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

Lunenburg Planning Office

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

Case Number:_____(Office Use Only)

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.

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/#/mwl. 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 **1st 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 1st 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: Virginia.

County of: Henrico County.

Before me, Paul Allen, on this 7th day of
Name of Notary Public

March, 2023, 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 7th day of March, 2023.

_____
Notary Public's Signature

Henrico County, VA
Location of Commission

Registration #: 7948285

Commission Expiration: 3/31/2025

(Seal)

PAUL J. ALLEN
NOTARY PUBLIC
REG # 7948285
COMMISSION EXPIRES 03/31/2025
COMMONWEALTH OF VIRGINIA

Verification of Identity

[X] Driver's License or Govt./State Identification Card:
State: VA 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

[X] 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.

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.

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

Reference attached Project Narrative.

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.

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 perfomed 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.

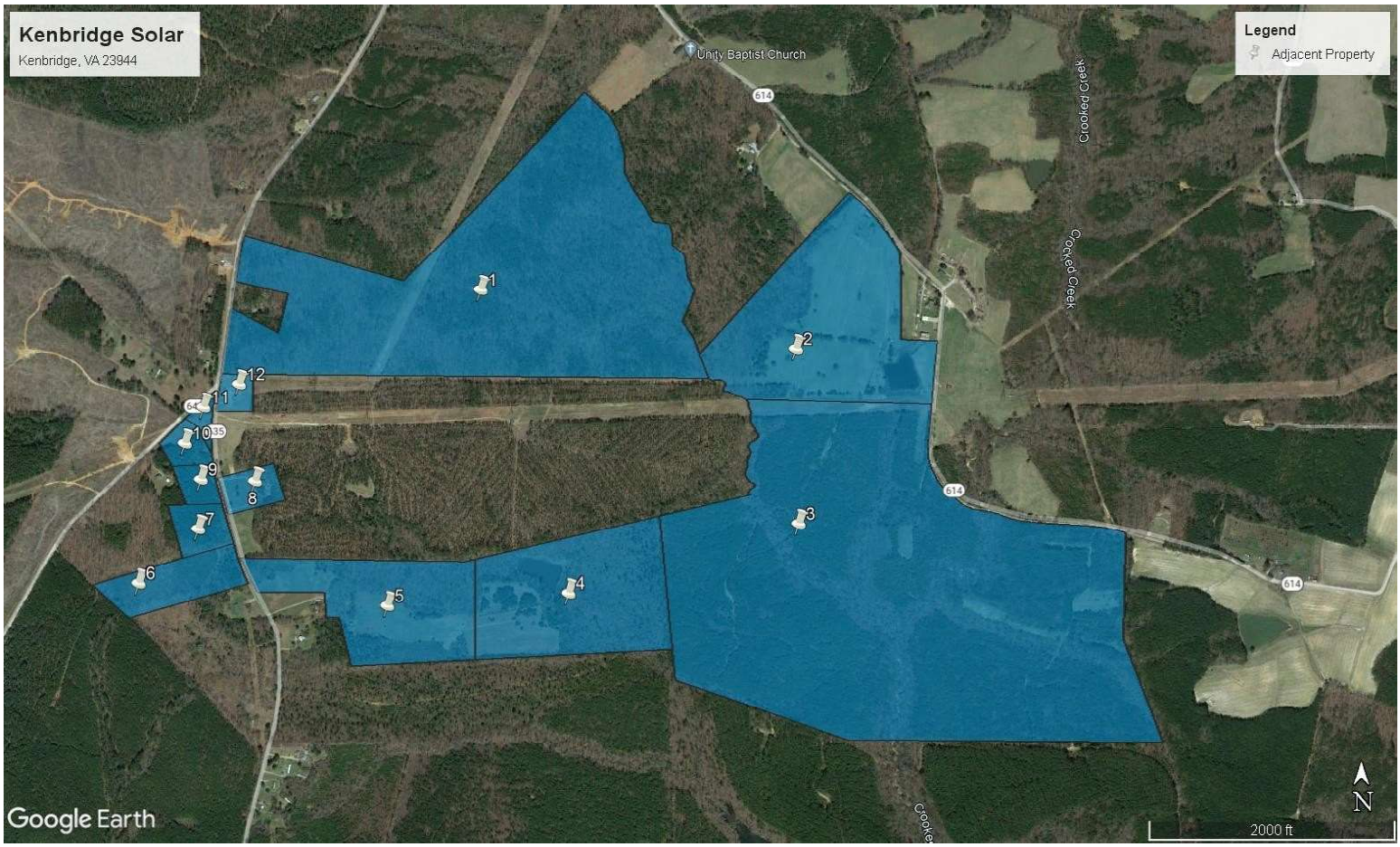
On-Site Storage, Unloading, and Turn-Around Areas

- 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
Parcel Number	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
Name(s)	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
Address	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 form 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 tuck 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

DECOMMISSIONING ESTIMATE BREAKDOWN						
Resource	**Task**	**Task Quantity**	**Task Duration**	**Person Hours**	**Rate**	**Cost**
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 xfmrs, 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
					Total Cost	**$546,644**

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, directive, 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 al 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)

