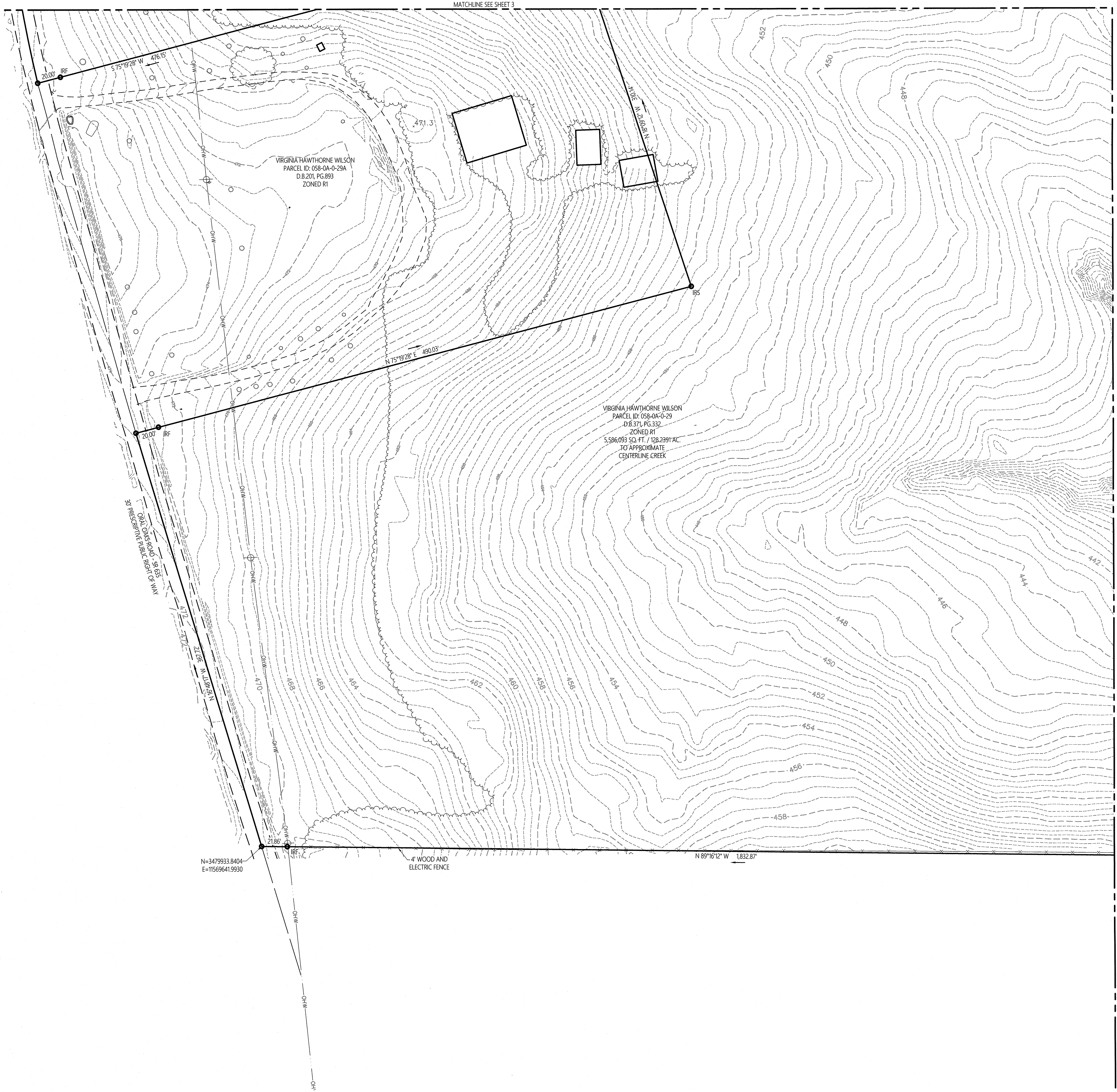
**Sv-4**

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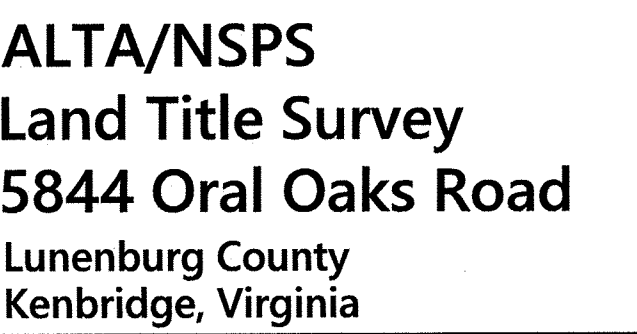
Sheet                      of

**4                                      10**

Project Number  
**34823.00**







No.	Revision	Date	Appvd.
Designed by		Checked by	
Issued for		Date	

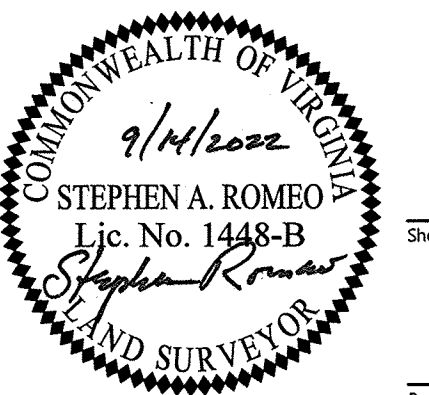
**September 14, 2022**

owing Number

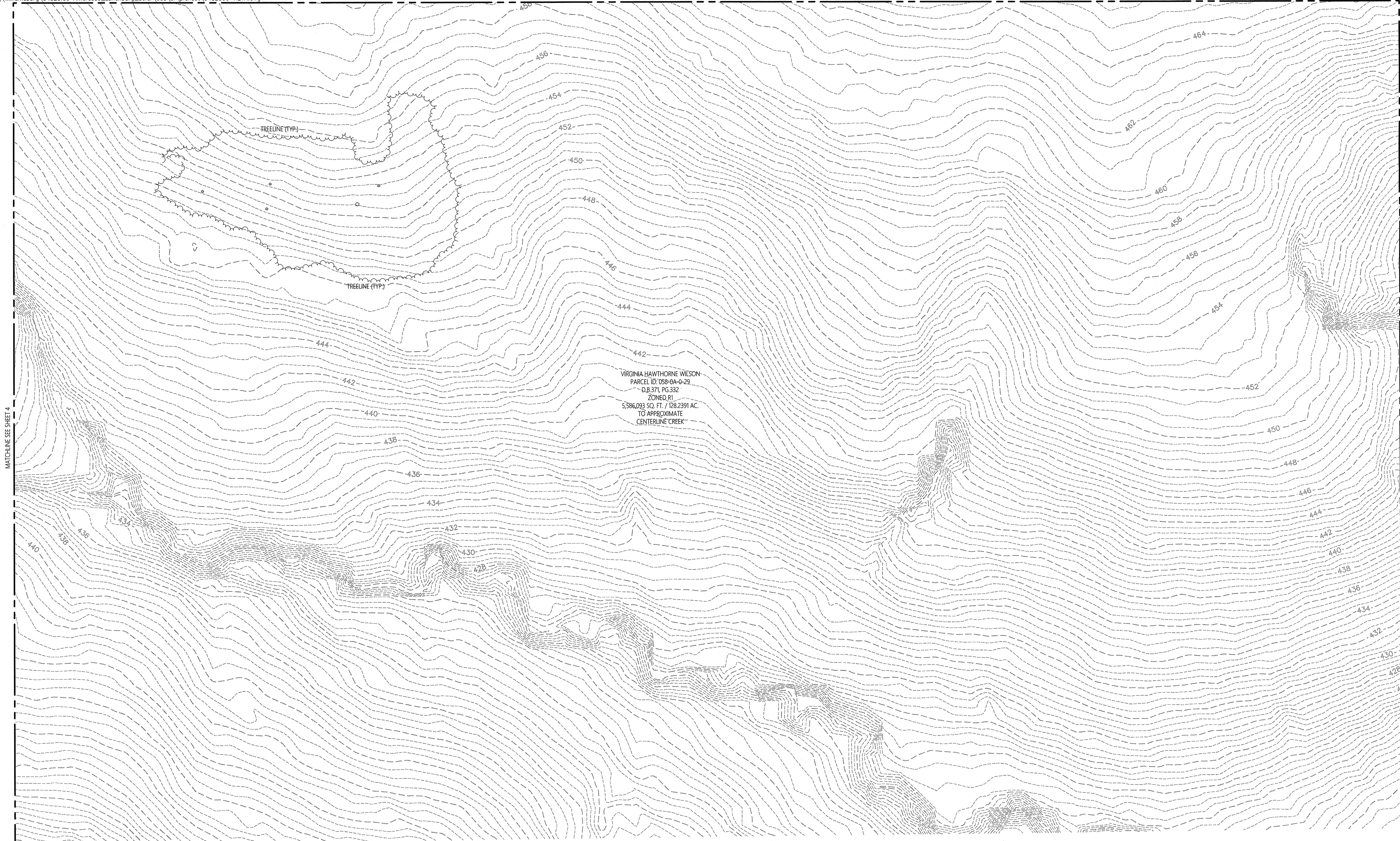
# Sv-5

5 of 10

Project Number  
**4823.00**







MATCHLINE SEE SHEET 4

MATCHLINE SEE SHEET 8



SCALE IN FEET

**ALTA/NSPS**  
**Land Title Survey**  
**5844 Oral Oaks Road**  
**Lunenburg County**  
**Kenbridge, Virginia**

No.	Revision	Date	Appr.

Designed by	Checked by
Issued for	Date

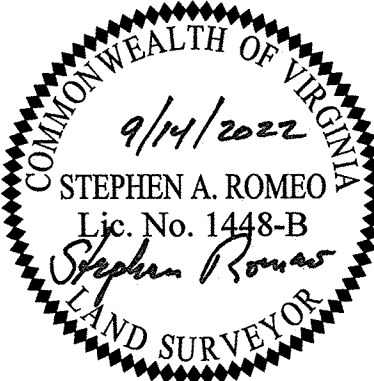
September 14, 2022

4' WOOD AND  
ELECTRIC FENCE

N 89°16'12" W 1,832.87'

JOSEPH TERRY II GUSTAF  
PARCEL ID: 058-0A-0-288  
INST.NO.21-0000034  
ZONED R1

2,391.65'  
S 76°37'27" W



Drawing Number

**Sv-6**

Sheet 6 of 10

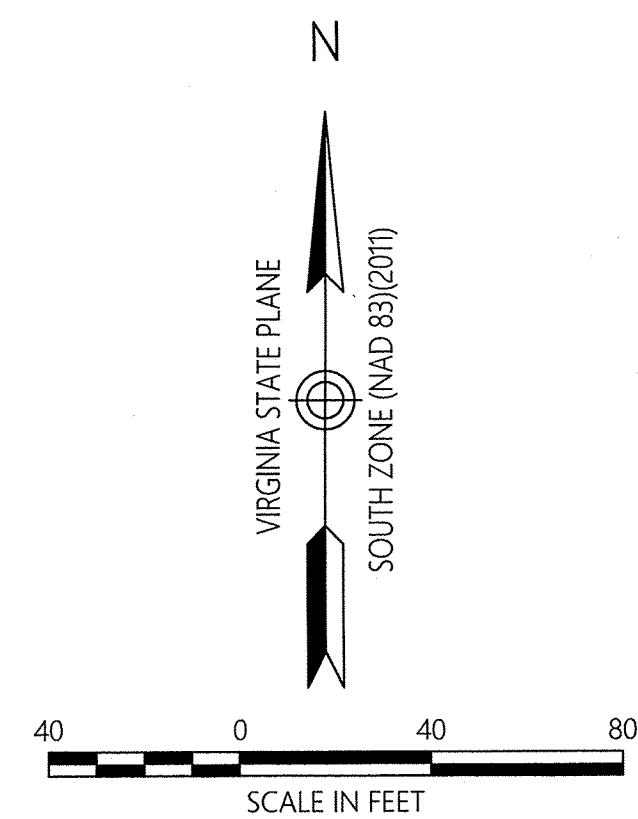
Project Number  
34823.00



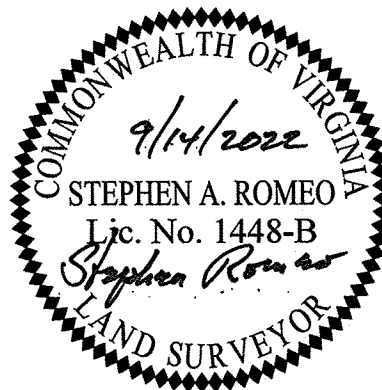




351 McLaws Circle  
Suite 3  
Williamsburg, VA 23185  
757.220.0500



**ALTA/NSPS**  
**Land Title Survey**  
**5844 Oral Oaks Road**  
**Lunenburg County**  
**Kenbridge, Virginia**

[illegible]

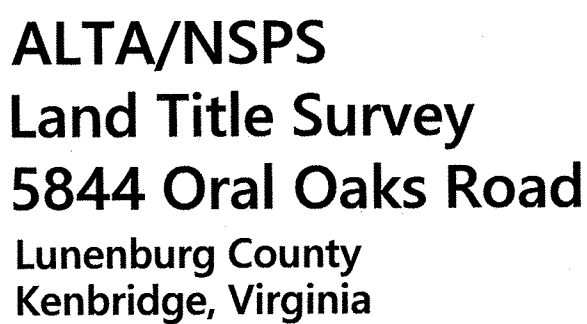
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# Sv-8

