

Spring Grove Solar II, LLC

PERMIT BY RULE

Small Renewable Energy Project (Solar) Permit By Rule



APPLICATION DOCUMENTS

Date: October 2020

Spring Grove Solar II

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- Generation Interconnection Feasibility Study Report

Queue Position AD2-007 (Uprate)

- Generation Interconnection Feasibility Study Report
- Generation Interconnection System Impact Study Report

Queue Position AD2-008 (Uprate)

- Generation Interconnection Feasibility Study Report
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I. INTRODUCTION AND OVERVIEW

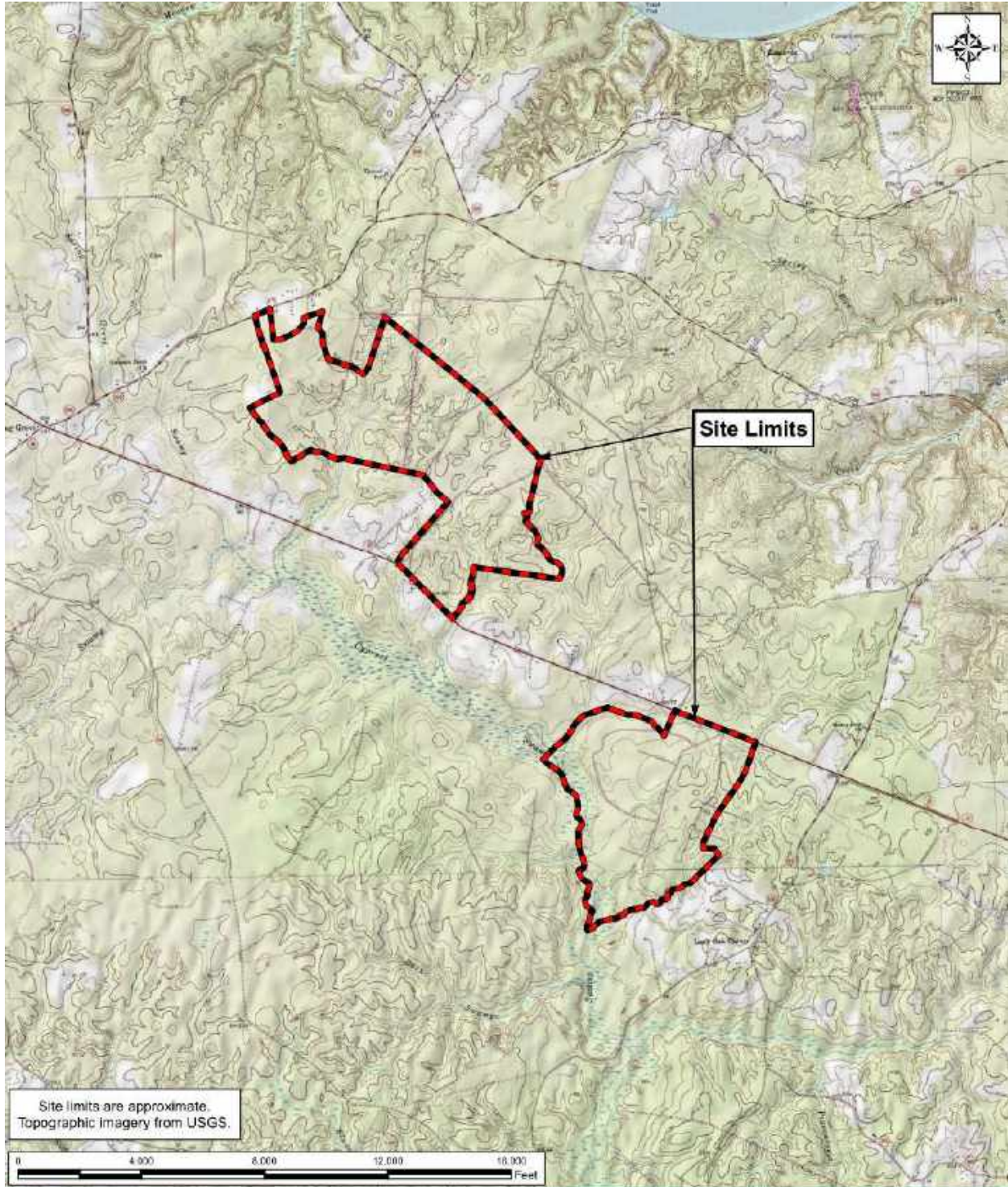
The Spring Grove Solar II project ("Project") is a 150 MW solar facility proposed by Spring Grove Solar II, LLC. The Project is located east of Spring Grove, Virginia, and spans Route 10, and is generally bound by Hollybush Rd (Route 618) and Swanns Point Road (Route 610) in Surry County. It is located on approximately 1,650 acres of multiple parcels. The portion of the Project north of Route 10 has been known as "Spring Grove Solar" while the portion of the Project south of Route 10 has been known as "Spring Grove III". As the areas are under common ownership and will have one interconnection agreement, are collectively referred to as Spring Grove Solar II.

The land has historically been utilized for silvicultural purposes and is proposed for development as a solar farm. The Project will utilize traditional photovoltaic solar modules to produce electricity which will interconnect through the utility infrastructure of Virginia Electric and Power Company. The proposed solar facility is comprised of solar panels that are attached to a single-axis tracking system. The solar facility has been designed to minimize land disturbance to the extent possible.

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

- Local Jurisdiction: Surry County, VA
- Total generating capacity of project: 150 MW AC
- Timeframe of project: Construction start Sept. 2021 through Sept. 2022
- Public comment period: 30 days

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U.S. Geological Survey, 2016. 7.5 Minute Series, Claremont, Virginia, Topographic Quadrangle Map, 1:24,000 scale.

Figure 1 – Vicinity Map

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II. PERMIT BY RULE COMPLIANCE ANALYSIS

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

1. NOTICE OF INTENT

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

A notice of intent was published for Spring Grove Solar II, LLC in Volume 34, Issue 9 of the Virginia Register of Regulations and is included in Attachment A. A revised notice of intent was submitted on September 4, 2020 and is also included in Attachment A.

2. COMPLIANCE WITH LOCAL LAND USE ORDINANCES

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

Approval of the Spring Grove Solar II project occurred in two parts; the portion north of Route 10 was approved in 2018, and the portion south of Route 10 was approved in 2020.

Two copies of the Local Governing Body Certification Form, both signed by the Zoning Administrator of Surry County, are included in Attachment B. For the portion north of Route 10, a conditional use permit was granted in a meeting of the Surry County Board of Supervisors at their May 3, 2018 meeting as a part of the 'Spring Grove Parcel'. For the portion south of Route 10, a conditional use permit was granted in a meeting of the Surry County Board of Supervisors at their July 2, 2020 meeting.

3. INTERCONNECTION STUDIES

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

The Project has been reviewed through PJM's standardized interconnection study process. Queue position AD1-025 represents the interconnection request for the Project. Queue positions AD2-007 and AD2-008 are updates.

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The following studies have been completed:

Queue Position AD1-025

- Generation Interconnection System Impact Study Report
- Generation Interconnection Feasibility Study Report

Queue Position AD2-007 (Uprate)

- Generation Interconnection Feasibility Study Report
- Generation Interconnection System Impact Study Report

Queue Position AD2-008 (Uprate)

- Generation Interconnection Feasibility Study Report
- Generation Interconnection Impact Study Report

The interconnection studies are included as Attachment C.

4. INTERCONNECTION AGREEMENTS

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

An interim interconnection service agreement among PJM Interconnection, L.L.C, Spring Grove Solar II, LLC, and Virginia Electric and Power Company has been drafted and is included in Attachment D.

When the final interconnection agreement for the Project is obtained, it will be included as Attachment D.

5. MAXIMUM GENERATION CAPACITY CERTIFICATION

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

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

6. ANALYSIS OF POTENTIAL IMPACT ON AIR QUALITY STANDARDS

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

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

- 176,890 tons of carbon dioxide
- 190,520 lbs of sulfur dioxide
- 226,380 lbs of nitrogen oxide
- 24,590 lbs of particulate matter 2.5 µm

The above calculations are estimates generated by the EPA Avoided Emissions and Generation Tool: <https://www.epa.gov/statelocalenergy/avoided-emissions-and-generation-tool-avert>. Southeast regional data was utilized for the calculations based on the facility location, and improvements are based on assumed generation of 150 MW of utility-scale solar.

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

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

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

A. Wildlife Analysis

Threatened and Endangered Species

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

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

Information obtained from VDWR and included on the WERMS map (Attachment F) indicates the presence of a state-threatened species, Barking treefrog (*Hyla gratiosa*). All other species identified within the WERMS map within a two-mile buffer of the project are described as non-threatened and non-endangered.

Information provided by VDCR indicates that the Barking treefrog (*Hyla gratiosa*), Mabee's salamander (*Ambystoma mabeei*), and Tiger salamander (*Ambystoma tigrinum*) may be present.

A species survey was conducted for the area of the Project north of Route 10 in Spring 2018; that report, titled *Faunal Species Survey Report*, was published in June 2018 and is included in Attachment F. Please note that the area studied in the report is greater than the Project area. The survey was completed to identify the presence of the following species:

- Blackbanded sunfish (*Enneacanthus chaetodon*)
- Eastern Tiger Salamander (*Ambystoma tigrinum*)
- Mabee's Salamander (*Ambystoma mabeei*)
- Barking Treefrog (*Hyla gratiosa*)

Trained biologists did not find indications of any of the species present within the project area north of Route 10.

A species survey was conducted for the area of the Project south of Route 10 in Spring 2019; that report, titled *Amphibian Species Survey Report* was published in June 2019 and is included in Attachment F. During the field study, trained biologists identified multiple amphibians, including the target species barking treefrog (*Hyla gratiosa*). One barking treefrog breeding pond was identified within the Project.

Expected beneficial and adverse impacts

According to the reviewed desktop resources, there is a potential for threatened or endangered species on the project area.

Through two surveys across the Project, Barking treefrog has been identified within the Project in the area south of Route 10. No other threatened or endangered species have been identified on the Project. Through identification, planning and preparation, impacts to the species will be minimized.

In addition, the letter from VDCR states that the current activity will not affect any State listed plants or insects.

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Coastal Avian Protection Zone

Project limits were compared to Coastal Avian Protection Zone (CAPZ) data from the Virginia Coastal Zone Management Program, provided by VDEQ's Coastal GEMS geospatial data system. A map showing the project boundary relative to CAPZ is included as Attachment F. While the Project is adjacent to Zone 10, Project limits do not fall in part or in whole within one or more CAPZ.

Expected beneficial and adverse impacts

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

B. Historical/Cultural Resource Analysis

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

Preliminary investigation of the Project area north of Route 10 was completed through the completion of a *Management Summary and Archaeological Probability Analysis – Spring Grove Property – Surry County, Virginia* dated May 2017 (Attachment G). Based on this analysis, and as approved in correspondence from VDEQ dated March 21, 2018, it was determined that further architectural study was warranted for the Project area north of Route 10. As such, a report titled *Phase I Architectural Survey of the Spring Grove Solar Site – Surry County, Virginia* was published in January 2018 (Attachment G). In a letter dated March 28, 2018 (Attachment G) VDHR offered concurrence with the findings of that report.

The area south of Route 10 was investigated in a *Management Summary and Archaeological Probability Analysis – Spring Grove II Solar Site – Surry County, Virginia*, published in May 2019 (Attachment G). Based on the findings, a Phase I archaeological study was not recommended. VDEQ concurred with the approach in correspondence dated August 20, 2019 (Attachment G).

Management Summaries

Investigations of the Project area found that soil conditions have been severely affected through timbering, stump grubbing and clearing, reclaiming and replanting activities. As a result of this extensive disturbance, no further archaeological survey was

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recommended, and architectural surveys of the Project area plus one-half-mile buffer were recommended.

Architectural Survey – Area North of Route 10

As a result of the Phase I architectural survey conducted for the area north of Route 10, three previously-recorded architectural resources and 11 new architectural resources were surveyed within the project limits and one-half mile architectural survey area (Area of Potential Effect, APE). The Phase I Cultural Resource Survey found that none of the surveyed resources reflect any unique or significant design or historical associations, and as such, all were recommended not eligible for listing in the NRHP.

A summary of the identified architectural resources and subsequent recommendations are provided below.

Site	Type	National Register Eligibility	Recommendation
<i>Previously Identified Resources</i>			
090-5074	Ca. 1914 house	No	No further work
090-5075	Ca. 1901 house	No	No further work
090-5086	Ca. 1966 house	No	No further work
<i>Newly Identified Resources</i>			
090-5087	Ca. 1900 farmstead	No	No further work
090-5088	Ca. 1950s house	No	No further work
090-5089	Ca. 1930 house	Not individually eligible	No further work
090-5090	Ca. 1930s house	Not individually eligible	No further work
090-5091	Ca. 1964 house	No	No further work
090-5092	Ca. 1900 house	No	No further work
090-5093	Ca. 1910 house	No	No further work
090-5094	Ca. 1952 house	No	No further work
090-5095	Ca. 1967 house	No	No further work
090-5096	Ca. 1957 house	No	No further work
090-5097	Ca. 1969 house	No	No further work

Phase I Architectural Survey of the Spring Grove Solar Site, VDHR #2018-3123. Circa~ Cultural Resource Management. January 2018.

Architectural Survey – Area South of Route 10

As a result of the Phase I architectural survey conducted for the area south of Route 10, nine previously-recorded architectural resources and six new architectural resources were surveyed within the project limits and one-half mile architectural survey area.

A summary of the identified architectural resources and subsequent recommendations are provided below.

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Site	Type	National Register Eligibility	Recommendation
<i>Previously Identified Resources</i>			
090-0012	Ca. 1724 Old Glebe	Yes	No adverse effect
090-0036	Ca. 1780 Warren Crossroads House	Potentially	No adverse effect
090-0048	Ca. 1840 Clerestory House	No	No further work
090-5070	Ca. 1950 Hunt Club	Not eligible	No further work
090-5071	Ca. 1950	Not eligible	No further work
090-5072	Ca. 1960s mobile home	Not eligible	No further work
090-5073	Ca. 1972 house	Not eligible	No further work
090-5074	Ca. 1914 house	Not eligible	No further work
090-5076	Ca. 1960s mobile home	Not eligible	No further work
<i>Newly Identified Resources</i>			
090-5140	Ca. 1880s house	No	No further work
090-5141	Ca. 1962 house	No	No further work
090-5142	Ca. 1880s New Design school	*Treat as Eligible	No further work
090-5143	Ca. 1966 house	No	No further work
090-5144	Ca. 1930s	No	No further work
090-5145	Ca. 1928 house	*Treat as Eligible	No further work

Phase I Architectural Survey of the Spring Grove II Solar Site, VDHR #2019-0724. Circa~ Cultural Resource Management. August 2019 and February 4, 2020 VDHR Letter RE: Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia DHR File No. 2019-0724.

Expected beneficial and adverse impacts

As a result of the Phase I Cultural Resource Survey for the Project north of Route 10, the Applicant assessed that the Project would not have an impact on the 11 architectural resources. VDHR concurred with the results of the Applicant's investigations in a letter dated March 28, 2018 (Attachment G), and there will be no adverse impacts on historical/cultural resources.

As a result of the Phase I Cultural Resource Survey for the Project south of Route 10, the Applicant assessed that the Project would not have an impact on the 15 architectural resources within the APE. VDHR provided comments in a letter dated February 4, 2020 (Attachment G) that DHR ID #090-5142 should be treated as eligible but will not be adversely impacted by the project. In addition, VDHR recommends that DHR ID #090-5145 should be treated as eligible for the purposes of review but will not be adversely impacted. No further work or adverse impacts are anticipated for the remainder of the identified historical/cultural resources.

C. Additional Natural Resource Analysis

Natural Heritage Resources

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

Expected beneficial and adverse impacts

Consideration will be given for the planting of native pollinator plants along the buffer areas of the facility.

Wetland Delineation

A wetland delineation has been conducted for the entire Project, using the methodology outlined in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual, the Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), and subsequently issued USACE regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features.

The U.S. Army Corps of Engineers has issued a Preliminary Jurisdictional Determination (PJD) under NAO-2017-01277 for the area north of Route 10. South of Route 10, a PJD has been issued under NAO-2020-0275. Relevant materials are included as Attachment H.

Expected beneficial and adverse impacts

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

8. MITIGATION PLAN

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

The Applicant has conducted studies to make a determination regarding impacts to wildlife and historic resources. One threatened species, barking treefrog (*Hyla gratiosa*) has been identified in the Project area south of Route 10 and a breeding pond has been identified within the Project. To avoid adverse impacts to the species, an avoidance and mitigation strategy has been developed by the Applicant in coordination with qualified biologists and is included in Attachment I.

The avoidance and mitigation strategy is summarized below:

Surry County development regulations require a 75 ft (23 m) setback along non-road facing property lines. The Applicant proposes to increase that setback to 98 ft (30 m)

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along the northern boundary along Route 10 where the Barking Treefrogs were heard calling. This increase in the setback creates an upland corridor between the wetlands within the Project and those located to the north of the Project. Additionally, there are three isolated upland pockets totaling approximately 22.2 acres in the southwest of the Project that will not be developed, providing further upland refugia for the Barking Treefrog on the Project.

Generally, mitigation proposed to protect the breeding habitat of pond-breeding amphibians like the Barking Treefrog is focused on the breeding habitat and includes buffers around the breeding habitat. Due to the highly impacted nature of this area and the poor quality of the potential breeding habitat, the Applicant proposes increasing the connectivity of the wetland and upland habitat through protected habitat corridors that may provide better long-term protection to the species. The additional upland pockets that will be protected in the south of the Project could provide further upland refugia for the species.

Cultural resources on the Site have been investigated and it has been determined that there will be no adverse impacts to any existing or newly-discovered resources. Two resources adjacent to the parcel south of Route 10 will be treated as eligible, DHR ID# 090-5142 and 090-5145, but will not be adversely impacted.

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

9. CERTIFICATION OF DESIGN INCORPORATING MITIGATION PLAN

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

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

10. OPERATION PLAN INCORPORATING MITIGATION PLAN

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

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

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11. SITE PLAN & CONTEXT MAP

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

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

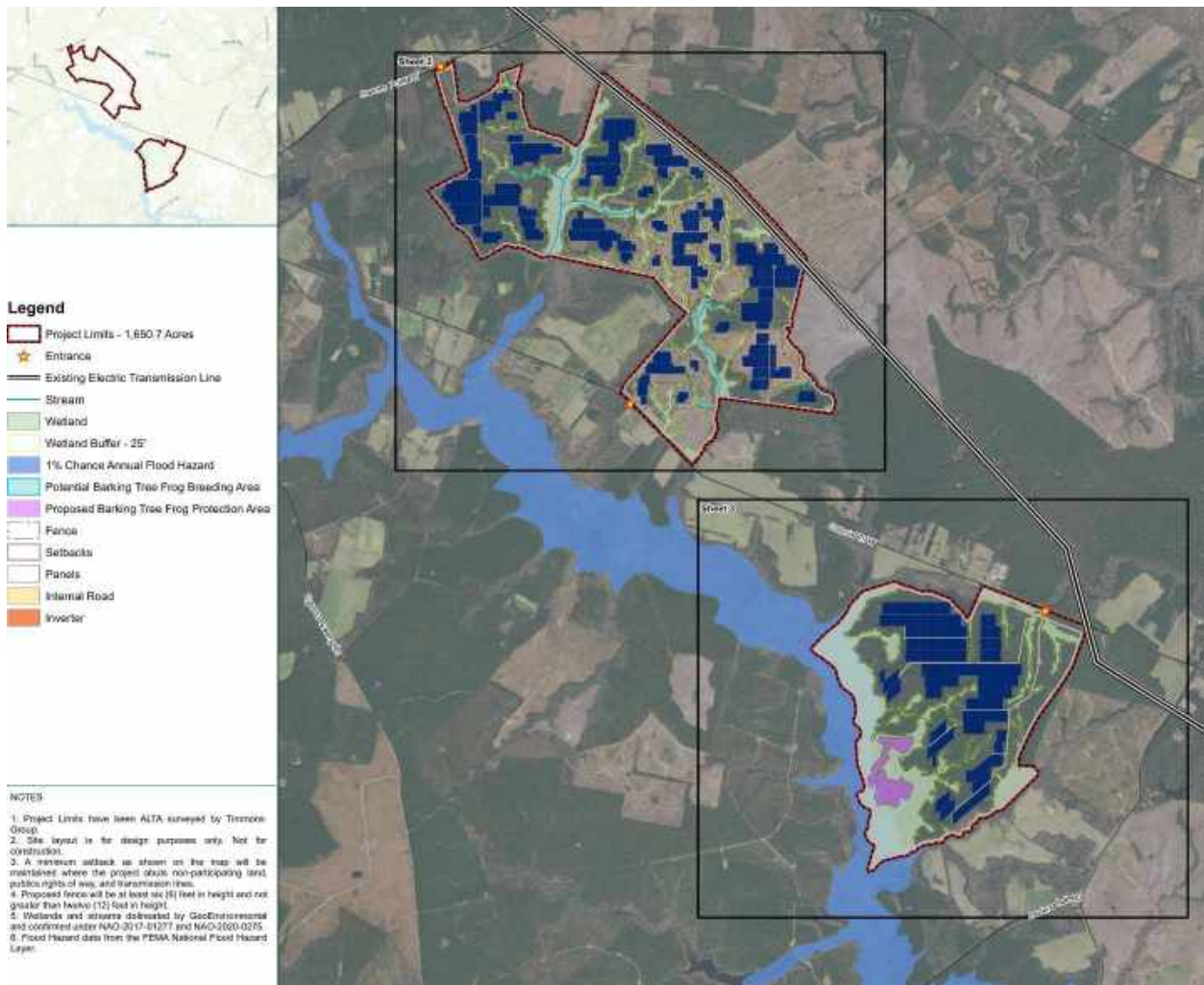


Figure 2 – Site Plan

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12. CERTIFICATION OF APPLICATION FOR ENVIRONMENTAL PERMITS

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

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

13. NON-UTILITY CERTIFICATION

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

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

14. PUBLIC REVIEW

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

A public review and comment period will occur in November-December 2020. In accordance with § 10.1-1197.6 B 13 and 14 of the Code of Virginia, there will be more than a 30-day public review and comment period from November 5 to December 10, 2020. The public review and comment period will be announced by publication in the Sussex-Surry Dispatch once a week for two consecutive weeks, on October 21 and 28th, 2020. A copy of the materials for review can be requested by contacting:

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Urban Grid Solar Project, LLC
ATTN: James Crawford
337 Log Canoe Circle
Stevensville, MD 21666
434-953-8810
James.Crawford@UrbanGridCo.com

Materials were also available electronically via: (<http://www.urbangridsolar.com/news>). Pursuant to 9VAC15-60-90, there will also be a public meeting held on December 2 from 5:30 to 7:00PM at the Ruritan Club, located at 2144 Colonial Trail W, Dendron, VA 23839. Materials in support of the public review process will be included in Attachment O.

15. PERMIT FEE

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

In accordance with 9VAC15-60-110, a payment of \$14,000 is provided with this application as stipulated by the PBR.

Attachments

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Attachment A – Notice of Intent



Updated Notice of Intent for Solar Energy Project – Spring Grove Solar II, LLC

September 4, 2020
Ms. Mary E. Major
Department of Environmental Quality
P. O. Box 1105
629 East Main Street Richmond, VA 23218
mary.major@deq.virginia.gov

Dear Ms. Major:

On behalf of Spring Grove Solar II, LLC, I am providing an updated notice to the Department of Environmental Quality of our intention to submit the necessary documentation for a permit by rule for a small renewable energy project (solar) in Surry County, Virginia, pursuant to Virginia Regulation 9VAC15-60. This is an update of the acreage and general location of project.

The proposed project is approximately 1,650 acres and is located east of Spring Grove, Virginia. The proposed project spans Colonial Trail West and is generally bound by Hollybush Rd (Route 618) and Swanns Point Road (Route 610) in Surry County. The project will have a maximum generating capacity of 150 megawatts alternating current (AC) and consist of approximately 346,710 photovoltaic panels. The project will connect to the grid through transmission lines that bisect the property. The project is generally located at latitude: 37.164117, longitude: -76.932147.

If the Department has questions regarding this project, please contact me at james.crawford@urbangridco.com or (434) 953-8810.

Sincerely,

A handwritten signature in cursive script that reads "James A Crawford Jr".

James Crawford
Vice President - Development



Variance for rooms within medical unit with no windows:

VCBR has four bedrooms in its medical unit that do not meet the requirement of the italicized portion of the following regulation:

- 12VAC35-115-50 C 3 (d): Live in a humane, safe, sanitary environment *that gives each individual, at a minimum, windows or skylights in all major areas used by individuals.*

VCBR requests a variance to this regulation to enable it to utilize these bedrooms if a bedroom that meets the requirement is not available on a unit that meets an individual's needs. VCBR currently provides a monthly report to the SHRC on how many times rooms with no windows within the medical unit of VCBR are used during the previous month and will continue to do so.

Variance for double-bunking:

Following the mandate by the General Assembly (Chapter 806 of the 2011 Acts of Assembly), VCBR implemented double-bunking (two individuals residing in a single room). Although VCBR has attempted to maintain residents' privacy and a physical environment free from bad odors, this is not always possible. For this reason, VCBR requests a variance to the regulations listed below:

12VAC35-115-50 C 3 (a) and (e):

- a) Reasonable privacy and private storage space
- e) Clean air, free of bad odors

VCBR Facility Instruction No. 124, Resident Housing Assignment, describes how residents' housing assignments are determined and shall substitute for these regulations. VCBR provides a monthly report to the SHRC on how many residents are double-bunked, complaints received by residents regarding double-bunking, and any medication sessions treatment staff hold with roommates to resolve concerns related to double-bunking.

Public comment period: December 25, 2017, through January 25, 2018.

How to comment: DBHDS accepts written comments by email, fax, and postal mail. In order to be considered, comments must include the full name, address, and telephone number of the person commenting and be received by DBHDS by the last day of the comment period. All information received is part of the public record.

To review a proposal: The applications for variance and any supporting documents may be obtained by contacting the DBHDS representative named below.

Contact Information: Deborah Lochart, Director, Office of Human Rights, Department of Behavioral Health and Developmental Services, P.O. Box 1797, Richmond, VA 23218-1797, telephone (804) 786-0032, FAX (804) 804-371-

2308, TDD (804) 371-8977, or email deb.lochart@dbhds.virginia.gov.

DEPARTMENT OF ENVIRONMENTAL QUALITY

Dominion Energy Virginia Notice of Intent for Small Renewable Energy Project (Solar) Permit by Rule - Westmoreland County

Dominion Energy Virginia has provided the Department of Environmental Quality a notice of intent to submit the necessary documentation for a permit by rule for a small renewable energy project (Montross Solar) in Westmoreland County. The project will be located on approximately 230 acres at 150 Nelson Street, Westmoreland County. The solar facility will be comprised of ground-mounted fixed-tilt photovoltaic arrays and auxiliary equipment to provide approximately 20 megawatts alternating current of nameplate capacity.

Contact Information: Mary E. Major, Department of Environmental Quality, P.O. Box 1105, Richmond, VA 23218, telephone (804) 698-4423, FAX (804) 698-4510, or email mary.major@deq.virginia.gov.