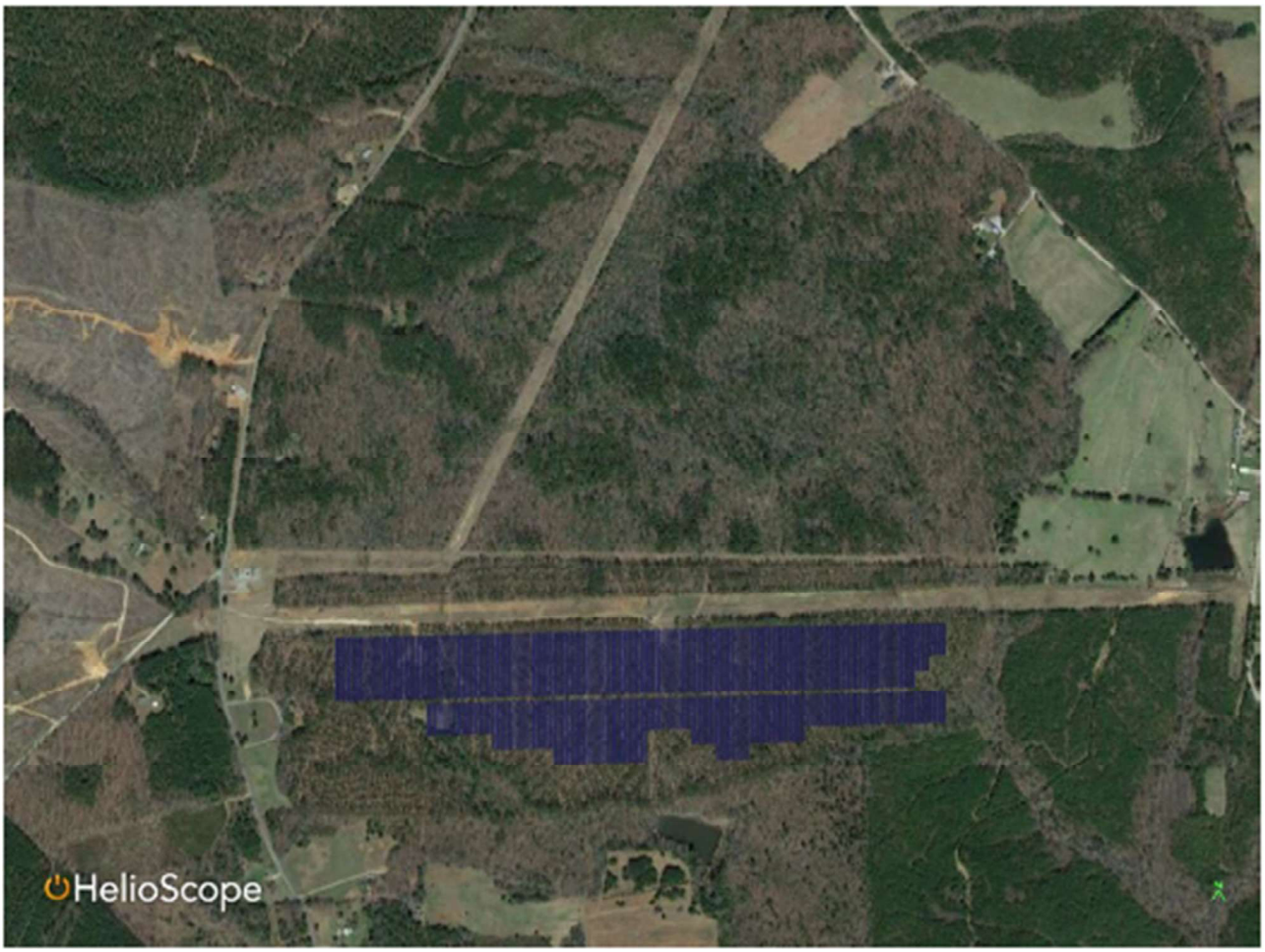


Exhibit B

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 utiltiy'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	[redacted]
2	[redacted]
3	[redacted]
4	[redacted]
5	[redacted]
6	[redacted]
7	[redacted]
8	[redacted]
9	[redacted]
10	[redacted]
11	[redacted]
12	[redacted]
13	[redacted]
14	[redacted]
15	[redacted]
16	[redacted]
17	[redacted]
18	[redacted]
19	[redacted]
20	[redacted]
Total	[redacted]

8. Liability Insurance

ACORD®

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).

PRODUCER Arthur J. Gallagher Risk Management Services, LLC 470 Atlantic Avenue Boston MA 02210	CONTACT NAME: PHONE (A/C, No, Ext): 617-261-6700 FAX (A/C, No): 617-646-0400 E-MAIL ADDRESS:
INSURED AMERINC-17 Ameresco, Inc. 111 Speen Street Suite 410 Framingham MA 01701	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Hartford Fire Insurance Company — 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	X COMMERCIAL GENERAL LIABILITY			30 CSF WQ0269	1/31/2023	1/31/2024	EACH OCCURRENCE	$ 2,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 500,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						MED EXP (Any one person)	$ 50,000
	POLICY X PRO-JECT LOC						PERSONAL & ADV INJURY	$ 1,000,000
	OTHER:						GENERAL AGGREGATE	$ 4,000,000
							PRODUCTS - COMP/OP AGG	$ 4,000,000
								$
A	AUTOMOBILE LIABILITY			30 UEL WQ0268	1/31/2023	1/31/2024	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N	N / A		30 WV WQ0267	1/31/2023	1/31/2024	X PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N (Mandatory in NH)						E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						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)

CERTIFICATE HOLDER	CANCELLATION
EVIDENCE OF	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 Patrick J Veale

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

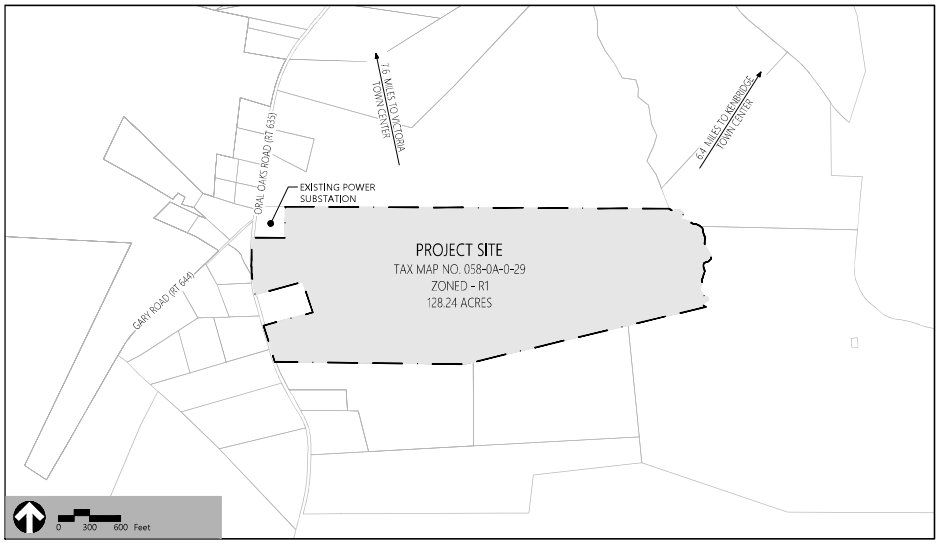
Issued for	CUP Review
Date Issued	March 6, 2023
Latest Issue	March 6, 2023

KENBRIDGE SOLAR CONDITIONAL USE PERMIT - 12 MW AC

APPLICATION #: TBD

COLUMBIAN GROVE MAGISTERIAL DISTRICT
LUNENBURG COUNTY

5844 Oral Oaks Road
Kenbridge, VA 23944



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

AMERESCO

Sheet Index

vhb.com

vhb

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

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

VHB Project : 34823.00 Kenbridge Solar
Issued for : Review 03/06/2023

PROJECT NOTES:

1. 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.
2. 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.
3. THE APPLICANT IS AMERESCO, 12001 SUNRISE VALLEY DRIVE, SUITE 205 RESTON, VA 20191.
4. 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.
5. 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.
6. 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.
7. PER FEMA FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL 51111C0175B, 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.
8. TO THE BEST KNOWLEDGE OF THE ENGINEER AND APPLICANT THIS APPLICATION CONFORMS TO ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS.
9. 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
10. 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 1 ESA WILL BE INCLUDED WITH THE CUP APPLICATION PACKAGE.
11. 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.
12. PROJECT SIGNAGE SHALL COMPLY WITH ALL APPLICABLE LUNENBURG COUNTY SIGN REGULATIONS. REQUIRED WARNING SIGNAGE SHALL BE PROVIDED AS REQUIRED BY THE ZONING ORDINANCE.
13. NOISE LEVELS FROM THE SOLAR ENERGY FACILITY WILL COMPLY WITH ALL APPLICABLE LUNENBURG COUNTY NOISE REGULATIONS.
14. 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. VEGWASHED 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 (ACRE)	(PERCENT)	LIMIT OF DISTURBANCE (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.

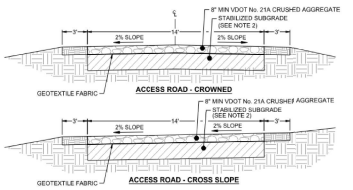
BUILDINGS	0 SF	0.00 AC	0.0%
IMPERVIOUS AREA	132,430 SF	3.04 AC	2.4%
OPEN AREA	5,453,712 SF	125.20 AC	97.6%

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

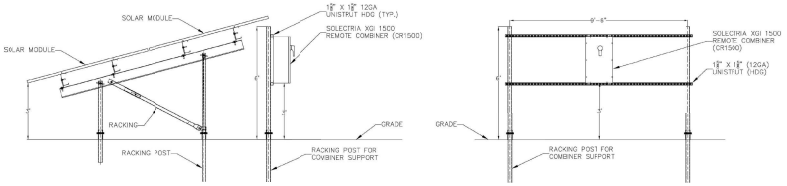
NOTES:

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 PARCEL'S 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.