Sheet 8 of 10

Project Number  
34823.0



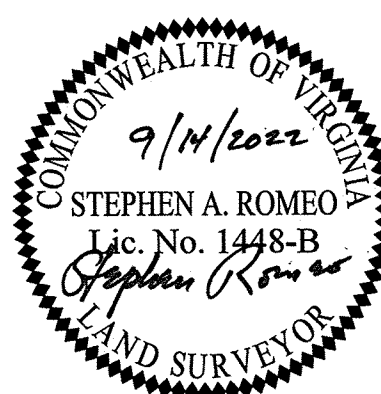
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September 14, 2022

Drawing Number

# Sv-9

Sheet 9 of 10

Project Number  
34823.00



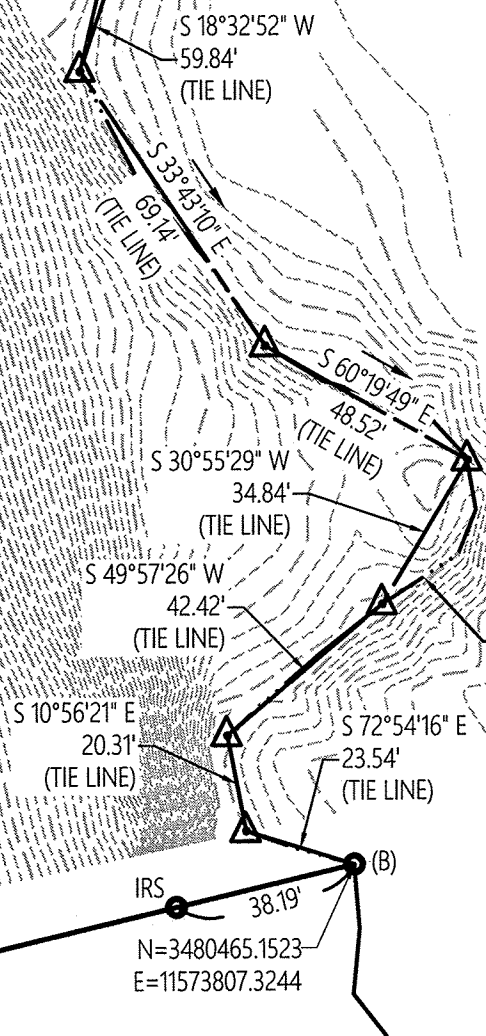
VIRGINIA HAWTHORNE WILSON  
PARCEL ID: 058-0A-0-29  
D.B.371, PG.332  
ZONED R1  
5,586.093 SQ. FT. (128,239 AC.)  
TO APPROXIMATE  
CENTERLINE CREEK

JOSEPH TERRY II GUSTAF  
PARCEL ID: 058-0A-0-288  
INST. NO. 21-0000034  
ZONED R1

RICHARD WILEY AND JAMES  
JACKSON III AND DAVID MARTIN  
ROBERTS  
PARCEL ID: 058-0A-0-39A  
D.B.332, PG.778  
PC 4-123  
ZONED R1

RICHARD WILEY AND JAMES  
JACKSON III AND DAVID MARTIN  
ROBERTS  
PARCEL ID: 058-0A-0-39A  
D.B.332, PG.778  
PC 4-123  
ZONED R1

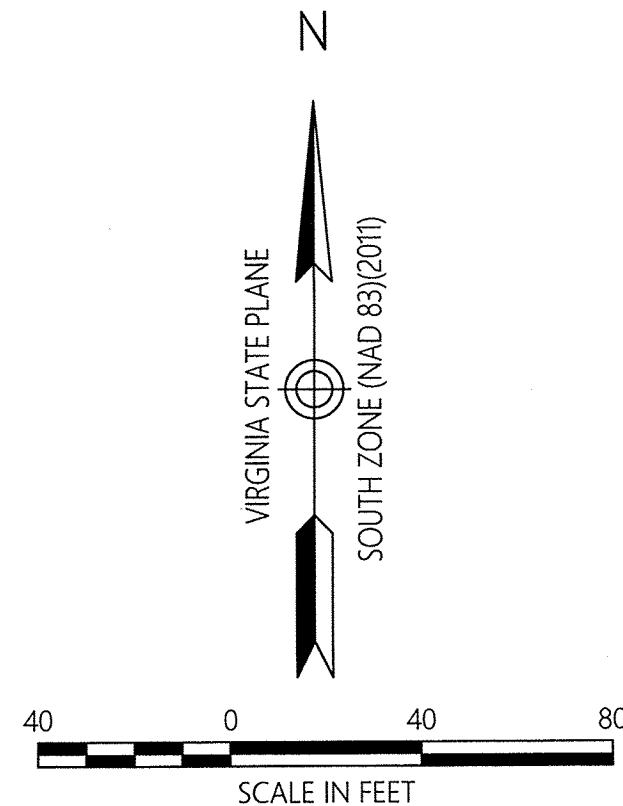
PROPERTY LINE BETWEEN (A)  
AND (B) FOLLOWS CL CREEK AS  
IT MEANDERS PER PC 4-123



vhb.com



351 McLaws Circle  
Suite 3  
Williamsburg, VA 23185  
757.220.0500



**ALTA/NSPS**  
**Land Title Survey**  
**5844 Oral Oaks Road**  
**Lunenburg County**  
**Kenbridge, Virginia**

No.	Revision	Date	Appr'd.

Designed by	Checked by

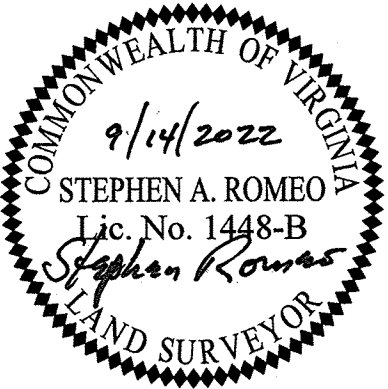
Issued for	Date
	September 14, 2022

Drawing Number

**Sv-10**

Sheet 10 of 10

Project Number  
**34823.00**







April 27, 2023

Ref: CUP 1-23: Oral Oaks Solar, LLC

Attn: Taylor N. Newton  
Director of Planning and Economic Development  
Lunenburg County  
11413 Courthouse Road  
Lunenburg, VA 23952  
[taylor@lunenburgva.gov](mailto:taylor@lunenburgva.gov)  
(via email and FedEx)

**Re: Completeness Review Response**

Dear Mrs. Newton,

Please accept this letter in response to the completeness review comments provided via your letter dated April 5, 2023. The following responses are provided in the same order as presented in the April 5<sup>th</sup> letter and a copy of that letter is included for reference in Attachment 1.

**Section 4. Application and procedures for solar energy facilities.**

- A. Number 3. Official application form, fees, and required information.
  - a. Subsection e. Preliminary Site Plan
    - i. Number 3 – the County has provided the application to VDOT review.
      - 1. **Resolved** – VDOT letter dated 4/4/23 is included in Attachment 1.
    - ii. Number 11
      - 1. **Resolved** – Wildlife corridors are accommodated on the site in the large undisturbed setbacks along the fenced facility perimeter where the existing wetlands and streams have also been preserved. These wooded perimeter buffers are to be conserved as Forest-Open Space for the life of the facility, and are expected to become even more diverse with vegetation, as they will no longer be managed for timber. Wildlife present in the area will be able to navigate in these conserved forest buffers around the facility perimeter and smaller wildlife/mammals will be able to pass back and forth through the bottom of the facility's perimeter fence. A wildlife-permeable perimeter fence with 8-inch vertical bar spacing for ground-level openings is being proposed. The fence will be 8 feet high, which adheres to the National Electric Safety Code as well as the general fencing recommendations in DWR's guidance to prevent deer from jumping the fence. A detail



for the proposed fencing is included on the revised sheet of the CUP Site Plan Details and Notes (sheet C100); reference Attachment 4. This fencing is subject to the approval of the local distribution utility.

2. **Resolved** – Stream buffers are not specified in the Lunenburg County Solar Ordinance, but the USACE confirmed wetlands and streams are to be protected with the proposed project design. The facility layout and stormwater management measures were purposely designed to avoid impacts to these jurisdictional features; there are no proposed wetland/stream impacts with this project. All existing vegetation within 10 feet of streams on site will remain undisturbed.

iii. Number 17 – section xvii

1. **Resolved** – There is no permanent parking required for the operation or periodic maintenance of this facility. Temporary vehicular parking is limited to the construction phase only, and during construction this temporary parking will be in the “Temporary Parking/Laydown Area” identified on the CUP Site Plan near the facility entrance from Oral Oaks Road. This approximately 1 acre laydown area will be sufficient for providing temporary parking. The appropriate temporary erosion and sediment control measures will be designed and installed to serve this laydown area during construction.

b. Subsection i. Draft Traffic Study

1. **Resolved** – The Traffic & Route Evaluation Study does not directly address the decommissioning process. However, assuming VDOT makes no improvements to the subject rural roadways during the life of the project, then the same TMP/MOT proposed with project construction will also apply to project decommissioning. This includes the Construction Routing, Temporary Traffic Control Plan, Public Communication Strategy, Crisis Communications Plan, and the Transportation Operations Plan. All of these are applicable in the decommissioning process and can be found in detail in Appendix E of the CUP Application package.

c. Subsection j. Draft Decommissioning and Reclamation Plan

i. Number 3

1. **Resolved** – Method of ensuring fund availability: Ameresco will post a Decommissioning Bond as the method of security for decommissioning funds; reference Attachment 2 – Revised Decommissioning Plan.

ii. Number 4

1. **Resolved** – Keeping the estimate current: The estimated cost of decommissioning shall be recalculated every five (5) years. If the recalculated estimated cost of decommissioning exceeds the original estimated cost of decommissioning by ten percent (10%) or more, then the amount of the financial assurance shall be increased to equal or exceed the new cost estimate. If the recalculated estimated cost of decommissioning is less than ninety



percent (90%) of the original estimated cost of decommissioning, the financial assurance may be reduced to the recalculated estimate of decommissioning cost subject to approval by the County; reference Attachment 2 – Revised Decommissioning Plan.

## Section 5. Location, appearance, and operational requirements.

### A. Subsection A

#### a. Number 4. Height

1. **Resolved** – The maximum height of the proposed photovoltaic panels at full tilt will be no more than 10 feet as measured from the finished grade to top of panel. Except for the required interconnection power poles, none of the proposed equipment onsite will exceed 10 feet as measured vertically from the finished surface grade adjacent to the respective equipment. The lowest edge of panels will be approximately 3 feet above adjacent finish grade. Additional information has been provided with dimensions of the proposed solar modules that will be used for this facility; reference Attachment 4 – CUP Notes and Details.

#### b. Number 8. Coordination of local emergency services.

##### i. Specifically needs to be discussed in the application.

1. **Resolved** – Emergency personnel will be provided access to the facility in accordance with the protocols of the local distribution utility via a Knox box, gate code or similar measure. This will be coordinated with County Emergency Management staff during County Site Plan review.

### B. Subsection D

#### a. Number 3. Visual Impacts

1. **Resolved** – The project will be using Hanwha Q CELLS PV modules that incorporate anti-reflective coating (ARC) technology that meet industry standards to reduce glint and glare. Reference the attached information sheet for the panel modules that has been provided by the manufacturer and shows that the ARC glass will reflect less light than bodies of water and typical manmade structures' external glass. The proposed technology and project's siting will mitigate impacts to the public viewshed surrounding the property; reference Attachment 3 – Hanwha Q CELLS ARC.

#### b. Number 5. Vegetated Buffers

##### i. Subsection h

1. **Resolved** – The existing vegetation that comprises the required vegetated buffer around the perimeter of the project will be maintained and preserved for the life of the facility. Assuming good conditions of the existing vegetation, there will be no impacts to these areas shown on the CUP Site Plan. If during County Site Plan Review or construction, a





portion of the existing vegetated buffer is determined to not be sufficiently opaque, supplemental buffer plantings will be installed as agreed upon with County staff.

c. Number 6. Wildlife Corridors

1. **Resolved** – Please reference previously described resolution addressed in Section 4. Number 3. Subsection e. Number 11.

## Section 8. Federal, state, and local requirements.

A. Number 4. FAA Regulations

1. **Resolved** – Although not mentioned specifically in the Project Narrative, the FAA's Notice Criteria tool was used with project equipment heights and respective project coordinates as inputs and the site did not exceed Notice Criteria. The result of this analysis is included in Appendix F of the CUP Application package originally submitted. Based on this result, it is our understanding that no further authorization is required for this matter.

It is my professional opinion that these responses and the corresponding documents attached will provide the additional clarification required for this CUP Application to be deemed complete. Please do not hesitate to contact me with any additional questions.