Grasshopper Solar LLC Notice of Intent for Small Renewable Energy Project (Solar) Permit by Rule - Mecklenburg County

A Notice of Intent from Grasshopper Solar LLC was previously published in the Virginia Register of Regulations on December 12, 2016, for a proposed small renewable solar energy project in Mecklenburg to be located north of Chase City. Grasshopper Solar LLC has provided the Department of Environmental Quality a revised notice of intent to submit the necessary documentation for a permit by rule for a small renewable solar energy project. The revised notice is proposing a 115-megawatt solar farm to be located across roughly 950 acres on one parcel in Mecklenburg County north of Chase City with borders along Routes 49 and 671. There is an existing transmission line bisecting the property, and a new substation is proposed to be built to connect to the grid.

Contact Information: Mary E. Major, Department of Environmental Quality, P.O. Box 1105, Richmond, VA 23218, telephone (804) 698-4423, FAX (804) 698-4510, or email mary.major@deq.virginia.gov.

Spring Grove Solar II LLC Notice of Intent for Small Renewable Energy Project (Solar) Permit by Rule - Surry County

Spring Grove Solar II LLC has provided the Department of Environmental Quality a notice of intent to submit the necessary documentation for a permit by rule for a small renewable solar energy project (solar). The proposed project will be located to the northeast of the intersection of Colonial Trail (Route 10) and Swanns Point Road (Route 610) in Surry

General Notices/Errata

County. This project will have a maximum generating capacity of 150 megawatts alternating current across approximately 1338 acres on multiple parcels. The project will interconnect into the transmission line that bisects the site by way of a substation built on an adjacent parcel.

Contact Information: Mary E. Major, Department of Environmental Quality, P.O. Box 1105, Richmond, VA 23218, telephone (804) 698-4423, FAX (804) 698-4510, or email mary.major@deq.virginia.gov.

VIRGINIA FIRE SERVICES BOARD

Notice of Periodic Review and Small Business Impact Review

Pursuant to Executive Order 17 (2014) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Virginia Fire Services Board is currently reviewing each of the regulations listed below to determine whether the regulation should be repealed, amended, or retained in its current form. The review of each regulation will be guided by the principles in Executive Order 17 (2014). Public comment is sought on the review of any issue relating to each regulation, including whether the regulation (i) is necessary for the protection of public health, safety, and welfare or for the economical performance of important governmental functions; (ii) minimizes the economic impact on small businesses in a manner consistent with the stated objectives of applicable law; and (iii) is clearly written and easily understandable.

19VAC15-20, Regulations Establishing Certification Standards for Fire Inspectors

19VAC15-30, Regulations Establishing the Certification Standards for Fire Investigators

Contact Information: Erin Rice, Community Risk Reduction Coordinator, Virginia State Fire Marshal's Office, Department of Fire Programs, 1005 Technology Park Drive, Glen Allen, VA 23059, telephone (804) 249-1975, or email erin.rice@vdfp.virginia.gov.

The comment period begins December 25, 2017, and ends January 25, 2018.

Comments must include the commenter's name and address (physical or email) information in order to receive a response to the comment from the agency. Following the close of the public comment period, a report of both reviews will be posted on the Virginia Regulatory Town Hall, and a report of the small business impact review will be published in the Virginia Register of Regulations.

VIRGINIA LOTTERY

Director's Orders

The following Director's Orders of the Virginia Lottery were filed with the Virginia Registrar of Regulations on December 6, 2017. The orders may be viewed at the Virginia Lottery, 600 East Main Street, Richmond, Virginia, or at the office of the Registrar of Regulations, 900 East Main Street, 11th Floor, Richmond, Virginia.

Director's Order Number One Hundred Sixty-Three (17)

Virginia Lottery "Publix March Madness, Scratcher Madness" Retailer Incentive Promotion (This Director's Order becomes effective on March 6, 2018, and shall remain in full force and effect through the end date of the incentive promotion, unless otherwise extended by the Director)

Director's Order Number One Hundred Sixty-Four (17)

Virginia Lottery "Debit Lunch Bag" Retailer Incentive Promotion (This Director's Order becomes effective on January 1, 2018, and shall remain in full force and effect through the end date of the incentive promotion, unless otherwise extended by the Director)

Director's Order Number One Hundred Sixty-Seven (17)

Virginia Lottery "Fas Mart April Scratch Growth Contest" (This Director's Order becomes effective on April 3, 2018, and shall remain in full force and effect through the end date of the incentive promotion, unless otherwise extended by the Director)

Director's Order Number One Hundred Sixty-Eight (17)

Virginia Lottery "Fas Rewards Double Points" Retailer Incentive Promotion (This Director's Order becomes effective on April 3, 2018, and shall remain in full force and effect through the end date of the incentive promotion, unless otherwise extended by the Director)

Director's Order Number One Hundred Seventy-Two (17)

Virginia Lottery "Beats® This Sales Contest" Retailer Incentive Promotion (This Director's Order becomes effective on April 3, 2018, and shall remain in full force and effect through the end date of the incentive promotion, unless otherwise extended by the Director)

Director's Order Number One Hundred Seventy-Five (17)

Virginia Lottery "Murphy USA Playbook Gas Discount" Retailer Incentive Promotion (This Director's Order becomes effective on February 6, 2018, and shall remain in full force and effect through the end date of the incentive promotion, unless otherwise extended by the Director)

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

**Virginia Department of Environmental Quality
Small Renewable Energy Projects (Solar)
Local Governing Body Certification Form**

Facility Name and Location: Spring Grove Solar LLC
5200 Colonial Trail West and Beaverdam Road, Surry, VA

Applicant's Name:
Spring Grove Solar LLC

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

Telephone Number and Email Address:
(434) 953-8810
James.Crawford@UrbanGridCo.com

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

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

Applicant's signature:

Franklin DePew

Date:

8/11/17

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

(Check one block)

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

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

Signature of authorized local government representative:

Rhonda E. Russell

Date:

08/25/17

Type or print name:

Rhonda E. Russell

Title:

Director- Planning & Community
Development

County, City or Town:

Surry County, Virginia

**Virginia Department of Environmental Quality
Small Renewable Energy Projects (Solar)
Local Governing Body Certification Form**

Facility Name and Location: Spring Grove Solar III, LLC, Tax Parcel 26-4C
Approx. 3/4 m. SW of Hollybush Road on Colonial Trail West

Applicant's Name:
Spring Grove Solar III, LLC

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

Telephone Number and Email Address:
(434) 953-8810
James.Crawford@UrbanGridCo.com

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

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

Applicant's signature:
Franklin DePew

Date:
07/10/2020

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

(Check one block)

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

Signature of authorized local government representative:

William Saunders

Date:

07/28/2020

Type or print name:

WILLIAM SAUNDERS

Title:

PLANNING DIRECTOR

County, City or Town:

SURRY COUNTY, VA



"The Countrie it selfe, I must
confesse is a very pleasant
land,
rich in commodities;
and fertile in soyle. . ."
- Samuel Argall, ca. 1609

Surry County
County Administrator's Office
P. O. Box 65
45 School Street
Surry, Virginia 23883

TYRONE W. FRANKLIN
County Administrator
Telephone (757) 294-5271
Fax: (757) 294-5204
Email: twfranklin@surrycountyva.gov

May 15, 2018

Mr. Roger G. Bowers, Esquire
FutureLaw, L.L.C.
1802 Bayberry Court, Suite 403
Richmond, Virginia 23226

Dear Mr. Bowers:

The Surry County Board of Supervisors considered the Conditional Use Permit requests captioned below at their May 3, 2018 meeting:

Conditional Use Permit Application No. 2018- 03

Application by Spring Grove Solar, LLC to amend previously approved Conditional Use Permits permitting Utility Service/ Major uses, specifically the construction and operation of solar energy facilities for one or more solar projects up to 400 MWAC generation capacity, in the aggregate, as permitted by Article III Section 3-302, Permitted Uses, (C) of the Surry County Zoning Ordinance for properties described below:

- (Spring Grove Parcel) An irregularly shared parcel, zoned Agricultural -Rural District (A-R) and consisting of $\pm 2,676$ acres. The property fronts on the North side of Colonial Trail West/SR10 for $\pm 3,000'$ and on the South side of Beaverdam Road/SR626 for $\pm 11,000'$ and has an average depth of $\pm 8,700'$.
- (Colonial Trail West Parcel) An irregularly shaped parcel zoned Agriculture Rural District (A-R) and consisting of $\pm 1,241$ acres. The property fronts on the North side of Colonial Trail West/SR10 for $\pm 2,600'$ and the West side of Hollybush Road/SR618 for $\pm 3,350'$ and has an average depth of $\pm 10,700'$.

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- Tax Parcels included in the Conditional Use Permit requests are: 26-4,12-21A,12-28,12-29,12-33,12-34A,12-34B,12-35,12-64,12-67,12-68,12-69,12-70,12-71,12-73,13-24,25-11,25-15,26-17, & 26-18.

The Board of Supervisors conditionally approved CUP Application No. 2018-03 subject to the following conditions:

1. *The total height of the solar energy system(s), including any panels and mounts, shall not exceed 20 feet above the ground when orientated at maximum tilt. This shall not apply to power poles, substation equipment and the connections to the existing transmission lines on the Property.*
2. *The solar energy systems, including their security fence(s), shall be fully screened from public rights-of-way and adjacent residential properties with existing or proposed vegetation. No landscaping, screening or buffer yards shall be required adjacent to either side of the property boundary between the boundary of the Property, and any parcel subdivided from the Property to be used as a utility transmission line switchyard.*
3. *Any electrical wiring used in the system(s) shall be underground (trenched) except (a) wiring directly connecting individual panels or arrays of panels, (b) where necessary to avoid natural obstacles, wetlands or electrical interference, or (c) where wiring is brought together for interconnection to system components, substations, and/or the local utility power grid.*
4. *Prior to the issuance of permits for installation of equipment, a plan for decommissioning the facility in substantial compliance with the Decommissioning Plan submitted to the County on July 28, 2017, shall be provided. Each solar energy system shall be decommissioned and removed within 18 months after that facility ceases electricity generation for a continuous 12-month period. Decommissioning shall include removal of solar collectors, cabling, electrical components, and any other associated items.*
5. *Installation of solar panels is permitted to provide up to a maximum of 400 megawatts of power generation on the 3,905± acre site (the "Property"). The Applicant may lease portions of the Property to individual tenants (each a "Solar Facility Tenant"), each of whom may develop, own and operate one or more solar energy systems on the portion of the Property that it leases (each a "Permitted Solar Project"). Each Permitted Solar Project shall constitute a separate power generating project (each having its own related facilities and substation), which may be operated under separate ownership and control, or as phases under the same ownership. Each Permitted Solar Project shall be established pursuant to a separate site plan to be filed with and approved by the County. The site plan will identify the location, size, layout, phasing, power generation allowance, etc., for each Permitted Solar Project. The land encompassed by each Permitted Solar Project, as shown on the approved site plan for that Permitted Solar Project, shall be subject to the requirements of this Conditional Use Permit independent from any other Permitted Solar Projects on other parts of the Property. The Solar Facility Tenant shall be identified on the site plan submitted for each Permitted Solar Project, and that Solar Facility Tenant shall have the same rights and responsibilities as the Applicant for the portion of the Property that is included in that*

Permitted Solar Project. The conditions of this Conditional Use Permit shall apply independently to each the Permitted Solar Project, provided that a Solar Facility Tenant shall not be responsible for the development and/or lawful operation of another tenant's Permitted Solar Projects. Any zoning violation(s) occurring with respect to one Permitted Solar Project shall not constitute a violation with respect to any other Permitted Solar Project, and no proceeding(s) to revoke this Conditional Use Permit as to one Permitted Solar Project (nor any resulting revocation), shall impair the validity of this Conditional Use Permit with respect to any other Permitted Solar Project, where this Conditional Use Permit shall run with the land.

6. *Prior to the issuance of a land disturbance permit for a Permitted Solar Project, all interior parcels lines to be vacated or modified must be effectuated by lot consolidation.*
7. *Fencing along the exterior of the facility shall be at least 6 feet and not more than 12 feet in height.*
8. *The Zoning Administrator may refer any of the site plans for a Permitted Solar Project to a qualified consultant for review and comment, at the Applicant's or Solar Facility Tenant's expense (as the case may be), the terms and conditions of which shall be determined in advance of the referral with the Applicant/Solar Facility Tenant.*
9. *The Applicant or Solar Facility Tenant, as the case may be, shall submit a report annually to the County Administrator outlining the project permitting and development plan progress for its respective Permitted Solar Project.*
10. *The Applicant or Solar Facility Tenant shall provide for construction phase third party inspections and submittal of inspection reports to the Surry County Building Official, at the Applicant's or Solar Facility Tenant's expense, for its respective Permitted Solar Project.*
11. *Prior to Site Plan approval, the Applicant or Solar Facility Tenant shall submit soils testing reports establishing baseline pre-installation conditions and the Applicant or Solar Facility Tenant shall restore its site to predevelopment soil conditions as part of the decommissioning process, and as evidenced by post-decommissioning soils tests, for its respective Permitted Solar Project.*
12. *Article I, Section 505(C), Time Limitations, of the Surry County Zoning Ordinance, stipulates that any approved condition use permit shall expire after two years from the date of approval if no substantial construction has taken place in accordance with the plans for which such use was granted, unless the Board grants a longer period of time for good cause shown.*
13. *The final approval of an initial site plan for a solar energy system on the Property must be obtained by August 4, 2019, and a second site plan must be approved no later than August 4, 2020, unless the Board grants a longer period of time for good cause shown. The first solar energy system shall be a project for up to 150 megawatts and will be located generally on the eastern portion the Property. The second solar energy system shall be a project for up to 100 megawatts and will be located generally on the northern portion of the Property, however the actual location of any Permitted Solar Project shall be identified on the site plan for that project.*

The Surry County Board of Supervisors and Administration wish you continued success with your project. Should you have any questions or desire additional information, please feel free to call me at (757) 294-5271 or Ms. Rhonda L. Russell, Planning & Community Development Director at (757) 294-5210.

Sincerely,

A handwritten signature in black ink that reads "Tyrone W. Franklin". The signature is written in a cursive style with a large, stylized initial "T".

Tyrone W. Franklin

TWF/rlr

SURRY COUNTY PLANNING COMMISSION

RESOLUTION

Spring Grove Solar, LLC

CUP 2018-03 - Consolidation and Amendment

WHEREAS, Section 15.2-2232(A) of the Code of Virginia requires that the Planning Commission review and consider whether the location, character and extent of utility facilities are substantially in accord with the County's Comprehensive Plan; and

WHEREAS, on November 27, 2017, the Planning Commission found that solar utility facilities located (a) on the north side of Route 10 (Colonial Trail West) west of its intersection with Route 618 (Hollybush Road), Colonial Trail W Solar, LLC, CUP 2017-01, and (b) on the north east side of Route 10 and south of Route 626 (Beaverdam Road), Spring Grove Solar, LLC, CUP 2017-02A, were in conformance with Surry County Comprehensive Plan; and

WHEREAS, CUP 2017-01, as amended, and CUP 2017-02A, as amended, were both subsequently approved by the Board of Supervisors on January 11, 2018; and

WHEREAS, Colonial Trail W Solar, LLC assigned all of its right, title and interest in the land and CUP 2017-01 to Spring Grove Solar, LLC, and Spring Grove Solar, LLC has submitted a request to consolidate CUP 2017-01 with CUP 2017-02A with amendments to be reissued as CUP 2018-03 for one or more solar projects that is before the Planning Commission at their April 23, 2018 meeting, and to be before the Board of Supervisors on May 3, 2018; and

WHEREAS, the Planning Commission has determined the solar utility facilities originally authorized by CUP 2017-01, as amended and CUP 2017-02A, as amended, were substantially in accord with the Surry County Comprehensive Plan pursuant to Virginia Code Section 15.2-2232 on November 27, 2017, and hereby confirms that finding as to the solar facility facilities authorized by CUP 2018-03, as consolidated and amended.

NOW, THEREFORE, BE IT RESOLVED, by the Surry County Planning Commission that the location, character and extent of the solar utility facilities proposed under CUP 2018-03, as amended, are substantially in accord with the Surry County Comprehensive Plan.

FURTHER RESOLVED, that the solar utility facilities under CUP 2018-03, as consolidated and amended with the conditions presented therein would further the purposes of the Comprehensive Plan and the Zoning Ordinance; would not threaten the public health, safety or welfare; would promote compatibility with the surroundings; and would mitigate any potential impacts to the environment and the natural, scenic, and historic assets of the County; and hereby communicates its findings as such to the Board of Supervisors.

Nothing further resolved herein.



Mr. Eddie Brock, Chairman
Surry County, Virginia Planning Commission

Date: 5-18-18



"The Countrie it selfe, I must
confesse is a very pleasant
land,
rich in commodities;
and fertile in soyle. . ."
- Samuel Argall, ca. 1609

Surry County
County Administrator's Office
P. O. Box 65
45 School Street
Surry, Virginia 23883

TYRONE W. FRANKLIN
County Administrator
Telephone (757) 294-5271
Fax: (757) 294-5204
Email: twfranklin@surrycountyva.gov

May 15, 2018

Mr. Roger G. Bowers, Esquire
FutureLaw, L.L.C.
1802 Bayberry Court, Suite 403
Richmond, Virginia 23226

Dear Mr. Bowers:

The Surry County Board of Supervisors considered the Conditional Use Permit requests captioned below at their May 3, 2018 meeting:

Conditional Use Permit Application No. 2018- 04

Application by Spring Grove Solar, LLC to permit a utility switchyard as permitted by Article III Section 3-302, Permitted Uses, (C) of the Surry County Zoning Ordinance on a portion, ± 2.0 acres located adjacent to an existing transmission line, of a larger irregularly shaped parcel zoned Agriculture Rural District (A-R) and consisting of $\pm 1,241$ acres. The property fronts on the North side of Colonial Trail West/SR10 for $\pm 2,600$ and the West side of Hollybush Road/SR618 for $\pm 3,350$ and has an average depth of $\pm 10,700'$. The subject property is identified as Tax Parcel 26-4.

The Board of Supervisors conditionally approved CUP Application No. 2018-04 subject to the following conditions:

1. No landscaping, screening or buffer yard requirements shall be required adjacent to either side of the property boundary between the boundary of the Property, and any adjacent parcel.

"Surry is Something Special"

2. Height restrictions shall not apply to power poles, substation equipment and connections to existing transmission lines on the Property.
3. The Zoning Administrator may refer the proposed site plan for the switchyard to a qualified consultant for review and comment, at the Applicant's expense, the terms and conditions of which shall be determined in advance of the referral with the Applicant.
4. The Applicant shall also be responsible for providing construction phase third party inspection and submittal of inspection reports to the Surry County Building Official, at the Applicant's expense.

The Surry County Board of Supervisors and Administration wish you continued success with your project. Should you have any questions or desire additional information, please feel free to call me at (757) 294-5271 or Ms. Rhonda L. Russell, Planning & Community Development Director at (757) 294-5210.

Sincerely,

A handwritten signature in cursive script that reads "Tyrone W. Franklin". The signature is written in dark ink and is positioned above the typed name.

Tyrone W. Franklin
County Administrator

TWF/rlr

**SURRY COUNTY PLANNING COMMISSION
RESOLUTION**

Spring Grove Solar, LLC
CUP 2018-04 - Switchyard

WHEREAS, Section 15.2-2232(A) of the Code of Virginia requires that the Planning Commission review and consider whether the location, character and extent of utility facilities are substantially in accord with the County's Comprehensive Plan; and

WHEREAS, on November 27, 2017, the Planning Commission found that a utility switchyard located on the north side of Route 10 (Colonial Trail West) west of its intersection with Route 618 (Hollybush Road) Colonial Trail W Solar, LLC CUP 2017-01 was in conformance with Surry County Comprehensive Plan; and

WHEREAS, CUP 2017-01, as amended, was subsequently approved by the Board of Supervisors on January 11, 2018; and

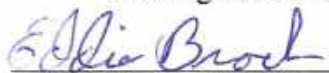
WHEREAS, Colonial Trail W Solar, LLC assigned all of its right, title and interest in the land and CUP 2017-01 to Spring Grove Solar, LLC, and Spring Grove Solar, LLC has submitted a request to separate the utility switchyard use approval from the solar facility use approval in CUP 2018-03 and requested approval of CUP 2018-04 for the utility switchyard use that is before the Planning Commission at their April 23, 2018 meeting, and to be before the Board of Supervisors on May 3, 2018; and

WHEREAS, the Planning Commission has determined the utility switchyard facilities originally authorized by CUP 2017-01, as amended, were substantially in accord with the Surry County Comprehensive Plan pursuant to Virginia Code Section 15.2-2232 on November 27, 2017, and hereby confirms that finding as to the utility switchyard facilities under CUP 2018-04.

NOW, THEREFORE, BE IT RESOLVED, by the Surry County Planning Commission that the location, character and extent of the utility switchyard facility proposed under CUP 2018-04 are substantially in accord with the Surry County Comprehensive Plan.

FURTHER RESOLVED, that the utility switchyard facility under CUP 2018-04 with the conditions presented therein would further the purposes of the Comprehensive Plan and the Zoning Ordinance; would not threaten the public health, safety or welfare; would promote compatibility with the surroundings; and would mitigate any potential impacts to the environment and the natural, scenic, and historic assets of the County; and hereby communicates its findings as such to the Board of Supervisors.

Nothing further resolved herein.



Mr. Eddie Brock, Chairman
Surry County, Virginia Planning Commission

Date: 5-18-18

**SURRY COUNTY PLANNING COMMISSION
RESOLUTION**

Spring Grove Solar III, LLC
SIA 2020-01

WHEREAS, Section 15.2-2232(A) of the Code of Virginia requires that the Planning Commission review and consider whether the location, character and extent of utility facilities are substantially in accord with the County's Comprehensive Plan; and

WHEREAS, on July 2, 2020, the Board of Supervisors approved Comprehensive Plan Development Plan Amendment 2020-01 to designate Tax Parcel 26-4C as appropriate for M-1 Industrial zoning, and approved Rezoning 2020-01 to conditionally rezone Tax Parcel 26-4C to M-1; and

WHEREAS, on July 2, 2020, the Board of Supervisors approved Conditional Use Permit 2020-01 to permit a solar utility facility located on the south side of Route 10 (Colonial Trail West) west of its intersection with Route 618 (Hollybush Road) and found that such use was in conformance with Surry County Comprehensive Plan; and

WHEREAS, the Planning Commission held a public hearing on May 18, 2020, with regard to SIA 2020-01.

NOW, THEREFORE, BE IT RESOLVED, by the Surry County Planning Commission that the location, character and extent of the solar utility facility proposed under CUP 2020-01, is substantially in accord with the Surry County Comprehensive Plan.

FURTHER RESOLVED, that the solar utility facility approved under CUP 2020-01, with the conditions presented therein would further the purposes of the Comprehensive Plan and the Zoning Ordinance; would not threaten the public health, safety or welfare; would promote compatibility with the surroundings; and would mitigate any potential impacts to the environment and the natural, scenic, and historic assets of the County; and hereby communicates its findings as such to the Board of Supervisors.

Nothing further resolved herein.



Mr. Eddie Brock, Chairman
Surry County, Virginia Planning Commission

Date: 7-27-20



“The Countrie it selfe, I must confesse is a very pleasant land, rich in commodities; and fertile in soyle...”

Samuel Argall, ca. 1609

County of Surry

45 School Street, P. O. Box 65
Surry, VA 23883

www.surrycountyva.gov

Phone: 757-294-5271

Fax: 757-294-5206

Board of Supervisors

Robert L. Elliott, Jr. Chair
Michael A. Drewry, Vice-Chair
Timothy Calhoun
Judy S. Lyttle
Kenneth R. Holmes

Melissa D. Rollins
County Administrator

July 30, 2020

Mr. Roger G. Bowers, Esquire
Future Law, LLC
1802 Bayberry Court, Suite 403
Richmond, VA 23226

Dear Mr. Bowers:

The Surry County Board of Supervisors considered the Conditional Use Permit captioned below at their July 2, 2020 meeting:

Conditional Use Permit Application No. 2020-02

Application by Spring Grove Solar III, LLC for a conditional use permit for a solar generation facility in Surry County (the “Project”). The Project is located on one parcel, irregularly shaped, beginning \pm 2850’ west of the intersection of Colonial Trail West/SR 10 and Hollybush Road/SR 618, extending along the south side of Colonial Trail W/SR 10 for \pm 2800’ with an average depth of \pm 5300’. The property is referred to as Tax Parcel No. 26-4C.

The Board of Supervisors approved CUP Application No. 2020-02 subject to the following conditions:

1. The total height of the solar energy system(s), including any panels and mounts, shall not exceed 18 feet above the ground when orientated at maximum tilt. This shall not apply to the power poles, substation equipment and the connections to the existing transmission lines on the Property.
2. The solar energy systems, including their security fence(s), shall be fully screened from public rights-of-way and adjacent residential properties with existing or proposed vegetation.
3. Any electrical wiring used in the system(s) shall be underground (trenched) except (a) wiring directly connecting individual panels or arrays of panels, (b) where necessary to avoid natural obstacles, wetlands or electrical interference, or (c) where wiring is brought together for interconnection to system components, substations, and/or the local utility power grid.
4. Prior to the issuance of permits for installation of equipment, a plan for decommissioning the facility in substantial compliance with the Decommissioning Plan submitted to the County on February 20, 2020, shall be provided. Each solar energy system shall be decommissioned and removed within 18 months after that facility ceases electricity

“Take the Rural Route to Success”

- generation for a continuous 12-month period. Decommissioning shall include removal of solar collectors, cabling, electrical components, and any other associated items.
5. Installation of solar panels is permitted to provide generation within the previously approved maximum of 400 megawatts of power generation under CUP 2018-03. The Applicant may lease portions of the Property to individual tenants (each a “Solar Facility Tenant”), each of whom may develop, own and operate one or more solar energy systems on the portion of the Property that it leases (each a “Permitted Solar Project”). Each Permitted Solar Project shall constitute a separate power generating project (each having its own related facilities and substation), which may be operated under separate ownership and control, or as phases under the same ownership. Each Permitted Solar Project shall be established pursuant to a separate site plan to be filed with and approved by the County. The site plan will identify the location, size, layout, phasing, power generation allowance, etc., for each Permitted Solar Project. The land encompassed by each Permitted Solar Project, as shown on the approved site plan for that Permitted Solar Project, shall be subject to the requirements of this Conditional Use Permit independent from any other Permitted Solar Projects or other parts of the Property. The Solar Facility Tenant shall be identified on the site plan submitted for each Permitted Solar Project, and that Solar Facility Tenant shall have the same rights and responsibilities as the Applicant for the portion of the Property that is included in that Permitted Solar Project. The conditions of this Conditional Use Permit shall apply independently to each of the Permitted Solar Project, provided that a Solar Facility Tenant shall not be responsible for the development and/or lawful operation of another tenant’s Permitted Solar Projects. Any zoning violation(s) occurring with respect to one Permitted Solar Project shall not constitute a violation with respect to any other Permitted Solar Project, and no proceeding(s) to revoke this Conditional Use Permit as to one Permitted Solar Project (nor any resulting revocation), shall impair the validity of this Conditional Use Permit with respect to any other Permitted Solar Project, where this Conditional Use Permit shall run with the land.
 6. The Applicant or applicable Solar Facility Tenant shall (a) develop a Traffic Mitigation Plan (the “Plan”) in consultation with County Planning Staff, the Virginia Department of Transportation, the Surry County Sheriff’s Office, and the Virginia State Police to identify and expeditiously resolve or mitigate traffic issues that arise during the construction or decommissioning of the facility and (b) repair public road damage in proximity to the facility, attributable to construction or decommissioning of the facility, such repair to be to conditions comparable to pre-existing conditions. As part of the Plan during construction and decommissioning an on-site staging area of at least four hundred (400) feet in depth and during operations an on-site staging area of at least two hundred (200) feet in depth shall be provided prior to any gate or badging locations such that traffic coming into the facility shall not back up onto Route 10.
 7. Fencing along the exterior of the facility shall be at least 6 feet and not more than 12 feet in height.
 8. The Zoning Administrator may refer any of the site plans for a Permitted Solar Project to a qualified consultant for review and comment, at the Applicant’s or Solar Facility Tenant’s expense (as the case may be), the terms and conditions of which shall be determined in advance of the referral with the Applicant/Solar Facility Tenant.
 9. The Applicant or Solar Facility Tenant, as the case may be, shall submit a report annually to the County Administrator outlining the project permitting and development plan progress for its respective Permitted Solar Project.