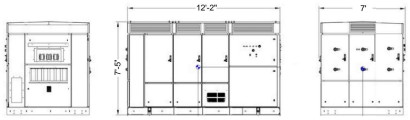
NOTES:
1. GEOTEXTILE FABRIC SHALL BE MIRAFI H570 OR PROJECT ENGINEER APPROVED EQUIVALENT.
2. SUBGRADE MATERIALS SHALL CONFORM TO VDOT "ROAD AND BRIDGE SPECIFICATIONS". SUBGRADE SHALL BE PLACED IN 8" MAXIMUM LIFTS AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. SOIL MOISTURE CONTENT DURING COMPACTION SHALL BE MAINTAINED WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT.
3. SHOULDERS SHALL BE COMPACTED NATIVE SOIL.
4. ROAD GRAVEL WIDTH MAY BE EXPANDED TO 20 FEET WIDE AT ENTRANCE OR WHERE SPECIFIED ON PLAN.

Access Road Typical Section
N.T.S.

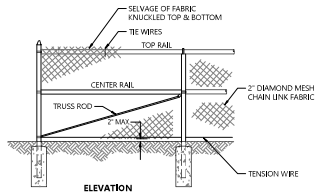


Typical Fixed-Tilt Racking and Combiner Elevations
N.T.S.

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.



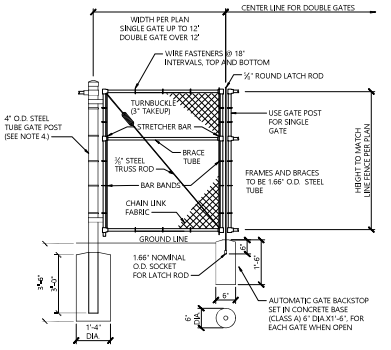
Typical Power Inverter Elevations
N.T.S.



NOTES

1. MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH "CHAIN LINK MANUFACTURER'S INSTITUTE" PRODUCT MANUAL.
2. CONCRETE FOOTING ON LINE POSTS MAY BE OMITTED IF POSTS ARE BURIED A MIN. OF 2.5 FEET, UNLESS SPECIFIED OTHERWISE BY FENCE MANUFACTURER.

7' Chain Link Fence 10/20
N.T.S. Source: VHB LD_480



NOTES

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

Chain Link Fence Gate 12/19
N.T.S. Source: VHB LD_482

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

AMERESCO

Kenbridge Solar

5844 Oral Oaks Road
Lunenburg, Virginia 23944

No.	Revision	Date	Appvd.

Designed by JRN | Checked by SCQ

Issued for: Conditional Use Permit — Date: 3/6/2023

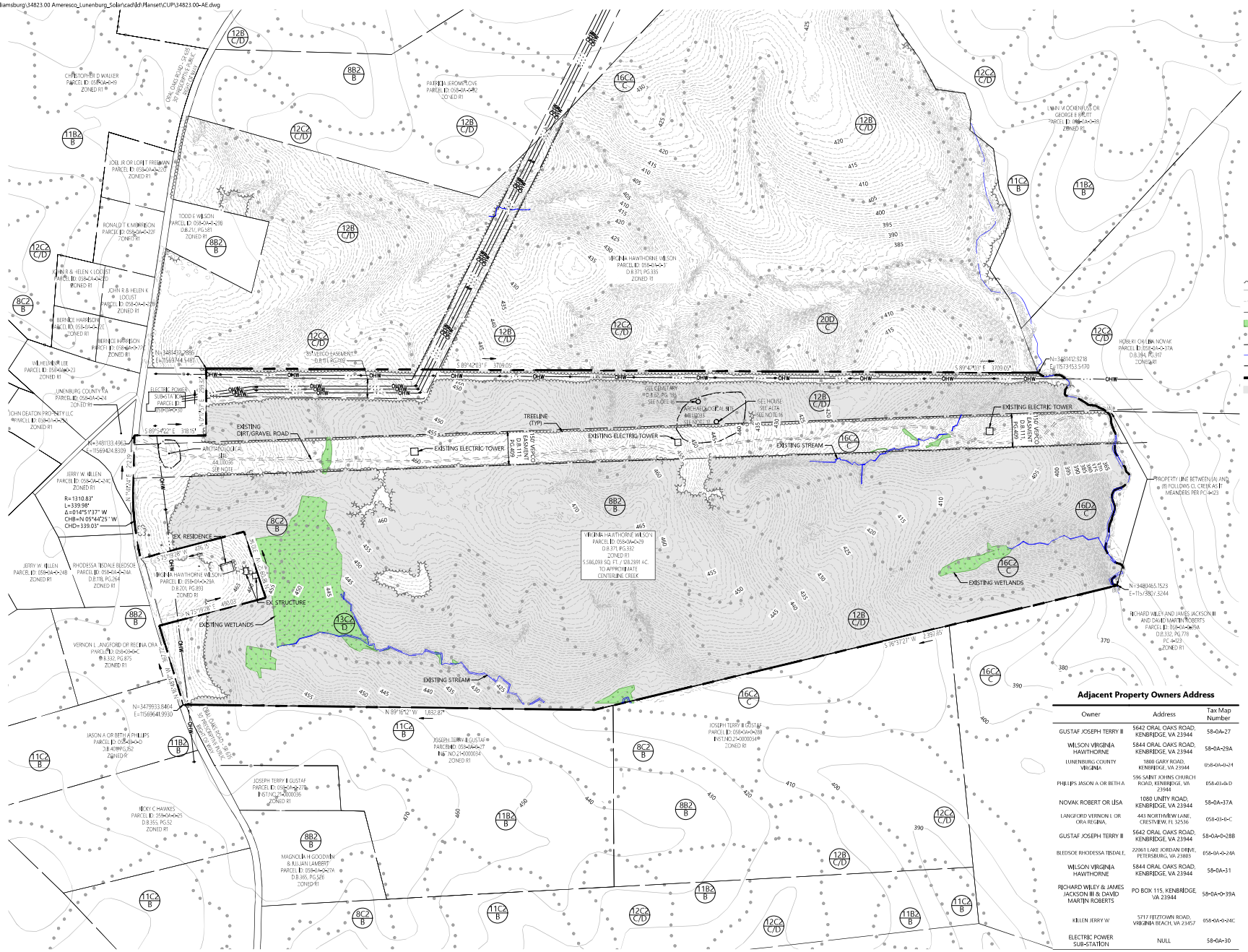
Not Approved for Construction

Drawing Title: NOTES AND DETAILS

Drawing Number: C100

Sheet 2 of 7

Project Number: 34823.00



vhb.com

vhb

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

AMERESCO

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
- FORESTED AREA

X/XX SOIL GROUP INFORMATION

0 100 200 400 Feet

Kenbridge Solar

5844 Oral Oaks Road
Lunenburg, Virginia 23944

No.	Revision	Date	Appvd.