Sincerely,

VHB

*Stephen Quina*

Stephen Quina, PE  
Mid-Atlantic Manager of Engineering - Energy

cc: Tom Holt, Ameresco

Attachment 1 – County Completeness Review Letter dated 4/5/23  
Attachment 2 – Revised Decommissioning Plan  
Attachment 3 - Hanwha Q CELLS ARC  
Attachment 4 – CUP Site Plan “Notes and Details” (sheet C100)



# 1

## Attachment 1

County Completeness Review Letter dated 4/5/23

**BOARD OF SUPERVISORS**

**Charles R. Slayton, CHAIRMAN**  
Election District 4

**Frank W. Bacon, VICE-CHAIRMAN**  
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**Mike Hankins**  
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Election District 6

**Robert G. Zava**  
Election District 7



**Lunenburg County Administration**  
11413 Courthouse Road  
Lunenburg, VA 23952

**Tracy M. Gee**  
County Administrator

**Telephone: (434) 696-2142**  
**Facsimile: (434) 696-1798**

April 5<sup>th</sup>, 2023

Oral Oaks Solar, LLC  
Ameresco, Inc.  
Atten: Mr. Stephen Quina  
111 Speen Street  
Framingham, MA 01701

Dear Mr. Quina,

A completeness review of your application, CUP 1-23: Oral Oaks Solar, LLC., has been conducted internally and through third-party review by the Berkley Group, LLC. The review has concluded that the application has been deemed incomplete. The following provides the list of deficiencies that are required to be remedied prior to proceeding with the 15.2-2232 public hearing:

1. A Report on Completeness of 2232 Review/Conditional Use Permit Application for Oral Oaks, LLC. Utility-Scale Solar Facility was conducted by the Berkley Group. The report is attached; however, below are the sections where the application has been deemed non-compliant or need additional clarification:
  - a. Section 4. Applications and procedures for solar energy facilities.
    - i. Number 3. Official application form, fees, and required information.
      1. Subsection e. Preliminary Site Plan.
        - a. Number 3—the County has provided the application to VDOT for review
          - i. See the enclosed letter with VDOT's response.
        - b. Number 11
        - c. Number 17—section xvii
      2. Subsection i. Draft Traffic Study.
      3. Subsection j. Draft Decommissioning and Reclamation Plan.
        - a. Number 3
        - b. Number 4
    - b. Section 5. Location, appearance, and operational requirements.
      - i. Subsection A
        1. Number 4. Height.
        2. Number 8. Coordination of local emergency services.
          - a. Specifically needs to be discussed in the application.
      - ii. Subsection D
        1. Number 3. Visual Impacts.
        2. Number 5. Vegetated Buffers.
          - a. Subsection h.
        3. Number 6. Wildlife Corridors.
    - c. Section 8. Federal, state, and local requirements.



i. Number 4. FAA Regulations.

In order to proceed with the Conditional Use Permit process, the noted deficiencies will be remedied and received a minimum of forty-five (45) business days prior to the next Planning Commission meeting. The Planning Commission meetings are scheduled for the 1<sup>st</sup> Thursday of each month, so in order to be placed on the July 2023 agenda, the revisions will be required to be submitted no later **than noon on May 1<sup>st</sup>, 2023.** To be placed on the August 2023 agenda, the revisions will be required to be submitted no later **than noon on May 30<sup>th</sup>, 2023.**

If you have any questions or concerns, please do not hesitate to contact.

Respectfully,



Taylor N. Newton, CZA  
Director of Planning and Economic Development  
Local Zone Administrator  
Department of Planning and Economic Development  
11413 Courthouse Road  
Lunenburg, VA 23952  
434.696.2142 (phone)  
434.696.1798 (fax)  
taylor@lunenburgva.gov

cc: File  
Drew DiStanislao, Assistant County Attorney

## **Report on Completeness of 2232 Review/Conditional Use Permit Application for Oral Oaks Road Utility-Scale Solar Facility**

March 30, 2023

**Purpose:** To determine whether the application of Oral Oaks Road Solar, LLC/Ameresco Inc. (“the Applicant”) is complete, as well as compliant, with respect to applicable sections of the Lunenburg County Zoning Ordinance (“LCZO”) and includes all materials and information necessary to conduct a complete review pursuant to § 15.2-2232, Legal status of plan, of the Code of Virginia, to allow the application to proceed to further review. This review provides no opinion as to whether the project is in accord with the County’s Comprehensive Plan and/or satisfies requisite findings associated with the review of a conditional use permit; those reviews would be completed should the application proceed to further review.

**Overview and Project Description:** The Applicant is requesting a Conditional Use Permit (“CUP”) for the construction and operation of a 12-megawatt (MW) utility-scale solar facility to be located on one (1) parcel (or portions thereof) totaling approximately 55 acres in Lunenburg County, Virginia, to be known as Oral Oaks Road Solar (cover letter dated March 10, 2023; “the Application” and/or “the Project”). The subject parcel as it currently exists totals 128.24 acres in size.

### **Completeness Review**

The subject Application has been reviewed for completeness with respect to the relevant sections and subsections of the LCZO identified below, specifically the County’s Solar Energy Facilities Ordinance. Staff’s interpretation of application completeness and/or compliance is noted in **bold underlined type**. **Based upon review, there are several areas where the Application is incomplete, noncompliant, and/or where completeness or compliance is uncertain based on the submitted information and materials, or lack thereof.** Application deficiencies and noncompliance must be addressed prior to further consideration of the Application.

- **Section 2. Definitions**

Solar Energy Facility, Large-scale. A ground-mounted solar facility that generates electricity from sunlight on an area adequate to support a rated capacity of five megawatts (MW) alternating current or greater.

**Compliant; based upon the generation capacity of the proposed facility (12 MW), the facility is a large-scale solar facility, as defined.**

- **Section 3. Applicability; Permitting.**

The requirements set forth in this article shall govern the location, siting, development, construction, installation, operation, and decommissioning of solar energy facilities in the county. Battery energy storage facilities will be addressed by a separate ordinance. Facilities shall be permitted as follows:

- d. Solar energy facilities, large-scale are required to have Conditional Use Permit to be constructed, installed, or operated in the county. No large-scale solar energy

facility shall be constructed on property that carries a Conservation Easement, whether local, state, or federal.

**Compliant; the proposed Project is a large-scale solar energy facility according to the definitions outlined in LCZO, and the Applicant is seeking a Conditional Use Permit.**

- **Section 4. Applications and procedures for solar energy facilities.**

In addition to materials required for a permit application under section 3, applications for solar energy facilities shall, unless otherwise provided herein, include:

1. A pre-application meeting. The meeting shall be held with the Zoning Administrator to discuss the location, scale, and nature of the proposed use and what will be expected during that process.

**Compliance presumed; a pre-application meeting was conducted between the Applicant and the County, although the date is not provided within the Application.**

2. Community meeting. An in-person public meeting shall be held at least 30 days prior to the determination that the project is in substantial accord with the Comprehensive Plan to give the community an opportunity to hear from the applicant and ask questions regarding the proposed facility.

**Compliance expected; a community meeting will be conducted by the Applicant.**

3. Official application form, fees, and required information. The form and fee schedule are provided by the Zoning Administrator in accord with Lunenburg County Zoning Ordinance Sec. 3-16. Fees.

**Incomplete/Noncompliant; while the required form and fee were submitted, please see e., Preliminary Site Plan, for aspects of the Application that are incomplete or noncompliant.**

- a. Project narrative.

**Complete; the project narrative addresses all required content.**

- b. Environmental impacts narrative.

**Complete; the environmental impacts narrative addresses all required content.**

- c. Wildlife impacts narrative.

**Complete; the wildlife impacts narrative addresses all required content.**



- d. Cultural impacts narrative.

Complete; the cultural impacts narrative addresses all required content.

- e. Preliminary Site Plan.

Incomplete; a preliminary site plan was included with the Application, however, the following required information (numbered as provided in the LCZO Solar Energy Facilities Ordinance) is not included in the plan or otherwise within the Application, needs clarification, or is noncompliant:

3. The Application does not include written confirmation from VDOT that all proposed entrances meet applicable requirements and are appropriate for the use. - The County has handled this - please see VDOT's response enclosed.
11. The plan does not include wildlife corridors or the location of stream buffers.

17. The Preliminary Site Plan does not include the following:

xvii. Parking that will be required and/or provided is not addressed in the plan.

- f. Public Information. Additional information as may be available on public databases, such as ConserveVirginia, including:

Complete; required content #s 1-10 were met by the Applicant. The public information was addressed as part of the preliminary site plan, Project Narrative, and other materials throughout the application.

- g. Draft landscaping and screening plan.

Compliant; the overall plans sheet (i.e., draft landscape and screening plan) indicates the intended preservation of the existing native and non-invasive tree, shrub, and grass species buffer.

- h. Draft grading plan.

Complete; a draft grading plan incorporating required content has been provided.

- i. Draft Traffic Study.

**Incomplete; the submitted Traffic & Route Evaluation Study does not address the decommissioning process.**

- j. Draft Decommissioning and Reclamation Plan.

**Incomplete; the Decommissioning Plan does not include the following required information and content:**

**3. The method of ensuring that funds will be available for decommissioning and reclamation. A proposed method of providing appropriate escrow, surety, or security for the cost of the decommissioning and reclamation plan. The surety shall be updated when the decommissioning and reclamation cost estimate is updated.**

**4. The method that the estimated cost will be kept current. The decommissioning and reclamation cost estimate shall include a mechanism for calculating increased removal costs due to inflation. This cost estimate shall be recalculated every five (5) years and the surety shall be updated accordingly. If the recalculated estimated cost exceeds the original estimated cost by ten percent (10%), then the owner or occupant shall deposit additional funds into the escrow account to meet the new cost estimate. If the recalculated estimated cost is less than ninety percent (90%) of the original estimated cost, then the County may approve reducing the amount of the escrow account to the recalculated estimate of cost.**

- k. Supplemental information.

**Not reviewed with respect to Application completeness or compliance.**

4. Comprehensive Plan (2232) Review.

**Not reviewed with respect to Application completeness or compliance.**

5. Consideration of the Conditional Use Permit by the Planning Commission.

**Not reviewed with respect to Application completeness or compliance.**

6. Consideration of the Conditional Use Permit by the Board of Supervisors.

**Not reviewed with respect to Application completeness or compliance.**

7. Post-application documentation and approvals.

**Not reviewed with respect to Application completeness or compliance.**

- **Section 5. Location, appearance, and operational requirements.**



A. The following requirements apply to all solar energy facilities that shall be considered by the Lunenburg Planning Commission and the Board of Supervisors in addressing whether to recommend or approve a Conditional Use Permit:

1. Signage. All signage on the site shall comply with the County Sign Ordinance, as adopted and, from time to time, amended.

**Compliant; the Applicant acknowledges this provision and notes the Project will comply with the County's Sign Ordinance.**

2. Noise. Noise levels from the facility shall comply with the County Noise Ordinance, as adopted and, from time to time, amended.

**Compliant; the Applicant acknowledges this provision and notes the Project will comply with the County's Noise Ordinance.**

3. Lighting. Lighting shall be limited to the minimum necessary for security purposes and shall be designed to minimize off-site effects. Lighting on the site shall comply with any Dark Skies Ordinance the Board of Supervisors may adopt or, from time to time, amend.

**Compliant; the Applicant acknowledges this provision and notes the Project will comply with the County's Dark Skies Ordinance.**

4. **Height.** The maximum height of the lowest edge of photovoltaic panels shall be ten feet as measured from the finished grade. Solar energy generation facilities shall not exceed a height of 15 feet, which shall be measured from the highest natural grade below each solar panel. This limit shall not apply to utility poles and the interconnection to the overhead electric utility grid. The Board of Supervisors may approve a greater height based upon the demonstration of a significant need where the impacts of increased height are mitigated.

**Noncompliant; while the Project Narrative references the type of panel to be used, the maximum height of the lowest edge of photovoltaic panels shall be ten (10) feet as measured from the finished grade and panels shall not exceed a height of fifteen (15) feet as measured from the highest natural grade below each solar panel; while the plans note the 15' height limit, no additional information is provided, and no information is provided to confirm compliance with respect to the maximum height of the lowest edge of panels.**

3. Groundcover.

- a. Groundcover on the site shall consist of pollinator plants, grasses, forbs, and wildflowers native to the County.



- b. Groundcover shall be maintained in accordance with established performance measures noted in the landscaping plan. A performance bond reflecting the costs of anticipated maintenance shall be posted and maintained.
- c. Failure to maintain the ground cover shall result in revocation of the CUP and the facility's decommissioning.
- d. The operator shall notify the County prior to application of pesticides and fertilizers. The County reserves the right to request soil and water testing.
- e. A list of appropriate plant materials shall be available at the Planning Office. Species listed on DCR's Invasive Plant Species list shall not be used.

**Compliant; the Application references compliance with required standards.**

- 4. Fencing. The project area shall be enclosed by security fencing not less than six feet in height and equipped with an appropriate antilimbing device such as strands of barbed wire on top of the fence. The height and/or location of the fence may be altered in the conditions for a particular permit. Fencing must be installed on the interior of the vegetative buffer. Fencing shall be placed around sections of the infrastructure (not the entire site) to provide access corridors for wildlife to navigate through the facility. The fencing shall be maintained while the facility is in operation.

**Compliant; the Application demonstrates compliance with required standards.**

- 7. Entry and inspection. For inspections and other requirements, all solar applicants, property owners and solar facility owners shall grant to the County a non-exclusive, perpetual easement for pedestrian, vehicular, and equipment access to the Solar Facility, and an easement across or through applicant's remaining property, which is necessary or convenient for ingress and egress to the Facility. The County will adhere to all safety requirements in gaining access to the Solar Facility.

**Complete; the Application references the intent to grant an easement to the County, as required.**

- 8. Coordination of local emergency services. The Applicant shall coordinate with the County's emergency services providers to provide materials, education, and/or training on how to safely respond to on-site emergencies.
  - a. Emergency personnel will be given a key or code to access the property in case of an on-site emergency.