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10. The Applicant or Solar Facility Tenant shall provide for construction phase third party inspections and submittal of inspection reports to the Surry County Building Official, at the Applicant's or Solar Facility Tenant's expense, for its respective Permitted Solar Project.
11. Prior to site plan approval, the Applicant or Solar Facility Tenant shall submit soils testing reports establishing baseline pre-installation conditions and the Applicant or Solar Facility Tenant shall restore its site to predevelopment soil conditions as part of the decommissioning process, and as evidenced by post-decommissioning soils tests, for its respective Permitted Solar Project. Applicant or Solar Facility Tenant shall provide ground water monitoring as required by the Surry County Solar Ordinance.
12. Article I, Section 505(C), Time Limitations, of the Surry County Zoning Ordinance, stipulates that any approved conditional use permit shall expire after two years from the date of approval if no substantial construction has taken place in accordance with the plans for which such use was granted, unless the Board grants a longer period of time for good cause shown.
13. The property may only be utilized for the operation and maintenance of the solar generation facility, to include supporting structures and infrastructure. Mass storage of electricity for transfer to the grid by battery or other means is not permitted.
14. The site plan for the project shall be in substantial conformity with the proposed Spring Grove III, LLC Preliminary Site Plan dated 09/11/2019 and revised 02/13/20.

The Surry Board of Supervisors and Administration wish you continued success with your project. Should you have any questions or desire additional information, please feel free to call me at (757) 294-5273.

Sincerely,



Melissa Rollins, ICMA-CM
County Administrator

cc: Mr. William Saunders, Director of Planning & Community Development

Attachment C – Interconnection Studies

Queue Position AD1-025

- Generation Interconnection System Impact Study Report
- Generation Interconnection Feasibility Study Report

Queue Position AD2-007 (Uprate)

- Generation Interconnection Feasibility Study Report
- Generation Interconnection System Impact Study Report

Queue Position AD2-008 (Uprate)

- Generation Interconnection Feasibility Study Report
- Generation Interconnection Impact Study Report

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

For

***PJM Generation Interconnection Request
Queue Position AD1-025***

***Hopewell – Surry 230kV
94.2 MW Capacity / 150 MW Energy***

Revised December / 2018

Introduction

This System Impact Study (SIS) has been prepared in accordance with the PJM Open Access Transmission Tariff, Section 205, as well as the System Impact Study Agreement between Spring Grove Solar II, LLC, the Interconnection Customer (IC) and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Virginia Electric and Power Company (VEPCO).

Preface

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

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

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

General

The IC has proposed a solar generating facility located in Spring Grove, VA (Surry County). The installed facilities will have a total capability of 150 MW with 94.2 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is 9/30/2019. **This study does not imply an ITO commitment to this in-service date.**

Point of Interconnection

AD1-025 will interconnect with the ITO transmission system will connect via a new ring bus position in the AB2-134 switching station that connects on the Hopewell – Surry 230kV line # 121.

Cost Summary

The AD1-025 interconnection request will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$1,800,000

Direct Connection Network Upgrades	\$0
Non Direct Connection Network Upgrades	\$1,200,000
Allocation for New System Upgrades	\$0
Contribution for Previously Identified Upgrades	\$69,616,167
Total Costs	\$72,616,167

Attachment Facilities

Generation Substation: Install metering and associated protection equipment. Estimated Cost \$600,000.

Transmission: Build approximately 0.5 miles of 230 kV Line. Estimated Cost \$1,200,000

The estimated total cost of the Attachment Facilities is \$1,800,000. It is estimated to take 30-36 months to complete this work. These preliminary cost estimates are based on typical engineering costs. A more detailed engineering cost estimates are normally done when the IC provides an exact site plan location for the generation substation during the Facility Study phase. These costs do not include CIAC Tax Gross-up. The single line is shown below in Attachment 1.

Non-Direct Connection Cost Estimate

Substation: Add one 230 kV circuit breaker to the AB2-134 Switching Station ringbus. The estimated cost of this work scope is \$1,200,000. The estimated cost to complete the work is \$1,200,000. It is estimated to take 24-36 months to complete this work.

Remote Terminal Work: During the Facilities Study, ITO's System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO's protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

System Reinforcements

Network Upgrade Number	Violation #	Ruling Violation #	Loading	Upgrade Description	Upgrade Cost	Allocated Cost
B3019	# 1	# 1	From 99.4% to 100%	Rebuild the 21.6 mile long Bristors to Chancellor 500kV line #552. Conductor ampacity will increase from 3364A to 5000A. Project in service date is December 2023.	na	na
Pending	# 2 - 5	# 4	From 93.47% to 105%	Wreck and rebuild the Hopewell – Bermuda – Chesterfield 230kV line #228 of 11 miles increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	\$27,425,000	\$22,507,074
Pending	# 6, 7, 14, 15	# 14	From 103.13% to 104.27%	Replace the wave trap in the Chickahominy substation to increase the Chickahominy – Elmont 500kV line #557 rating to 3424 MVA (normal), 3424 MVA (emergency), and 3937 MVA (load dump). It is estimated to take 12-16 months to engineer and construct.	\$500,000	\$0
Pending	# 9	# 9	From 104.32% to 105.75%	Replace the Elmont 500-230 kV transformer #1 to increase its rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to take 24-30 months to engineer and construct	\$17,500,000	\$757,305
Pending	# 10	# 10	From 110.51% to 123.81%	Add a second Price George 230/115 kV transformer to increase the rating to 276.82 MVA (normal) and 292.4 MVA (emergency) and 328.7MVA (load dump). Estimated to 24-30 months to engineer and construct.	\$5,500,000	\$3,016,980

Network Upgrade Number	Violation #	Ruling Violation #	Loading	Upgrade Description	Upgrade Cost	Allocated Cost
B3020	# 16 - 19	# 16	From 144.36% to 145.44%	Rebuild the 26.2 mile long Elmont to Ladysmith 500kV line #574. Conductor ampacity will increase from 3364A to 5000A. Project in service date is December 2022.	na	na
N5609	# 20, 21	# 20	From 108.85% to 109.73%	In addition to wavetrapped replacement identified in AC1 Queue. Wreck and rebuild the Midlothian – North Anna 500kV line #576 line (41 miles) to increase its line rating to 4453 MVA (normal), 4453 MVA (emergency), and 5121 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	\$123,390,000	\$43,334,808
Total Estimated Allocated Cost of Network Upgrades						\$69,616,167

Interconnection Customer Requirements

ITO's Facility Interconnection Requirements as posted on PJM's website

<http://www.pjm.com/~media/planning/plan-standards/private-dominion/facility-connection-requirements1.ashx>

An Interconnection Customer entering the New Services Queue on or after October 1, 2012 with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

Voltage Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Frequency Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Reactive Power - The Generation Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

- The queue project, AD1-025, does not meet the 0.95 lagging power factor requirement and meets the leading power factor requirement. **An additional 26.85 MVar would be needed for the project to meet the lagging power factor requirement at the high side of the main transformer.**

Meteorological Data Reporting Requirement - The solar generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

Revenue Metering and SCADA Requirements

PJM Requirements

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

Interconnected Transmission Owner Requirements

Metering and SCADA/Communication equipment must meet the requirements outlined in section 3.1.6 Metering and Telecommunications of ITO's Facility Connection Requirement NERC Standard FAC-001 which is publically available at www.dom.com.

Network Impacts

The Queue Project AD1-025 was evaluated as a 150.0 MW (Capacity 94.2 MW) injection tapping into Hopewell - Surry 230kV in the ITO area. Project AD1-025 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD1-025 was studied with a commercial probability of 100%. Potential network impacts were as follows:

Contingency Descriptions

The following contingencies resulted in overloads:

Contingency Name	Description
DVP_P1-2: LN 211	CONTINGENCY 'DVP_P1-2: LN 211' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 END
DVP_P1-2: LN 217	CONTINGENCY 'DVP_P1-2: LN 217' OPEN BRANCH FROM BUS 314225 TO BUS 314227 CKT 1 /* 6CHARCTY 230.00 - 6LAKESD 230.00 OPEN BRANCH FROM BUS 314225 TO BUS 314228 CKT 1 /* 6CHARCTY 230.00 - 6MESSER 230.00 OPEN BRANCH FROM BUS 314228 TO BUS 314287 CKT 1 /* 6MESSER 230.00 - 6CHSTF B 230.00 OPEN BUS 314225 /* ISLAND OPEN BUS 314228 /* ISLAND END
DVP_P1-2: LN 228	CONTINGENCY 'DVP_P1-2: LN 228' OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-2: LN 568	CONTINGENCY 'DVP_P1-2: LN 568' OPEN BRANCH FROM BUS 314911 TO BUS 314922 CKT 1 /* 8LDYSMTH 500.00 - 8POSSUM 500.00 END
DVP_P1-2: LN 573	CONTINGENCY 'DVP_P1-2: LN 573' OPEN BRANCH FROM BUS 314918 TO BUS 314934 CKT 1 /* 8NO ANNA 500.00 - 8SPOTSYL 500.00 END
DVP_P1-2: LN 574	CONTINGENCY 'DVP_P1-2: LN 574' OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1 /* 8ELMONT 500.00 - 8LDYSMTH 500.00 END

Contingency Name	Description
DVP_P1-2: LN 576	CONTINGENCY 'DVP_P1-2: LN 576' OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 END
DVP_P1-2: LN 594	CONTINGENCY 'DVP_P1-2: LN 594' OPEN BRANCH FROM BUS 314916 TO BUS 314934 CKT 1 /* 8MORRSVL 500.00 - 8SPOTSYL 500.00 END
DVP_P4-2: 211T2124	CONTINGENCY 'DVP_P4-2: 211T2124' /*_ HOPEWELL OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1 /*L211 HOPEWELL CHESTERFIELD OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1 /*L2124 END
DVP_P4-2: 557T574	CONTINGENCY 'DVP_P4-2: 557T574' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314911 TO BUS 314908 CKT 1 /*ELMONT TO LADYSMITH (LINE 574) END
DVP_P4-2: 56372	CONTINGENCY 'DVP_P4-2: 56372' /*CARSON OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MIDLOTHIAN 500.00 OPEN BRANCH FROM BUS 314902 TO BUS 314282 CKT 1 /*CARSON 500-230 (TX#1) END
DVP_P4-2: 563T576	CONTINGENCY 'DVP_P4-2: 563T576' /* MIDLOTHIAN 500 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 END
DVP_P4-2: 57602	CONTINGENCY 'DVP_P4-2: 57602' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 1 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P4-2: H2T557	CONTINGENCY 'DVP_P4-2: H2T557' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2 /*ELMONT 500-230 (TX#2) END

Contingency Name	Description
DVP_P4-2: WT576	CONTINGENCY 'DVP_P4-2: WT576' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 2 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P7-1: LN 211-228	CONTINGENCY 'DVP_P7-1: LN 211-228' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END
DVP_P7-1: LN 212-240_D	CONTINGENCY 'DVP_P7-1: LN 212-240_D' OPEN BRANCH FROM BUS 925330 TO BUS 314538 CKT 2 /* AB2-190 TAP 230.00 - 6SURRY 230.00 OPEN BRANCH FROM BUS 924810 TO BUS 314538 CKT 1 /* AB2-134 TAP 230.00 - 6SURRY 230.00 END

Summer Peak Analysis – 2021

Generator Deliverability

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
1	N-1	DVP_P1-2: LN 568	DVP - DVP	8CHANCE-8BRISTER 500 kV line	314905	314900	1	AC	99.4	100	ER	2442	16.84	1

Multiple Facility Contingency

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
2	LFFB	DVP_P4-2: 211T2124	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	AC	93.45	104.98	LD	549	63.98	2
3	DCTL	DVP_P7-1: LN 212- 240_D	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	AC	78.86	90.8	LD	549	66.49	
4	LFFB	DVP_P4-2: 211T2124	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	AC	93.47	105	LD	549	63.98	3
5	DCTL	DVP_P7-1: LN 212- 240_D	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	AC	78.88	90.82	LD	549	66.49	
6	LFFB	DVP_P4-2: 57602	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	AC	98.78	99.91	LD	3144	38.64	

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
7	LFFB	DVP_P4-2: WT576	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	AC	98.78	99.91	LD	3144	38.64	

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Contributions to previously identified circuit breakers found to be over-duty:

None

Contribution to Previously Identified Overloads

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
8	N-1	DVP_P1-2: LN 574	DVP - DVP	6FOUR RIVERS- 6STJOHN 230 kV line	314212	314150	1	AC	122.7	123.76	ER	749	8.92	4
9	LFFB	DVP_P4-2: H2T557	DVP - DVP	8ELMONT 500/230 kV transformer	314218	314908	1	AC	104.32	105.75	LD	1051	33.17	5
10	DCTL	DVP_P7-1: LN 211-228	DVP - DVP	6PRGEORG 230/115 kV transformer	314269	314291	1	AC	110.51	123.81	LD	220	29.72	6
11	N-1	DVP_P1-2: LN 217	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	AC	113.33	115.95	ER	449	11.78	7

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
12	DCTL	DVP_P7-1: LN 217-287	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	AC	106.75	110.3	LD	549	19.55	
13	N-1	DVP_P1-2: LN 563	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	AC	101.48	103.56	ER	449	9.21	
14	LFFB	DVP_P4-2: 563T576	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	AC	103.13	104.27	LD	3144	39.06	8
15	LFFB	DVP_P4-2: 56372	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	AC	100.91	101.94	LD	3144	35.29	
16	N-1	DVP_P1-2: LN 576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	AC	144.36	145.44	ER	2442	30.47	9
17	N-1	DVP_P1-2: LN 563	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	AC	128.37	129.27	ER	2442	25.23	
18	LFFB	DVP_P4-2: 57602	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	AC	121.22	122.47	LD	3351	48.5	
19	LFFB	DVP_P4-2: WT576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	AC	121.22	122.47	LD	3351	48.5	
20	N-1	DVP_P1-2: LN 574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	AC	108.85	109.73	ER	2442	24.76	10
21	LFFB	DVP_P4-2: 557T574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	AC	104.32	105.33	LD	3637	41.94	

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

None

Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

No mitigations were found to be required.

New System Reinforcements

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

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost	AD1-025 Allocation									
# 1	8CHANCE-8BRISTER 500 kV line	Rebuild the 21.6 mile long Bristors to Chancellor 500kV line #552. Conductor ampacity will increase from 3364A to 5000A. Project in service date is December 2023.	B3019	na	\$0									
# 2, 3	6BERMUDA-6CHESTF A 230 kV line	Wreck and rebuild the Hopewell – Bermuda – Chesterfield 230kV line #228 of 11 miles increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	Pending	\$27,425,000	\$22,507,074									
# 4, 5	6HOPEWLL-6BERMUDA 230 kV line													
		<table border="1"> <thead> <tr> <th>Queue</th> <th>Impact (MW)</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>AC2-012</td> <td>13.98</td> <td>\$4,917,926</td> </tr> <tr> <td>AD1-025</td> <td>63.98</td> <td>\$22,507,074</td> </tr> </tbody> </table>	Queue	Impact (MW)	Cost	AC2-012	13.98	\$4,917,926	AD1-025	63.98	\$22,507,074			
Queue	Impact (MW)	Cost												
AC2-012	13.98	\$4,917,926												
AD1-025	63.98	\$22,507,074												
# 6, 7	8CHCKAHM-8ELMONT 500 kV line	Wavetrap replacement identified in AC1 Queue. Replace the wave trap in the Chickahominy substation to increase the Chickahominy – Elmont 500kV line #557 rating to 3424 MVA (normal), 3424 MVA (emergency), and 3937 MVA (load dump). It is estimated to take 12-16 months to engineer and construct.	Pending	\$500,000	\$0									
Total New Network Upgrades					\$22,507,074									

Contribution to Previously Identified System Reinforcements

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

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost	AD1-025 Allocation																														
# 8	6FOUR RIVERS-6STJOHN 230 kV line	Four Rivers – St. Johns 230kV line # 256 wave trap at Four Rivers and line switches at St. Johns replaced. Work completed in 2017 and new rating of 876 MVA (normal), 956 MVA (emergency) and 1163 MVA (load dump).	N4692		\$0																														
# 9	8ELMONT 500/230 kV transformer	Replace the Elmont 500-230 kV transformer #1 to increase its rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to take 24-30 months to engineer and construct <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Queue</th> <th>Impact (MW)</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>AC1-164</td> <td>48.87</td> <td>\$3,611,745</td> </tr> <tr> <td>AC1-191</td> <td>26.35</td> <td>\$1,947,401</td> </tr> <tr> <td>AC1-216</td> <td>21.14</td> <td>\$1,562,355</td> </tr> <tr> <td>AC2-012</td> <td>24.79</td> <td>\$1,832,109</td> </tr> <tr> <td>AC2-078</td> <td>12.13</td> <td>\$896,469</td> </tr> <tr> <td>AC2-079</td> <td>14.89</td> <td>\$1,100,448</td> </tr> <tr> <td>AC2-141</td> <td>38.06</td> <td>\$2,812,830</td> </tr> <tr> <td>AD1-023</td> <td>17.4</td> <td>\$1,285,950</td> </tr> <tr> <td>AD1-025</td> <td>33.16</td> <td>\$2,450,695</td> </tr> </tbody> </table>	Queue	Impact (MW)	Cost	AC1-164	48.87	\$3,611,745	AC1-191	26.35	\$1,947,401	AC1-216	21.14	\$1,562,355	AC2-012	24.79	\$1,832,109	AC2-078	12.13	\$896,469	AC2-079	14.89	\$1,100,448	AC2-141	38.06	\$2,812,830	AD1-023	17.4	\$1,285,950	AD1-025	33.16	\$2,450,695	Pending	\$17,500,000	\$2,450,695
Queue	Impact (MW)	Cost																																	
AC1-164	48.87	\$3,611,745																																	
AC1-191	26.35	\$1,947,401																																	
AC1-216	21.14	\$1,562,355																																	
AC2-012	24.79	\$1,832,109																																	
AC2-078	12.13	\$896,469																																	
AC2-079	14.89	\$1,100,448																																	
AC2-141	38.06	\$2,812,830																																	
AD1-023	17.4	\$1,285,950																																	
AD1-025	33.16	\$2,450,695																																	

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost	AD1-025 Allocation												
# 10	6PRGEORG 230/115 kV transformer	<p>Add a second Price George 230/115 kV transformer to increase the rating to 276.82 MVA (normal) and 292.4 MVA (emergency) and 328.7MVA (load dump). Estimated to 24-30 months to engineer and construct.</p> <table border="1"> <thead> <tr> <th>Queue</th> <th>Impact (MW)</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>AB2-190</td> <td>5.04</td> <td>\$511,628</td> </tr> <tr> <td>AC1-216</td> <td>19.42</td> <td>\$1,971,392</td> </tr> <tr> <td>AD1-025</td> <td>29.72</td> <td>\$3,016,980</td> </tr> </tbody> </table>	Queue	Impact (MW)	Cost	AB2-190	5.04	\$511,628	AC1-216	19.42	\$1,971,392	AD1-025	29.72	\$3,016,980	Pending	\$5,500,000	\$3,016,980
Queue	Impact (MW)	Cost															
AB2-190	5.04	\$511,628															
AC1-216	19.42	\$1,971,392															
AD1-025	29.72	\$3,016,980															
# 11 - 13	6CHESTF B-6BASIN 230 kV line	Chesterfield – Basin 230kV line # 259, replace 0.14 miles of 1109 ACAR with a conductor with a conductor which will increase the line rating to approximately 706 MVA (normal), 706 MVA (emergency), and 812 MVA (load dump). Work completed 6/01/2018.	B2990	na	\$0												
# 14, 15	8CHCKAHM-8ELMONT 500 kV line	Wavetrap replacement identified in AC1 Queue. Replace the wave trap in the Chickahominy substation to increase the Chickahominy – Elmont 500kV line #557 rating to 3424 MVA (normal), 3424 MVA (emergency), and 3937 MVA (load dump). It is estimated to take 12-16 months to engineer and construct.	Pending	\$500,000	\$0												
# 16 - 19	8ELMONT-8LADYSMITH 500 kV line	Rebuild the 26.2 mile long Elmont to Ladysmith 500kV line #574. Conductor ampacity will increase from 3364A to 5000A. Project in service date is December 2022.	B3020	na	\$0												

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost	AD1-025 Allocation									
# 20, 21	8MDLTHAN-8NO ANNA 500 kV line	In addition to wavetrapp replacement identified in AC1 Queue. Wreck and rebuild the Midlothian – North Anna 500kV line #576 line (41 miles) to increase its line rating to 4453 MVA (normal), 4453 MVA (emergency), and 5121 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	n5609	\$123,390,000	\$43,334,808									
		<table border="1"> <thead> <tr> <th>Queue</th> <th>Impact (MW)</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>AC2-141</td> <td>77.46</td> <td>\$80,055,192</td> </tr> <tr> <td>AD1-025</td> <td>41.93</td> <td>\$43,334,808</td> </tr> </tbody> </table>	Queue	Impact (MW)	Cost	AC2-141	77.46	\$80,055,192	AD1-025	41.93	\$43,334,808			
Queue	Impact (MW)	Cost												
AC2-141	77.46	\$80,055,192												
AD1-025	41.93	\$43,334,808												
Total New Network Upgrades					\$48,802,483									

Potential Congestion due to Local Energy Deliverability

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

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To	Circuit		Initial	Final	Type	MVA	
22	N-1	DVP_P1-2: LN 574	DVP - DVP	6FOUR RIVERS-6STJOHN 230 kV line	314212	314150	1	AC	119.33	120.98	ER	749	14.2

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To	Circuit		Initial	Final	Type	MVA	
23	N-1	DVP_P1-2: LN 211	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	AC	99.04	111.35	ER	449	55.66
24	N-1	DVP_P1-2: LN 217	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	AC	126.52	130.67	ER	449	18.76
25	N-1	DVP_P1-2: LN 211	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	AC	99.07	111.38	ER	449	55.66
26	N-1	DVP_P1-2: LN 228	DVP - DVP	6HOPEWLL-6CHESTF B 230 kV line	314303	314287	1	AC	90.84	103.8	ER	442	57.82
27	N-1	DVP_P1-2: LN 576	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	AC	127.02	128.49	ER	2442	38.64
28	Non	Non	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	AC	101.98	103.16	NR	2442	30.71
29	N-1	DVP_P1-2: LN 594	DVP - DVP	8CHANCE-8BRISTER 500 kV line	314905	314900	1	AC	127.79	128.82	ER	2442	29.01
30	N-1	DVP_P1-2: LN 576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	AC	166.21	167.93	ER	2442	48.52
31	Non	Non	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	AC	116.92	118.13	NR	2442	34.07
32	N-1	DVP_P1-2: LN 573	DVP - DVP	8LADYSMITH-8CHANCE 500 kV line	314911	314905	1	AC	114	114.94	ER	2738	29.48
33	N-1	DVP_P1-2: LN 594	DVP - DVP	8LADYSMITH-8POSSUM 500 kV line	314911	314922	1	AC	116.06	116.95	ER	2442	24.78
34	N-1	DVP_P1-2: LN 574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	AC	135.27	136.68	ER	2442	39.42

Light Load Analysis in 2021

Not required

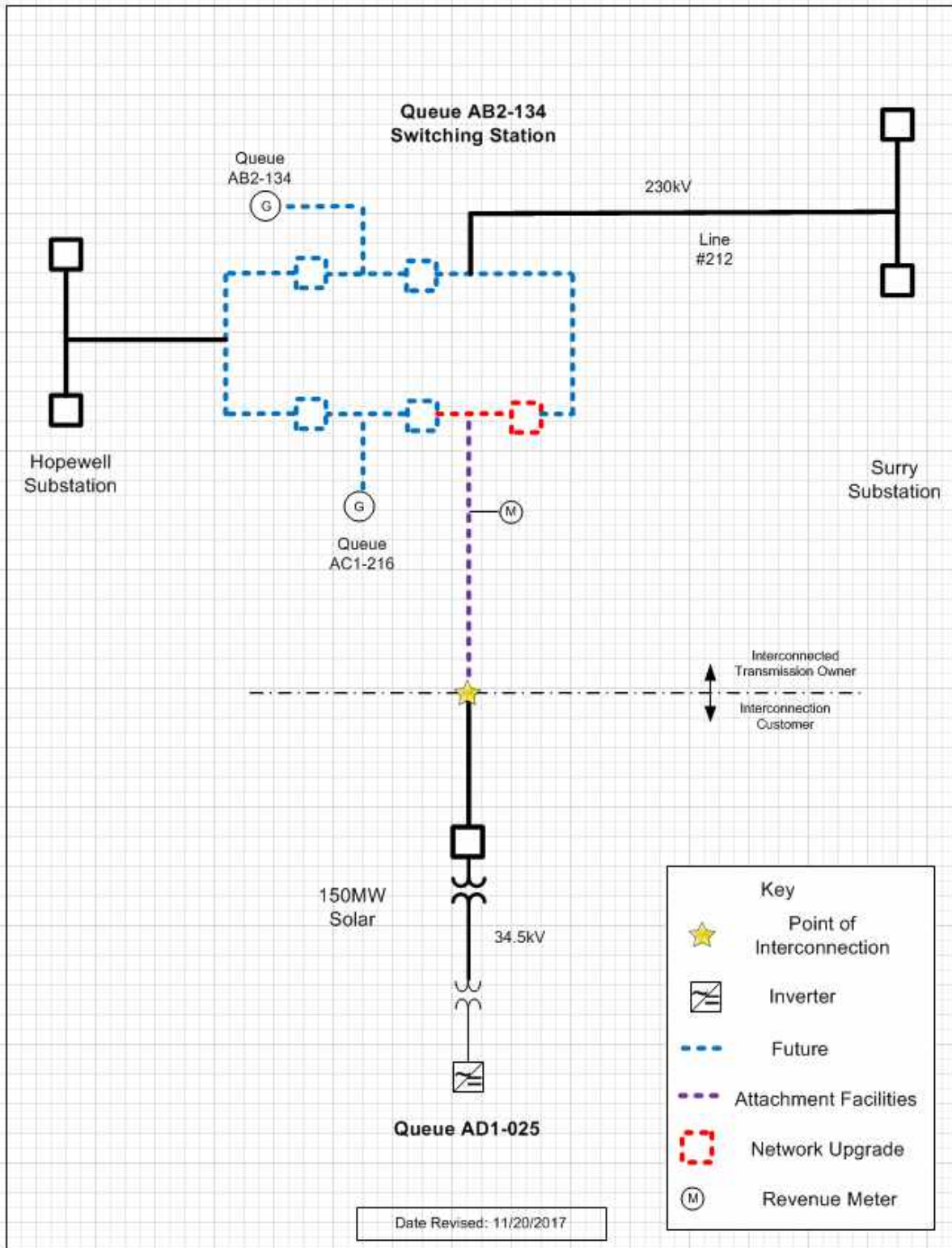
Affected System Analysis & Mitigation

Duke Energy:

None

Attachment 1.