Designed by: JRN | Checked by: SCQ

Issued for: Conditional Use Permit | Date: 3/6/2023

Not Approved for Construction

Drawing Title: EXISTING CONDITIONS

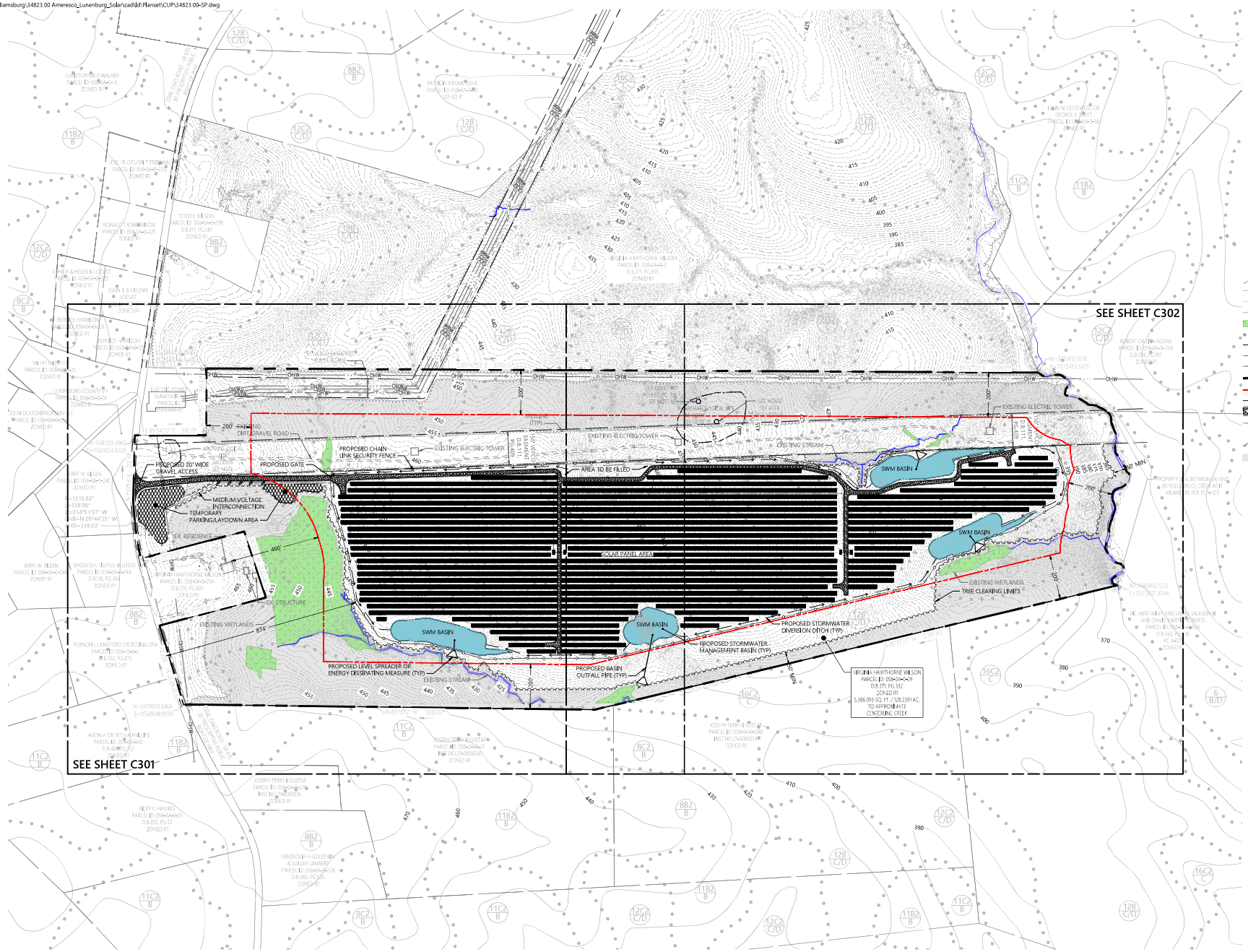
Drawing Number: C200

Sheet 3 of 7

Project Number: 34823.00

Adjacent Property Owners Address

Owner	Address	Tax Map Number
GUSTAF JOSEPH TERRY III	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-A-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-A-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



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Suite 200
Richmond, VA 23219
804.343.7100

AMERESCO

LEGEND

- 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
- REQUIRED SETBACK
- PROPOSED STORMWATER DITCH
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED SOLAR PANEL
- TREE CLEARING LIMITS
- FORESTED AREA

X/XX SOIL GROUP INFORMATION

0 100 200 400 Feet

Kenbridge Solar

5844 Oral Oaks Road
Lunenburg, Virginia 23944

No.	Revision	Date	Appvd.

Designed by JRN | Checked by SCQ

Issued for: Conditional Use Permit — Date: 3/6/2023

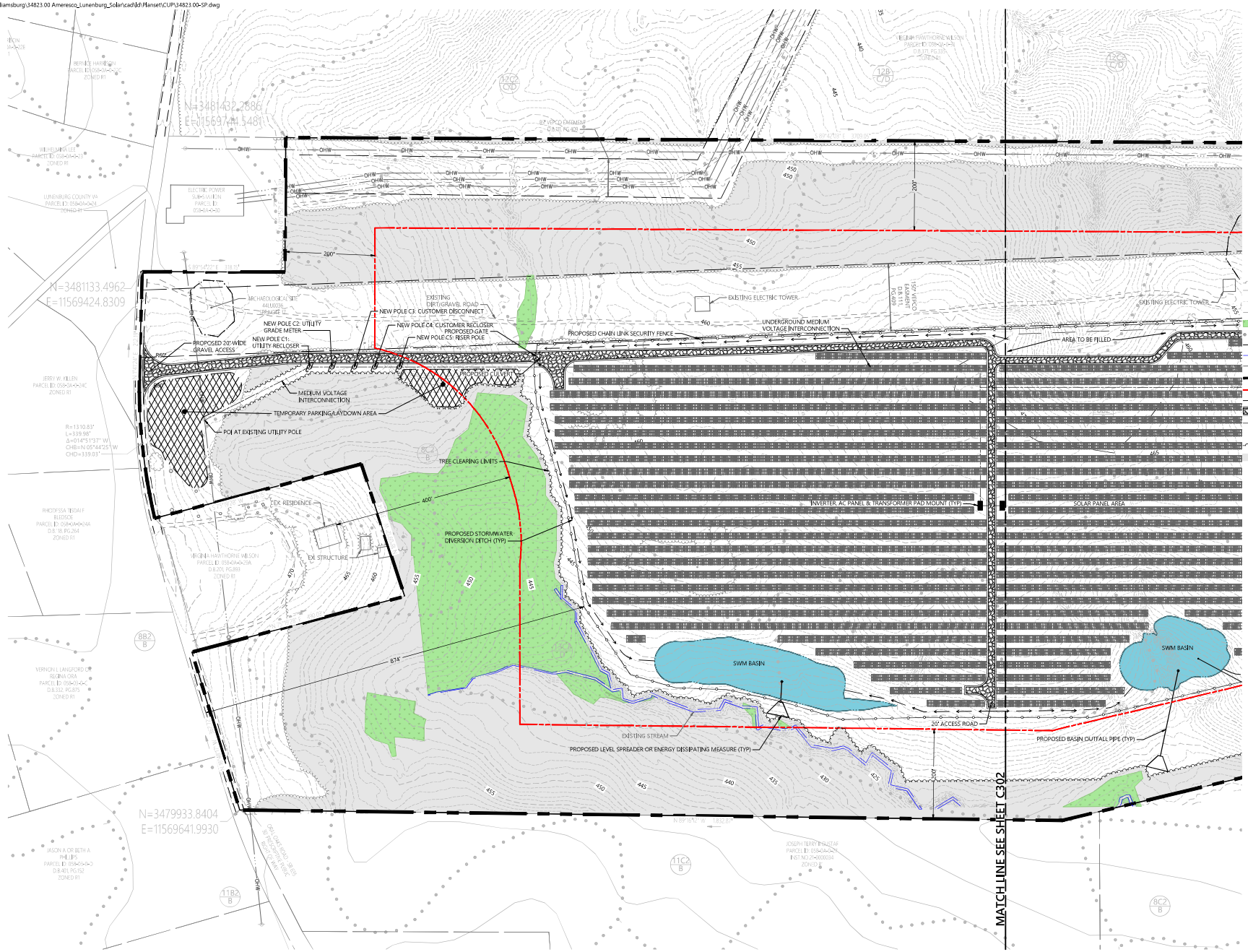
Not Approved for Construction

Drawing Title: OVERALL SITE PLAN

Drawing Number: C300

Sheet 4 of 7

Project Number: 34823.00



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- 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

X/XX SOIL GROUP INFORMATION

0 50 100 200 Feet

Kenbridge Solar

5844 Oral Oaks Road
Lunenburg, Virginia 23944

No.	Revision	Date	Appvd.