**Compliance unknown; the Application does not reference compliance with these requirements.**

9. Conditions pursuant to Virginia Code § 15.2-2288.8 that shall apply to all solar facilities. The Board of Supervisors may grant a condition that includes (i) dedication of real property of substantial value or (ii) substantial cash payments for or construction of substantial public improvements, the need for which is not generated solely by the granting of a Conditional Use Permit, so long as such conditions are reasonably related to the project.

**Not reviewed with respect to Application completeness or compliance.**

10. Siting Agreement. The applicant shall enter into a Siting Agreement with the County unless that requirement is waived by the County.

**Compliance Anticipated; the Applicant will engage with the County with respect to a Siting Agreement.**

- D. The following requirements also apply to large-scale solar energy facilities:

1. Location. Solar facilities should locate on brownfields, County-owned capped landfills, or near existing industrial uses, where feasible (but not within areas designated for growth). Solar facilities shall not be located within 1 mile from a Town. Solar facilities shall not be located within two miles of an airport unless the applicant submits, as part of its application, written certification from the Federal Aviation Administration that the location of the facility poses no hazard for, and will not interfere with, airport operations.

**Compliant; no active project area is located within 1 mile of any Town boundaries.**

2. Density. Large-scale solar facilities shall be sited at least one (1) mile from existing medium- and large-scale solar facilities as measured from the nearest fence line. No more than 5% of the land in a five-mile radius of the project area of any existing large scale solar energy facility shall be approved for use as the project area for a new large-scale solar energy facility. The center point of the project shall be at the intersection of the mid-points of the north, south, east, and west property lines. Measurement to achieve the required five-mile distance shall begin at the midpoint of each north, south, east, and west property line chosen to determine the center of the property.

**Compliant; portions of the project are within the 5-mile radius of the proposed project area of the Laurel Branch project. The Applicant demonstrate the percentage of land within this 5-mile radius that will be used as project area as 4.8%.**

3. **Visual impacts.** The applicant shall demonstrate through project siting and proposed mitigation, that the solar project minimizes impacts on public viewsheds, including from residential areas and areas of scenic, historical,



cultural, archaeological, and recreational significance. The facility shall utilize only panels that employ anti-glare technology, anti-reflective coatings, and other available mitigation techniques, all that meet or exceed industry standards, to reduce glint and glare. The applicant shall provide written certification from a qualified expert, acceptable to the county, that the facility's panels incorporate and utilize anti-glare technology and anti-reflective coatings and reduce glint and glare to levels that meet or exceed industry standards.

**Compliance unknown; the Application does not address that anti-glare technology, anti-reflective coatings, and other available mitigation techniques, all that meet or exceed industry standards will be used to reduce glint and glare. The Applicant has not provided written certification from a qualified expert, acceptable to the County, that the facility's panels incorporate and utilize anti-glare technology and anti-reflective coatings and reduce glint and glare levels to levels that meet or exceed industry standards.**

**Whether the Project's siting or proposed mitigation minimizes impacts on public viewsheds, including from residential areas and areas of scenic, historical, cultural, archaeological, and recreational significance, will be a consideration of the 2232 and Conditional Use Permit reviews.**

4. Setbacks. Setbacks are measured from the outermost structure including the security fence, substation, and inverters but not including the driveways and power poles.
  - a. The project area shall be set back a distance of at least
    - i. 200 feet from adjacent property lines,
    - ii. 200 feet from the centerline of all adjoining or abutting public rights-of-way, and
    - iii. 400 feet from residential structures on non-project parcels.Exceptions may be made for adjoining parcels that are owned by the applicant.

**Compliant; the Application materials demonstrate compliance with required project area setbacks.**

- b. Increased setbacks up to 300 feet and additional buffering may be included in the conditions for a particular permit.

**Not applicable at this time.**

- c. Solar energy facilities also shall meet all setback requirements for primary structures for the zoning district in which the facility is located, in addition to the requirements set forth above.



→ Zoning is actually A-1

**Compliant; The site is zoned R-1 and the preliminary site plan meets the minimum requirements for R-1.**

- d. In the case of the facility location incorporating multiple zoning districts, the more restrictive requirements shall apply.

**Not applicable**

- e. Access, erosion and stormwater structures, and interconnection to the electrical grid may be made through setback areas provided that such are generally perpendicular to the property line.

**Compliant; subject features are identified to be generally perpendicular to property lines.**

- f. County approved permanent, buffered setback easements with non-solar facility landowners may be utilized to meet these setback requirements so long as solar facility setbacks from public rights of way are maintained.

**Not applicable at this time.**

- 5. **Vegetated Buffer.** A vegetated buffer sufficient to mitigate the visual impact of the facility is required.

- a. The buffer shall consist of a landscaped strip at least 50 feet wide, shall be located within the setbacks required under this Section, and shall run around the entire perimeter of the property.

**Compliant; the preliminary site plan indicates a vegetated buffer meeting the requirements of the Ordinance.**

- b. The buffer shall consist of existing vegetation and, if deemed necessary for the issuance of a Conditional Use Permit, an installed landscaped strip consisting of multiple rows of staggered trees and other vegetation. This buffer should be made up of plant materials at least three feet tall, at the time of planting, and that are expected to grow to a minimum height of eight feet within three years.

**Compliant; the preliminary site plan and Application materials demonstrate compliance with these requirements.**

- c. Landscaping intended for screening shall consist of plants, shrubs, trees, grasses, forbs, and wildflowers native to the County. If a sufficient quantity of native plants cannot be procured, non-invasive plants may be used. A list of appropriate plant materials shall be available at the Planning Office. Species listed on the DCR Virginia Invasive Plant Species List shall not be used.

**Compliant; the landscaping buffer sheet indicates the intended planting of native and non-invasive plant species.**

- d. The Planning Commission or Board of Supervisors may require increased setbacks and additional or taller vegetative buffering in situations where the height of structures or the topography affects the visual impact of the facility.

**Not reviewed with respect to Application completeness or compliance.**

- e. Non-invasive plant species and pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers must be used in the vegetative buffer.

**Compliant; as noted above.**

- f. A recommendation that the screening and/or buffer creation requirements be waived or altered may be made by the Planning Commission when the applicant proposes to use existing wetlands or woodlands. The wetlands or woodlands shall be permanently protected for use as a buffer.

**Not reviewed with respect to Application completeness or compliance; however, this will be a consideration for the Planning Commission based upon the use of existing/preserved vegetation.**

- g. Existing trees and vegetation may be maintained within such buffer areas except where dead, diseased or as necessary for development or to promote healthy growth, and such trees and vegetation may supplement or satisfy landscaping requirements as applicable. If existing trees and vegetation are disturbed, new plantings shall be provided for the buffer.

**Not reviewed with respect to Application completeness or compliance; however, this will be a consideration for the Planning Commission as to whether existing trees and vegetation with or without supplemental plantings as proposed by the Applicant will establish a sufficient buffer.**

- h. The buffer shall be maintained for the life of the facility.

**Compliance anticipated; the Application does not reference compliance, but reasonable conditions could be considered to ensure compliance.**

- i. An earthen berm may be utilized to comply with the intent of this Section 5, D5 to screen or mitigate the visual impact of the solar facilities from public view.

**Not applicable at this time; the Project does not propose the use of earthen berms.**

6. **Wildlife corridors.** The Applicant shall identify access corridor(s) for wildlife to navigate through and across the Solar Facility. The proposed wildlife corridor(s) shall be shown on the site plan submitted to the County. Areas between fencing shall be kept open to allow for the movement of migratory animals and other wildlife.

**Noncompliant; the preliminary site plan does not demonstrate compliance with these requirements.**

- **Section 6 and Section 7** were not reviewed with respect to Application completeness or compliance.
- **Section 8. Federal, state, and local requirements.**

1. Compliance with Uniform Statewide Building Code. All solar energy facilities shall be constructed and operated in compliance with the Uniform Statewide Building Code.

**Compliance expected.**

2. Compliance with National Electric Code. All solar energy facilities shall be constructed and operated in compliance with the National Electric Code.

**Compliance expected.**

3. Compliance with regulations governing electric energy supply. Large-scale solar energy facilities connected to the utility grid must comply with permitting requirements of the state corporation commission or the permit by rule requirements of the Department of Environmental Quality, as applicable.

**Compliance expected.**

4. **FAA regulations.** All solar energy facilities within 5 miles of an airport must meet or exceed the standards and regulations of the Federal Aviation Administration.

**Compliance expected; the Project site is within 5 miles of the Lunenburg County Airport; without providing documentation, the Application indicates that the project has been reviewed in some fashion by the FAA and will not require additional permitting.**



5. Other applicable laws. All solar energy facilities shall be constructed and operated in compliance with all applicable local, state, and federal laws, rules, regulations, permit requirements, and ordinances.

**Compliance expected.**



## COMMONWEALTH of VIRGINIA

### DEPARTMENT OF TRANSPORTATION

RICHMOND DISTRICT  
2430 Pine Forest Drive  
COLONIAL HEIGHTS, VA 23834  
[www.VDOT.Virginia.gov](http://www.VDOT.Virginia.gov)

Stephen C. Brich, P.E.  
COMMISSIONER

April 4, 2023

Ms. Taylor N. Newton  
Director of Planning and Economic Development  
County of Lunenburg  
11413 Courthouse Road  
Lunenburg, VA 23952  
(Sent Via E-mail)

SUBJECT: **Oral Oaks Solar, LLC (Kenbridge Solar)**  
**Rte. 635, Oral Oaks Rd.**  
**Lunenburg County, VA**  
**CUP Acceptance, CUP Application 1-23 Dated 3/10/23**

Dear Ms. Newton:

The Virginia Department of Transportation, Southern Region Land Development Office has reviewed the subject CUP Application 1-23 received on March 30, 2023 by email. At this time we have no comments on CTMP section, therefore we find the construction traffic/haul route acceptable.

If you have any questions please feel free to contact me at 434-774-2310 or by email, [todd.cage@vdot.virginia.gov](mailto:todd.cage@vdot.virginia.gov).

Sincerely,

C. Todd Cage

Digitally signed by C. Todd Cage  
DN: cn=CAGE,  
email=todd.cage@vdot.virginia.gov,  
c=C, o=VDOT  
Reason: I am the author of this  
document  
Date: 2023.04.04 09:31:36 -0400

***C. Todd Cage***

Land Development Engineer  
Southern Region Land Development  
Richmond District

CC: Paul Hinson, P.E., LEED AP, VDOT Southern Region Area Land Use Engineer  
John Legg, VDOT Southern Region Permits/Subdivision Specialist Sr.  
Tommy Johnson, VDOT South Hill Residency Administrator  
Kevin Smith, VDOT South Hill Assistant Residency Administrator

WE KEEP VIRGINIA MOVING



# 2

## Attachment 2

Revised Decommissioning Plan



## DECOMMISSIONING PLAN

Kenbridge Solar is proposed as a 12-Megawatt Alternating Current (AC) freestanding solar energy facility to be located on Lunenburg County Property Tax Map Number 058-0A-0-29 near 5844 Oral Oaks Road in Kenbridge as shown on the VHB CUP Site Plan dated November 2022 (the "Project"). The Project will not contain any permanent building structures after construction is complete and the Project is operational. There will be security fencing installed around the perimeter of the Project, with security gates for access. The Project has an estimated useful life of 40 years. In conjunction with the permits, the following is the decommissioning plan for the Project:

Lunenburg County will be notified by certified mail to the County Planning Commissioner office, of the proposed date of discontinuation of operations and plans for removal. Decommissioning will consist of:

- physical removal of all project elements,
- reuse, salvage, recycling and disposal of all material in accordance with local, state, and federal regulations, and
- return of the array surface to its pre solar development condition (as can reasonably be achieved via acceptable land development practices). This consists of surface stabilization, revegetation of the site to minimize erosion and replanting of trees to similar predevelopment density.

Kenbridge Solar will obtain any required local or state permits before starting the decommissioning operation and will ensure there are no impacts on the premises and abutters.

## DECOMMISSIONING STEPS

Under the decommission and restoration process, Kenbridge Solar or a subcontractor will dismantle and remove all above ground structures, equipment, gravel roads and recondition the ground and any related temporary staging areas. Structures and equipment include panels, racking, canopy structures, inverters, transformers, wiring, pads, poles and low and medium voltage electrical equipment.

All dismantled equipment and material are categorized for reuse, salvage, recycling or disposal. Steel, aluminum, glass, copper and plastics can all be recycled. To optimize transportation and reduce costs, all materials will be collected and classified on-site before transport to the appropriate facilities.

No waste material will remain on site, other than certain underground materials as described below in items number 3 and 8.

The different steps below describe the process to decommission the Photovoltaic (PV) systems.

1. **Temporary erosion controls:** Appropriate temporary and sedimentation control best management practices will be used in the decommissioning of ground mount systems.