System Configuration



Appendices

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact.

It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

Appendix 1

(DVP - DVP) The 8CHANCE-8BRISTER 500 kV line (from bus 314905 to bus 314900 ckt 1) loads from 99.4% to 100.0% (AC power flow) of its emergency rating (2442 MVA) for the single line contingency outage of 'DVP_P1-2: LN 568'. This project contributes approximately 16.84 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 568'

OPEN BRANCH FROM BUS 314911 TO BUS 314922 CKT 1

/* 8LDYSMTH

500.00 - 8POSSUM 500.00

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315053	1BELMEDI	3.64
315054	1BELMED2	3.64
315058	1CHESTF3	3.86
315059	1CHESTF4	6.25
315060	1CHESTF5	13.07
315061	1CHESTG7	5.12
315063	1CHESTG8	5.06
315062	1CHESTS7	2.33
315064	1CHESTS8	2.6
315067	1DARBY 1	3.38
315068	1DARBY 2	3.38
315069	1DARBY 3	3.39
315070	1DARBY 4	3.4
315043	1FOUR RIVERA	4.69
315044	1FOUR RIVERB	3.63
315045	1FOUR RIVERC	4.69
315046	1FOUR RIVERD	3.63
315047	1FOUR RIVERE	3.63
315048	1FOUR RIVERF	4.69
315074	1HOPCGN1	8.39
315075	1HOPCGN2	8.28
315037	1LDYSMT1	6.25
315038	1LDYSMT2	6.24
315039	1LDYSMT3	6.61
315040	1LDYSMT4	6.62
315041	1LDYSMT5	6.64

315083	<i>ISPRUNCA</i>	10.56
315084	<i>ISPRUNCB</i>	10.56
315085	<i>ISPRUNCC</i>	7.83
315086	<i>ISPRUNCD</i>	7.83
315090	<i>1YORKTN1</i>	28.36
315091	<i>1YORKTN2</i>	29.43
314315	<i>3LOCKS E</i>	1.25
314309	<i>6IRON208</i>	0.58
314236	<i>6NRTHEST</i>	0.25
314250	<i>6ROCKVILLE</i>	0.27
932041	<i>AC2-012 C</i>	9.82
932501	<i>AC2-070 C</i>	1.77
932531	<i>AC2-073 C</i>	2.39
932581	<i>AC2-078 C</i>	3.97
932591	<i>AC2-079 C</i>	5.5
932831	<i>AC2-110 C</i>	1.36
933011	<i>AC2-125</i>	2.94
933021	<i>AC2-126</i>	2.96
933031	<i>AC2-127</i>	1.62
933041	<i>AC2-128</i>	1.56
933051	<i>AC2-129</i>	1.46
933061	<i>AC2-130</i>	2.45
933071	<i>AC2-131 1</i>	1.66
933081	<i>AC2-131 2</i>	0.75
933111	<i>AC2-132 1</i>	0.87
933121	<i>AC2-132 2</i>	0.45
933261	<i>AC2-137 C</i>	0.45
933291	<i>AC2-141 C</i>	29.3
933991	<i>AD1-023 C</i>	12.
934011	<i>AD1-025 C O1</i>	16.84
934061	<i>AD1-033 C O1</i>	7.2
934141	<i>AD1-041 C O1</i>	5.31
934211	<i>AD1-048 C</i>	2.51
934391	<i>AD1-063 C</i>	1.62
934521	<i>AD1-076 C O1</i>	49.79
934541	<i>AD1-078 C</i>	1.95
934571	<i>AD1-082 C O1</i>	7.44
934781	<i>AD1-105 C</i>	8.96
<i>LTF</i>	<i>AD1-120</i>	9.62

<i>LTF</i>	<i>ADI-121</i>	<i>9.6</i>
<i>935111</i>	<i>ADI-144 C</i>	<i>1.66</i>
<i>935161</i>	<i>ADI-151 C OI</i>	<i>16.08</i>
<i>935211</i>	<i>ADI-156 C</i>	<i>2.07</i>
<i>LTF</i>	<i>CARR</i>	<i>1.15</i>
<i>LTF</i>	<i>CBM-S1</i>	<i>13.13</i>
<i>LTF</i>	<i>CBM-S2</i>	<i>22.71</i>
<i>LTF</i>	<i>CBM-W1</i>	<i>28.25</i>
<i>LTF</i>	<i>CBM-W2</i>	<i>70.09</i>
<i>LTF</i>	<i>CIN</i>	<i>6.65</i>
<i>LTF</i>	<i>CPLE</i>	<i>6.81</i>
<i>LTF</i>	<i>IPL</i>	<i>4.24</i>
<i>LTF</i>	<i>LGEE</i>	<i>1.46</i>
<i>LTF</i>	<i>MEC</i>	<i>14.54</i>
<i>LTF</i>	<i>MECS</i>	<i>5.84</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.91</i>
<i>297087</i>	<i>V2-040</i>	<i>0.16</i>
<i>LTF</i>	<i>WEC</i>	<i>1.78</i>
<i>918691</i>	<i>AA1-083</i>	<i>0.82</i>
<i>919211</i>	<i>AA1-145</i>	<i>14.01</i>
<i>LTF</i>	<i>AA2-074</i>	<i>4.63</i>
<i>930121</i>	<i>AB1-027 C</i>	<i>0.56</i>
<i>923801</i>	<i>AB2-015 C OI</i>	<i>7.96</i>
<i>923831</i>	<i>AB2-022 C</i>	<i>2.18</i>
<i>924061</i>	<i>AB2-050</i>	<i>0.82</i>
<i>924241</i>	<i>AB2-068 OI</i>	<i>211.51</i>
<i>924511</i>	<i>AB2-100 C</i>	<i>10.34</i>
<i>924811</i>	<i>AB2-134 C OI</i>	<i>12.83</i>
<i>925051</i>	<i>AB2-160 C OI</i>	<i>5.41</i>
<i>925061</i>	<i>AB2-161 C OI</i>	<i>3.26</i>
<i>925281</i>	<i>AB2-186 C</i>	<i>0.57</i>
<i>925291</i>	<i>AB2-188 C OI</i>	<i>2.19</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>20.02</i>
<i>925861</i>	<i>AC1-065 C</i>	<i>3.39</i>
<i>926291</i>	<i>AC1-107</i>	<i>319.26</i>
<i>926411</i>	<i>AC1-112 C</i>	<i>0.44</i>
<i>926551</i>	<i>AC1-134</i>	<i>9.84</i>
<i>926751</i>	<i>AC1-161 C</i>	<i>29.3</i>
<i>926781</i>	<i>AC1-164 C</i>	<i>41.54</i>

<i>927041</i>	<i>ACI-191 C</i>	<i>9.89</i>
<i>927221</i>	<i>ACI-216 C OI</i>	<i>9.79</i>

Appendix 2

(DVP - DVP) The 6BERMUDA-6CHESTF A 230 kV line (from bus 314278 to bus 314286 ckt 1) loads from 93.45% to 104.98% (AC power flow) of its load dump rating (549 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 211T2124'. This project contributes approximately 63.98 MW to the thermal violation.

CONTINGENCY 'DVP_P4-2: 211T2124' /*_ HOPEWELL
 OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1 /*L211
 HOPEWELL CHESTERFIELD
 OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1 /*L2124
 END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315120	1GRAVEL4	4.57
315121	1GRAVEL5	4.51
315122	1GRAVEL6	4.57
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315077	1HOPHCF1	9.4
315078	1HOPHCF2	9.4
315079	1HOPHCF3	9.4
315080	1HOPHCF4	14.26
315076	1HOPPOLC	6.69
315073	1STONECA	23.11
315116	1SURRY 1	45.24
934011	AD1-025 C O1	40.18
934012	AD1-025 E O1	23.8
935161	AD1-151 C O1	38.39
935162	AD1-151 E O1	25.59
LTF	CARR	0.16
LTF	CBM-S1	1.
LTF	CBM-S2	3.05
LTF	CBM-W1	0.66
LTF	CBM-W2	4.86
LTF	CIN	0.17
LTF	CPLE	1.04
LTF	DEARBORN	0.06
LTF	G-007	0.61
LTF	IPL	0.1

<i>LTF</i>	<i>LGEE</i>	<i>0.04</i>
<i>LTF</i>	<i>MEC</i>	<i>0.69</i>
<i>LTF</i>	<i>O-066</i>	<i>2.05</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.13</i>
<i>292791</i>	<i>U1-032 E</i>	<i>12.03</i>
<i>LTF</i>	<i>WEC</i>	<i>0.05</i>
<i>914231</i>	<i>Y2-077</i>	<i>3.78</i>
<i>924811</i>	<i>AB2-134 C OI</i>	<i>30.63</i>
<i>924812</i>	<i>AB2-134 E OI</i>	<i>30.11</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>47.77</i>
<i>925332</i>	<i>AB2-190 E</i>	<i>20.47</i>
<i>927221</i>	<i>AC1-216 C OI</i>	<i>23.37</i>
<i>927222</i>	<i>AC1-216 E OI</i>	<i>18.38</i>