Designed by JRN | Checked by SCQ

Issued for: Conditional Use Permit | Date: 3/6/2023

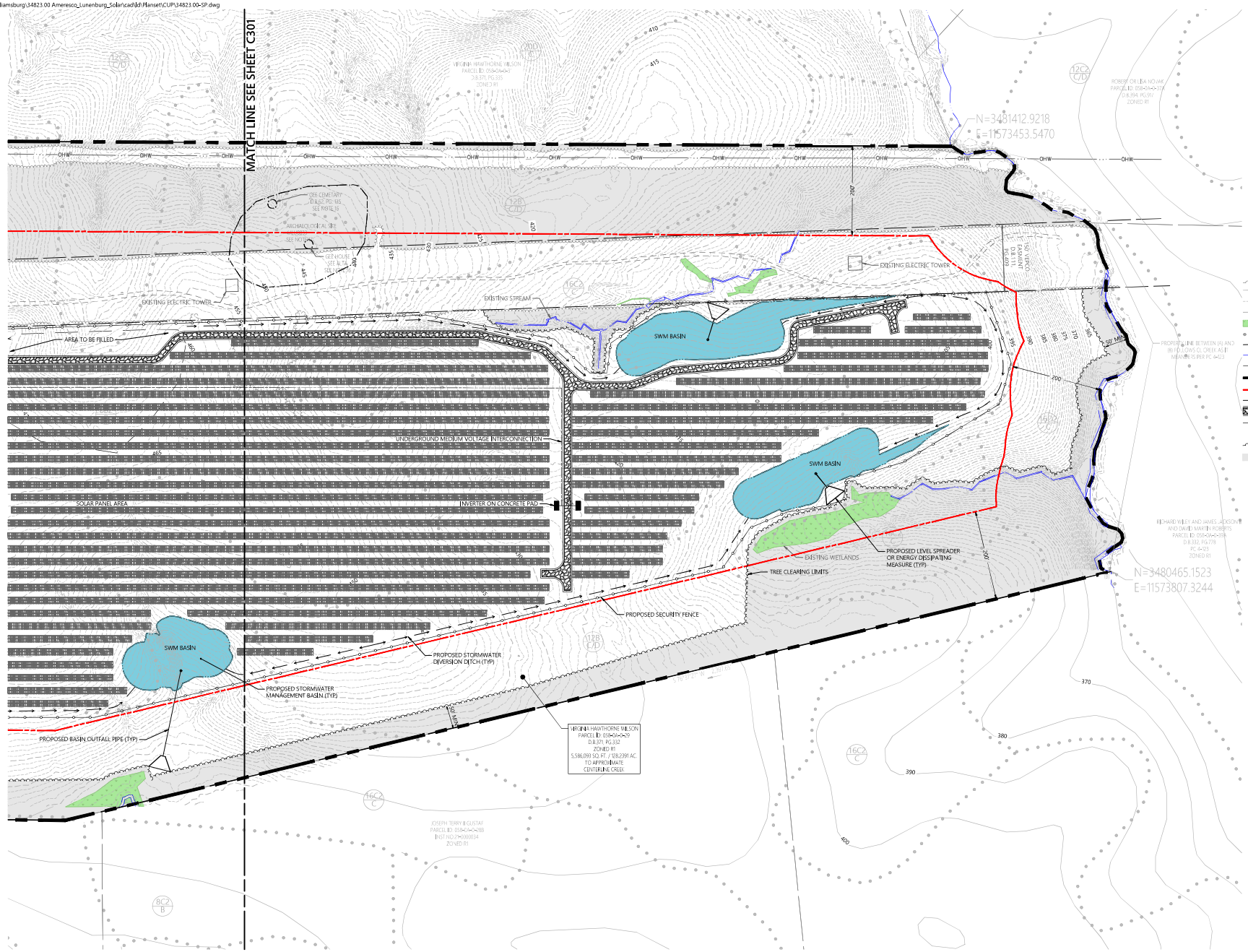
Not Approved for Construction

Drawing Title: SITE PLAN - WEST

Drawing Number: C301

Sheet 5 of 7

Project Number: 34823.00



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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

X/XX SOIL GROUP INFORMATION

0 50 100 200 Feet

Kenbridge Solar

5844 Oral Oaks Road
Lunenburg, Virginia 23944

No.	Revision	Date	Appvd.

Designed by JRN Checked by SCQ

Issued for: Conditional Use Permit — Date: 3/6/2023

Not Approved for Construction

Drawing Title: SITE PLAN - EAST

Drawing Number: C302

Sheet 6 of 7

Project Number: 34823.00

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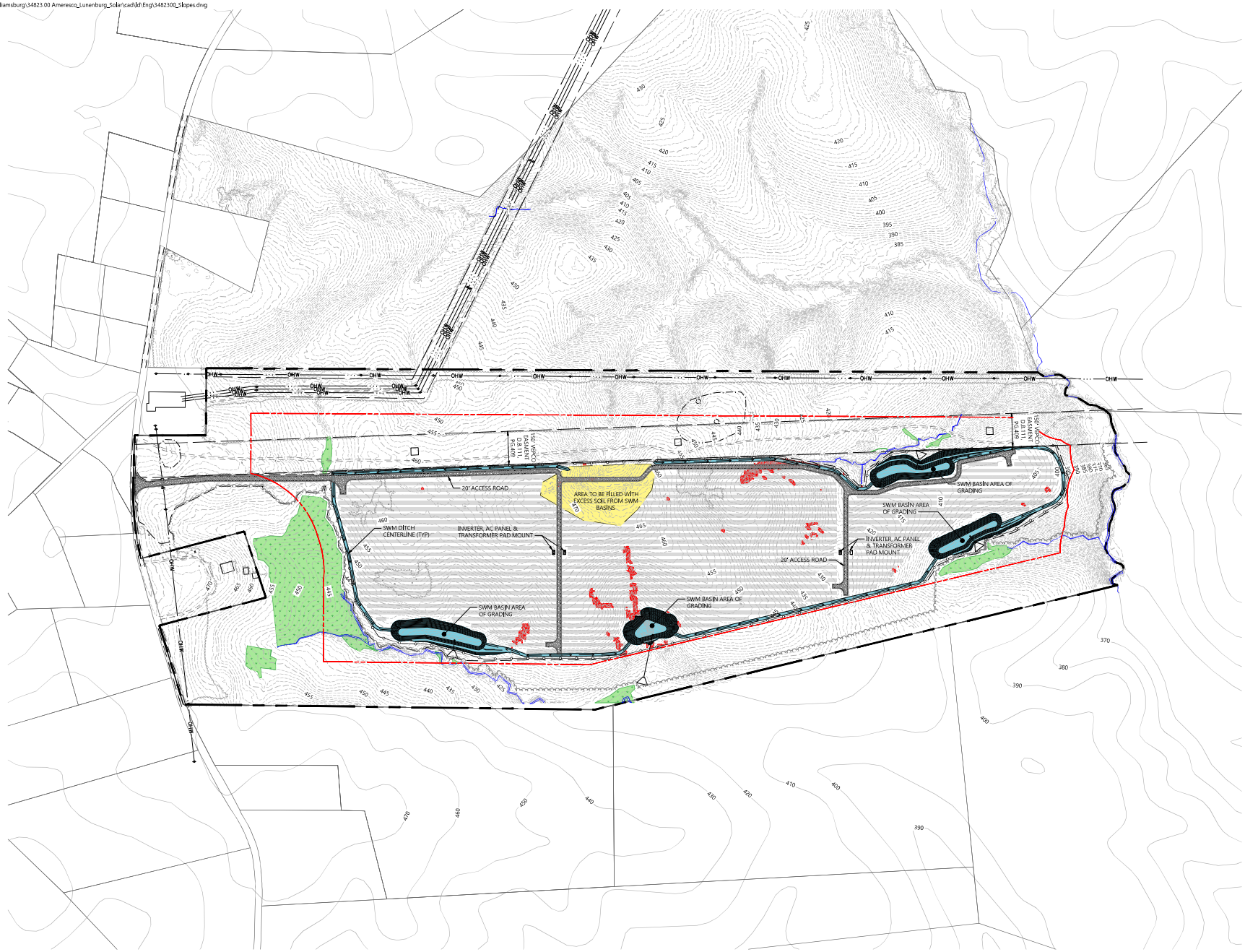