2. **Disconnect PV system from the power grid:** System will be shut down. All inverters, combiner boxes, AC panels and medium voltage disconnects, and switches will be put in the off position.
3. **Remove electric wiring and cables:** DC and AC wire will be disconnected and removed by hand from panels, racking, combiner boxes, inverters and AC panels. Underground cables will be pulled and removed from underground conduit and overhead cables will be removed from poles and Medium Voltage (MV) equipment. Any underground cable left in place will be cut off at a minimum depth of 12-inches below the ground surface.
4. **Remove panels:** Crystalline silicon panels are considered landfill safe since they do not contain hazardous materials such as lead or cadmium. Panels contain recyclable materials such as aluminum, copper and glass. Panels will be dismantled and packaged per manufacturer or approved recycler specifications. If possible, panels will be returned to manufacturer for recycling or disposal or transported to a recycling facility where panel componentry will be recycled.
5. **Dismantle and removal of racks:** Racks include, fix tilt structures. All racking will be disassembled, broken down and shipped to the appropriate metal recycling facilities.
6. **Remove rack foundations:** Foundations include post and ground screws. All support, posts and ground screws will be pulled and removed from the ground.
7. **Remove electrical and electronic equipment:** Electrical and electronic equipment include inverters, transformers, combiner boxes, AC panels, disconnect switches and MV equipment. Equipment will be removed from supports, concrete pads and utility poles. Equipment will be transported for reconditioning and reuse or disassembled into easily transportable sections for salvage, recycling or disposal using approved techniques.
8. **Breakup and remove concrete materials:** Concrete materials include equipment pads. Pads will be excavated to remove anchor bolts, rebar and conduits and concrete will be broken into small manageable pieces. Ballast blocks will be broken into small manageable pieces and canopy concrete foundations (if applicable) will be demolished to a minimum of 12 inches below grade. Concrete material will be disposed at the appropriate facilities and rebar will be recycled, if possible.
9. **Remove power poles.** Utility poles installed to interconnect the system will be removed and reused, if possible.
10. **Remove fence:** Fencing, gates and guards will be removed and salvaged or recycled.
11. **Remove roads:** Gravel access and internal array roads will be removed. Gravel aggregate will be tested for contamination prior to salvage and disposed of or reused based on tested condition.

12. **Remove stormwater ditches and basins:** Stormwater management drainage ditches and basins will be removed. This will include removal of associated concrete discharge control structures, discharge piping and energy dissipation riprap. These excavated stormwater management features will be filled and/or re-graded to prevent excessive ponding and accommodate establishment of the prescribed predevelopment vegetation.
13. **Restoration:** Restoration includes grading, seeding and loaming of disturbed areas resulting from decommissioning activities.

## **DECOMMISSIONING FUNDS**

1. **Method of ensuring fund availability:** Ameresco will post a Decommissioning Bond as the method of security for decommissioning funds.
2. **Keeping the estimate current:** The estimated cost of decommissioning shall be recalculated every five (5) years. If the recalculated estimated cost of decommissioning exceeds the original estimated cost of decommissioning by ten percent (10%) or more, then the amount of the financial assurance shall be increased to equal or exceed the new cost estimate. If the recalculated estimated cost of decommissioning is less than ninety percent (90%) of the original estimated cost of decommissioning, the financial assurance may be reduced to the recalculated estimate of decommissioning cost subject to approval by the county.



# 3

## Attachment 3

Hanwha Q CELLS ARC

# PV MODULE REFLECTION – GLARE

## PV MODULE REFLECTION – GLARE

When light falls on a surface it is split; some of the light traverses the surface (transmission), some light enters the surface and is lost (absorption) and some is redirected away from the surface (reflection). In order for a PV module to produce as much power as possible, the cover glass is optimized for high transmission. This is why Hanwha Q CELLS PV modules have cutting-edge anti-reflective coatings (ARC) in order to maximize transmission and limiting the possibility for reflections.

Each of these actions, transmission, absorption and reflection, can be measured as a proportion of the original light falling on the surface, eg.  $T + A + R = 100\%$ . For our purposes it is only necessary to look at the proportion of this original light, as the intensity of the light falling on the surface of the PV module glass will change with numerous factors including different system configurations, locations and times of both the day and year.

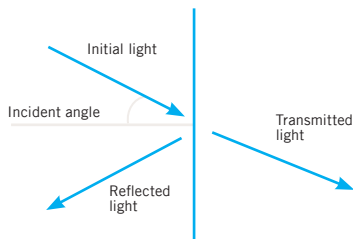


Figure 1: Light falling on a surface

The proportion of light reflected from any surface is dependent upon the angle at which the light hits the glass, called the incident angle where  $0^\circ$  is direct light and  $90^\circ$  is parallel to the surface. The proportion of reflected light can be calculated for different incident angles using the Fresnel equations. For a sheet of glass it would be necessary to calculate the reflection twice, once for the frontside of the glass and once for the backside. However as the rear of PV module glass is connected to an EVA and light absorbing PV cell it is only necessary to consider the frontside effect. To calculate the reflection the refractive index of the involved media is needed. As an example air has an index of 1, for normal “window” glass the value is around 1.5, for water it is 1.33 and for PV module glass it is around 1.25. From these figures alone it is possible to, correctly, presume that the glass used in PV modules creates less reflected light than normal “window” glass or a body of water. Figure 2 shows the curves of these different cases, along with measurements by TÜV Rheinland of Hanwha Q CELLS modules. It can be seen that the proportion of light reflected starts close to zero but rises as the incident angle gets closer to  $90^\circ$ .

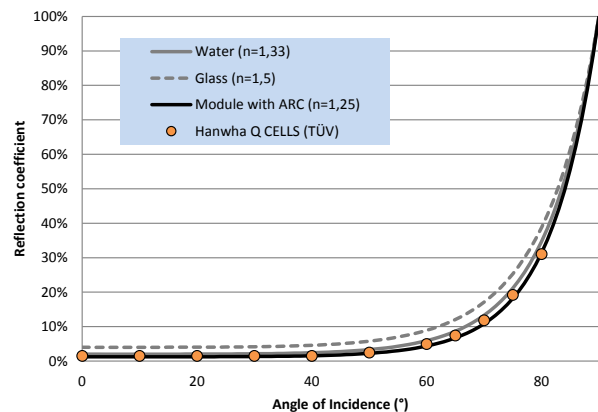


Figure 2: Reflection vs. incident angle

## CONCLUSION

From both the theoretical and measured data it is clear that ARC glass used in all Hanwha Q CELLS currently produced PV modules reflects less light than both naturally occurring features, such as bodies of water, and common manmade structures. Moreover for incident angles below  $55^\circ$  less than 4 % of the initial light is reflected away from the PV module.

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TEL: +49 (0)3494 66 99 23222



# 4

## Attachment 4

CUP Site Plan “Notes and Details” (sheet C100)





115 South 15th Street  
Suite 200  
Richmond, VA 23219  
804.343.7100



PROJECT NOTES:

- THE APPLICANT REQUESTS THE GRANTING OF A CONDITIONAL USE PERMIT (CUP) TO ALLOW FOR THE INSTALLATION OF A LARGE SOLAR ENERGY SYSTEM ON THE SUBJECT PROPERTY PER SECTION 4 OF THE ORDINANCE FOR SOLAR ENERGY FACILITIES IN LUNENBURG COUNTY, VA.
- THE SUBJECT PROPERTY IS IDENTIFIED AS PARCEL TAX MAP NUMBER 058-0A-0-29 PER THE LUNENBURG COUNTY ASSESSOR AND TOTALS 128.24 ACRES PER THE VHB PERFORMED ALTA.
- THE APPLICANT IS AMERESCO, 12001 SUNRISE VALLEY DRIVE, SUITE 205 RESTON, VA 20191.
- THE DEPICTED SUBJECT PROPERTY BOUNDARY AND EASEMENT INFORMATION TAKEN FROM A FIELD RUN SURVEY PREPARED BY VHB AND COURT RECORDS. ADDITIONAL ADJOINER LINES AND EXISTING CONDITIONS INFORMATION WAS OBTAINED FROM LUNENBURG COUNTY GIS DATA.
- TOPOGRAPHY, EXISTING BUILDINGS AND DRIVEWAYS ARE DERIVED FROM A PHOTOGRAMMETRIC SURVEY PREPARED BY NVS DATED MAY 31, 2022. THE CONTOUR INTERVAL IS ONE (1) FOOT.
- WETLANDS INFORMATION OBTAINED FROM A WATERS OF THE U.S. DELINEATION PREPARED BY VHB AND CONFIRMATION VIA A PRELIMINARY JURISDICTIONAL DETERMINATION LETTER DATED 8/29/22 FROM THE UNITED STATES ARMY CORPS OF ENGINEERS.
- PER FEMA FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL 51111C01758, WITH AN EFFECTIVE DATE OF 7/20/2009, THERE ARE NO SPECIAL FLOOD HAZARD AREAS. THE PROPERTY IS LOCATED IN ZONE X, AREA OF MINIMAL FLOOD HAZARD.
- TO THE BEST KNOWLEDGE OF THE ENGINEER AND APPLICANT THIS APPLICATION CONFORMS TO ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS.
- A PHASE I CULTURAL RESOURCES SURVEY WAS PERFORMED BY JAMES RIVER INSTITUTE FOR ARCHAEOLOGY IN NOVEMBER 2022 AND WAS SUBMITTED TO BOTH VDEQ AND VDHR. BOTH AGENCIES ARE IN AGREEMENT THAT, WITHIN THE PROJECT DEVELOPMENT AREA THERE ARE NO SITES ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER. A COPY OF THE PHASE I CULTURAL RESOURCES SURVEY WILL BE INCLUDED WITH THE CUP APPLICATION.
- A PHASE I ENVIRONMENTAL SITE ASSESSMENT WAS PERFORMED IN MAY 2022 AND DID NOT INDICATE THE PRESENCE OF ANY POTENTIAL OR RECOGNIZED ENVIRONMENTAL CONDITIONS IN CONNECTION WITH THE SITE. A COPY OF THE PHASE I ESA WILL BE INCLUDED WITH THE CUP APPLICATION PACKAGE.
- THE SOLAR PANEL LAYOUT PROVIDED ON THIS CONDITIONAL USE PERMIT PLAN IS APPROXIMATE AND THE FINAL LOCATION OF THE PROPOSED SOLAR PANELS, WITHIN THE PROPOSED LIMITS OF DISTURBANCE, SHALL BE DETERMINED AT THE TIME OF SITE PLAN SUBMISSION.
- PROJECT SIGNAGE SHALL COMPLY WITH ALL APPLICABLE LUNENBURG COUNTY SIGN REGULATIONS. REQUIRED WARNING SIGNAGE SHALL BE PROVIDED AS REQUIRED BY THE ZONING ORDINANCE.
- NOISE LEVELS FROM THE SOLAR ENERGY FACILITY WILL COMPLY WITH ALL APPLICABLE LUNENBURG COUNTY NOISE REGULATIONS.
- EROSION CONTROL AND STORMWATER MANAGEMENT SHALL BE PROVIDED IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS.

PROJECT NARRATIVE:

AMERESCO (APPLICANT) PROPOSES TO CONSTRUCT AND OPERATE THE KENBRIDGE SOLAR FACILITY (PROJECT) AT 5844 ORAL OAKS ROAD, KENBRIDGE, VIRGINIA 23944. THE PROJECT WILL BE A FIXED TILT, GROUND-MOUNTED PHOTOVOLTAIC (PV) SOLAR FACILITY, WITH AN ELECTRICITY GENERATING CAPACITY OF APPROXIMATELY 12.0 MEGAWATTS (MW) OF ALTERNATING CURRENT (AC) AND 13.5 MW OF DIRECT CURRENT (DC) WITHIN A FENCE SECURED AREA OF APPROXIMATELY 51.0 ACRES. THE 51-ACRE FENCED DEVELOPMENT AREA IS LOCATED WITHIN PARCEL TAX MAP NO. 058-0A-0-29 WITH A PROPOSED GRAVEL ACCESS ROAD THAT CONNECTS TO ORAL OAKS ROAD (SR 635). THE PROJECT PARCEL IS APPROXIMATELY 128.24 ACRES AND IS PRIVATELY OWNED BY VIRGINIA HAWTHORNE WILSON (PROPERTY). THE LOCATION AND ORIENTATION OF THE SOLAR ARRAY WITHIN THE PROPERTY WAS DESIGNED SO TO MINIMIZE VISIBILITY FROM NEARBY RESIDENTS AND PUBLIC ROADWAYS, MINIMIZE EXCAVATION AND GRADING ASSOCIATED WITH PROJECT CONSTRUCTION, AND MAXIMIZE EXPOSURE TO SOLAR RADIATION THROUGHOUT THE YEAR. THE FACILITY SETBACKS FROM ORAL OAKS ROAD AND THE SURROUNDING RESIDENTIAL PARCELS HAVE BEEN INCREASED TO EXCEED COUNTY REQUIREMENTS.

PURPOSE AND NEED

THE PURPOSE OF THE PROPOSED PROJECT IS TO GENERATE LOCAL, CLEAN, AND RENEWABLE SOLAR POWER, WITH THE ELECTRICITY GENERATION TO BE SOLD TO THE LOCAL UTILITY. THE INTERCONNECTION STUDY HAS BEEN COMPLETED BY SOUTHSIDE ELECTRIC COOPERATIVE AND APPLICANT EXPECTS A SOLAR GENERATOR INTERCONNECTION AGREEMENT (SGIA) BY MARCH 2023. PROJECT SITE CONSTRUCTION IS ANTICIPATED TO BEGIN IN 2023. LOCAL SOLAR PROJECTS ARE PART OF THE ENERGY MIX, REDUCING THE DEPENDENCE ON ANY SINGLE SOURCE OF ELECTRICITY GENERATION. THESE PROJECTS HELP KEEP ELECTRIC COSTS DOWN BY PROVIDING A HEDGE AGAINST THE RISING COSTS OF COMMODITY FUELS. THESE LOCAL POWER GENERATION PROJECTS ALSO BENEFIT THEIR HOST COMMUNITIES BY IMPROVING THE RESILIENCY OF THE LOCAL ELECTRIC GRID, SUPPLYING POWER LOCALLY AND OFFSETTING POWER SUPPLIES THAT WOULD OTHERWISE BE REQUIRED FROM DISTANT POWER PLANTS.