Appendix 3

(DVP - DVP) The 6HOPEWELL-6BERMUDA 230 kV line (from bus 314303 to bus 314278 ckt 1) loads from 93.47% to 105.0% (AC power flow) of its load dump rating (549 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 211T2124'. This project contributes approximately 63.98 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: 211T2124'                /*_ HOPEWELL
  OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1    /*L211
HOPEWELL CHESTERFIELD
  OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1    /*L2124
END
```

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315120	1GRAVEL4	4.57
315121	1GRAVEL5	4.51
315122	1GRAVEL6	4.57
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315077	1HOPHCF1	9.4
315078	1HOPHCF2	9.4
315079	1HOPHCF3	9.4
315080	1HOPHCF4	14.26
315076	1HOPPOLC	6.69
315073	1STONECA	23.11
315116	1SURRY 1	45.24
934011	AD1-025 C O1	40.18
934012	AD1-025 E O1	23.8
935161	AD1-151 C O1	38.39
935162	AD1-151 E O1	25.59
LTF	CARR	0.16
LTF	CBM-S1	1.
LTF	CBM-S2	3.05
LTF	CBM-W1	0.66
LTF	CBM-W2	4.86
LTF	CIN	0.17
LTF	CPLE	1.04
LTF	DEARBORN	0.06
LTF	G-007	0.61
LTF	IPL	0.1

<i>LTF</i>	<i>LGEE</i>	<i>0.04</i>
<i>LTF</i>	<i>MEC</i>	<i>0.69</i>
<i>LTF</i>	<i>O-066</i>	<i>2.05</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.13</i>
<i>292791</i>	<i>U1-032 E</i>	<i>12.03</i>
<i>LTF</i>	<i>WEC</i>	<i>0.05</i>
<i>914231</i>	<i>Y2-077</i>	<i>3.78</i>
<i>924811</i>	<i>AB2-134 C OI</i>	<i>30.63</i>
<i>924812</i>	<i>AB2-134 E OI</i>	<i>30.11</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>47.77</i>
<i>925332</i>	<i>AB2-190 E</i>	<i>20.47</i>
<i>927221</i>	<i>AC1-216 C OI</i>	<i>23.37</i>
<i>927222</i>	<i>AC1-216 E OI</i>	<i>18.38</i>

Appendix 4

(DVP - DVP) The 6FOUR RIVERS-6STJOHN 230 kV line (from bus 314212 to bus 314150 ckt 1) loads from 122.7% to 123.76% (AC power flow) of its emergency rating (749 MVA) for the single line contingency outage of 'DVP_P1-2: LN 574'. This project contributes approximately 8.92 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 574'

OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1

/* 8ELMONT

500.00 - 8LDYSMTH 500.00

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315053	1BELMED1	2.22
315054	1BELMED2	2.22
315055	1BELMED3	1.84
315058	1CHESTF3	2.32
315059	1CHESTF4	3.76
315060	1CHESTF5	7.58
315065	1CHESTF6	15.47
315061	1CHESTG7	2.97
315063	1CHESTG8	2.94
315062	1CHESTS7	1.35
315064	1CHESTS8	1.51
315067	1DARBY 1	2.19
315068	1DARBY 2	2.19
315069	1DARBY 3	2.2
315070	1DARBY 4	2.2
315043	1FOUR RIVERA	7.2
315044	1FOUR RIVERB	5.57
315045	1FOUR RIVERC	7.2
315046	1FOUR RIVERD	5.57
315047	1FOUR RIVERE	5.57
315048	1FOUR RIVERF	7.2
315074	1HOPCGN1	4.73
315075	1HOPCGN2	4.67
315083	1SPRUNCA	6.19
315084	1SPRUNCB	6.19
315085	1SPRUNCC	4.59
315086	1SPRUNCD	4.59

314315	3LOCKS E	0.69
314309	6IRON208	0.35
314236	6NRTHEST	0.16
314250	6ROCKVILLE	0.18
932501	AC2-070 C	1.19
933061	AC2-130	1.42
933071	AC2-131 1	0.96
933081	AC2-131 2	0.44
933111	AC2-132 1	0.51
933121	AC2-132 2	0.26
933261	AC2-137 C	0.27
934011	AD1-025 C O1	8.92
934211	AD1-048 C	1.56
LTF	AD1-120	4.
LTF	AD1-121	3.99
935161	AD1-151 C O1	8.52
LTF	CARR	0.42
LTF	CBM-S1	5.86
LTF	CBM-S2	9.48
LTF	CBM-W1	13.67
LTF	CBM-W2	31.68
LTF	CIN	3.19
LTF	CPL	2.81
LTF	IPL	2.03
LTF	LGEE	0.7
LTF	MEC	6.78
LTF	MECS	3.07
LTF	RENSSELAER	0.33
297087	V2-040	0.12
LTF	WEC	0.85
918691	AA1-083	1.26
919211	AA1-145	21.49
LTF	AA2-074	1.91
930121	AB1-027 C	0.38
924061	AB2-050	1.26
924241	AB2-068 O1	107.13
924811	AB2-134 C O1	6.8
925051	AB2-160 C O1	3.01
925331	AB2-190 C	10.6

<i>926291</i>	<i>ACI-107</i>	<i>161.71</i>
<i>926411</i>	<i>ACI-112 C</i>	<i>0.3</i>
<i>926551</i>	<i>ACI-134</i>	<i>15.1</i>
<i>926781</i>	<i>ACI-164 C</i>	<i>23.17</i>
<i>927041</i>	<i>ACI-191 C</i>	<i>6.7</i>
<i>927221</i>	<i>ACI-216 C O1</i>	<i>5.19</i>

Appendix 5

(DVP - DVP) The 8ELMONT 500/230 kV transformer (from bus 314218 to bus 314908 ckt 1) loads from 104.32% to 105.75% (AC power flow) of its load dump rating (1051 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: H2T557'. This project contributes approximately 33.17 MW to the thermal violation.

CONTINGENCY 'DVP_P4-2: H2T557' /* ELMONT
 OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO
 CHICKAHOMINY (LINE 557)
 OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1
 /*CHICKAHOMINY 500-230 (TX#1)
 OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2 /*ELMONT 500-
 230 (TX#2)
 END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315067	1DARBY 1	5.32
315068	1DARBY 2	5.32
315069	1DARBY 3	5.34
315070	1DARBY 4	5.35
315043	1FOUR RIVERA	7.07
315044	1FOUR RIVERB	5.47
315045	1FOUR RIVERC	7.07
315046	1FOUR RIVERD	5.47
315047	1FOUR RIVERE	5.47
315048	1FOUR RIVERF	7.07
315074	1HOPCGN1	11.29
315075	1HOPCGN2	11.14
315083	1SPRUNCA	14.96
315084	1SPRUNCB	14.96
315085	1SPRUNCC	11.09
315086	1SPRUNCD	11.09
315073	1STONECA	9.36
315090	1YORKTN1	30.94
315091	1YORKTN2	32.11
314566	3CRESWEL	2.11
314315	3LOCKS E	1.65
314539	3UNCAMP	2.19
314541	3WATKINS	0.61

314229	6MT RD221	1.41
314236	6NRTHEST	0.39
314189	6PAPERMILL	8.82
314594	6PLYMOTH	0.73
314250	6ROCKVILLE	0.42
314256	6ROCKVILLE E	1.15
314648	6SUNBURY	0.81
314651	6WINFALL	1.59
932041	AC2-012 C	9.63
932042	AC2-012 E	15.7
932501	AC2-070 C	2.91
932502	AC2-070 E	1.2
932531	AC2-073 C	3.1
932532	AC2-073 E	1.56
932581	AC2-078 C	4.75
932582	AC2-078 E	7.76
932591	AC2-079 C	5.8
932592	AC2-079 E	9.46
932831	AC2-110 C	1.74
932832	AC2-110 E	2.85
933061	AC2-130	3.48
933071	AC2-131 1	2.36
933081	AC2-131 2	1.07
933111	AC2-132 1	1.24
933121	AC2-132 2	0.63
933261	AC2-137 C	0.66
933262	AC2-137 E	2.05
933272	AC2-138 E	1.09
933291	AC2-141 C	27.17
933292	AC2-141 E	11.6
933732	AC2-196 E	1.1
933991	AD1-023 C	11.29
933992	AD1-023 E	6.15
934011	AD1-025 C O1	20.83
934012	AD1-025 E O1	12.34
934061	AD1-033 C O1	6.96
934062	AD1-033 E O1	4.64
934141	AD1-041 C O1	6.74
934142	AD1-041 E O1	4.49

934211	AD1-048 C	3.82
934212	AD1-048 E	1.93
934391	AD1-063 C	2.1
934392	AD1-063 E	1.4
934521	AD1-076 C O1	46.91
934522	AD1-076 E O1	23.89
934571	AD1-082 C O1	8.27
934572	AD1-082 E O1	4.72
934781	AD1-105 C	8.09
934782	AD1-105 E	5.62
LTF	AD1-120	5.94
LTF	AD1-121	5.9
935111	AD1-144 C	1.68
935112	AD1-144 E	0.92
935161	AD1-151 C O1	19.9
935162	AD1-151 E O1	13.27
935211	AD1-156 C	2.56
935212	AD1-156 E	1.71
LTF	CARR	0.67
LTF	CBM-S1	3.89
LTF	CBM-S2	13.86
LTF	CBM-W1	0.41
LTF	CBM-W2	18.21
LTF	CIN	0.16
LTF	CLIFTY	1.55
LTF	CPLE	4.76
LTF	DEARBORN	0.46
LTF	G-007	2.3
LTF	IPL	0.08
LTF	LGEE	0.05
LTF	MEC	2.05
LTF	O-066	7.7
LTF	RENSSELAER	0.53
292791	U1-032 E	4.88
297087	V2-040	0.29
901082	W1-029E	41.84
LTF	WEC	0.07
907092	X1-038 E	5.48
913392	Y1-086 E	1.99

916042	Z1-036 E	40.86
916192	Z1-068 E	1.76
917122	Z2-027 E	0.96
918691	AA1-083	1.24
919152	AA1-139 E	5.92
919211	AA1-145	21.11
LTF	AA2-074	3.24
920042	AA2-088 E	9.16
920692	AA2-178 E	3.61
930121	AB1-027 C	0.93
930122	AB1-027 E	1.89
923801	AB2-015 C O1	7.73
923802	AB2-015 E O1	6.34
923831	AB2-022 C	2.1
923832	AB2-022 E	1.13
923842	AB2-024 E	1.49
923852	AB2-025 E	1.09
924061	AB2-050	1.24
924241	AB2-068 O1	178.04
924511	AB2-100 C	10.49
924512	AB2-100 E	5.17
924811	AB2-134 C O1	15.88
924812	AB2-134 E O1	15.61
925051	AB2-160 C O1	7.18
925052	AB2-160 E O1	11.71
925061	AB2-161 C O1	3.63
925062	AB2-161 E O1	5.92
925281	AB2-186 C	0.55
925282	AB2-186 E	0.24
925291	AB2-188 C O1	2.08
925292	AB2-188 E O1	0.93
925331	AB2-190 C	24.76
925332	AB2-190 E	10.61
925522	AC1-027 E	1.07
925861	AC1-065 C	4.36
925862	AC1-065 E	7.11
926291	AC1-107	268.74
926411	AC1-112 C	0.72
926412	AC1-112 E	1.93

926472	ACI-118 E	1.07
926551	ACI-134	14.83
926662	ACI-147 E	1.25
926751	ACI-161 C	27.17
926752	ACI-161 E	11.6
926781	ACI-164 C	58.43
926782	ACI-164 E	26.25
927041	ACI-191 C	17.46
927042	ACI-191 E	8.7
927221	ACI-216 C OI	12.12
927222	ACI-216 E OI	9.53

Appendix 6

(DVP - DVP) The 6PRGEORG 230/115 kV transformer (from bus 314269 to bus 314291 ckt 1) loads from 110.51% to 123.81% (AC power flow) of its load dump rating (220 MVA) for the tower line contingency outage of 'DVP_P7-1: LN 211-228'. This project contributes approximately 29.72 MW to the thermal violation.

CONTINGENCY 'DVP_P7-1: LN 211-228'

OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B
230.00 - 6HOPEWLL 230.00

OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA
230.00 - 6CHSTF A 230.00

OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA
230.00 - 6HOPEWLL 230.00

OPEN BUS 314278 /* ISLAND

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315120	1GRAVEL4	2.09
315121	1GRAVEL5	2.07
315122	1GRAVEL6	2.09
315074	1HOPCGN1	13.02
315075	1HOPCGN2	12.85
315077	1HOPHCF1	4.39
315078	1HOPHCF2	4.39
315079	1HOPHCF3	4.39
315080	1HOPHCF4	6.66
315076	1HOPPOLC	3.12
315073	1STONECA	10.8
315116	1SURRY 1	20.72
934011	AD1-025 C O1	18.66
934012	AD1-025 E O1	11.06
935161	AD1-151 C O1	17.83
935162	AD1-151 E O1	11.89
LTF	AMIL	0.03
LTF	BAYOU	0.07
LTF	BIG_CAJUN1	0.11
LTF	BIG_CAJUN2	0.22
LTF	BLUEG	0.19
LTF	CALDERWOOD	0.03

<i>LTF</i>	<i>CANNELTON</i>	<i>0.03</i>
<i>LTF</i>	<i>CARR</i>	<i>0.06</i>
<i>LTF</i>	<i>CATAWBA</i>	<i>< 0.01</i>
<i>LTF</i>	<i>CBM-S2</i>	<i>0.03</i>
<i>LTF</i>	<i>CELEVELAND</i>	<i>< 0.01</i>
<i>LTF</i>	<i>CHEOAH</i>	<i>0.03</i>
<i>LTF</i>	<i>CHILHOWEE</i>	<i>0.01</i>
<i>LTF</i>	<i>CHOCTAW</i>	<i>0.07</i>
<i>LTF</i>	<i>CLIFTY</i>	<i>0.81</i>
<i>LTF</i>	<i>COTTONWOOD</i>	<i>0.3</i>
<i>LTF</i>	<i>CPLE</i>	<i>0.04</i>
<i>LTF</i>	<i>DEARBORN</i>	<i>0.11</i>
<i>LTF</i>	<i>EDWARDS</i>	<i>0.06</i>
<i>LTF</i>	<i>ELMERSMITH</i>	<i>0.09</i>
<i>LTF</i>	<i>FARMERCITY</i>	<i>0.03</i>
<i>LTF</i>	<i>G-007</i>	<i>0.18</i>
<i>LTF</i>	<i>GIBSON</i>	<i>0.06</i>
<i>LTF</i>	<i>MORGAN</i>	<i>0.12</i>
<i>LTF</i>	<i>NEWTON</i>	<i>0.14</i>
<i>LTF</i>	<i>O-066</i>	<i>0.62</i>
<i>LTF</i>	<i>PRAIRIE</i>	<i>0.24</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.05</i>
<i>LTF</i>	<i>ROWAN</i>	<i>< 0.01</i>
<i>LTF</i>	<i>SANTEETLA</i>	<i>< 0.01</i>
<i>LTF</i>	<i>SMITHLAND</i>	<i>0.02</i>
<i>LTF</i>	<i>TATANKA</i>	<i>0.06</i>
<i>LTF</i>	<i>TILTON</i>	<i>0.07</i>
<i>LTF</i>	<i>TRIMBLE</i>	<i>0.04</i>
<i>LTF</i>	<i>TVA</i>	<i>0.06</i>
<i>292791</i>	<i>U1-032 E</i>	<i>5.62</i>
<i>LTF</i>	<i>UNIONPOWER</i>	<i>0.03</i>
<i>914231</i>	<i>Y2-077</i>	<i>1.77</i>
<i>924811</i>	<i>AB2-134 C O1</i>	<i>14.23</i>
<i>924812</i>	<i>AB2-134 E O1</i>	<i>13.99</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>22.19</i>
<i>925332</i>	<i>AB2-190 E</i>	<i>9.51</i>
<i>927221</i>	<i>AC1-216 C O1</i>	<i>10.86</i>
<i>927222</i>	<i>AC1-216 E O1</i>	<i>8.54</i>

Appendix 7

(DVP - DVP) The 6CHESTF B-6BASIN 230 kV line (from bus 314287 to bus 314276 ckt 1) loads from 113.33% to 115.95% (AC power flow) of its emergency rating (449 MVA) for the single line contingency outage of 'DVP_P1-2: LN 217'. This project contributes approximately 11.78 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 217'

OPEN BRANCH FROM BUS 314225 TO BUS 314227 CKT 1 /* 6CHARCTY
230.00 - 6LAKESD 230.00

OPEN BRANCH FROM BUS 314225 TO BUS 314228 CKT 1 /* 6CHARCTY
230.00 - 6MESSER 230.00

OPEN BRANCH FROM BUS 314228 TO BUS 314287 CKT 1 /* 6MESSER
230.00 - 6CHSTF B 230.00

OPEN BUS 314225 /* ISLAND

OPEN BUS 314228 /* ISLAND

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315065	1CHESTF6	49.45
315139	1GASTONA	1.85
315141	1GASTONB	1.85
315119	1GRAVEL3	1.54
315120	1GRAVEL4	1.56
315121	1GRAVEL5	1.54
315122	1GRAVEL6	1.56
315117	1GRAVELC	0.53
315074	1HOPCGN1	7.6
315075	1HOPCGN2	7.51
315077	1HOPHCF1	2.56
315078	1HOPHCF2	2.56
315079	1HOPHCF3	2.56
315080	1HOPHCF4	3.89
315076	1HOPPOLC	1.83
315116	1SURRY 1	15.45
314314	3LOCKS	0.09
314315	3LOCKS E	1.06
932581	AC2-078 C	3.67
932591	AC2-079 C	2.96
932631	AC2-084 C	3.3

934011	AD1-025 C O1	11.78
934201	AD1-047 C	3.96
934331	AD1-057 C O1	4.03
934571	AD1-082 C O1	5.16
935161	AD1-151 C O1	11.25
935211	AD1-156 C	2.59
LTF	CARR	0.18
LTF	CBM-S1	2.56
LTF	CBM-S2	6.06
LTF	CBM-W1	4.15
LTF	CBM-W2	13.28
LTF	CIN	0.95
LTF	CPLE	1.99
LTF	IPL	0.6
LTF	LGEE	0.21
LTF	MEC	2.43
LTF	MECS	0.63
LTF	RENSSELAER	0.15
LTF	WEC	0.26
914231	Y2-077	1.03
LTF	AA2-074	1.35
930861	AB1-132 C	6.75
931231	AB1-173 C	1.12
931241	AB1-173AC	1.12
923801	AB2-015 C O1	3.33
923851	AB2-025 C	0.4
923911	AB2-031 C O1	1.11
923991	AB2-040 C O1	3.63
924501	AB2-099 C	0.22
924511	AB2-100 C	7.19
924811	AB2-134 C O1	8.98
925051	AB2-160 C O1	4.6
925061	AB2-161 C O1	2.26
925171	AB2-174 C O1	3.57
925331	AB2-190 C	14.01
925821	AC1-061	< 0.01
926071	AC1-086 C	9.94
926201	AC1-098 C	2.32
926211	AC1-099 C	0.78

<i>927141</i>	<i>ACI-208 C</i>	<i>3.54</i>
<i>927221</i>	<i>ACI-216 C OI</i>	<i>6.85</i>

Appendix 8

(DVP - DVP) The 8CHCKAHM-8ELMONT 500 kV line (from bus 314903 to bus 314908 ckt 1) loads from 103.13% to 104.27% (AC power flow) of its load dump rating (3144 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 563T576'. This project contributes approximately 39.06 MW to the thermal violation.

CONTINGENCY 'DVP_P4-2: 563T576' /* MIDLOTHIAN 500 500 KV
 OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON
 500.00 - 8MDLTHAN 500.00
 OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN
 500.00 - 8NO ANNA 500.00
 END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315131	1EDGECEMA	11.78
315132	1EDGECEMB	11.78
315074	1HOPCGN1	10.5
315075	1HOPCGN2	10.37
315073	1STONECA	8.71
315233	1SURRY 2	67.1
315090	1YORKTN1	53.45
315091	1YORKTN2	55.47
315092	1YORKTN3	55.68
314557	3BETHEL C	1.05
314554	3BTLEBRO	1.02
314566	3CRESWEL	3.96
314572	3EMPORIA	0.55
314578	3HORNRTN	4.49
314582	3KELFORD	1.2
314315	3LOCKS E	1.42
314603	3SCOT NK	4.62
314617	3TUNIS	1.26
314539	3UNCAMP	3.89
314541	3WATKINS	1.08
314620	6CASHIE	1.33
314574	6EVERETS	3.37
314189	6PAPERMILL	10.95
314594	6PLYMOTH	1.37
314648	6SUNBURY	1.55

314651	6WINFALL	3.04
932041	AC2-012 C	18.53
932042	AC2-012 E	30.23
932531	AC2-073 C	3.89
932532	AC2-073 E	1.96
932581	AC2-078 C	5.46
932582	AC2-078 E	8.91
932591	AC2-079 C	9.26
932592	AC2-079 E	15.1
932631	AC2-084 C	12.06
932632	AC2-084 E	5.94
932831	AC2-110 C	2.14
932832	AC2-110 E	3.5
933061	AC2-130	3.11
933071	AC2-131 1	2.1
933081	AC2-131 2	0.96
933111	AC2-132 1	1.11
933121	AC2-132 2	0.57
933262	AC2-137 E	1.87
933272	AC2-138 E	1.18
933291	AC2-141 C	59.42
933292	AC2-141 E	25.37
933732	AC2-196 E	2.17
933991	AD1-023 C	20.86
933992	AD1-023 E	11.36
934011	AD1-025 C O1	24.53
934012	AD1-025 E O1	14.53
934061	AD1-033 C O1	13.67
934062	AD1-033 E O1	9.12
934141	AD1-041 C O1	8.48
934142	AD1-041 E O1	5.65
934201	AD1-047 C	10.68
934202	AD1-047 E	7.12
934211	AD1-048 C	2.72
934212	AD1-048 E	1.37
934231	AD1-050 C	5.54
934232	AD1-050 E	3.03
934331	AD1-057 C O1	13.1
934332	AD1-057 E O1	6.99

934391	AD1-063 C	2.63
934392	AD1-063 E	1.75
934521	AD1-076 C O1	87.16
934522	AD1-076 E O1	44.38
934571	AD1-082 C O1	11.6
934572	AD1-082 E O1	6.62
934611	AD1-087 C O1	10.29
934612	AD1-087 E O1	4.81
LTF	AD1-120	12.9
LTF	AD1-121	12.83
935111	AD1-144 C	3.05
935112	AD1-144 E	1.67
935161	AD1-151 C O1	23.44
935162	AD1-151 E O1	15.62
935171	AD1-152 C O1	9.54
935172	AD1-152 E O1	6.36
935211	AD1-156 C	2.54
935212	AD1-156 E	1.69
LTF	CARR	0.99
LTF	CBM-S1	12.84
LTF	CBM-S2	30.25
LTF	CBM-W1	20.5
LTF	CBM-W2	66.57
LTF	CIN	4.72
LTF	CPL	9.8
LTF	G-007	4.19
LTF	IPL	2.99
LTF	LGEE	1.04
LTF	MEC	12.13
LTF	MECS	2.99
LTF	O-066	13.99
LTF	RENSSELAER	0.79
292791	U1-032 E	4.54
900672	V4-068 E	0.45
901082	W1-029E	79.93
LTF	WEC	1.31
907092	X1-038 E	9.71
913392	Y1-086 E	3.84
916042	Z1-036 E	77.7

916192	Z1-068 E	3.41
916302	Z1-086 E	13.58
917122	Z2-027 E	1.86
917332	Z2-043 E	1.44
917342	Z2-044 E	0.75
917512	Z2-088 E OPI	5.12
918492	AA1-063AE OP	5.71
918512	AA1-065 E OP	6.76
918532	AA1-067 E	1.01
918562	AA1-072 E	0.24
919152	AA1-139 E	11.57
919692	AA2-053 E	5.19
919702	AA2-057 E	4.68
LTF	AA2-074	6.66
920042	AA2-088 E	16.01
920592	AA2-165 E	0.62
920672	AA2-174 E	0.6
920692	AA2-178 E	6.78
930402	AB1-081 E	4.87
930861	AB1-132 C	19.1
930862	AB1-132 E	8.19
931231	AB1-173 C	3.
931232	AB1-173 E	1.4
931241	AB1-173AC	3.
931242	AB1-173AE	1.4
923801	AB2-015 C OI	13.67
923802	AB2-015 E OI	11.21
923831	AB2-022 C	4.06
923832	AB2-022 E	2.19
923842	AB2-024 E	1.84
923852	AB2-025 E	1.43
923911	AB2-031 C OI	2.98
923912	AB2-031 E OI	1.47
923941	AB2-035 C	0.44
923942	AB2-035 E	0.19
923991	AB2-040 C OI	9.79
923992	AB2-040 E OI	8.01
924151	AB2-059 C OI	13.41
924152	AB2-059 E OI	6.91

924241	AB2-068 OI	619.79
924391	AB2-088 C	0.57
924392	AB2-088 E	0.27
924401	AB2-089 C	2.51
924402	AB2-089 E	1.29
924491	AB2-098 C	0.79
924492	AB2-098 E	0.34
924501	AB2-099 C	0.88
924502	AB2-099 E	0.38
924511	AB2-100 C	15.26
924512	AB2-100 E	7.52
924811	AB2-134 C OI	18.7
924812	AB2-134 E OI	18.38
925051	AB2-160 C OI	6.17
925052	AB2-160 E OI	10.07
925061	AB2-161 C OI	5.09
925062	AB2-161 E OI	8.31
925121	AB2-169 C	9.77
925122	AB2-169 E	8.76
925171	AB2-174 C OI	9.32
925172	AB2-174 E OI	8.43
925281	AB2-186 C	1.05
925282	AB2-186 E	0.45
925291	AB2-188 C OI	3.9
925292	AB2-188 E OI	1.75
925331	AB2-190 C	29.17
925332	AB2-190 E	12.5
925522	AC1-027 E	2.08
925591	AC1-034 C	8.68
925592	AC1-034 E	6.55
925781	AC1-054 C	8.65
925782	AC1-054 E	3.98
925861	AC1-065 C	5.36
925862	AC1-065 E	8.75
926071	AC1-086 C	28.13
926072	AC1-086 E	12.8
926201	AC1-098 C	8.46
926202	AC1-098 E	5.04
926211	AC1-099 C	2.83

926212	ACI-099 E	1.66
926291	ACI-107	935.54
926662	ACI-147 E	2.41
926751	ACI-161 C	59.42
926752	ACI-161 E	25.37
926781	ACI-164 C	68.07
926782	ACI-164 E	30.58
927021	ACI-189 C	11.6
927022	ACI-189 E	5.78
927141	ACI-208 C	12.24
927142	ACI-208 E	5.43
927221	ACI-216 C OI	14.27
927222	ACI-216 E OI	11.22

Appendix 9

(DVP - DVP) The 8ELMONT-8LADYSMITH 500 kV line (from bus 314908 to bus 314911 ckt 1) loads from 144.36% to 145.44% (AC power flow) of its emergency rating (2442 MVA) for the single line contingency outage of 'DVP_P1-2: LN 576'. This project contributes approximately 30.47 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 576'

OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1

/* 8MDLTHAN

500.00 - 8NO ANNA 500.00

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315059	1CHESTF4	11.08
315060	1CHESTF5	23.49
315061	1CHESTG7	9.21
315063	1CHESTG8	9.1
315062	1CHESTS7	4.19
315064	1CHESTS8	4.67
315067	1DARBY 1	5.99
315068	1DARBY 2	6.
315069	1DARBY 3	6.02
315070	1DARBY 4	6.03
315074	1HOPCGN1	15.07
315075	1HOPCGN2	14.88
315083	1SPRUNCA	18.62
315084	1SPRUNCB	18.62
315085	1SPRUNCC	13.8
315086	1SPRUNCD	13.8
315233	1SURRY 2	58.73
315090	1YORKTN1	51.99
315091	1YORKTN2	53.95
315092	1YORKTN3	54.02
314315	3LOCKS E	2.22
314309	6IRON208	1.04
314236	6NRTHEST	0.43
314421	6WINCHST	0.34
932041	AC2-012 C	18.08
932501	AC2-070 C	3.15
932531	AC2-073 C	4.17

932581	AC2-078 C	7.15
932591	AC2-079 C	10.05
932631	AC2-084 C	13.79
932831	AC2-110 C	2.34
933061	AC2-130	4.4
933071	AC2-131 1	2.98
933081	AC2-131 2	1.35
933111	AC2-132 1	1.56
933121	AC2-132 2	0.8
933261	AC2-137 C	0.81
933291	AC2-141 C	54.31
933991	AD1-023 C	21.98
934011	AD1-025 C O1	30.47
934061	AD1-033 C O1	13.26
934141	AD1-041 C O1	9.1
934201	AD1-047 C	12.81
934211	AD1-048 C	4.48
934391	AD1-063 C	2.82
934521	AD1-076 C O1	91.25
934571	AD1-082 C O1	13.51
LTF	AD1-092	5.98
LTF	AD1-093	10.25
LTF	AD1-094	1.92
LTF	AD1-120	17.83
LTF	AD1-121	17.79
935111	AD1-144 C	3.05
935161	AD1-151 C O1	29.11
935211	AD1-156 C	3.7
LTF	CARR	1.65
LTF	CBM-S1	25.73
LTF	CBM-S2	42.16
LTF	CBM-W1	59.85
LTF	CBM-W2	139.14
LTF	CIN	13.9
LTF	CPL	12.51
LTF	IPL	8.88
LTF	LGEE	3.04
LTF	MEC	29.71
LTF	MECS	13.47

<i>LTF</i>	<i>RENSSELAER</i>	<i>1.32</i>
<i>297087</i>	<i>V2-040</i>	<i>0.28</i>
<i>LTF</i>	<i>WEC</i>	<i>3.73</i>
<i>LTF</i>	<i>Y3-032</i>	<i>8.74</i>
<i>LTF</i>	<i>Z1-043</i>	<i>14.66</i>
<i>LTF</i>	<i>AA2-074</i>	<i>8.51</i>
<i>930121</i>	<i>AB1-027 C</i>	<i>1.</i>
<i>930861</i>	<i>AB1-132 C</i>	<i>22.43</i>
<i>931231</i>	<i>AB1-173 C</i>	<i>3.6</i>
<i>931241</i>	<i>AB1-173AC</i>	<i>3.6</i>
<i>LTF</i>	<i>AB2-013</i>	<i>8.54</i>
<i>923801</i>	<i>AB2-015 C OI</i>	<i>14.55</i>
<i>923831</i>	<i>AB2-022 C</i>	<i>4.01</i>
<i>923911</i>	<i>AB2-031 C OI</i>	<i>3.57</i>
<i>923991</i>	<i>AB2-040 C OI</i>	<i>11.74</i>
<i>924241</i>	<i>AB2-068 OI</i>	<i>417.56</i>
<i>924501</i>	<i>AB2-099 C</i>	<i>0.96</i>
<i>924511</i>	<i>AB2-100 C</i>	<i>18.7</i>
<i>924811</i>	<i>AB2-134 C OI</i>	<i>23.22</i>
<i>925051</i>	<i>AB2-160 C OI</i>	<i>9.65</i>
<i>925061</i>	<i>AB2-161 C OI</i>	<i>5.93</i>
<i>925121</i>	<i>AB2-169 C</i>	<i>10.52</i>
<i>925171</i>	<i>AB2-174 C OI</i>	<i>11.24</i>
<i>925281</i>	<i>AB2-186 C</i>	<i>1.06</i>
<i>925291</i>	<i>AB2-188 C OI</i>	<i>4.02</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>36.23</i>
<i>925861</i>	<i>AC1-065 C</i>	<i>5.85</i>
<i>926071</i>	<i>AC1-086 C</i>	<i>33.03</i>
<i>926201</i>	<i>AC1-098 C</i>	<i>9.67</i>
<i>926211</i>	<i>AC1-099 C</i>	<i>3.24</i>
<i>926291</i>	<i>AC1-107</i>	<i>630.27</i>
<i>926411</i>	<i>AC1-112 C</i>	<i>0.78</i>
<i>926751</i>	<i>AC1-161 C</i>	<i>54.31</i>
<i>926781</i>	<i>AC1-164 C</i>	<i>75.69</i>
<i>927041</i>	<i>AC1-191 C</i>	<i>16.51</i>
<i>927141</i>	<i>AC1-208 C</i>	<i>14.19</i>
<i>927221</i>	<i>AC1-216 C OI</i>	<i>17.73</i>

Appendix 10

(DVP - DVP) The 8MDLTHAN-8NO ANNA 500 kV line (from bus 314914 to bus 314918 ckt 1) loads from 108.85% to 109.73% (AC power flow) of its emergency rating (2442 MVA) for the single line contingency outage of 'DVP_P1-2: LN 574'. This project contributes approximately 24.76 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 574'

OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1

/* 8ELMONT

500.00 - 8LDYSMTH 500.00

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315102	1BRUNSWICKG1	17.44
315103	1BRUNSWICKG2	17.44
315104	1BRUNSWICKG3	17.44
315105	1BRUNSWICKS1	36.23
315099	1CHESPKB	2.2
315131	1EDGECEMA	13.32
315132	1EDGECEMB	13.32
315108	1ELIZAR1	6.47
315109	1ELIZAR2	6.36
315110	1ELIZAR3	6.56
315074	1HOPCGN1	11.87
315075	1HOPCGN2	11.72
315083	1SPRUNCA	15.7
315084	1SPRUNCB	15.7
315085	1SPRUNCC	11.64
315086	1SPRUNCD	11.64
315090	1YORKTN1	41.69
315091	1YORKTN2	43.26
314315	3LOCKS E	1.85
932041	AC2-012 C	16.09
932501	AC2-070 C	2.04
932531	AC2-073 C	2.99
932581	AC2-078 C	6.2
932591	AC2-079 C	8.91
932631	AC2-084 C	13.04
932831	AC2-110 C	1.7
933061	AC2-130	3.23

933071	AC2-131 1	2.19
933081	AC2-131 2	0.99
933111	AC2-132 1	1.15
933121	AC2-132 2	0.59
933291	AC2-141 C	48.3
933501	AC2-165 C	16.08
933731	AC2-196 C	0.59
933991	AD1-023 C	20.22
934011	AD1-025 C O1	24.76
934061	AD1-033 C O1	11.87
934141	AD1-041 C O1	6.63
934201	AD1-047 C	12.15
934211	AD1-048 C	3.13
934231	AD1-050 C	6.68
934331	AD1-057 C O1	14.69
934391	AD1-063 C	2.02
934521	AD1-076 C O1	83.79
934571	AD1-082 C O1	11.88
934611	AD1-087 C O1	12.88
934621	AD1-088 C	18.45
LTF	AD1-092	4.84
LTF	AD1-093	8.29
LTF	AD1-094	1.55
LTF	AD1-120	17.13
LTF	AD1-121	17.07
935111	AD1-144 C	2.68
935161	AD1-151 C O1	23.65
935171	AD1-152 C O1	11.94
935211	AD1-156 C	3.27
935221	AD1-157 C	1.94
935231	AD1-160 C	1.42
LTF	CARR	1.37
LTF	CBM-S1	22.24
LTF	CBM-S2	40.32
LTF	CBM-W1	48.12
LTF	CBM-W2	119.21
LTF	CIN	11.13
LTF	CPL	12.29
LTF	IPL	7.1

<i>LTF</i>	<i>LGEE</i>	2.43
<i>LTF</i>	<i>MEC</i>	24.62
<i>LTF</i>	<i>MECS</i>	10.25
<i>LTF</i>	<i>RENSSELAER</i>	1.09
<i>LTF</i>	<i>WEC</i>	3.
<i>LTF</i>	<i>Z1-043</i>	11.83
916191	<i>Z1-068 C</i>	0.09
916301	<i>Z1-086 C</i>	106.1
<i>LTF</i>	<i>AA2-074</i>	8.36
930861	<i>AB1-132 C</i>	21.22
931231	<i>AB1-173 C</i>	3.42
931241	<i>AB1-173AC</i>	3.42
<i>LTF</i>	<i>AB2-013</i>	6.91
923801	<i>AB2-015 C O1</i>	13.29
923831	<i>AB2-022 C</i>	3.61
923911	<i>AB2-031 C O1</i>	3.39
923941	<i>AB2-035 C</i>	0.49
923991	<i>AB2-040 C O1</i>	11.14
924021	<i>AB2-043 C O1</i>	4.25
924151	<i>AB2-059 C O1</i>	15.15
924161	<i>AB2-060 C O1</i>	12.23
924241	<i>AB2-068 O1</i>	241.01
924301	<i>AB2-077 C O1</i>	2.7
924311	<i>AB2-078 C O1</i>	2.7
924321	<i>AB2-079 C O1</i>	2.7
924391	<i>AB2-088 C</i>	0.63
924401	<i>AB2-089 C</i>	3.03
924491	<i>AB2-098 C</i>	0.83
924501	<i>AB2-099 C</i>	0.89
924511	<i>AB2-100 C</i>	17.73
924811	<i>AB2-134 C O1</i>	18.87
925051	<i>AB2-160 C O1</i>	8.03
925061	<i>AB2-161 C O1</i>	5.21
925121	<i>AB2-169 C</i>	9.78
925171	<i>AB2-174 C O1</i>	10.67
925281	<i>AB2-186 C</i>	0.95
925291	<i>AB2-188 C O1</i>	3.67
925331	<i>AB2-190 C</i>	29.43
925521	<i>AC1-027 C</i>	0.66

<i>925591</i>	<i>ACI-034 C</i>	<i>9.81</i>
<i>925781</i>	<i>ACI-054 C</i>	<i>10.31</i>
<i>925861</i>	<i>ACI-065 C</i>	<i>4.24</i>
<i>926071</i>	<i>ACI-086 C</i>	<i>31.24</i>
<i>926201</i>	<i>ACI-098 C</i>	<i>9.15</i>
<i>926211</i>	<i>ACI-099 C</i>	<i>3.06</i>
<i>926271</i>	<i>ACI-105 C</i>	<i>7.53</i>
<i>926291</i>	<i>ACI-107</i>	<i>363.79</i>
<i>926751</i>	<i>ACI-161 C</i>	<i>48.3</i>
<i>926761</i>	<i>ACI-162 C</i>	<i>38.24</i>
<i>926781</i>	<i>ACI-164 C</i>	<i>51.58</i>
<i>927021</i>	<i>ACI-189 C</i>	<i>12.56</i>
<i>927141</i>	<i>ACI-208 C</i>	<i>13.45</i>
<i>927221</i>	<i>ACI-216 C OI</i>	<i>14.4</i>

***Generation Interconnection
Feasibility Study Report***

For

***PJM Generation Interconnection Request
Queue Position AD1-025***

***Hopewell – Surry 230kV
94.2 MW Capacity / 150 MW Energy***

February / 2018

Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between Spring Grove Solar II, LLC, the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Virginia Electric and Power Company (VEPCO).

Preface

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

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

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

General

The IC has proposed a solar generating facility located in Spring Grove, VA (Surry County). The installed facilities will have a total capability of 150 MW with 94.2 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is 9/30/2019. **This study does not imply an ITO commitment to this in-service date.**

Point of Interconnection

AD1-025 will interconnect with the ITO transmission system at one of the following points of interconnection:

Option 1 will connect via a new ring bus position in the AB2-134 switching station that connects on the Hopewell – Surry 230kV line # 121

Option 2 will connect via a new three breaker ring bus switching station that connects on the Hopewell - Surry 230kV line # 240.

Cost Summary

The AD1-025 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$1,800,000
Direct Connection Network Upgrades	\$0
Non Direct Connection Network Upgrades	\$1,200,000
Total Costs	\$3,000,000

In addition, the AD1-025 project may be responsible for a contribution to the following costs:

Description	Total Cost
New System Upgrades	\$ 54,925,000
Previously Identified Upgrades	\$224,690,000
Total Costs	\$279,615,000

Cost allocations for these upgrades will be provided in the System Impact Study Report.

Note: PJM Open Access Transmission Tariff (OATT) section 217.3A outline cost allocation rules. The rules are further clarified in PJM Manual 14A Attachment B. For New System Upgrades, the cost allocation rule differ depending on whether the minimum amount of upgrades to resolve a single reliability criteria violation will cost less than \$5,000,000. For upgrades estimated to cost less than \$5,000,000 the allocation of costs will not occur outside of the Queue in which the need for the Network Upgrade was identified. Cost allocation within the Queue will be contingent each Queue projects Distribution Factor on the overloaded facility. For upgrades estimated to cost \$5,000,000 or greater the allocation of costs will start with the first Queue project to cause the need for the upgrade. Later queue projects will receive cost allocation contingent on their contribution to the violation and are allocated to the queues that have not closed less than 5 years following the execution of the first Interconnection Service Agreement which identifies the need for this upgrade.

The Feasibility Study is used to make a preliminary determination of the type and scope of Attachment Facilities, Local Upgrades, and Network Upgrades that will be necessary to accommodate the Interconnection Request and to provide the Interconnection Customer a preliminary estimate of the time that will be required to construct any necessary facilities and upgrades and the Interconnection Customer's cost responsibility. The System Impact Study provides refined and comprehensive estimates of cost responsibility and construction lead times for new facilities and system upgrades. Facilities Studies will include, commensurate with the degree of engineering specificity as provided in the Facilities Study Agreement, good faith estimates of the cost, determined in accordance with Section 217 of the Tariff,

- (a) to be charged to each affected New Service Customer for the Facilities and System Upgrades that are necessary to accommodate this queue project;