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AMERESCO

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.

0 100 200 400 Feet

Kenbridge Solar

5844 Oral Oaks Road
Lunenburg, Virginia 23944

No.	Revision	Date	Appvd.

Designed by: JRN
Checked by: SCQ

Issued for: Conditional Use Permit
Date: 3/6/2023

Not Approved for Construction

Drawing Title: SLOPE ANALYSIS

Drawing Number: C400

Sheet 7 of 7

Project Number: 34823.00

Saved Friday, March 3, 2023 8:35:20 AM JNICKEL Plotted Monday, March 6, 2023 8:55:52 AM Jackson Nickel

B

Appendix B

Archeological and Architectural Resource Reports

COMMONWEALTH of VIRGINIA

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

Travis A. Voyles
Acting Secretary of Natural and Historic Resources

Julie V. Langan
Director
Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

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

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.

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 15th Street, Suite 200
Richmond, Virginia 23219

Prepared By:
Matthew R. Laird, Ph.D., RPA
Anthony W. Smith, M.A.
James River Institute for Archaeology, Inc.
223 McLaws Circle, Suite 1
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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LIST OF FIGURES

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

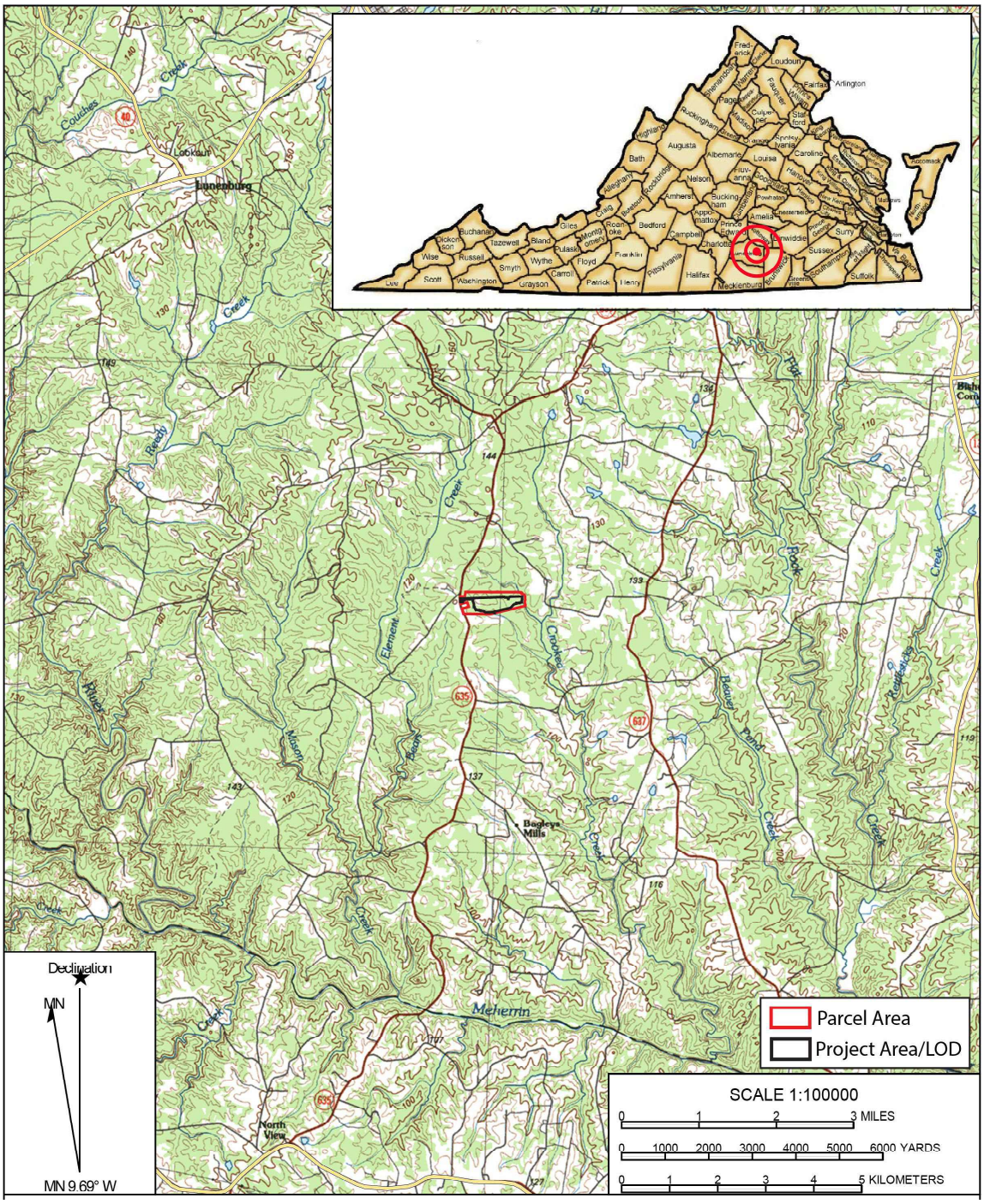

Figure 1. Location of the project area on detail of USGS 1:100,000 South Boston topographic quadrangle map, 1984.