BASED ON ITS COMMITMENT TO PROVIDING RENEWABLE ENERGY, THE APPLICANT PROPOSES TO DEVELOP THE SITE DESCRIBED BELOW TO MAXIMIZE ITS SOLAR ENERGY POTENTIAL WITHIN THE PROJECT'S SECURED FENCED AREA. TO BEST DETERMINE OPTIMAL LOCATION WITHIN THE SITE, THE FOLLOWING FACTORS HAVE BEEN ANALYZED:

- SIGNIFICANT SOLAR RADIATION (INSOLATION)
- SITE ACCESSIBILITY FOR SERVICE AND CONSTRUCTION VEHICLES
- AVOIDANCE OF ENVIRONMENTALLY SENSITIVE AREAS
- LIMITED TREE AND VEGETATIVE CLEARING
- LIMITED VISIBILITY FROM OFFSITE LOCATIONS
- REQUIRED SETBACKS FROM ADJACENT PROPERTIES AND PUBLIC ROADS

SITE SETTING

THE PROPOSED PROJECT SITE IS LOCATED AT 5844 ORAL OAKS ROAD IN KENBRIDGE, VIRGINIA. THE FENCED PORTION OF THE PROJECT AREA IS APPROXIMATELY 51 ACRES IN SIZE AND WILL BE INSTALLED WITHIN PARCEL TAX MAP NO. 058-0A-0-29 (128.24 ACRES) WITH A PROPOSED GRAVEL ACCESS ROAD THAT CONNECTS TO ORAL OAKS ROAD (SR 635). THE PROPERTY IS PRIVATELY OWNED BY VIRGINIA WILSON HAWTHORNE AND MAJORITY OF THIS PARCEL, APPROXIMATELY 80% (102 ACRES) EXISTS AS FORESTED (TIMBER). THERE IS APPROXIMATELY 26 ACRES THAT EXIST AS MANAGED TURF WITHIN THE PROPERTY, AND APPROXIMATELY 77% (20 ACRES) OF THE TURF IS LOCATED WITHIN A 150-FOOT VEPCO EASEMENT ALONG THE NORTHERN SIDE OF THE PARCEL. THERE IS ALSO APPROXIMATELY 5.5 ACRES OF WETLANDS IN THE PROJECT PARCEL, WHICH IS TO BE CONSERVED AND PROTECTED.

THE PROPOSED 51-ACRE FENCED PROJECT SITE IS BORDERED AS FOLLOWS:

- BORDERED TO THE NORTH BY A 150-FOOT VEPCO EASEMENT THAT IS INTERNAL TO THE PROJECT PARCEL. THE PROPOSED SECURITY FENCE RUNS PARALLEL TO THE EASEMENT ALONG ITS ENTIRE NORTHERN BORDER.
- BORDERED TO THE EAST BY THE CENTERLINE OF THE EXISTING STREAM FOUND IN A FIELD RUN SURVEY PREPARED BY VHB. ADJACENT TO THE STREAM IS A RESIDENTIAL - LOW DENSITY (R1) ZONED PARCEL WHICH BORDERS THE EAST AND SOUTHEAST CORNER OF THE PROJECT (TAX MAP NO. 058-0A-0-39A).
- BORDERED TO THE SOUTH BY TWO (2) R1 ZONED PARCELS WITH THE SAME OWNER (TAX MAP NO. 058-0A-0-28B AND 058-0A-0-27).
- BORDERED TO THE WEST BY A PROJECT PARTICIPANT PARCEL (TAX MAP NO. 058-0A-0-29A) WITH A SINGLE-FAMILY RESIDENCE OWNED BY THE PROJECT PARCEL OWNER, THE NORTH AND SOUTHWEST CORNERS ARE BORDERED BY THE ORAL OAKS ROAD (SR 635) RIGHT-OF-WAY.

THE SPECIFIC LOCATION OF THE PROPOSED SOLAR ARRAY WITHIN THIS PROPERTY WAS CAREFULLY DESIGNED SO TO MINIMIZE VISIBILITY AND MAXIMIZE SETBACKS FROM NEARBY RESIDENTS TO THE SOUTH AND ORAL OAKS ROAD TO THE WEST. THE SELECTED LOCATION IS PARALLEL AND ADJACENT TO AN EXISTING VEPCO EASEMENT TO THE NORTH AND RESIDENTIAL ZONED PROPERTIES TO THE EAST AND SOUTH. VIEWSHED BUFFERING/SCREENING IS ACCOMPLISHED BY PRESERVING A 50-FOOT OR GREATER WIDTH BUFFER OF EXISTING VEGETATION AROUND THE PERIMETER OF THE PROJECT.

A WETLAND DELINEATION WAS COMPLETED BY VHB IN APRIL 2022 AND CONFIRMED VIA A PRELIMINARY JURISDICTIONAL DETERMINATION FROM THE UNITED STATES ARMY CORPS OF ENGINEERS ON AUGUST 29, 2022. THERE WERE WATERS REGULATED UNDER SECTION 404 OF THE CLEAN WATERS ACT FOUND ON THE PROJECT SITE, HOWEVER NO WETLAND/WATERS IMPACTS ARE PROPOSED WITH THIS PROJECT.

KEY COMPONENTS

THE PROPOSED PROJECT WILL CONSIST OF THE FOLLOWING KEY COMPONENTS:

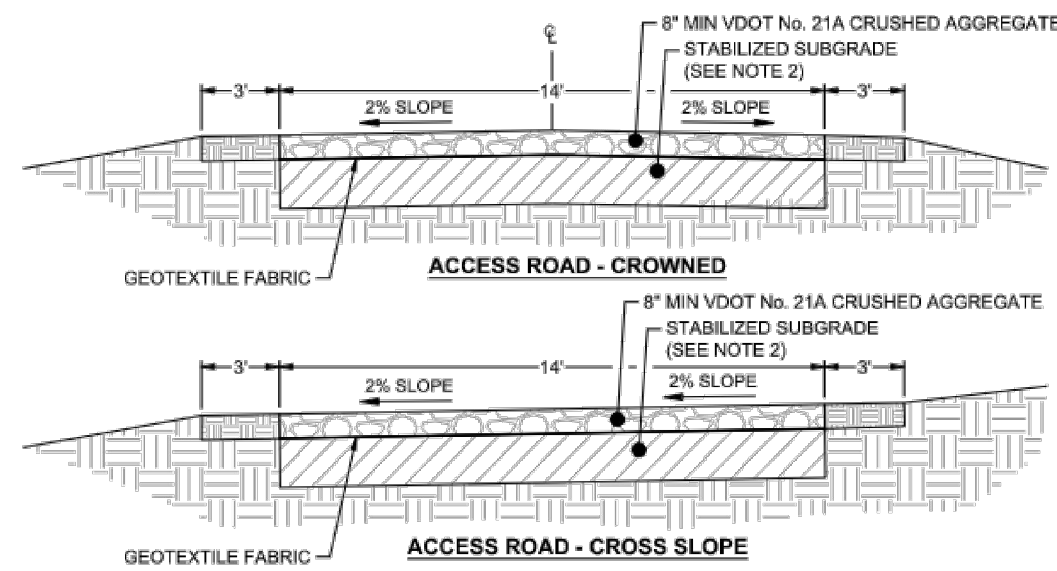
- SOLAR MODULES AND RACKING
- UNDERGROUND ELECTRICAL CONDUCTORS
- BALANCE OF SYSTEM EQUIPMENT
- GRAVEL ACCESS ROAD
- SECURITY FENCING

FOR ADDITIONAL INFORMATION PLEASE REFERENCE THE COMPLETE PROJECT NARRATIVE AND OTHER SUPPORTING DOCUMENTS THAT ACCOMPANY THIS PRELIMINARY SITE PLAN AND CUP APPLICATION.

PROJECT DEVELOPMENT DATA

AREA CLASSIFICATION	PROJECT PARCEL AREA		LIMIT OF DISTURBANCE	
	(ACRE)	(PERCENT)	(ACRE)	(PERCENT)
WOODED AREA	41.04	32.0%	0.08	0.2%
TURF/POLLINATOR AREA	75.39	58.8%	51.88	94.3%
*TREE CLEARING AREA FOR SHADE REDUCTION	8.77	6.8%	0.00	0.0%
TOTAL IMPERVIOUS AREA	3.04	2.4%	3.04	5.5%
Gravel Roads/Riprap	2.02	-	2.02	-
PV Racking Posts	1.00	-	1.00	-
Equipment Pads	0.02	-	0.02	-
TOTAL PROJECT PARCEL	128.24		TOTAL LOD	55.00
*EXISTING TREES IN THESE SHADE REDUCTION AREAS ARE TO BE CLEARED VIA TIMBER PRACTICES THAT PRESERVE THE STUMPS/ROOTS AND PREVENT LAND DISTURBANCE.				
BUILDINGS	0 SF	0.00 AC		0.0%
IMPERVIOUS AREA	132,430 SF	3.04 AC		2.4%
OPEN AREA	5,453,712 SF	125.20 AC		97.6%

ZONING TABULATIONS		
	REQUIREMENT / EXISTING	PROPOSED / PROVIDED
ZONING DISTRICT	RESIDENTIAL - LOW DENSITY (R1)	NO CHANGE
LAND USE	VACANT / FORESTED	LARGE SOLAR ENERGY FACILITY
DISTANCE TO NEAREST TOWN OF KENBRIDGE	ONE (1) MILE	5.0 MILES (SEE NOTE #1)
DISTANCE TO NEAREST AIRPORT	GREATER THAN TWO (2) MILES	5.0 MILES (SEE NOTE #1)
DISTANCE TO NEAREST MEDIUM OR LARGE SOLAR FACILITY	ONE (1) MILE	1.1 MILES (SEE NOTE #2)
SOLAR FACILITY DENSITY	5% IN A FIVE (5) MILE RADIUS	4.8% (SEE NOTE #2)
MINIMUM SETBACKS (SEE NOTE #3)		
RIGHT-OF-WAY	200 FEET	>800 FEET
ADJACENT PROPERTY LINES	200 FEET	>200 FEET
RESIDENTIAL STRUCTURES	400 FEET	>400 FEET
MAXIMUM HEIGHT	15 FEET	<12 FEET
MINIMUM BUFFER (SEE NOTE #4)	50 FOOT LANDSCAPED STRIP LOCATED WITHIN THE SETBACKS OF THE PROJECT AROUND THE PERIMETER OF THE PROJECT	EXISTING FORESTED BUFFER 50 FEET OR GREATER IN WIDTH TO BE PRESERVED AND MITIGATE VISUAL IMPACT OF SOLAR FACILITY.
NOTES:	1. THE PROJECT SITE IS LOCATED 5.0 MILES FROM THE TOWN OF KENBRIDGE AND MORE THAN 6.5 MILES FROM THE TOWN OF VICTORIA. THE PROJECT SITE IS LOCATED 5.0 MILES FROM THE LUNENBURG COUNTY AIRPORT (NEAREST). THE PROJECT SITE LOCATION IS IN ACCORDANCE WITH SECTION 5 PART D.1 OF THE COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES.  2. THE PROJECT SITE IS LOCATED MORE THAN 6 MILES FROM THE NEAREST EXISTING SOLAR FACILITY (MEDIUM-SCALE DOGWOOD SOLAR) AND MORE THAN 1.1 MILES FROM NEAREST END OF PROPOSED LARGE-SCALE LAUREL BRANCH SOLAR. THE PROJECT SITE ALSO ADHERES TO LESS THAN 5% SOLAR DEVELOPMENT DENSITY WHEN MEASURED IN RESPECT TO THE PROPOSED LAUREL BRANCH SOLAR. THE PROJECT SITE LOCATION IS IN ACCORDANCE WITH SECTION 5 PART D.2 OF THE COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES.  3. SETBACKS MAY VARY SLIGHTLY WITH FINAL PLAN BUT ARE SUBJECT TO THE MINIMUM DISTANCES AS REQUIRED BY SECTION 5 PART D.4 OF THE COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES.  4. THE PROJECT LAYOUT IS DESIGNED SO TO PRESERVE AN EXISTING FORESTED/WOODLAND BUFFER OF 50 FEET OR WIDER AROUND THE PROJECT PARCELS PERIMETER. THIS EXISTING VEGETATION IS NATIVE AND WELL ESTABLISHED/MATURE AND PRESERVES EXISTING HABITAT IN ADDITION TO VISUALLY SCREENING THE SOLAR FACILITY. THIS IS IN ACCORDANCE WITH SECTION 5 PART D.5 OF THE COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES.	