- (b) the time required to complete detailed design and construction of the facilities and upgrades;
and
- (c) a description of any site-specific environmental issues or requirements that could reasonably be anticipated to affect the cost or time required to complete construction of such facilities and upgrades.

Attachment Facilities

Generation Substation: Install metering and associated protection equipment. Estimated Cost \$600,000.

Transmission: Build approximately 0.5 miles of 230 kV Line. Estimated Cost \$1,200,000

The estimated total cost of the Attachment Facilities is \$1,800,000. It is estimated to take 30-36 months to complete this work. These preliminary cost estimates are based on typical engineering costs. A more detailed engineering cost estimates are normally done when the IC provides an exact site plan location for the generation substation during the Facility Study phase. These costs do not include CIAC Tax Gross-up. The single line is shown below in Attachment 1.

Direct Connection Cost Estimate

None

Non-Direct Connection Cost Estimate

- Substation: Add one 230 kV circuit breaker at AB2-134 Substation to interconnect the proposed AD1-025 Project and associated equipment. The arrangement in the substation will be as shown in Attachment 1. The estimated cost of this work scope is \$1,200,000 and it is estimated to take 24-36 months to complete this work.

Remote Terminal Work: During the Facilities Study, ITO's System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO's protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

System Reinforcement

Violation #	Upgrade Description	Upgrade Cost
# 1	Wreck and rebuild the Hopewell – Chesterfield 230 kV line #211 of 11 miles to increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	\$27,500,000
# 2 – 4, 8, 11	Wreck and rebuild the Hopewell – Bermuda – Chesterfield 230 kV line #228 of 11 miles increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	\$27,425,000
# 6	Replace the Elmont 500/230 kV transformer #1 increase its line rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to take 24-30 months to engineer and construct.	\$17,500,000
# 7	Add a second Prince George 230/115 kV transformer to increase its rating to 276.8 MVA (normal), 292.4 MVA (emergency), and 328.7 MVA (load dump). Estimated to take 24-30 months to engineer and construct.	\$5,500,000
# 16 - 19	Wreck and rebuild the Elmont - Ladysmith 500kV line #574 (26 miles) to a minimum rating of 4453 MVA. Estimated time 36-48 months to engineer and construct.	\$78,300,000
# 20, 21	Wreck and rebuild the Midlothian – North Anna 500 kV line #576 of 41 miles increase its line rating to 4453 MVA (normal), 4453 MVA (emergency), and 5121 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	\$123,390,000
Total Network Upgrades		\$279,615,000

Interconnection Customer Requirements

ITO's Facility Connection Requirements as posted on PJM's website

<http://www.pjm.com/~media/planning/plan-standards/private-dominion/facility-connection-requirements1.ashx>

An Interconnection Customer entering the New Services Queue on or after October 1, 2012 with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

Voltage Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Frequency Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Reactive Power - The Generation Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

Revenue Metering and SCADA Requirements

PJM Requirements

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

Meteorological Data Reporting Requirement

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

Option One

Network Impacts

The Queue Project AD1-025 was evaluated as a 150.0 MW (Capacity 94.2 MW) injection tapping the Hopewell to Surry 230kV line #212 in the ITO area. Project AD1-025 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD1-025 was studied with a commercial probability of 53%. Potential network impacts were as follows:

PJM assessed the impact of the proposed Queue Project as an injection into the ITO, for compliance with NERC Reliability Criteria. The system was assessed using the summer 2021 RTEP case. When performing analysis, ITO Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under single contingency (normal and stressed system conditions). A full listing of the ITO’s Planning Criteria and interconnection requirements can be found in the ITO’s Facility Connection Requirements which are publicly available at: <http://www.dom.com>.

The results of these studies evaluate the system under a limited set of operating conditions and do not guarantee the full delivery of the capacity and associated energy of this proposed generation facility under all operating conditions. NERC Planning and Operating Reliability Criteria allow for the re-dispatch of generating units to resolve projected and actual deficiencies in real time and planning studies. Specifically NERC Category C Contingency Conditions (Bus Fault, Tower Line, N-1-1, and Stuck Breaker scenarios) allow for re-dispatch of generating units to resolve potential reliability deficiencies. For ITO Planning Criteria the re-dispatch of generating units for these contingency conditions is allowed as long as the projected loading does not exceed 100% of a facility Load Dump Rating. The results of these studies are discussed in more detail below.

Contingency Descriptions

The following contingencies resulted in overloads:

Contingency Name	Description
DVP_P1-2: LN 211	CONTINGENCY 'DVP_P1-2: LN 211' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 END
DVP_P1-2: LN 217	CONTINGENCY 'DVP_P1-2: LN 217' OPEN BRANCH FROM BUS 314225 TO BUS 314227 CKT 1 /* 6CHARCTY 230.00 - 6LAKESD 230.00 OPEN BRANCH FROM BUS 314225 TO BUS 314228 CKT 1 /* 6CHARCTY 230.00 - 6MESSER 230.00 OPEN BRANCH FROM BUS 314228 TO BUS 314287 CKT 1 /* 6MESSER 230.00 - 6CHSTF B 230.00 OPEN BUS 314225 /* ISLAND OPEN BUS 314228 /* ISLAND END

Contingency Name	Description
DVP_P1-2: LN 228	CONTINGENCY 'DVP_P1-2: LN 228' OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END
DVP_P1-2: LN 557	CONTINGENCY 'DVP_P1-2: LN 557' OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 - 8CHCKAHM 500.00 OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 - 8ELMONT 500.00 END
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-2: LN 573	CONTINGENCY 'DVP_P1-2: LN 573' OPEN BRANCH FROM BUS 314918 TO BUS 314934 CKT 1 /* 8NO ANNA 500.00 - 8SPOTSYL 500.00 END
DVP_P1-2: LN 574	CONTINGENCY 'DVP_P1-2: LN 574' OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1 /* 8ELMONT 500.00 - 8LDYSMTH 500.00 END
DVP_P1-2: LN 576	CONTINGENCY 'DVP_P1-2: LN 576' OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 END
DVP_P1-2: LN 594	CONTINGENCY 'DVP_P1-2: LN 594' OPEN BRANCH FROM BUS 314916 TO BUS 314934 CKT 1 /* 8MORRSVL 500.00 - 8SPOTSYL 500.00 END
DVP_P4-2: 211T2124	CONTINGENCY 'DVP_P4-2: 211T2124' /*_ HOPEWELL OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1 /*L211 HOPEWELL CHESTERFIELD OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1 /*L2124 END
DVP_P4-2: 557T574	CONTINGENCY 'DVP_P4-2: 557T574' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314911 TO BUS 314908 CKT 1 /*ELMONT TO LADYSMITH (LINE 574) END
DVP_P4-2: 56372	CONTINGENCY 'DVP_P4-2: 56372' /*CARSON OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MIDLOTHIAN 500.00 OPEN BRANCH FROM BUS 314902 TO BUS 314282 CKT 1 /*CARSON 500-230 (TX#1) END

Contingency Name	Description
DVP_P4-2: 563T576	CONTINGENCY 'DVP_P4-2: 563T576' /* MIDLOTHIAN 500 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 END
DVP_P4-2: 57602	CONTINGENCY 'DVP_P4-2: 57602' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 1 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P4-2: G5T228	CONTINGENCY 'DVP_P4-2: G5T228' /* _ CHESTERFIELD OPEN BRANCH FROM BUS 314286 TO BUS 314278 CKT 1 /*L228 CHESTERFIELD BERMUDA OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /*L228 BERMUDA HOPEWELL REMOVE MACHINE 5 FROM BUS 315060 /*CHESTERFIELD GEN G5 END
DVP_P4-2: H2T557	CONTINGENCY 'DVP_P4-2: H2T557' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2 /*ELMONT 500-230 (TX#2) END
DVP_P4-2: WT576	CONTINGENCY 'DVP_P4-2: WT576' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 2 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P7-1: LN 211-228	CONTINGENCY 'DVP_P7-1: LN 211-228' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END
DVP_P7-1: LN 212-240_D	CONTINGENCY 'DVP_P7-1: LN 212-240_D' OPEN BRANCH FROM BUS 925330 TO BUS 314538 CKT 2 /* AB2-190 TAP 230.00 - 6SURREY 230.00 OPEN BRANCH FROM BUS 924810 TO BUS 314538 CKT 1 /* AB2-134 TAP 230.00 - 6SURREY 230.00 END

Summer Peak Analysis - 2021

Generator Deliverability

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To	Circuit		Initial	Final	Type	MVA	
1	N-1	DVP_P1-2: LN 228	DVP - DVP	6HOPEWLL-6CHESTF B 230 kV line	314303	314287	1	DC	90.77	98.99	ER	442	36.31

Multiple Facility Contingency

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
2	DCTL	DVP_P7-1: LN 212- 240_D	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	DC	78.9	91.02	LD	549	66.49	
3	DCTL	DVP_P7-1: LN 212- 240_D	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	DC	78.9	91.02	LD	549	66.49	
4	LFFB	DVP_P4-2: G5T228	DVP - DVP	6HOPEWLL-6CHESTF B 230 kV line	314303	314287	1	DC	92.31	102.88	LD	541	57.82	1

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Contributions to previously identified circuit breakers found to be over-duty:

None

Contribution to Previously Identified Overloads

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
5	N-1	DVP_P1-2: LN 574	DVP - DVP	6FOUR RIVERS- 6STJOHN 230 kV line	314212	314150	1	DC	122.58	123.07	ER	749	8.92	2
6	LFFB	DVP_P4-2: H2T557	DVP - DVP	8ELMONT 500/230 kV transformer	314218	314908	1	DC	120.15	121.4	LD	1051	33.15	3
7	DCTL	DVP_P7-1: LN 211-228	DVP - DVP	6PRGEORG 230/115 kV transformer	314269	314291	1	DC	112.1	125.62	LD	220	29.72	4
8	LFFB	DVP_P4-2: 211T2124	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	DC	111.25	114.72	LD	549	63.98	5
9	N-1	DVP_P1-2: LN 563	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	DC	121.95	124.02	ER	449	9.21	6
10	N-1	DVP_P1-2: LN 217	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	DC	115.82	118.07	ER	449	11.78	
11	LFFB	DVP_P4-2: 211T2124	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	DC	111.25	114.72	LD	549	63.98	7
12	LFFB	DVP_P4-2: 563T576	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	117.29	117.85	LD	3144	39.06	8
13	LFFB	DVP_P4-2: 56372	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	114.88	115.39	LD	3144	35.29	

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
14	LFFB	DVP_P4-2: WT576	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	112.65	113.2	LD	3144	38.64	
15	LFFB	DVP_P4-2: 57602	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	112.65	113.2	LD	3144	38.64	
16	N-1	DVP_P1-2: LN 576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	155.96	156.5	ER	2442	30.48	9
17	N-1	DVP_P1-2: LN 563	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	140.08	140.52	ER	2442	25.24	
18	LFFB	DVP_P4-2: 57602	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	131.37	131.96	LD	3351	48.51	
19	LFFB	DVP_P4-2: WT576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	131.37	131.96	LD	3351	48.51	
20	N-1	DVP_P1-2: LN 574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	DC	124.6	125.06	ER	2442	24.76	10
21	LFFB	DVP_P4-2: 557T574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	DC	113.27	113.78	LD	3637	41.94	

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

To be determined during Impact Study

Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

To be determined during Impact Study

New System Reinforcements

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

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost
# 1	6HOPEWLL-6CHESTF B 230 kV line	Wreck and rebuild the Hopewell – Chesterfield 230 kV line #211 of 11 miles to increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	Pending	\$27,500,000
# 2	6BERMUDA-6CHESTF A 230 kV line	Wreck and rebuild the Hopewell – Bermuda – Chesterfield 230 kV line #228 of 11 miles increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	Pending	\$27,425,000
# 3	6HOPEWLL-6BERMUDA 230 kV line			
# 4	6HOPEWLL-6CHESTF B 230 kV line			
Total New Network Upgrades				\$54,925,000

Contribution to Previously Identified System Reinforcements

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

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost
# 5	6FOUR RIVERS-6STJOHN 230 kV line	Replace the 2000A wave trap at Four Rivers and the 230kV line switches at St. Johns Substation for the 256 line	n4692	\$150,000

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost
# 6	8ELMONT 500/230 kV transformer	Replace the Elmont 500/230 kV transformer #1 increase its line rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to take 24-30 months to engineer and construct.	Pending	\$17,500,000
# 7	6PRGEORG 230/115 kV transformer	Add a second Prince George 230/115 kV transformer to increase its rating to 276.8 MVA (normal), 292.4 MVA (emergency), and 328.7 MVA (load dump). Estimated to take 24-30 months to engineer and construct.	Pending	\$5,500,000
# 8	6BERMUDA-6CHESTF A 230 kV line	Wreck and rebuild the Hopewell – Bermuda – Chesterfield 230 kV line #228 of 11 miles increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	Pending	\$27,425,000
# 11	6HOPEWLL-6BERMUDA 230 kV line			
# 9, 10	6CHESTF B-6BASIN 230 kV line	Reconductor Chesterfield – Basin 230 kV line #259 for 0.14 miles of 1109 ACAR with a conductor which will increase the line rating to approximately 706 MVA (normal), 706 MVA (emergency), and 812 MVA (load dump). It is estimated to take 15-18 months to engineer, permit and construct.	Pending	\$250,000
#12 – 15	8CHCKAHM-8ELMONT 500 kV line	Replace the Elmont – Chickahominy 500 kV line #557 wave trap in the Chickahominy substation to increase its line rating to 3424 MVA (normal), 3424 MVA (emergency), and 3937 MVA (load dump). It is estimated to take 12-16 months to engineer and construct.	Pending	\$500,000
# 16 – 19	8ELMONT-8LADYSMITH 500 kV line	Wreck and rebuild the Elmont - Ladysmith 500kV line #574 (26 miles) to a minimum rating of 4453 MVA. Estimated time 36-48 months to engineer and construct.	Pending	\$78,300,000
#20, 21	8MDLTHAN-8NO ANNA 500 kV line	Wreck and rebuild the Midlothian – North Anna 500 kV line #576 of 41 miles increase its line rating to 4453 MVA (normal), 4453 MVA (emergency), and 5121 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	Pending	\$123,390,000

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost
Total New Network Upgrades				\$253,015,000

Potential Congestion due to Local Energy Deliverability

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

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

#	Contingency		Affected Area	Facility Description	Bus		Circuit	Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To			Initial	Final	Type	MVA	
22	N-1	DVP_P1-2: LN 574	DVP - DVP	6FOUR RIVERS-6STJOHN 230 kV line	314212	314150	1	DC	120.58	121.29	ER	749	14.2
23	N-1	DVP_P1-2: LN 557	DVP - DVP	6CHARCTY-6LAKESIDE 230 kV line	314225	314227	1	DC	96.53	98.08	ER	984	18.31
24	N-1	DVP_P1-2: LN 211	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	DC	118.65	122.18	ER	449	55.65
25	N-1	DVP_P1-2: LN 563	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	DC	146.13	147.62	ER	449	14.67
26	N-1	DVP_P1-2: LN 211	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	DC	118.65	122.18	ER	449	55.65
27	N-1	DVP_P1-2: LN 228	DVP - DVP	6HOPEWLL-6CHESTF B 230 kV line	314303	314287	1	DC	112.15	125.1	ER	442	57.82

#	Contingency		Affected Area	Facility Description	Bus		Circuit	Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To			Initial	Final	Type	MVA	
28	N-1	DVP_P1-2: LN 576	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	145	145.71	ER	2442	38.64
29	Non	Non	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	115.79	116.35	NR	2442	30.7
30	N-1	DVP_P1-2: LN 594	DVP - DVP	8CHANCE-8BRISTER 500 kV line	314905	314900	1	DC	138.23	138.67	ER	2442	29
31	N-1	DVP_P1-2: LN 576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	180.13	180.94	ER	2442	48.53
32	Non	Non	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	125.47	125.96	NR	2442	34.08
33	N-1	DVP_P1-2: LN 573	DVP - DVP	8LADYSMITH-8CHANCE 500 kV line	314911	314905	1	DC	124.04	124.49	ER	2738	29.47
34	N-1	DVP_P1-2: LN 594	DVP - DVP	8LADYSMITH-8POSSUM 500 kV line	314911	314922	1	DC	126.25	126.47	ER	2442	24.8
35	N-1	DVP_P1-2: LN 574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	DC	154.83	155.55	ER	2442	39.43
36	Non	Non	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	DC	94.51	95.01	NR	2442	26.74
37	N-1	DVP_P1-2: LN 563	DVP - DVP	8SURRY-8CHCKAHM 500 kV line	314924	314903	1	DC	101.29	101.78	ER	1809	22.08

Light Load Analysis

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

Affected System Analysis & Mitigation

Duke, Progress & TVA Impacts:

Duke Carolina, Progress, & TVA Impacts to be determined during later study phases (as applicable).

Option Two

Network Impacts

The Queue Project AD1-025 was evaluated as a 150.0 MW (Capacity 94.2 MW) injection tapping the Hopewell to Surry 230kV line #240 in the ITO area. Project AD1-025 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD1-025 was studied with a commercial probability of 53%. Potential network impacts were as follows:

PJM assessed the impact of the proposed Queue Project as an injection into the ITO, for compliance with NERC Reliability Criteria. The system was assessed using the summer 2021 RTEP case. When performing analysis, ITO Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under single contingency (normal and stressed system conditions). A full listing of the ITO's Planning Criteria and interconnection requirements can be found in the ITO's Facility Connection Requirements which are publicly available at: <http://www.dom.com>.

The results of these studies evaluate the system under a limited set of operating conditions and do not guarantee the full delivery of the capacity and associated energy of this proposed generation facility under all operating conditions. NERC Planning and Operating Reliability Criteria allow for the re-dispatch of generating units to resolve projected and actual deficiencies in real time and planning studies. Specifically NERC Category C Contingency Conditions (Bus Fault, Tower Line, N-1-1, and Stuck Breaker scenarios) allow for re-dispatch of generating units to resolve potential reliability deficiencies. For ITO Planning Criteria the re-dispatch of generating units for these contingency conditions is allowed as long as the projected loading does not exceed 100% of a facility Load Dump Rating. The results of these studies are discussed in more detail below.

Contingency Descriptions

The following contingencies resulted in overloads:

Contingency Name	Description
DVP_P1-2: LN 211	CONTINGENCY 'DVP_P1-2: LN 211' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 END
DVP_P1-2: LN 217	CONTINGENCY 'DVP_P1-2: LN 217' OPEN BRANCH FROM BUS 314225 TO BUS 314227 CKT 1 /* 6CHARCTY 230.00 - 6LAKESD 230.00 OPEN BRANCH FROM BUS 314225 TO BUS 314228 CKT 1 /* 6CHARCTY 230.00 - 6MESSER 230.00 OPEN BRANCH FROM BUS 314228 TO BUS 314287 CKT 1 /* 6MESSER 230.00 - 6CHSTF B 230.00 OPEN BUS 314225 /* ISLAND OPEN BUS 314228 /* ISLAND END

Contingency Name	Description
DVP_P1-2: LN 228	CONTINGENCY 'DVP_P1-2: LN 228' OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END
DVP_P1-2: LN 557	CONTINGENCY 'DVP_P1-2: LN 557' OPEN BRANCH FROM BUS 314214 TO BUS 314903 CKT 1 /* 6CHCKAHM 230.00 - 8CHCKAHM 500.00 OPEN BRANCH FROM BUS 314903 TO BUS 314908 CKT 1 /* 8CHCKAHM 500.00 - 8ELMONT 500.00 END
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-2: LN 573	CONTINGENCY 'DVP_P1-2: LN 573' OPEN BRANCH FROM BUS 314918 TO BUS 314934 CKT 1 /* 8NO ANNA 500.00 - 8SPOTSYL 500.00 END
DVP_P1-2: LN 574	CONTINGENCY 'DVP_P1-2: LN 574' OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1 /* 8ELMONT 500.00 - 8LDYSMTH 500.00 END
DVP_P1-2: LN 576	CONTINGENCY 'DVP_P1-2: LN 576' OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 END
DVP_P1-2: LN 594	CONTINGENCY 'DVP_P1-2: LN 594' OPEN BRANCH FROM BUS 314916 TO BUS 314934 CKT 1 /* 8MORRSVL 500.00 - 8SPOTSYL 500.00 END
DVP_P4-2: 211T2124	CONTINGENCY 'DVP_P4-2: 211T2124' /*_ HOPEWELL OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1 /*L211 HOPEWELL CHESTERFIELD OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1 /*L2124 END
DVP_P4-2: 557T574	CONTINGENCY 'DVP_P4-2: 557T574' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314911 TO BUS 314908 CKT 1 /*ELMONT TO LADYSMITH (LINE 574) END
DVP_P4-2: 56372	CONTINGENCY 'DVP_P4-2: 56372' /*CARSON OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MIDLOTHIAN 500.00 OPEN BRANCH FROM BUS 314902 TO BUS 314282 CKT 1 /*CARSON 500-230 (TX#1) END

Contingency Name	Description
DVP_P4-2: 563T576	CONTINGENCY 'DVP_P4-2: 563T576' /* MIDLOTHIAN 500 500 KV OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 END
DVP_P4-2: 57602	CONTINGENCY 'DVP_P4-2: 57602' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 1 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P4-2: G5T228	CONTINGENCY 'DVP_P4-2: G5T228' /* _ CHESTERFIELD OPEN BRANCH FROM BUS 314286 TO BUS 314278 CKT 1 /*L228 CHESTERFIELD BERMUDA OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /*L228 BERMUDA HOPEWELL REMOVE MACHINE 5 FROM BUS 315060 /*CHESTERFIELD GEN G5 END
DVP_P4-2: H2T557	CONTINGENCY 'DVP_P4-2: H2T557' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2 /*ELMONT 500-230 (TX#2) END
DVP_P4-2: WT576	CONTINGENCY 'DVP_P4-2: WT576' /* NORTH ANNA 500 KV OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN 500.00 - 8NO ANNA 500.00 OPEN BRANCH FROM BUS 314232 TO BUS 314918 CKT 2 /* 6NO ANNA 230.00 - 8NO ANNA 500.00 END
DVP_P7-1: LN 211- 228	CONTINGENCY 'DVP_P7-1: LN 211-228' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END

Summer Peak Analysis - 2021

Generator Deliverability

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

#	Contingency		Affected Area	Facility Description	Bus		Circuit	Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To			Initial	Final	Type	MVA	
1	N-1	DVP_P1-2: LN 211	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	DC	97.8	105.58	ER	449	34.95
2	N-1	DVP_P1-2: LN 211	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	DC	97.8	105.58	ER	449	34.95

Multiple Facility Contingency

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

#	Contingency		Affected Area	Facility Description	Bus		Cir.	Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To			Initial	Final	Type	MVA		
3	LFFB	DVP_P4-2: G5T228	DVP - DVP	6HOPEWLL-6CHESTF B 230 kV line	314303	314287	1	DC	92.31	103	LD	541	57.82	1

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Contributions to previously identified circuit breakers found to be over-duty:

None

Contribution to Previously Identified Overloads

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
4	N-1	DVP_P1-2: LN 574	DVP - DVP	6FOUR RIVERS- 6STJOHN 230 kV line	314212	314150	1	DC	122.59	123.09	ER	749	8.92	2
5	LFFB	DVP_P4-2: H2T557	DVP - DVP	8ELMONT 500/230 kV transformer	314218	314908	1	DC	120.16	121.39	LD	1051	33.15	3
6	DCTL	DVP_P7-1: LN 211-228	DVP - DVP	6PRGEORG 230/115 kV transformer	314269	314291	1	DC	112.1	125.62	LD	220	29.72	4
7	LFFB	DVP_P4-2: 211T2124	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	DC	111.25	122.91	LD	549	63.98	5
8	N-1	DVP_P1-2: LN 563	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	DC	121.99	124.06	ER	449	9.21	6
9	N-1	DVP_P1-2: LN 217	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	DC	115.8	117.94	ER	449	11.78	
10	LFFB	DVP_P4-2: 211T2124	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	DC	111.25	122.91	LD	549	63.98	7
11	LFFB	DVP_P4-2: 563T576	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	117.29	117.86	LD	3144	39.06	8
12	LFFB	DVP_P4-2: 56372	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	114.89	115.39	LD	3144	35.29	
13	N-1	DVP_P1-2: LN 576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	155.98	156.52	ER	2442	30.48	9

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
14	N-1	DVP_P1-2: LN 563	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	140.1	140.54	ER	2442	25.24	
15	LFFB	DVP_P4-2: 57602	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	131.39	131.98	LD	3351	48.52	
16	LFFB	DVP_P4-2: WT576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	131.39	131.98	LD	3351	48.52	
17	N-1	DVP_P1-2: LN 574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	DC	124.62	125.08	ER	2442	24.76	10
18	LFFB	DVP_P4-2: 557T574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	DC	113.29	113.8	LD	3637	41.94	

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

To be determined during Impact Study

Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

To be determined during Impact Study

Potential Congestion due to Local Energy Deliverability

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

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

#	Contingency		Affected Area	Facility Description	Bus		Circuit	Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To			Initial	Final	Type	MVA	
19	N-1	DVP_P1-2: LN 574	DVP - DVP	6FOUR RIVERS-6STJOHN 230 kV line	314212	314150	1	DC	120.59	121.31	ER	749	14.2
20	N-1	DVP_P1-2: LN 557	DVP - DVP	6CHARCTY-6LAKESIDE 230 kV line	314225	314227	1	DC	96.53	98.03	ER	984	18.31
21	N-1	DVP_P1-2: LN 211	DVP - DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	DC	118.67	131.08	ER	449	55.65
22	N-1	DVP_P1-2: LN 563	DVP - DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	DC	146.16	147.65	ER	449	14.67
23	N-1	DVP_P1-2: LN 211	DVP - DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	DC	118.67	131.08	ER	449	55.65
24	N-1	DVP_P1-2: LN 228	DVP - DVP	6HOPEWLL-6CHESTF B 230 kV line	314303	314287	1	DC	112.15	125.24	ER	442	57.82
25	N-1	DVP_P1-2: LN 563	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	144.84	145.51	ER	2442	36.29
26	Non	Non	DVP - DVP	8CHCKAHM-8ELMONT 500 kV line	314903	314908	1	DC	115.72	116.19	NR	2442	30.7
27	N-1	DVP_P1-2: LN 594	DVP - DVP	8CHANCE-8BRISTER 500 kV line	314905	314900	1	DC	138.26	138.7	ER	2442	29
28	N-1	DVP_P1-2: LN 576	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	180.16	180.98	ER	2442	48.54
29	Non	Non	DVP - DVP	8ELMONT-8LADYSMITH 500 kV line	314908	314911	1	DC	125.46	125.91	NR	2442	34.08

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To	Circuit		Initial	Final	Type	MVA	
30	N-1	DVP_P1-2: LN 573	DVP - DVP	8LADYSMITH-8CHANCE 500 kV line	314911	314905	1	DC	124.08	124.56	ER	2738	29.47
31	N-1	DVP_P1-2: LN 594	DVP - DVP	8LADYSMITH-8POSSUM 500 kV line	314911	314922	1	DC	126.29	126.47	ER	2442	24.8
32	N-1	DVP_P1-2: LN 574	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	DC	154.85	155.57	ER	2442	39.43
33	Non	Non	DVP - DVP	8MDLTHAN-8NO ANNA 500 kV line	314914	314918	1	DC	94.52	95.02	NR	2442	26.74
34	N-1	DVP_P1-2: LN 563	DVP - DVP	8SURRY-AD1-151 TAP 500 kV line	314924	935160	1	DC	101.24	101.69	ER	1809	22.08
35	N-1	DVP_P1-2: LN 563	DVP - DVP	AD1-151 TAP-8CHCKAHM 500 kV line	935160	314903	1	DC	101.27	101.73	ER	1809	22.08

Light Load Analysis

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

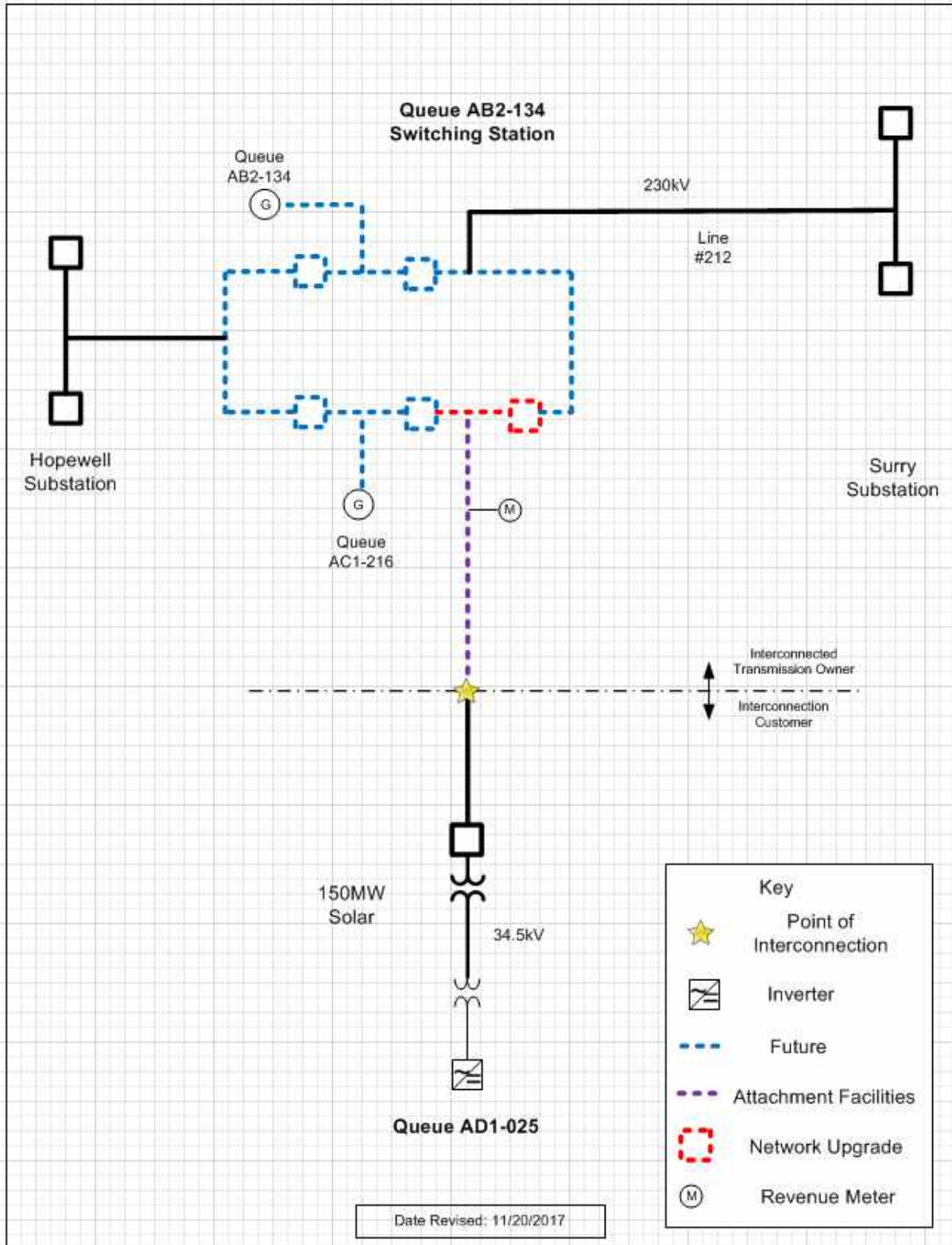
Affected System Analysis & Mitigation

Duke, Progress & TVA Impacts:

Duke Carolina, Progress, & TVA Impacts to be determined during later study phases (as applicable).

Attachment 1.

System Configuration



Attachment 2.

Flowgate Appendices

Appendices

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gauge other generators impact. When a flowgate is identified in multiple analysis the appendix is presented for only the analysis with the greatest overload.

It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

Appendix 1

(DVP - DVP) The 6HOPEWELL-6CHESTF B 230 kV line (from bus 314303 to bus 314287 ckt 1) loads from 92.31% to 102.88% (**DC power flow**) of its load dump rating (541 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: G5T228'. This project contributes approximately 57.82 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: G5T228'                /*_ CHESTERFIELD
  OPEN BRANCH FROM BUS 314286 TO BUS 314278 CKT 1      /*L228
CHESTERFIELD BERMUDA
  OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1      /*L228 BERMUDA
HOPEWELL
  REMOVE MACHINE 5 FROM BUS 315060                /*CHESTERFIELD GEN
G5
END
```