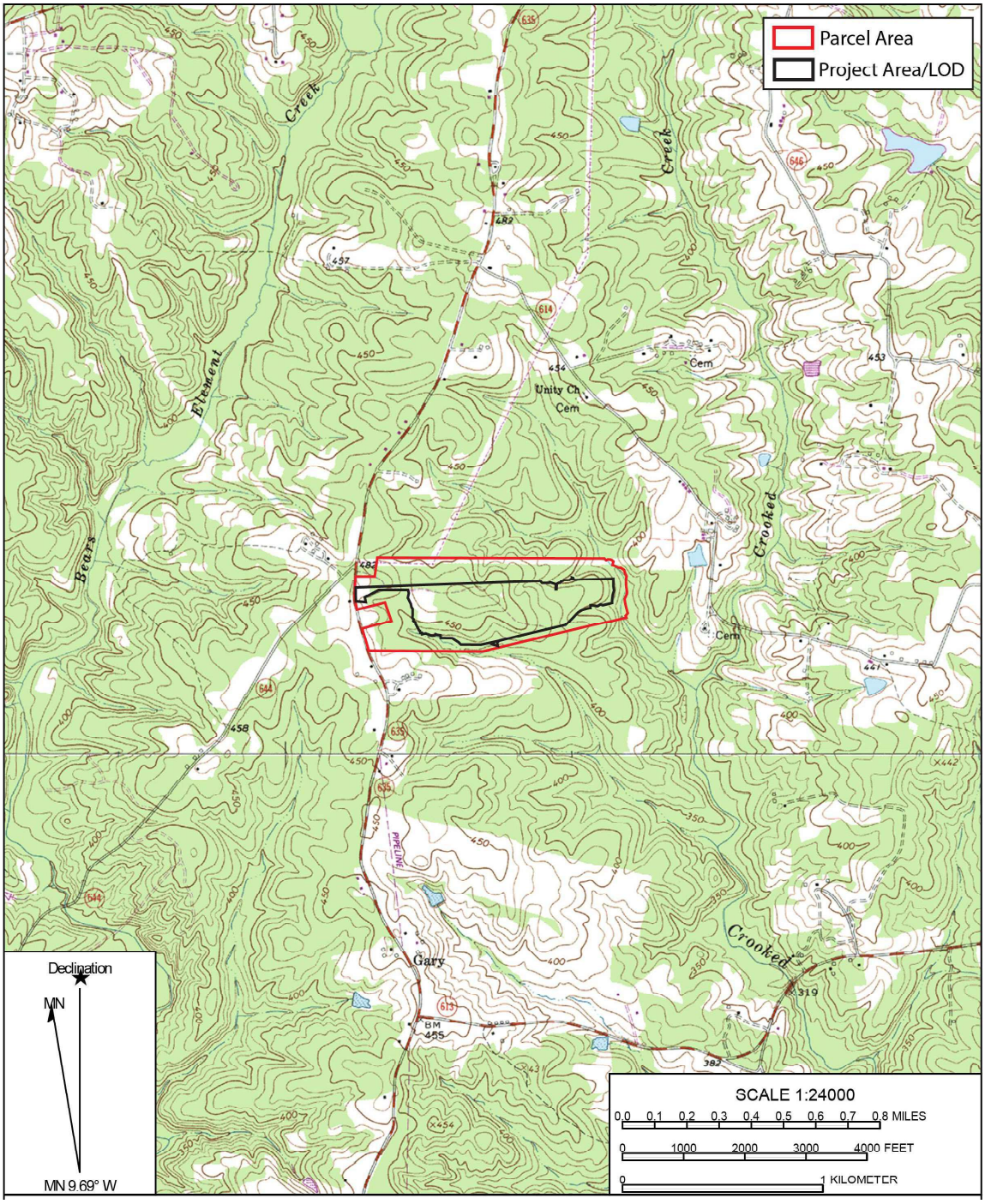

Figure 2. Location of the project area on detail of USGS 7.5' Kenbridge West topographic quadrangle map, 1981.

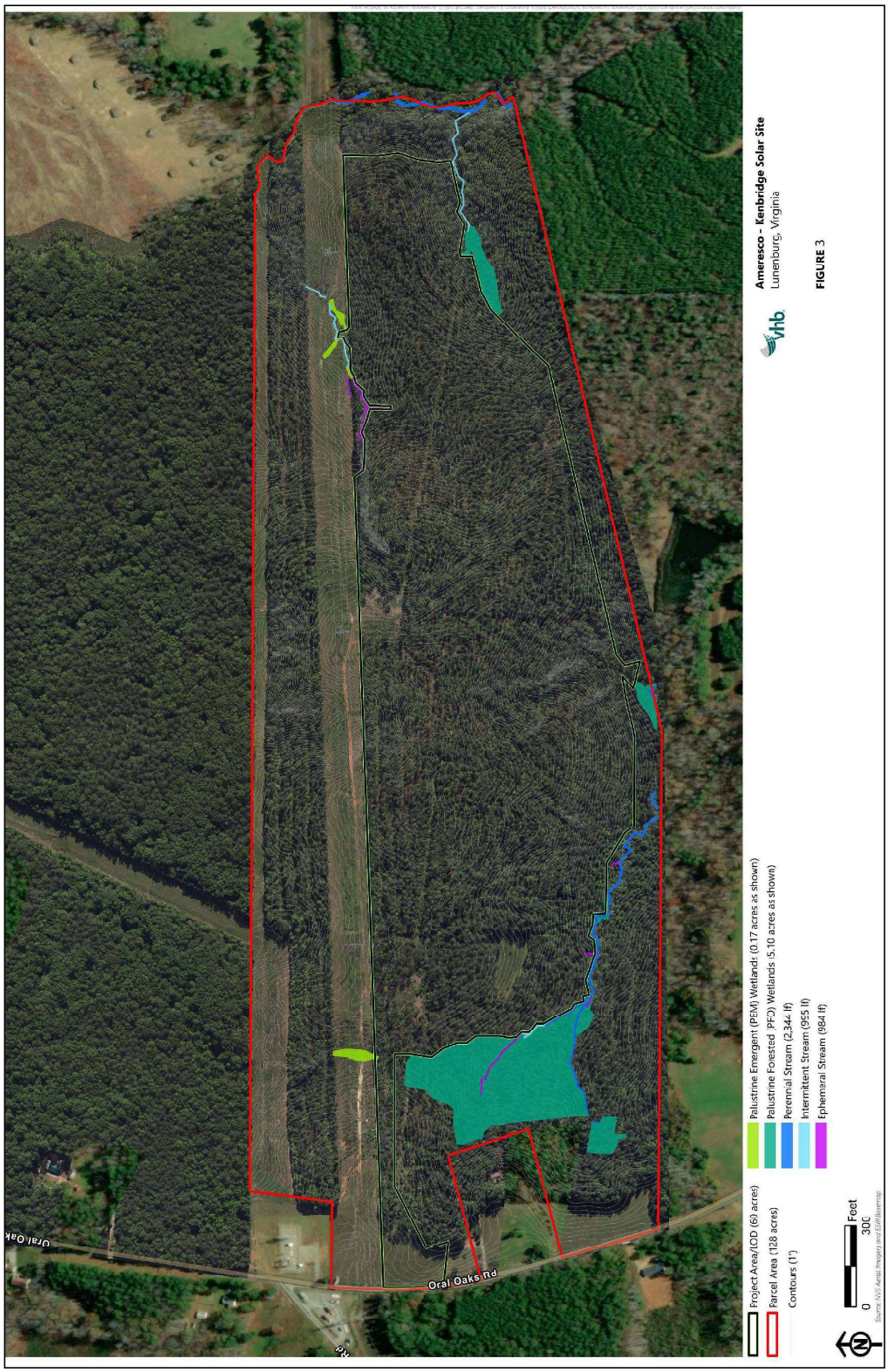

Figure 3. Location of the project area on an aerial photograph with topography and identified wetlands (VHB).