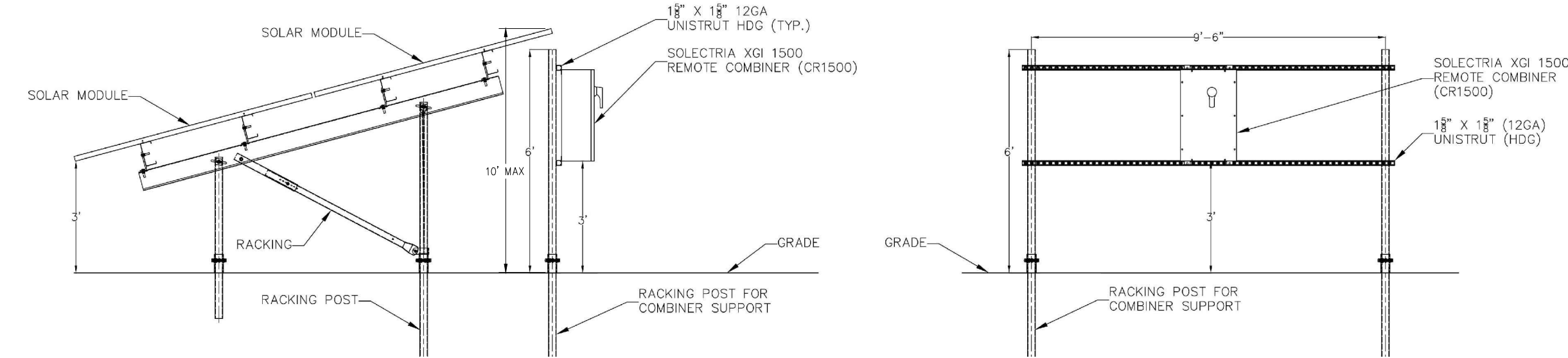
- NOTES:
- GEOTEXTILE FABRIC SHALL BE MIRAFI HP970 OR PROJECT ENGINEER APPROVED EQUIVALENT.
  - SUBGRADE MATERIALS SHALL CONFORM TO VDOT "ROAD AND BRIDGE SPECIFICATIONS". SUBGRADE SHALL BE PLACED IN 8" MAXIMUM LIFTS AND COMPACTED TO AT LEAST 96% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. SOIL MOISTURE CONTENT DURING COMPACTION SHALL BE MAINTAINED WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT.
  - SHOULDERS SHALL BE COMPACTED NATIVE SOIL.
  - ROAD GRAVEL WIDTH MAY BE EXPANDED TO 20 FEET WIDE AT ENTRANCE OR WHERE SPECIFIED ON PLAN.

Access Road Typical Section

N.T.S.

SOLAR EQUIPMENT NOTE:

TYPICAL SECTION DETAIL REPRESENTATIVES ARE SHOWN FOR THE GROUND MOUNTED FIXED-TILT PV MODULE RACKING SYSTEM AND POWER INVERTERS. THE FINAL EQUIPMENT SELECTIONS WILL BE SPECIFIED WITH THE FINAL SITE PLAN SUBMITTAL TO THE COUNTY.

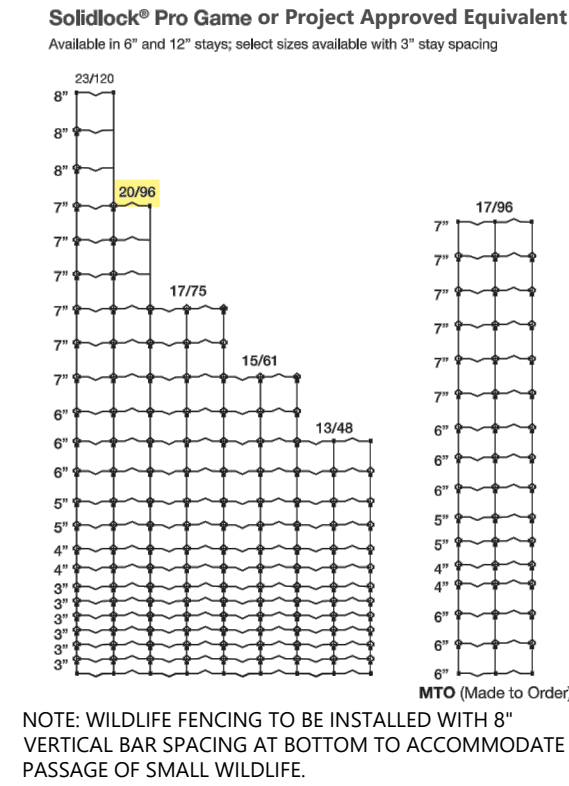


Typical Fixed-Tilt Racking and Combiner Elevations

N.T.S.

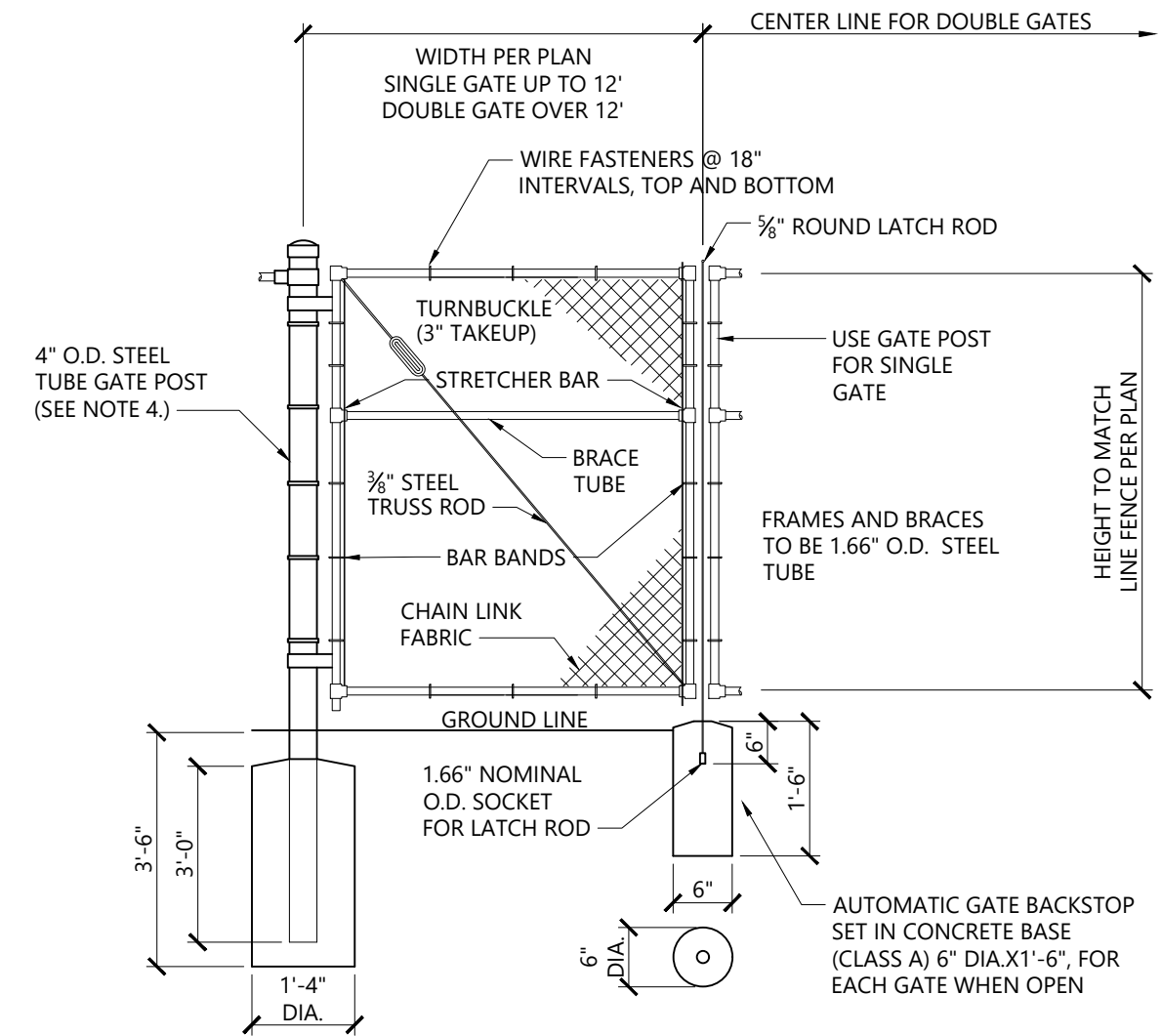
Fixed Knot Fence Products

Solidlock® Pro Professional Strength Fixed Knot Game Fence						
Part #	Fence Design	Height	Vertical Spacing	Rail Length	Wire Gauge	Rail Weight
118248	1951-48	61"	6"	330'	12.5g	279 lbs
118009	1775-48	70"	6"	330'	12.5g	307 lbs
118271	2096-48	90"	3"	160'	12.5g	340 lbs
118208	2096-48	90"	6"	330'	12.5g	307 lbs
118376	2096-48	90"	6"	500'	12.5g	601 lbs
118241	2096-12	90"	12"	330'	12.5g	282 lbs
118371	2096-12	90"	12"	660'	12.5g	564 lbs
118918	231024-6	120"	6"	330'	12.5g	492 lbs
185545	2096-6	90"	6"	330'	12.5g	307 lbs
210607	2096-48	90"	6"	800'	12.5g	600 lbs
118201	2096-48	90"	6"	330'	12.5g	306 lbs



Wildlife-Permeable Fencing Specifications\*

N.T.S. Source: Bekaert Fixed Knot Fence  
\*NOTE: FENCING IS SUBJECT TO APPROVAL BY THE LOCAL DISTRIBUTION UTILITY



NOTES

- MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH "CHAIN LINK MANUFACTURER'S INSTITUTE" PRODUCT MANUAL.
- CONCRETE FOOTING ON LINE POSTS MAY BE OMITTED IF POSTS ARE BURIED A MIN. OF 2.5 FEET, UNLESS SPECIFIED OTHERWISE BY FENCE MANUFACTURER.
- FENCE FABRIC, POSTS, FRAMEWORKS, AND HARDWARE SHALL BE GALVANIZED STEEL PER SPECIFICATIONS.
- GATE POSTS TO BE USED ON EACH SIDE OF SINGLE AND DOUBLE GATE OPENINGS.

Chain Link Fence Gate

N.T.S. Source: VHB REV LD\_482

Kenbridge Solar

5844 Oral Oaks Road  
Lunenburg, Virginia 23944

No.	Revision	Date	Apprd.

Designed by	JRN	Checked by	SCQ
Issued for		Date	

Conditional Use Permit 3/6/2023

Not Approved for Construction

NOTES AND DETAILS

Drawing Number

C100

Sheet of

2 7

Project Number

34823.00



# Staff Report

## **Report on Conditional Use Permit CUP-1-23 Oral Oaks Solar (Ameresco/VHB) with Respect to Article 15.2-2232 of the Code of Virginia**

### **Purpose of Review and Scope of Hearing**

**Purpose:** To determine whether the request of Oral Oaks Solar for a Conditional Use Permit for a proposed solar energy facility (“the Application”), as a “public utility facility” under Virginia Code Section 15.2-2232(A), is substantially in accord with the *Lunenburg/Kenbridge/ Victoria Joint Comprehensive Plan 2019-2024* (“the Comprehensive Plan”) relative to the general or approximate location, character, and extent of the proposed facility.

**Scope of Hearing:** Staff has recommended that the Planning Commission review the request for determination under Virginia Code Section 15.2-2232 prior to any review of a Conditional Use Permit (CUP) application. Therefore, the subject hearing is limited in scope to the determination of whether the request made in the Application, file number CUP-1-23, is ‘substantially in accord’ with the Comprehensive Plan. During this hearing phase, only those facts that pertain to the broader issues of the Comprehensive Plan will be discussed. Should the request be found to be in accord with the Comprehensive Plan, detailed examination of the Application as a Conditional Use Permit will be addressed in additional hearings before the Planning Commission, with a subsequent hearing before the Board of Supervisors. Should the request be found not to be in accord with the Comprehensive Plan, the Application will be dismissed, and no further hearing nor consideration of the Conditional Use Permit will be conducted; the facility proposed in the Application will not receive approval or permissions to build. The Applicant may appeal this action to the Board of Supervisors.

### **Project Description and Existing Conditions**

**Description:** The facility proposed under CUP-1-23, having a rated capacity of 12 megawatts (12 MW), is classified as a Large-Scale Solar facility (solar facility that generates electricity from sunlight on an area adequate to support a rated capacity of five megawatts (5 MW) alternating current or greater). The facility is proposed to be developed on one (1) parcel totaling approximately 128 acres (the leased area for the project totals approximately 63 acres), currently zoned A-1, Agriculture District, and located in an area of the County having a current and future land use designation as *Agricultural*, characterized as areas “foreseen as slow growth, low density areas...expected to remain primarily agricultural, forest, and rural residential land uses.”

The Property is located along Oral Oaks Road, Kenbridge, Virginia. The Property is currently used for timber and agricultural uses. The project area of the site inside the fenceline (the area within the site used for the construction and operation of the solar energy facility, including security fencing but excluding setbacks and buffer areas) totals approximately 51 acres and approximately 18 acres will be directly under solar panels. The Application indicates the installation of an estimated maximum 27,594 photo-voltaic (PV) fixed tilt solar panels.



**Preexisting Site Use/Economic Considerations:** Preexisting or recent use of the site is not addressed within the Application; however, it appears that timber was harvested. Adjacent uses and uses within the area are comprised of residential and agricultural uses.

**Existing Topography:** The Application contains a *Slope Analysis* plan indicating topography of the site. Generally, the front of the site slopes from north to south, and the rear of the site from west to east. Stormwater would generally flow in these directions, with stormwater basins planned. Slopes generally range between 0% to 20%.

**Soils:** According to the Application, on-site soils are moderately fine-grained sands, humus, and clay, including USGS soil category of Ultisols (red clay soils with high acidity). Soil types found on the property include the following classifications: 8B2 Georgeville loam, 8C2 Georgeville loam eroded, 12B Iredell loam, 12C2 Iredell loam, 16C2 Mecklenburg loam, and 16D2 Mecklenburg loam.