Bus Number	Bus Name	Full Contribution
315120	1GRAVEL4	3.94
315121	1GRAVEL5	3.89
315122	1GRAVEL6	3.94
315074	1HOPCGN1	24.99
315075	1HOPCGN2	24.67
315077	1HOPHCF1	7.9
315078	1HOPHCF2	7.9
315079	1HOPHCF3	7.9
315080	1HOPHCF4	11.99
315076	1HOPPOLC	5.63
315073	1STONECA	20.73
315116	1SURRY 1	39.02
932041	AC2-012 C	5.08
932042	AC2-012 E	8.29
933471	AC2-161 C	2.34
933472	AC2-161 E	1.2
934011	AD1-025 C O1	36.31
934012	AD1-025 E O1	21.51
935111	AD1-144 C	0.94
935112	AD1-144 E	0.51
935161	AD1-151 C O1	34.69
935162	AD1-151 E O1	23.13
LTF	CARR	0.14
LTF	CBM-S1	0.61
LTF	CBM-S2	2.19
LTF	CBM-W2	2.77
LTF	CIN	< 0.01

LTF	CLIFTY	0.3
LTF	CPL	0.76
LTF	DEARBORN	0.09
LTF	G-007	0.52
LTF	LGEE	< 0.01
LTF	MEC	0.29
LTF	O-066	1.73
LTF	RENSSELAER	0.11
LTF	ROSETON	0.81
LTF	TRIMBLE	< 0.01
292791	U1-032 E	10.8
LTF	WEC	< 0.01
914231	Y2-077	3.18
924071	AB2-051	66.52
924811	AB2-134 C O1	27.68
924812	AB2-134 E O1	27.22
925331	AB2-190 C	43.17
925332	AB2-190 E	18.5
925692	AC1-045 E	0.51
926662	AC1-147 E	0.66
926741	AC1-159	32.07
927221	AC1-216 C O1	21.12
927222	AC1-216 E O1	16.61

Appendix 2

(DVP - DVP) The 6FOUR RIVERS-6STJOHN 230 kV line (from bus 314212 to bus 314150 ckt 1) loads from 122.58% to 123.07% (**DC power flow**) of its emergency rating (749 MVA) for the single line contingency outage of 'DVP_P1-2: LN 574'. This project contributes approximately 8.92 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 574'

OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1 /* 8ELMONT
500.00 - 8LDYSMTH 500.00
END

Bus Number	Bus Name	Full Contribution
315053	1BELMED1	2.08
315054	1BELMED2	2.08
315055	1BELMED3	1.73
315058	1CHESTF3	2.18
315059	1CHESTF4	3.53
315060	1CHESTF5	7.11
315065	1CHESTF6	14.51
315061	1CHESTG7	2.79
315063	1CHESTG8	2.76
315062	1CHESTS7	1.27
315064	1CHESTS8	1.41
315067	1DARBY 1	2.05
315068	1DARBY 2	2.05
315069	1DARBY 3	2.06
315070	1DARBY 4	2.06
315043	1FOUR RIVERA	6.75
315044	1FOUR RIVERB	5.22
315045	1FOUR RIVERC	6.75
315046	1FOUR RIVERD	5.22
315047	1FOUR RIVERE	5.22
315048	1FOUR RIVERF	6.75
315074	1HOPCGN1	4.73
315075	1HOPCGN2	4.67
315083	1SPRUNCA	6.19
315084	1SPRUNCB	6.19
315085	1SPRUNCC	4.59
315086	1SPRUNCD	4.59
314315	3LOCKS E	0.69
314309	6IRON208	0.33

314236	6NRTHEST	0.15
314250	6ROCKVILLE	0.17
932501	AC2-070 C	1.19
932581	AC2-078 C	2.05
933061	AC2-130	1.42
933071	AC2-131 1	0.96
933081	AC2-131 2	0.44
933111	AC2-132 1	0.51
933121	AC2-132 2	0.26
933261	AC2-137 C	1.27
933481	AC2-162 C	1.71
934011	AD1-025 C O1	8.92
934071	AD1-034 C O1	4.45
934211	AD1-048 C	1.56
LTF	AD1-120	4.
LTF	AD1-121	4.
935161	AD1-151 C O1	8.52
935211	AD1-156 C	1.09
LTF	CARR	0.42
LTF	CBM-S1	5.86
LTF	CBM-S2	9.49
LTF	CBM-W1	13.64
LTF	CBM-W2	31.65
LTF	CIN	3.19
LTF	CPL	2.81
LTF	IPL	2.04
LTF	LGEE	0.7
LTF	MEC	6.79
LTF	MECS	3.07
LTF	RENSSELAER	0.33
LTF	ROSETON	2.43
297087	V2-040	0.12
LTF	WEC	0.85
918691	AA1-083	1.19
919211	AA1-145	20.15
LTF	AA2-074	1.91
930121	AB1-027 C	0.36
924061	AB2-050	1.19
924241	AB2-068 O1	107.17
924811	AB2-134 C O1	6.8
925051	AB2-160 C O1	3.01
925331	AB2-190 C	10.6
926291	AC1-107	161.76
926411	AC1-112 C	0.28
926551	AC1-134	15.1

926781	AC1-164 C	23.18
927041	AC1-191 C	6.71
927221	AC1-216 C O1	5.19

Appendix 3

(DVP - DVP) The 8ELMONT 500/230 kV transformer (from bus 314218 to bus 314908 ckt 1) loads from 120.15% to 121.4% (**DC power flow**) of its load dump rating (1051 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: H2T557'. This project contributes approximately 33.15 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: H2T557'                               /* ELMONT
  OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1           /*ELMONT TO
CHICKAHOMINY (LINE 557)
  OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1
/*CHICKAHOMINY 500-230 (TX#1)
  OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2           /*ELMONT 500-
230 (TX#2)
END
```

Bus Number	Bus Name	Full Contribution
315067	1DARBY 1	4.99
315068	1DARBY 2	4.99
315069	1DARBY 3	5.01
315070	1DARBY 4	5.01
315043	1FOUR RIVERA	6.63
315044	1FOUR RIVERB	5.13
315045	1FOUR RIVERC	6.63
315046	1FOUR RIVERD	5.13
315047	1FOUR RIVERE	5.13
315048	1FOUR RIVERF	6.63
315074	1HOPCGN1	11.28
315075	1HOPCGN2	11.14
315083	1SPRUNCA	14.95
315084	1SPRUNCB	14.95
315085	1SPRUNCC	11.08
315086	1SPRUNCD	11.08
315073	1STONECA	9.36
314566	3CRESWEL	2.11
314572	3EMPORIA	0.36
314315	3LOCKS E	1.65
314617	3TUNIS	0.71
314539	3UNCAMP	2.19
314541	3WATKINS	0.61
314620	6CASHIE	0.72
314229	6MT RD221	1.41

314236	6NRTHEST	0.37
314189	6PAPERMILL	8.82
314594	6PLYMOTH	0.73
314250	6ROCKVILLE	0.4
314256	6ROCKVILLE E	1.15
314648	6SUNBURY	0.81
314651	6WINFALL	1.59
932041	AC2-012 C	9.62
932042	AC2-012 E	15.7
932501	AC2-070 C	2.9
932502	AC2-070 E	1.2
932531	AC2-073 C	3.1
932532	AC2-073 E	1.56
932581	AC2-078 C	4.75
932582	AC2-078 E	7.75
932591	AC2-079 C	6.82
932592	AC2-079 E	11.13
932831	AC2-110 C	1.74
932832	AC2-110 E	2.84
933061	AC2-130	3.48
933071	AC2-131 1	2.36
933081	AC2-131 2	1.07
933111	AC2-132 1	1.24
933121	AC2-132 2	0.63
933261	AC2-137 C	3.16
933262	AC2-137 E	2.05
933271	AC2-138 C	0.87
933272	AC2-138 E	1.09
933291	AC2-141 C	27.16
933292	AC2-141 E	11.59
933451	AC2-158 C	4.63
933452	AC2-158 E	4.63
933471	AC2-161 C	2.47
933472	AC2-161 E	1.27
933481	AC2-162 C	4.17
933482	AC2-162 E	2.15
933711	AC2-194 C	0.98
933712	AC2-194 E	1.59
933731	AC2-196 C	1.66
933732	AC2-196 E	1.1
933991	AD1-023 C	11.29
933992	AD1-023 E	6.14
934011	AD1-025 C O1	20.82
934012	AD1-025 E O1	12.33
934061	AD1-033 C O1	6.96

934062	AD1-033 E O1	4.64
934071	AD1-034 C O1	10.6
934072	AD1-034 E O1	6.87
934141	AD1-041 C O1	6.74
934142	AD1-041 E O1	4.49
934191	AD1-046 C	4.71
934192	AD1-046 E	3.14
934201	AD1-047 C	6.75
934202	AD1-047 E	4.5
934211	AD1-048 C	3.82
934212	AD1-048 E	1.93
934391	AD1-063 C	2.1
934392	AD1-063 E	1.4
934521	AD1-076 C O1	46.88
934522	AD1-076 E O1	23.87
934571	AD1-082 C O1	8.27
934572	AD1-082 E O1	4.72
934781	AD1-105 C	8.08
934782	AD1-105 E	5.62
LTF	AD1-120	5.93
LTF	AD1-121	5.89
935111	AD1-144 C	1.68
935112	AD1-144 E	0.92
935161	AD1-151 C O1	19.89
935162	AD1-151 E O1	13.26
935211	AD1-156 C	2.56
935212	AD1-156 E	1.71
LTF	CARR	0.67
LTF	CBM-S1	3.86
LTF	CBM-S2	13.84
LTF	CBM-W1	0.21
LTF	CBM-W2	17.91
LTF	CIN	0.13
LTF	CLIFTY	1.62
LTF	CPL	4.75
LTF	DEARBORN	0.47
LTF	G-007	2.31
LTF	IPL	0.06
LTF	LGEE	0.05
LTF	MEC	1.99
LTF	O-066	7.73
LTF	RENSSELAER	0.53
LTF	ROSETON	3.84
292791	U1-032 E	4.87
297087	V2-040	0.28

900672	V4-068 E	0.26
901082	W1-029E	41.82
LTF	WEC	0.06
907092	X1-038 E	5.47
913392	Y1-086 E	1.99
916042	Z1-036 E	40.84
916192	Z1-068 E	1.76
917122	Z2-027 E	0.96
917592	Z2-099 E	0.38
918492	AA1-063AE OP	3.35
918512	AA1-065 E OP	3.74
918691	AA1-083	1.16
919152	AA1-139 E	5.92
919211	AA1-145	19.79
919732	AA2-059 E	0.5
LTF	AA2-074	3.23
920022	AA2-086 E	0.21
920042	AA2-088 E	9.15
920691	AA2-178 C	8.43
920692	AA2-178 E	3.61
930051	AB1-013 C	2.54
930052	AB1-013 E	17.02
930121	AB1-027 C	0.87
930122	AB1-027 E	1.89
930861	AB1-132 C	11.78
930862	AB1-132 E	5.05
931231	AB1-173 C	1.9
931232	AB1-173 E	0.89
931241	AB1-173AC	1.9
931242	AB1-173AE	0.89
923801	AB2-015 C O1	7.73
923802	AB2-015 E O1	6.34
923831	AB2-022 C	2.1
923832	AB2-022 E	1.13
923842	AB2-024 E	1.49
923852	AB2-025 E	1.09
923862	AB2-026 E	0.88
923911	AB2-031 C O1	1.88
923912	AB2-031 E O1	0.93
923991	AB2-040 C O1	6.19
923992	AB2-040 E O1	5.06
924061	AB2-050	1.16
924071	AB2-051	128.86
924241	AB2-068 O1	177.95
924381	AB2-087 C	0.48

924382	AB2-087 E	0.22
924501	AB2-099 C	0.49
924502	AB2-099 E	0.21
924511	AB2-100 C	10.48
924512	AB2-100 E	5.16
924811	AB2-134 C O1	15.87
924812	AB2-134 E O1	15.6
925051	AB2-160 C O1	7.18
925052	AB2-160 E O1	11.71
925061	AB2-161 C O1	3.63
925062	AB2-161 E O1	5.92
925171	AB2-174 C O1	5.96
925172	AB2-174 E O1	5.39
925281	AB2-186 C	0.55
925282	AB2-186 E	0.24
925291	AB2-188 C O1	2.08
925292	AB2-188 E O1	0.93
925331	AB2-190 C	24.76
925332	AB2-190 E	10.61
925522	AC1-027 E	1.07
925692	AC1-045 E	0.92
925861	AC1-065 C	4.36
925862	AC1-065 E	7.11
926071	AC1-086 C	17.34
926072	AC1-086 E	7.89
926291	AC1-107	268.61
926411	AC1-112 C	0.68
926412	AC1-112 E	1.93
926441	AC1-115 C	1.01
926442	AC1-115 E	1.64
926472	AC1-118 E	1.07
926551	AC1-134	14.83
926662	AC1-147 E	1.25
926741	AC1-159	62.13
926751	AC1-161 C	27.16
926752	AC1-161 E	11.59
926771	AC1-163 C	1.63
926772	AC1-163 E	0.76
926781	AC1-164 C	58.41
926782	AC1-164 E	26.24
927041	AC1-191 C	17.46
927042	AC1-191 E	8.7
927111	AC1-206 C	9.15
927112	AC1-206 E	4.32
927221	AC1-216 C O1	12.11

927222	AC1-216 E O1	9.53
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Appendix 4

(DVP - DVP) The 6PRGEORG 230/115 kV transformer (from bus 314269 to bus 314291 ckt 1) loads from 112.1% to 125.62% (**DC power flow**) of its load dump rating (220 MVA) for the tower line contingency outage of 'DVP_P7-1: LN 211-228'. This project contributes approximately 29.72 MW to the thermal violation.

CONTINGENCY 'DVP_P7-1: LN 211-228'

OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B
230.00 - 6HOPEWLL 230.00

OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA
230.00 - 6CHSTF A 230.00

OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA
230.00 - 6HOPEWLL 230.00

OPEN BUS 314278 /* ISLAND

END

Bus Number	Bus Name	Full Contribution
315120	1GRAVEL4	1.96
315121	1GRAVEL5	1.94
315122	1GRAVEL6	1.96
315074	1HOPCGN1	13.02
315075	1HOPCGN2	12.85
315077	1HOPHCF1	4.12
315078	1HOPHCF2	4.12
315079	1HOPHCF3	4.12
315080	1HOPHCF4	6.25
315076	1HOPPOLC	2.93
315073	1STONECA	10.8
315116	1SURRY 1	19.43
933471	AC2-161 C	1.13
933472	AC2-161 E	0.58
934011	AD1-025 C O1	18.66
934012	AD1-025 E O1	11.06
935161	AD1-151 C O1	17.83
935162	AD1-151 E O1	11.89
LTF	AMIL	0.03
LTF	BAYOU	0.07
LTF	BIG_CAJUN1	0.11
LTF	BIG_CAJUN2	0.22
LTF	BLUEG	0.19
LTF	CALDERWOOD	0.03

LTF	CANNELTON	0.03
LTF	CARR	0.06
LTF	CATAWBA	< 0.01
LTF	CBM-S2	0.03
LTF	CELEVELAND	< 0.01
LTF	CHEOAH	0.03
LTF	CHILHOWEE	0.01
LTF	CHOCTAW	0.07
LTF	CLIFTY	0.82
LTF	COTTONWOOD	0.3
LTF	CPLE	0.04
LTF	DEARBORN	0.11
LTF	EDWARDS	0.06
LTF	ELMERSMITH	0.09
LTF	FARMERCITY	0.03
LTF	G-007	0.18
LTF	GIBSON	0.06
LTF	MORGAN	0.12
LTF	NEWTON	0.14
LTF	O-066	0.62
LTF	PRAIRIE	0.25
LTF	RENSSELAER	0.05
LTF	ROSETON	0.34
LTF	ROWAN	< 0.01
LTF	SANTEETLA	< 0.01
LTF	SMITHLAND	0.02
LTF	TATANKA	0.06
LTF	TILTON	0.07
LTF	TRIMBLE	0.04
LTF	TVA	0.06
292791	U1-032 E	5.62
LTF	UNIONPOWER	0.03
914231	Y2-077	1.66
924811	AB2-134 C O1	14.23
924812	AB2-134 E O1	13.99
925331	AB2-190 C	22.19
925332	AB2-190 E	9.51
927221	AC1-216 C O1	10.86
927222	AC1-216 E O1	8.54

Appendix 5

(DVP - DVP) The 6BERMUDA-6CHESTF A 230 kV line (from bus 314278 to bus 314286 ckt 1) loads from 111.25% to 114.72% (**DC power flow**) of its load dump rating (549 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 211T2124'. This project contributes approximately 63.98 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: 211T2124'                /*_ HOPEWELL
  OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1    /*L211
HOPEWELL CHESTERFIELD
  OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1    /*L2124
END
```

Bus Number	Bus Name	Full Contribution
315120	1GRAVEL4	4.29
315121	1GRAVEL5	4.23
315122	1GRAVEL6	4.28
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315077	1HOPHCF1	8.81
315078	1HOPHCF2	8.81
315079	1HOPHCF3	8.81
315080	1HOPHCF4	13.37
315076	1HOPPOLC	6.27
315073	1STONECA	23.11
315116	1SURRY 1	42.42
932041	AC2-012 C	5.33
932042	AC2-012 E	8.69
933471	AC2-161 C	2.52
933472	AC2-161 E	1.3
934011	AD1-025 C O1	40.18
934012	AD1-025 E O1	23.8
935111	AD1-144 C	0.97
935112	AD1-144 E	0.53
935161	AD1-151 C O1	38.39
935162	AD1-151 E O1	25.59
LTF	CARR	0.16
LTF	CBM-S1	0.99
LTF	CBM-S2	3.05
LTF	CBM-W1	0.62
LTF	CBM-W2	4.81
LTF	CIN	0.16

LTF	CPLE	1.04
LTF	DEARBORN	0.06
LTF	G-007	0.61
LTF	IPL	0.1
LTF	LGEE	0.04
LTF	MEC	0.67
LTF	O-066	2.05
LTF	RENSSELAER	0.13
LTF	ROSETON	0.93
292791	U1-032 E	12.03
LTF	WEC	0.05
914231	Y2-077	3.54
924811	AB2-134 C O1	30.62
924812	AB2-134 E O1	30.11
925331	AB2-190 C	47.77
925332	AB2-190 E	20.47
925692	AC1-045 E	0.53
926662	AC1-147 E	0.69
927221	AC1-216 C O1	23.37
927222	AC1-216 E O1	18.38

Appendix 6

(DVP - DVP) The 6CHESTF B-6BASIN 230 kV line (from bus 314287 to bus 314276 ckt 1) loads from 121.95% to 124.02% (**DC power flow**) of its emergency rating (449 MVA) for the single line contingency outage of 'DVP_P1-2: LN 563'. This project contributes approximately 9.21 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 563'

OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON
500.00 - 8MDLTHAN 500.00
END

Bus Number	Bus Name	Full Contribution
315065	1CHESTF6	33.33
315131	1EDGECSMA	3.18
315132	1EDGECSMB	3.18
315139	1GASTONA	1.58
315141	1GASTONB	1.58
315119	1GRAVEL3	1.24
315120	1GRAVEL4	1.26
315121	1GRAVEL5	1.24
315122	1GRAVEL6	1.26
315117	1GRAVELC	0.43
315074	1HOPCGN1	5.63
315075	1HOPCGN2	5.56
315077	1HOPHCF1	1.78
315078	1HOPHCF2	1.78
315079	1HOPHCF3	1.78
315080	1HOPHCF4	2.7
315076	1HOPPOLC	1.27
315116	1SURRY 1	12.47
314314	3LOCKS	0.06
314315	3LOCKS E	0.77
932041	AC2-012 C	3.21
932581	AC2-078 C	2.86
932591	AC2-079 C	3.07
932631	AC2-084 C	3.22
932701	AC2-093 C	23.37
933451	AC2-158 C	1.94
933461	AC2-159 C	2.55
933471	AC2-161 C	0.89
933711	AC2-194 C	0.35

933731	AC2-196 C	0.55
933991	AD1-023 C	4.54
934011	AD1-025 C O1	9.21
934041	AD1-029 C	3.98
934061	AD1-033 C O1	2.31
934071	AD1-034 C O1	4.93
934201	AD1-047 C	3.58
934331	AD1-057 C O1	3.86
934521	AD1-076 C O1	18.6
934571	AD1-082 C O1	4.27
935111	AD1-144 C	0.56
935161	AD1-151 C O1	8.8
935211	AD1-156 C	1.97
LTF	CARR	0.2
LTF	CBM-S1	3.34
LTF	CBM-S2	7.3
LTF	CBM-W1	6.1
LTF	CBM-W2	17.57
LTF	CIN	1.4
LTF	CPLE	2.35
LTF	IPL	0.89
LTF	LGEE	0.31
LTF	MEC	3.38
LTF	MECS	1.11
LTF	RENSSELAER	0.16
LTF	ROSETON	1.15
LTF	WEC	0.39
914231	Y2-077	0.72
LTF	AA2-074	1.6
920631	AA2-169 C	0.75
920691	AA2-178 C	3.22
930051	AB1-013 C	0.97
930401	AB1-081 C	3.05
930861	AB1-132 C	6.17
931231	AB1-173 C	1.01
931241	AB1-173AC	1.01
923801	AB2-015 C O1	3.22
923831	AB2-022 C	0.73
923851	AB2-025 C	0.31
923911	AB2-031 C O1	1.
923941	AB2-035 C	0.11
923991	AB2-040 C O1	3.28
924071	AB2-051	42.84
924151	AB2-059 C O1	3.6
924381	AB2-087 C	0.21

924391	AB2-088 C	0.15
924491	AB2-098 C	0.19
924501	AB2-099 C	0.22
924511	AB2-100 C	6.19
924811	AB2-134 C O1	7.02
925051	AB2-160 C O1	3.33
925061	AB2-161 C O1	1.87
925121	AB2-169 C	2.2
925171	AB2-174 C O1	3.2
925281	AB2-186 C	0.2
925291	AB2-188 C O1	0.79
925331	AB2-190 C	10.95
925591	AC1-034 C	2.34
925821	AC1-061	< 0.01
926071	AC1-086 C	9.08
926201	AC1-098 C	2.26
926211	AC1-099 C	0.76
926741	AC1-159	20.65
926771	AC1-163 C	0.71
927021	AC1-189 C	2.92
927111	AC1-206 C	5.47
927141	AC1-208 C	3.41
927221	AC1-216 C O1	5.36