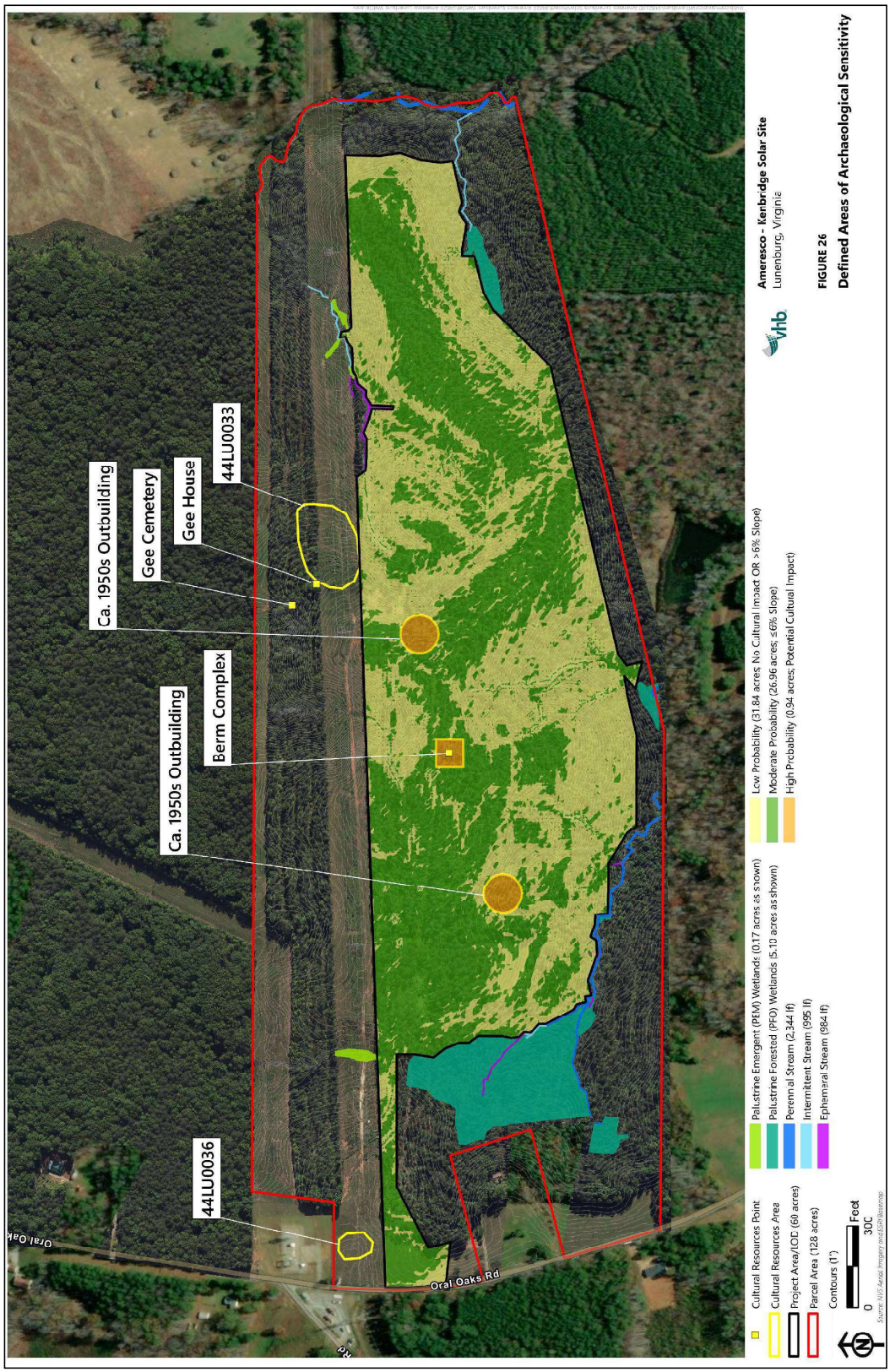

Figure 4. Defined areas of archaeological probability within the project area.

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).

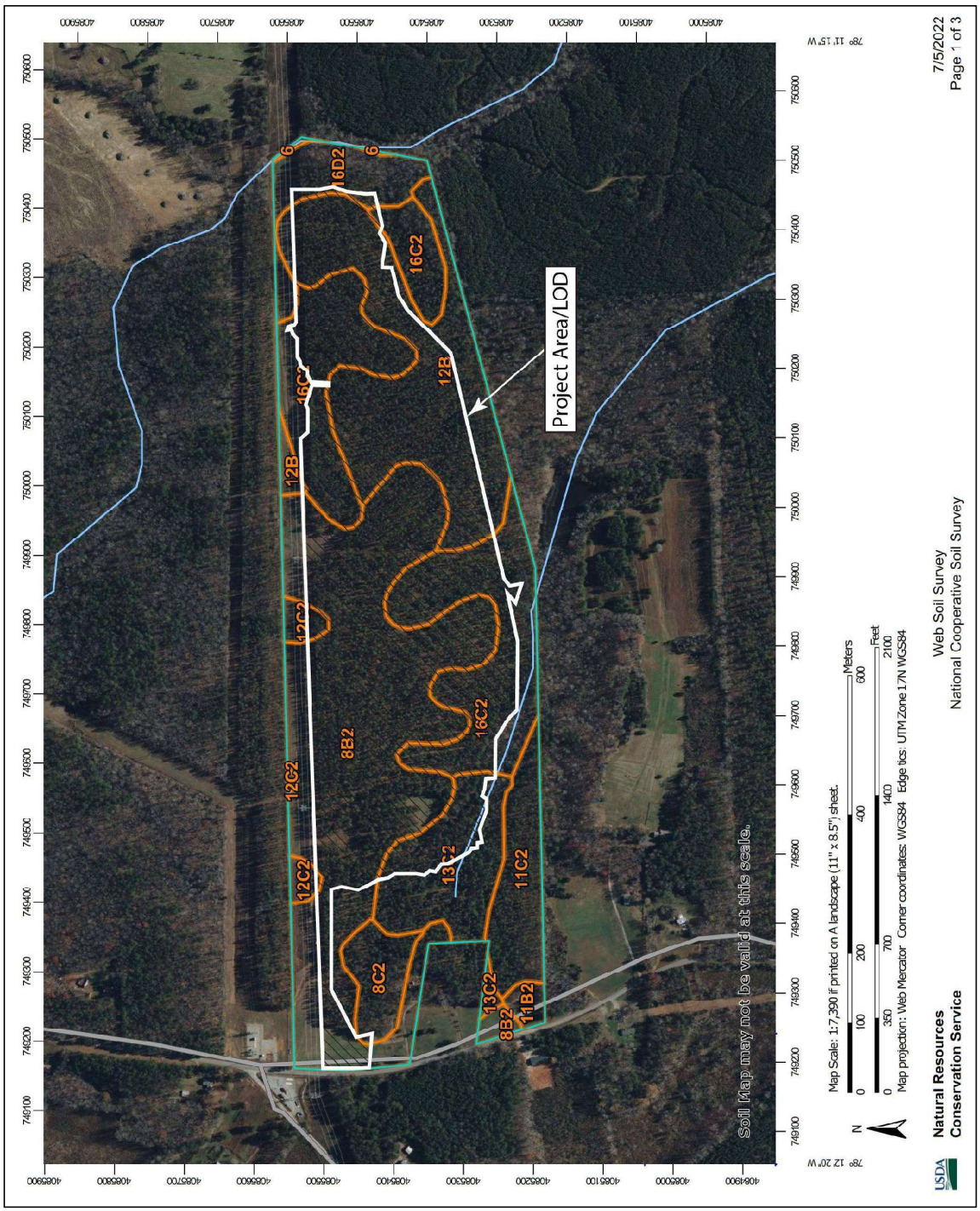

Figure 9. Mapped soil types within the project area (USDA-NRCS Soil Resource Report).

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 Earl 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-Lunënburg. 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 Iroqouian-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