**Transportation:** The Project will be constructed over an approximate 6-month period with a peak of 80 employees on the site during module installation. It is anticipated that construction will commence in 2024 and the Project will be operational by the end of 2025. Once operational, maintenance crews will visit the Project site as necessary to mow and perform other maintenance activities. The Project will have a limited impact on existing transportation infrastructure once constructed.

**Existing Air Quality:** Given the sparseness of development and traffic, existing air quality should be acceptable. While no sampling has been done, one can expect low levels of degradation in the area due to its limited accessibility and use.

**Existing Demand for Emergency Services:** The site and existing use poses no unique demands on emergency services at present.

**Adjacent and Surrounding Uses:** The areas surrounding the proposed project area share the same land use and zoning characteristics – rural, agricultural, forestry uses – as well as the same land use classifications.

### **Comprehensive Plan Citations**

The Comprehensive Plan includes a *Special Policy Areas* discussion and recommendations on solar facilities (Chapter V, *Special Policy Areas*), as follows:

#### **Policy Area: Solar Facilities**

*Solar Facilities are acres of raw farm land covered with solar panels which enable the owner of the solar facilities to capture sunlight, convert that sunlight into electrical energy and then sell that electricity to the utility company.*

*Solar facilities are located in areas with availability of large tracts of land at low costs as well as available infrastructure (transmission lines) to support additional capacity. The existing land use of Lunenburg County could make the county's open areas an option for*

*Solar Facilities. The County and the Towns should consider the development of alternative energy production while protecting agriculture, forestry lands and watersheds that the county enjoys.*

*Alternative energy production may be considered by the County and Towns as an attraction to expand employment opportunities and for companies interested in supporting solar development in communities where they are located.*

**Recommendations:**

*The County and Town Planning Commissions should consider safe development of solar energy that minimizes impacts to land uses, properties, and the environment, particularly for economic development purposes. They should develop reasonable conditions for the development of Solar Facilities which will protect the character of surrounding properties and will not limit future property development. Any County or Town planning measures which address Solar Facilities siting should also have an effective decommissioning plan developed and funded by the Solar developer before installation.*

Additionally, the following Comprehensive Plan citations should be considered:

- Chapter V, *Special Policy Areas, Policy Area: Loss of Agricultural Land and Open Space*, references that “Future residential, commercial and industrial development should be encouraged to locate in areas where adequate public services are available or planned. Any development that does occur in the rural areas should be designed to incorporate significant open spaces and designed to minimize environmental impacts on the land and water resources,” and that “Environmental impacts of any newly planned development area should be considered. It is essential to maintain a balance between development and preservation objectives throughout the area.” This section recommends that “Commercial and/or industrial developments that are approved in the rural portions of the County should be consistent with the best interest of the community.”
- Chapter V, *Special Policy Areas, Policy Area: Protection of Water Resources*, references that surface water resources within the County “provide recreational opportunities and are a critical component of the County’s infrastructure and quality of life. As such, protection and enhancement of these water resources should be a primary object of the County and the Towns.”
- Chapter VI, *Goals, Objectives, and Strategies, B., Economy and Employment:*
  - Goal: Promote the expansion of a diversified economy.
    - Objective 1: Encourage quality industries to locate within the County and Towns.
      - Strategy 4: County Government, and other parties, to promote the area to environmentally friendly industries.
    - Objective 2: Provide adequate land and resources for commercial and industrial uses.

- Strategy 5: Guide community and industrial uses into areas with adequate public utilities and transportation access.
- Chapter VI, *Goals, Objectives, and Strategies, C., Land Use*:
  - Goal: Promote a balance of land uses that meet economic and demographic needs of Lunenburg County, the Town of Kenbridge and the Town of Victoria.
    - Objective 4: Encourage quality industries to locate within the County and Towns.
      - Strategy 1: Encourage industries to locate in the County and Towns' industrial parks or in areas where they are compatible to adjacent uses.
      - Strategy 2: Guide community and industrial uses into areas with adequate public utilities and transportation access.
      - Strategy 3: Work with interest groups to attract new industries to the locality. Encourage industries to locate in the industrial parks or in areas where they are compatible to adjacent uses.
      - Strategy 4: Liaise with the Chamber of Commerce, and other parties, to promote the area to environmentally friendly industries.
- Chapter VI, *Goals, Objectives, and Strategies, F., Natural Resources*:
  - Goal: Protect and preserve the natural resources of the community.
    - Objective 1: Prevent development in areas of critical environmental importance.
      - Strategy 1: Restrict development in flood plains, swamps and drainage ways.
      - Strategy 2: Restrict development on soils that will not adequately support structures.
      - Strategy 4: Identify and protect all open spaces which have recreational potential or which would enhance the environment in Lunenburg County, the Town of Kenbridge and the Town of Victoria.
      - Strategy 5: Promote the preservation and planting of trees, shrubs and other natural foliage.

### **Staff Analysis and Comments**



Staff has reviewed and analyzed the Application and the above referenced Comprehensive Plan citations to determine whether the project is substantially in accord with the Comprehensive Plan.

With respect to the *Solar Facilities* policy area, Staff is of the opinion that the proposed facility can be characterized as safe development that generally minimizes, or will minimize through reasonable conditions, impacts to land uses, properties, and the environments.

With respect to the *Loss of Agricultural Land and Open Space* policy area, significant areas of the project will remain undeveloped, and the project is designed to minimize environmental impacts, and/or such impacts will be minimized through reasonable conditions. It is also important to note that none of the leased lands comprising the Project rank as having suitability (high or otherwise) under the Agricultural Model used for the Virginia Department of Conservation and Recreation's (DCR's) Virginia Natural Heritage Data Explorer.

With respect to the *Protection of Water Resources* policy area, Staff is of the opinion that the project will be subject to Virginia Department of Environmental Quality regulations and permitting, which will work to ensure protection of the County's water resources. It is important to note that there are areas along streams within the Project that rank low impact under the Watershed Impact Model used for the Virginia DCR's Virginia Natural Heritage Data Explorer. It is notable that the project design employs setbacks of developed areas from identified streams and wetlands and will preserve the 5.5 acres of existing wetlands within the Project parcel, however, there are areas proposed for development that have slopes greater than 20% and likely greater than 15%, which could result in erosion and sedimentation issues.

With respect to applicable *Economy and Employment* goals, objectives, and strategies. Staff is of the opinion that the proposed development works to expand a diversified economy within the County, and would constitute an environmentally friendly industrial use, primarily due to the proposed scale of operation, generally sited in an area with adequate and necessary utility access.

With respect to applicable *Land Use* goals, objectives, and strategies, while the area has adequate and necessary utility access and constitutes a more environmentally friendly industrial use, it is not inherently compatible with adjacent uses, which are almost entirely residential and agricultural. Significant setbacks and buffers/screening work to mitigate for this incompatibility and additional reasonable conditions should be considered as part of the review of the Conditional Use Permit.

With respect to applicable *Natural Resources* goals, objectives, and strategies, Staff is of the opinion that the proposed development does not negatively impact natural resources of the County, especially areas of critical environmental importance. Staff acknowledges that the project works to promote the preservation of existing trees by retaining existing vegetated areas along the periphery of the site and would suggest that additional reasonable conditions to support the long-term maintenance of these areas be considered as part of the review of the Conditional Use Permit. It is important to note that while some areas of the Project, not under panel, rank as Moderate for Forest Conservation Value on Virginia DCR's Virginia Natural Heritage Data Explorer, most forested areas rank as Moderate or Average. Further, areas of the Project rank as Moderate or General for Ecological Cores on Virginia DCR's Virginia Natural Heritage Data

Explorer, with no areas ranking as High, Very High, or Outstanding. However, as noted with respect to the *Protection of Water Resources* policy area, development of slopes greater than 15% may have negative effects on natural resources and stormwater conditions.

### **Staff Conclusions and Recommendations**

Staff has analyzed the applicable elements of the Comprehensive Plan referenced above. The project's proposed location, character, and extent appear to be consistent with the overall policies, goals, objectives, and strategies of the Comprehensive Plan (or reasonably expected with the imposition of conditions as part of the review of the Conditional Use Permit). **Based upon this, Staff is of the opinion and recommends that the proposed utility-scale solar facility is substantially in accord with the Comprehensive Plan, or parts thereof.** It is expected that details of the design will be further evaluated for suitability as part of the consideration of the Conditional Use Permit.

As noted at the beginning of this Report, the question before the Planning Commission with this 2232 review is whether the general location or approximate location, character, and extent of the proposed solar energy facility is substantially in accord with the Comprehensive Plan or part thereof. Staff suggests that the Planning Commission consider all relevant portions of the Comprehensive Plan in its analysis, and carefully and thoroughly document the reasons and basis for the action which the Commission takes. Options for Commission action are as follows:

1. By motion, determine that the application is substantially in accord with the Comprehensive Plan, with written reasons for the decision;
2. By motion, determine that the application is not substantially in accord with the Comprehensive Plan, with written reasons for the decision; or
3. By motion, defer action on the review at this time and continue for further discussion and consideration (within the 60-day window).

### **Planning Commission Actions**

#### **Option 1 - Applicant's proposal is substantially in accord with the Comprehensive Plan**

I move that Oral Oaks Solar's proposed 12-megawatt photovoltaic solar energy facility, as described in the conditional use permit application CUP-1-23, is substantially in accord with the Lunenburg County Comprehensive Plan, or parts thereof, for the following reasons:

1. The proposed solar facility can be characterized as safe development that minimizes, or will be expected to minimize through conditions, impacts to land uses, properties, and the environments.

2. The project will be subject to Virginia Department of Environmental Quality regulations and permitting, which will work to ensure protection of the County's water resources.
3. The proposed development works to expand a diversified economy within the County, and would constitute an environmentally friendly industrial use, primarily due to the proposed scale of operation, generally sited in an area with adequate and necessary utility access.
4. The area of the proposed project has adequate and necessary utility access and the project constitutes a more environmentally friendly industrial use; while not inherently compatible with adjacent uses, which are almost entirely residential and agricultural, significant setbacks and buffers/screening will work to mitigate for this incompatibility and additional conditions can be considered as part of the review of the Conditional Use Permit.
5. The proposed development does not negatively impact natural resources of the County, especially areas of critical environmental importance. Further, the project works to promote the preservation of existing trees by retaining existing vegetated areas along the periphery of the site.

The Secretary of the Planning Commission is directed to communicate the Planning Commission's findings to the Board of Supervisors.

Option 2 - Applicant's proposal is not substantially in accord with the Comprehensive Plan

I move that Oral Oaks Solar's proposed 12-megawatt photovoltaic solar energy facility, as described in the conditional use permit application CUP-1-23, is not substantially in accord with the Lunenburg County Comprehensive Plan, or parts thereof, for the following reasons:

1. The location of the proposed solar facility is a rural area, the amount of undeveloped area within the project is insufficient and the project is not designed to minimize environmental impacts.
2. Despite being subject to Virginia Department of Environmental Quality regulations and permitting, the project will have negative effects on the County's water resources.
3. The proposed development does not work to expand a diversified economy within the County, and, given the scale of the proposal, would not constitute an environmentally friendly industrial use; furthermore, utility and transportation access to support the development are inadequate.
4. The proposed project is not compatible with adjacent residential and agricultural uses; setbacks and buffers/screening are insufficient, and cannot be improved in a manner that would improve the compatibility of the project with adjacent uses.



5. The proposed development negatively impacts natural resources of the County, especially areas of critical environmental importance such as existing stands of trees and the isolated wetland to the east of the project site.

The Secretary of the Planning Commission is directed to communicate the Planning Commission's findings to the Board of Supervisors.

**Option 3 – Deferral of the application**

I move that the Planning Commission defer a decision on Oral Oaks Solar's request under Va. Code § 15.2-2232 regarding its proposed 12-megawatt photovoltaic solar energy facility, as described in the conditional use permit application CUP-1-23, until the Planning Commission meeting scheduled to begin at \_\_\_\_\_ p.m. on \_\_\_\_\_, in the \_\_\_\_\_ meeting room.

Public Comments  
Received

# Other Business



# Discussion on Solar Facility Study

## **Lunenburg County Planning Commission and Solar Committee**

The Lunenburg County Board of Supervisors has requested the Planning Commission and Solar Committee, by resolution, to conduct a study on the impact of Solar Facilities in Lunenburg County and to provide recommendations regarding future solar development in the County.

We are tasked with determining if there is a need to amend the County's Comprehensive Plan, Zoning Ordinance, and/or Solar Facilities Ordinance and making recommendations to the Board.

Some areas to look at further are:

Comprehensive Plan ---

Pg 116 – Loss of Agricultural Land and Open Space

Pg 117 – Protection of Water Resources

Pg 120 & 121 – Solar Facilities

Solar Ordinance ---

Pg 3 – Acreage Coverage

Pg 4 – Project Area

Pg 6 – Fees

Pg 10- Draft Decommission and Reclamation Plan

Pg 15- #2 Setbacks, #3 Vegetative Buffers

Pg 16- #1 Density

Pg 17- Vegetative Buffers

Pg 18- whole page

Pg 19- Prime Farm Land and total land

Zoning ---

--- And any other pertinent issues that may arise.

# County Attorney Update



# Next Meeting

The next Planning  
Commission meeting is  
scheduled for **October**  
**5, 2023, at 7:00 p.m.**

(time may change to  
6:00 p.m. dependent  
upon the number of  
agenda items).