Appendix 7

(DVP - DVP) The 6HOPEWELL-6BERMUDA 230 kV line (from bus 314303 to bus 314278 ckt 1) loads from 111.25% to 114.72% (**DC power flow**) of its load dump rating (549 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 211T2124'. This project contributes approximately 63.98 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: 211T2124'                /*_ HOPEWELL
  OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1    /*L211
HOPEWELL CHESTERFIELD
  OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1    /*L2124
END
```

Bus Number	Bus Name	Full Contribution
315120	1GRAVEL4	4.29
315121	1GRAVEL5	4.23
315122	1GRAVEL6	4.28
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315077	1HOPHCF1	8.81
315078	1HOPHCF2	8.81
315079	1HOPHCF3	8.81
315080	1HOPHCF4	13.37
315076	1HOPPOLC	6.27
315073	1STONECA	23.11
315116	1SURRY 1	42.42
932041	AC2-012 C	5.33
932042	AC2-012 E	8.69
933471	AC2-161 C	2.52
933472	AC2-161 E	1.3
934011	AD1-025 C O1	40.18
934012	AD1-025 E O1	23.8
935111	AD1-144 C	0.97
935112	AD1-144 E	0.53
935161	AD1-151 C O1	38.39
935162	AD1-151 E O1	25.59
LTF	CARR	0.16
LTF	CBM-S1	0.99
LTF	CBM-S2	3.05
LTF	CBM-W1	0.62
LTF	CBM-W2	4.81
LTF	CIN	0.16

LTF	CPLE	1.04
LTF	DEARBORN	0.06
LTF	G-007	0.61
LTF	IPL	0.1
LTF	LGEE	0.04
LTF	MEC	0.67
LTF	O-066	2.05
LTF	RENSSELAER	0.13
LTF	ROSETON	0.93
292791	U1-032 E	12.03
LTF	WEC	0.05
914231	Y2-077	3.54
924811	AB2-134 C O1	30.62
924812	AB2-134 E O1	30.11
925331	AB2-190 C	47.77
925332	AB2-190 E	20.47
925692	AC1-045 E	0.53
926662	AC1-147 E	0.69
927221	AC1-216 C O1	23.37
927222	AC1-216 E O1	18.38

Appendix 8

(DVP - DVP) The 8CHCKAHM-8ELMONT 500 kV line (from bus 314903 to bus 314908 ckt 1) loads from 117.29% to 117.85% (**DC power flow**) of its load dump rating (3144 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 563T576'. This project contributes approximately 39.06 MW to the thermal violation.

CONTINGENCY 'DVP_P4-2: 563T576' /* MIDLOTHIAN 500 500 KV
 OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON
 500.00 - 8MDLTHAN 500.00
 OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN
 500.00 - 8NO ANNA 500.00
 END

Bus Number	Bus Name	Full Contribution
315131	1EDGECEMA	11.78
315132	1EDGECEMB	11.78
315108	1ELIZAR1	7.
315109	1ELIZAR2	6.88
315110	1ELIZAR3	7.09
315074	1HOPCGN1	10.5
315075	1HOPCGN2	10.36
315073	1STONECA	8.71
315233	1SURRY 2	62.92
315092	1YORKTN3	52.2
314557	3BETHEL C	1.05
314554	3BTLEBRO	1.02
314566	3CRESWEL	3.96
314572	3EMPORIA	0.55
314578	3HORNRTN	4.49
314582	3KELFORD	1.2
314315	3LOCKS E	1.42
314603	3SCOT NK	4.61
314617	3TUNIS	1.26
314539	3UNCAMP	3.88
314541	3WATKINS	1.08
314620	6CASHIE	1.33
314574	6EVERETS	3.37
314189	6PAPERMILL	10.95
314594	6PLYMOTH	1.37
314648	6SUNBURY	1.55
314421	6WINCHST	0.33

314651	6WINFALL	3.04
932041	AC2-012 C	18.53
932042	AC2-012 E	30.23
932531	AC2-073 C	3.89
932532	AC2-073 E	1.96
932581	AC2-078 C	5.46
932582	AC2-078 E	8.91
932591	AC2-079 C	10.89
932592	AC2-079 E	17.77
932631	AC2-084 C	12.06
932632	AC2-084 E	5.94
932701	AC2-093 C	104.49
932702	AC2-093 E	59.77
932831	AC2-110 C	2.14
932832	AC2-110 E	3.5
933061	AC2-130	3.11
933071	AC2-131 1	2.1
933081	AC2-131 2	0.96
933111	AC2-132 1	1.11
933121	AC2-132 2	0.57
933261	AC2-137 C	2.87
933262	AC2-137 E	1.87
933271	AC2-138 C	0.94
933272	AC2-138 E	1.18
933291	AC2-141 C	59.42
933292	AC2-141 E	25.36
933451	AC2-158 C	8.43
933452	AC2-158 E	8.43
933461	AC2-159 C	9.5
933462	AC2-159 E	9.5
933471	AC2-161 C	4.04
933472	AC2-161 E	2.08
933711	AC2-194 C	1.88
933712	AC2-194 E	3.04
933731	AC2-196 C	3.26
933732	AC2-196 E	2.17
933991	AD1-023 C	20.86
933992	AD1-023 E	11.36
934011	AD1-025 C O1	24.53
934012	AD1-025 E O1	14.53
934041	AD1-029 C	14.92
934042	AD1-029 E	9.83
934061	AD1-033 C O1	13.67
934062	AD1-033 E O1	9.12
934071	AD1-034 C O1	9.11

934072	AD1-034 E O1	5.91
934141	AD1-041 C O1	8.48
934142	AD1-041 E O1	5.65
934201	AD1-047 C	10.68
934202	AD1-047 E	7.12
934211	AD1-048 C	2.72
934212	AD1-048 E	1.37
934231	AD1-050 C	5.54
934232	AD1-050 E	3.03
934331	AD1-057 C O1	13.1
934332	AD1-057 E O1	6.99
934391	AD1-063 C	2.63
934392	AD1-063 E	1.75
934521	AD1-076 C O1	87.15
934522	AD1-076 E O1	44.38
934571	AD1-082 C O1	11.6
934572	AD1-082 E O1	6.62
934611	AD1-087 C O1	10.29
934612	AD1-087 E O1	4.81
LTF	AD1-120	12.89
LTF	AD1-121	12.82
935111	AD1-144 C	3.05
935112	AD1-144 E	1.67
935161	AD1-151 C O1	23.44
935162	AD1-151 E O1	15.62
935171	AD1-152 C O1	9.53
935172	AD1-152 E O1	6.36
935211	AD1-156 C	2.54
935212	AD1-156 E	1.69
LTF	CARR	0.99
LTF	CBM-S1	12.81
LTF	CBM-S2	30.24
LTF	CBM-W1	20.3
LTF	CBM-W2	66.23
LTF	CIN	4.7
LTF	CPL	9.79
LTF	G-007	4.19
LTF	IPL	2.98
LTF	LGEE	1.04
LTF	MEC	12.09
LTF	MECS	2.95
LTF	O-066	14.
LTF	RENSSELAER	0.79
LTF	ROSETON	5.72
292791	U1-032 E	4.54

900672	V4-068 E	0.45
901082	W1-029E	79.92
LTF	WEC	1.3
907092	X1-038 E	9.71
913392	Y1-086 E	3.84
916042	Z1-036 E	77.7
916191	Z1-068 C	0.1
916192	Z1-068 E	3.41
916302	Z1-086 E	13.58
917122	Z2-027 E	1.86
917332	Z2-043 E	1.44
917342	Z2-044 E	0.75
917512	Z2-088 E OP1	5.12
917592	Z2-099 E	0.67
918492	AA1-063AE OP	5.71
918512	AA1-065 E OP	6.76
918532	AA1-067 E	1.01
918562	AA1-072 E	0.24
919152	AA1-139 E	11.57
919692	AA2-053 E	5.19
919702	AA2-057 E	4.68
919732	AA2-059 E	0.94
919822	AA2-068 E	1.38
LTF	AA2-074	6.66
920022	AA2-086 E	0.36
920042	AA2-088 E	16.01
920592	AA2-165 E	0.62
920631	AA2-169 C	2.75
920632	AA2-169 E	1.26
920672	AA2-174 E	0.6
920691	AA2-178 C	15.82
920692	AA2-178 E	6.78
930051	AB1-013 C	4.78
930052	AB1-013 E	31.96
930401	AB1-081 C	11.37
930402	AB1-081 E	4.87
930861	AB1-132 C	19.1
930862	AB1-132 E	8.19
931231	AB1-173 C	3.
931232	AB1-173 E	1.4
931241	AB1-173AC	3.
931242	AB1-173AE	1.4
923801	AB2-015 C O1	13.67
923802	AB2-015 E O1	11.21
923831	AB2-022 C	4.06

923832	AB2-022 E	2.19
923842	AB2-024 E	1.84
923852	AB2-025 E	1.43
923911	AB2-031 C O1	2.98
923912	AB2-031 E O1	1.47
923941	AB2-035 C	0.44
923942	AB2-035 E	0.19
923991	AB2-040 C O1	9.79
923992	AB2-040 E O1	8.01
924071	AB2-051	249.42
924151	AB2-059 C O1	13.4
924152	AB2-059 E O1	6.91
924241	AB2-068 O1	619.77
924381	AB2-087 C	0.85
924382	AB2-087 E	0.4
924391	AB2-088 C	0.57
924392	AB2-088 E	0.27
924401	AB2-089 C	2.51
924402	AB2-089 E	1.29
924491	AB2-098 C	0.79
924492	AB2-098 E	0.34
924501	AB2-099 C	0.88
924502	AB2-099 E	0.38
924511	AB2-100 C	15.26
924512	AB2-100 E	7.52
924811	AB2-134 C O1	18.7
924812	AB2-134 E O1	18.38
925051	AB2-160 C O1	6.17
925052	AB2-160 E O1	10.07
925061	AB2-161 C O1	5.09
925062	AB2-161 E O1	8.31
925121	AB2-169 C	9.76
925122	AB2-169 E	8.76
925171	AB2-174 C O1	9.32
925172	AB2-174 E O1	8.43
925281	AB2-186 C	1.05
925282	AB2-186 E	0.45
925291	AB2-188 C O1	3.9
925292	AB2-188 E O1	1.75
925331	AB2-190 C	29.16
925332	AB2-190 E	12.5
925522	AC1-027 E	2.08
925591	AC1-034 C	9.
925592	AC1-034 E	6.79
925692	AC1-045 E	1.67

925781	AC1-054 C	8.64
925782	AC1-054 E	3.98
925861	AC1-065 C	5.36
925862	AC1-065 E	8.75
926071	AC1-086 C	28.13
926072	AC1-086 E	12.8
926201	AC1-098 C	8.46
926202	AC1-098 E	5.04
926211	AC1-099 C	2.83
926212	AC1-099 E	1.66
926291	AC1-107	935.5
926662	AC1-147 E	2.41
926741	AC1-159	120.26
926751	AC1-161 C	59.42
926752	AC1-161 E	25.36
926771	AC1-163 C	2.89
926772	AC1-163 E	1.35
926781	AC1-164 C	68.07
926782	AC1-164 E	30.58
927021	AC1-189 C	11.6
927022	AC1-189 E	5.78
927111	AC1-206 C	13.15
927112	AC1-206 E	6.22
927141	AC1-208 C	12.24
927142	AC1-208 E	5.43
927221	AC1-216 C O1	14.27
927222	AC1-216 E O1	11.22

Appendix 9

(DVP - DVP) The 8ELMONT-8LADYSMITH 500 kV line (from bus 314908 to bus 314911 ckt 1) loads from 155.96% to 156.5% (**DC power flow**) of its emergency rating (2442 MVA) for the single line contingency outage of 'DVP_P1-2: LN 576'. This project contributes approximately 30.48 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 576'

OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN
500.00 - 8NO ANNA 500.00
END

Bus Number	Bus Name	Full Contribution
315058	1CHESTF3	6.41
315059	1CHESTF4	10.39
315060	1CHESTF5	22.04
315061	1CHESTG7	8.64
315063	1CHESTG8	8.54
315062	1CHESTS7	3.93
315064	1CHESTS8	4.38
315067	1DARBY 1	5.62
315068	1DARBY 2	5.63
315069	1DARBY 3	5.65
315070	1DARBY 4	5.65
315074	1HOPCGN1	15.08
315075	1HOPCGN2	14.88
315078	1HOPHCF2	4.77
315079	1HOPHCF3	4.77
315080	1HOPHCF4	7.24
315083	1SPRUNCA	18.62
315084	1SPRUNCB	18.62
315085	1SPRUNCC	13.81
315086	1SPRUNCD	13.81
315233	1SURRY 2	55.09
315092	1YORKTN3	50.67
314315	3LOCKS E	2.22
314309	6IRON208	0.98
314236	6NRTHEST	0.41
314421	6WINCHST	0.32
932041	AC2-012 C	18.08
932501	AC2-070 C	3.15
932531	AC2-073 C	4.17

932581	AC2-078 C	7.15
932591	AC2-079 C	11.82
932631	AC2-084 C	13.79
932701	AC2-093 C	113.43
932831	AC2-110 C	2.34
933061	AC2-130	4.4
933071	AC2-131 1	2.98
933081	AC2-131 2	1.35
933111	AC2-132 1	1.57
933121	AC2-132 2	0.8
933261	AC2-137 C	3.87
933291	AC2-141 C	54.33
933451	AC2-158 C	9.04
933461	AC2-159 C	10.73
933471	AC2-161 C	4.22
933481	AC2-162 C	4.53
933711	AC2-194 C	1.88
933731	AC2-196 C	3.16
933991	AD1-023 C	21.99
934011	AD1-025 C O1	30.48
934041	AD1-029 C	17.06
934061	AD1-033 C O1	13.26
934071	AD1-034 C O1	14.26
934141	AD1-041 C O1	9.1
934201	AD1-047 C	12.81
934211	AD1-048 C	4.49
934391	AD1-063 C	2.82
934521	AD1-076 C O1	91.28
934571	AD1-082 C O1	13.52
LTF	AD1-092	5.99
LTF	AD1-093	10.26
LTF	AD1-094	1.92
LTF	AD1-120	17.84
LTF	AD1-121	17.8
935111	AD1-144 C	3.06
935161	AD1-151 C O1	29.12
935211	AD1-156 C	3.7
LTF	CARR	1.65
LTF	CBM-S1	25.74
LTF	CBM-S2	42.18
LTF	CBM-W1	59.72
LTF	CBM-W2	138.96
LTF	CIN	13.91
LTF	CPLE	12.52
LTF	IPL	8.89

LTF	LGEE	3.04
LTF	MEC	29.72
LTF	MECS	13.46
LTF	RENSSELAER	1.32
LTF	ROSETON	9.56
297087	V2-040	0.27
LTF	WEC	3.73
LTF	Y3-032	8.73
LTF	Z1-043	14.67
LTF	AA2-074	8.52
920691	AA2-178 C	16.3
930051	AB1-013 C	4.92
930121	AB1-027 C	0.94
930861	AB1-132 C	22.44
931231	AB1-173 C	3.6
931241	AB1-173AC	3.6
LTF	AB2-013	8.55
923801	AB2-015 C O1	14.56
923831	AB2-022 C	4.01
923911	AB2-031 C O1	3.58
923991	AB2-040 C O1	11.74
924071	AB2-051	242.92
924241	AB2-068 O1	417.67
924381	AB2-087 C	0.93
924501	AB2-099 C	0.96
924511	AB2-100 C	18.71
924811	AB2-134 C O1	23.23
925051	AB2-160 C O1	9.66
925061	AB2-161 C O1	5.93
925121	AB2-169 C	10.53
925171	AB2-174 C O1	11.24
925281	AB2-186 C	1.06
925291	AB2-188 C O1	4.02
925331	AB2-190 C	36.24
925861	AC1-065 C	5.85
926071	AC1-086 C	33.04
926201	AC1-098 C	9.68
926211	AC1-099 C	3.24
926291	AC1-107	630.45
926411	AC1-112 C	0.73
926741	AC1-159	117.13
926751	AC1-161 C	54.33
926771	AC1-163 C	3.17
926781	AC1-164 C	75.71
927041	AC1-191 C	16.51

927111	AC1-206 C	16.2
927141	AC1-208 C	14.19
927221	AC1-216 C O1	17.73

Appendix 10

(DVP - DVP) The 8MDLTHAN-8NO ANNA 500 kV line (from bus 314914 to bus 314918 ckt 1) loads from 124.6% to 125.06% (**DC power flow**) of its emergency rating (2442 MVA) for the single line contingency outage of 'DVP_P1-2: LN 574'. This project contributes approximately 24.76 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 574'

OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1 /* 8ELMONT
500.00 - 8LDYSMTH 500.00
END

Bus Number	Bus Name	Full Contribution
315102	1BRUNSWICKG1	16.36
315103	1BRUNSWICKG2	16.36
315104	1BRUNSWICKG3	16.36
315105	1BRUNSWICKS1	33.98
315099	1CHESPKB	2.06
315131	1EDGECEMA	13.32
315132	1EDGECEMB	13.32
315108	1ELIZAR1	6.07
315109	1ELIZAR2	5.97
315110	1ELIZAR3	6.15
315074	1HOPCGN1	11.87
315075	1HOPCGN2	11.72
315083	1SPRUNCA	15.71
315084	1SPRUNCB	15.71
315085	1SPRUNCC	11.64
315086	1SPRUNCD	11.64
314315	3LOCKS E	1.85
932041	AC2-012 C	16.09
932501	AC2-070 C	2.04
932531	AC2-073 C	2.99
932581	AC2-078 C	6.2
932591	AC2-079 C	10.49
932631	AC2-084 C	13.04
932701	AC2-093 C	123.19
932831	AC2-110 C	1.7
933061	AC2-130	3.23
933071	AC2-131 1	2.19
933081	AC2-131 2	0.99
933111	AC2-132 1	1.15

933121	AC2-132 2	0.59
933261	AC2-137 C	2.68
933291	AC2-141 C	48.31
933451	AC2-158 C	8.36
933461	AC2-159 C	10.06
933471	AC2-161 C	3.62
933481	AC2-162 C	2.93
933501	AC2-165 C	16.08
933711	AC2-194 C	1.7
933731	AC2-196 C	2.83
933991	AD1-023 C	20.22
934011	AD1-025 C O1	24.76
934041	AD1-029 C	16.13
934061	AD1-033 C O1	11.87
934071	AD1-034 C O1	11.86
934141	AD1-041 C O1	6.64
934201	AD1-047 C	12.15
934211	AD1-048 C	3.14
934231	AD1-050 C	6.68
934331	AD1-057 C O1	14.69
934391	AD1-063 C	2.02
934521	AD1-076 C O1	83.81
934571	AD1-082 C O1	11.88
934611	AD1-087 C O1	12.89
934621	AD1-088 C O1	21.5
LTF	AD1-092	4.84
LTF	AD1-093	8.29
LTF	AD1-094	1.55
LTF	AD1-120	17.13
LTF	AD1-121	17.08
934911	AD1-123 C	1.45
935111	AD1-144 C	2.69
935161	AD1-151 C O1	23.66
935171	AD1-152 C O1	11.94
935211	AD1-156 C	3.27
935221	AD1-157 C	1.94
935231	AD1-160 C	1.42
LTF	CARR	1.37
LTF	CBM-S1	22.23
LTF	CBM-S2	40.33
LTF	CBM-W1	47.95
LTF	CBM-W2	118.94
LTF	CIN	11.12
LTF	CPL	12.29
LTF	IPL	7.09

LTF	LGEE	2.43
LTF	MEC	24.61
LTF	MECS	10.23
LTF	RENSSELAER	1.1
LTF	ROSETON	7.93
LTF	WEC	3.
LTF	Z1-043	11.83
916191	Z1-068 C	0.08
916301	Z1-086 C	99.51
LTF	AA2-074	8.36
920631	AA2-169 C	3.22
920691	AA2-178 C	14.88
930051	AB1-013 C	4.49
930401	AB1-081 C	12.86
930861	AB1-132 C	21.22
931231	AB1-173 C	3.42
931241	AB1-173AC	3.42
LTF	AB2-013	6.91
923801	AB2-015 C O1	13.29
923831	AB2-022 C	3.61
923911	AB2-031 C O1	3.39
923941	AB2-035 C	0.49
923991	AB2-040 C O1	11.14
924021	AB2-043 C O1	4.25
924071	AB2-051	216.38
924151	AB2-059 C O1	15.15
924161	AB2-060 C O1	12.23
924241	AB2-068 O1	241.09
924301	AB2-077 C O1	2.7
924311	AB2-078 C O1	2.7
924321	AB2-079 C O1	2.7
924381	AB2-087 C	0.86
924391	AB2-088 C	0.63
924401	AB2-089 C	3.03
924411	AB2-090 C	5.36
924491	AB2-098 C	0.83
924501	AB2-099 C	0.89
924511	AB2-100 C	17.74
924811	AB2-134 C O1	18.87
925051	AB2-160 C O1	8.03
925061	AB2-161 C O1	5.21
925121	AB2-169 C	9.78
925171	AB2-174 C O1	10.67
925221	AB2-176 C	2.21
925281	AB2-186 C	0.95

925291	AB2-188 C O1	3.67
925331	AB2-190 C	29.44
925521	AC1-027 C	0.62
925591	AC1-034 C	9.95
925611	AC1-036 C	1.26
925781	AC1-054 C	10.31
925861	AC1-065 C	4.24
926071	AC1-086 C	31.25
926201	AC1-098 C	9.15
926211	AC1-099 C	3.07
926271	AC1-105 C	7.54
926291	AC1-107	363.9
926741	AC1-159	104.33
926751	AC1-161 C	48.31
926761	AC1-162 C	37.21
926771	AC1-163 C	2.95
926781	AC1-164 C	51.59
927021	AC1-189 C	12.57
927111	AC1-206 C	15.37
927141	AC1-208 C	13.46
927221	AC1-216 C O1	14.41

Appendix 1

(DVP - DVP) The 6HOPEWELL-6CHESTF B 230 kV line (from bus 314303 to bus 314287 ckt 1) loads from 92.31% to 103.0% (**DC power flow**) of its load dump rating (541 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: G5T228'. This project contributes approximately 57.82 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: G5T228'                /*_ CHESTERFIELD
  OPEN BRANCH FROM BUS 314286 TO BUS 314278 CKT 1      /*L228
CHESTERFIELD BERMUDA
  OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1      /*L228 BERMUDA
HOPEWELL
  REMOVE MACHINE 5 FROM BUS 315060                /*CHESTERFIELD GEN
G5
END
```

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315120	1GRAVEL4	3.94
315121	1GRAVEL5	3.89
315122	1GRAVEL6	3.94
315074	1HOPCGN1	24.99
315075	1HOPCGN2	24.67
315077	1HOPHCF1	7.9
315078	1HOPHCF2	7.9
315079	1HOPHCF3	7.9
315080	1HOPHCF4	11.99
315076	1HOPPOLC	5.63
315073	1STONECA	20.73
315116	1SURRY 1	39.02
932041	AC2-012 C	5.08
932042	AC2-012 E	8.29
933471	AC2-161 C	2.34
933472	AC2-161 E	1.2
934011	AD1-025 C O2	36.31
934012	AD1-025 E O2	21.51
935111	AD1-144 C	0.94
935112	AD1-144 E	0.51
LTF	CARR	0.14
LTF	CBM-S1	0.61
LTF	CBM-S2	2.19

<i>LTF</i>	<i>CBM-W2</i>	<i>2.77</i>
<i>LTF</i>	<i>CIN</i>	<i>< 0.01</i>
<i>LTF</i>	<i>CLIFTY</i>	<i>0.3</i>
<i>LTF</i>	<i>CPLE</i>	<i>0.76</i>
<i>LTF</i>	<i>DEARBORN</i>	<i>0.09</i>
<i>LTF</i>	<i>G-007</i>	<i>0.52</i>
<i>LTF</i>	<i>LGEE</i>	<i>< 0.01</i>
<i>LTF</i>	<i>MEC</i>	<i>0.28</i>
<i>LTF</i>	<i>O-066</i>	<i>1.73</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.11</i>
<i>LTF</i>	<i>ROSETON</i>	<i>0.81</i>
<i>LTF</i>	<i>TRIMBLE</i>	<i>< 0.01</i>
<i>292791</i>	<i>U1-032 E</i>	<i>10.8</i>
<i>LTF</i>	<i>WEC</i>	<i>< 0.01</i>
<i>914231</i>	<i>Y2-077</i>	<i>3.18</i>
<i>916192</i>	<i>Z1-068 E</i>	<i>0.86</i>
<i>924071</i>	<i>AB2-051</i>	<i>66.52</i>
<i>924811</i>	<i>AB2-134 C O1</i>	<i>27.68</i>
<i>924812</i>	<i>AB2-134 E O1</i>	<i>27.22</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>43.17</i>
<i>925332</i>	<i>AB2-190 E</i>	<i>18.5</i>
<i>925522</i>	<i>AC1-027 E</i>	<i>0.53</i>
<i>925692</i>	<i>AC1-045 E</i>	<i>0.51</i>
<i>926662</i>	<i>AC1-147 E</i>	<i>0.66</i>
<i>926741</i>	<i>AC1-159</i>	<i>32.07</i>
<i>927221</i>	<i>AC1-216 C O1</i>	<i>21.12</i>
<i>927222</i>	<i>AC1-216 E O1</i>	<i>16.61</i>

Appendix 2

(DVP - DVP) The 6FOUR RIVERS-6STJOHN 230 kV line (from bus 314212 to bus 314150 ckt 1) loads from 122.59% to 123.09% (**DC power flow**) of its emergency rating (749 MVA) for the single line contingency outage of 'DVP_P1-2: LN 574'. This project contributes approximately 8.92 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 574'

OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1

/* 8ELMONT

500.00 - 8LDYSMTH 500.00

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315053	1BELMED1	2.08
315054	1BELMED2	2.08
315055	1BELMED3	1.73
315058	1CHESTF3	2.18
315059	1CHESTF4	3.53
315060	1CHESTF5	7.11
315065	1CHESTF6	14.51
315061	1CHESTG7	2.79
315063	1CHESTG8	2.76
315062	1CHESTS7	1.27
315064	1CHESTS8	1.41
315067	1DARBY 1	2.05
315068	1DARBY 2	2.05
315069	1DARBY 3	2.06
315070	1DARBY 4	2.06
315043	1FOUR RIVERA	6.75
315044	1FOUR RIVERB	5.22
315045	1FOUR RIVERC	6.75
315046	1FOUR RIVERD	5.22
315047	1FOUR RIVERE	5.22
315048	1FOUR RIVERF	6.75
315074	1HOPCGN1	4.73
315075	1HOPCGN2	4.67
315083	1SPRUNCA	6.19
315084	1SPRUNCB	6.19
315085	1SPRUNCC	4.59
315086	1SPRUNCD	4.59

314315	3LOCKS E	0.69
314309	6IRON208	0.33
314236	6NRTHEST	0.15
314250	6ROCKVILLE	0.17
932501	AC2-070 C	1.19
932581	AC2-078 C	2.05
933061	AC2-130	1.42
933071	AC2-131 1	0.96
933081	AC2-131 2	0.44
933111	AC2-132 1	0.51
933121	AC2-132 2	0.26
933261	AC2-137 C	1.27
933481	AC2-162 C	1.71
934011	AD1-025 C O2	8.92
934141	AD1-041 C O2	2.59
934211	AD1-048 C	1.56
934571	AD1-082 C O2	3.82
LTF	AD1-120	4.
LTF	AD1-121	3.99
935161	AD1-151 C O2	8.28
935211	AD1-156 C	1.09
LTF	CARR	0.42
LTF	CBM-S1	5.86
LTF	CBM-S2	9.49
LTF	CBM-W1	13.64
LTF	CBM-W2	31.65
LTF	CIN	3.19
LTF	CPLE	2.81
LTF	IPL	2.04
LTF	LGEE	0.7
LTF	MEC	6.78
LTF	MECS	3.06
LTF	RENSSELAER	0.33
LTF	ROSETON	2.43
297087	V2-040	0.12
LTF	WEC	0.85
918691	AA1-083	1.19
919211	AA1-145	20.15
LTF	AA2-074	1.91

<i>930121</i>	<i>AB1-027 C</i>	<i>0.36</i>
<i>924061</i>	<i>AB2-050</i>	<i>1.19</i>
<i>924241</i>	<i>AB2-068 O1</i>	<i>107.17</i>
<i>924811</i>	<i>AB2-134 C O1</i>	<i>6.8</i>
<i>925051</i>	<i>AB2-160 C O1</i>	<i>3.01</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>10.6</i>
<i>926291</i>	<i>AC1-107</i>	<i>161.76</i>
<i>926411</i>	<i>AC1-112 C</i>	<i>0.28</i>
<i>926551</i>	<i>AC1-134</i>	<i>15.1</i>
<i>926781</i>	<i>AC1-164 C</i>	<i>23.18</i>
<i>927041</i>	<i>AC1-191 C</i>	<i>6.71</i>
<i>927221</i>	<i>AC1-216 C O1</i>	<i>5.19</i>

Appendix 3

(DVP - DVP) The 8ELMONT 500/230 kV transformer (from bus 314218 to bus 314908 ckt 1) loads from 120.16% to 121.39% (**DC power flow**) of its load dump rating (1051 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: H2T557'. This project contributes approximately 33.15 MW to the thermal violation.

CONTINGENCY 'DVP_P4-2: H2T557' /* ELMONT
 OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO
 CHICKAHOMINY (LINE 557)
 OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1
 /*CHICKAHOMINY 500-230 (TX#1)
 OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2 /*ELMONT 500-
 230 (TX#2)
 END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315067	1DARBY 1	4.99
315068	1DARBY 2	4.99
315069	1DARBY 3	5.01
315070	1DARBY 4	5.01
315043	1FOUR RIVERA	6.63
315044	1FOUR RIVERB	5.13
315045	1FOUR RIVERC	6.63
315046	1FOUR RIVERD	5.13
315047	1FOUR RIVERE	5.13
315048	1FOUR RIVERF	6.63
315074	1HOPCGN1	11.28
315075	1HOPCGN2	11.14
315083	1SPRUNCA	14.95
315084	1SPRUNCB	14.95
315085	1SPRUNCC	11.08
315086	1SPRUNCD	11.08
315073	1STONECA	9.36
314566	3CRESWEL	2.11
314572	3EMPORIA	0.36
314315	3LOCKS E	1.65
314617	3TUNIS	0.71
314539	3UNCAMP	2.19
314541	3WATKINS	0.61

314620	6CASHIE	0.72
314229	6MT RD221	1.41
314236	6NRTHEST	0.37
314189	6PAPERMILL	8.82
314594	6PLYMOTH	0.73
314250	6ROCKVILLE	0.4
314256	6ROCKVILLE E	1.15
314648	6SUNBURY	0.81
314651	6WINFALL	1.59
932041	AC2-012 C	9.62
932042	AC2-012 E	15.7
932501	AC2-070 C	2.9
932502	AC2-070 E	1.2
932531	AC2-073 C	3.1
932532	AC2-073 E	1.56
932581	AC2-078 C	4.75
932582	AC2-078 E	7.75
932591	AC2-079 C	6.82
932592	AC2-079 E	11.13
932831	AC2-110 C	1.74
932832	AC2-110 E	2.84
933061	AC2-130	3.48
933071	AC2-131 1	2.36
933081	AC2-131 2	1.07
933111	AC2-132 1	1.24
933121	AC2-132 2	0.63
933261	AC2-137 C	3.16
933262	AC2-137 E	2.05
933271	AC2-138 C	0.87
933272	AC2-138 E	1.09
933291	AC2-141 C	27.16
933292	AC2-141 E	11.59
933451	AC2-158 C	4.63
933452	AC2-158 E	4.63
933471	AC2-161 C	2.47
933472	AC2-161 E	1.27
933481	AC2-162 C	4.17
933482	AC2-162 E	2.15
933711	AC2-194 C	0.98

933712	AC2-194 E	1.59
933731	AC2-196 C	1.66
933732	AC2-196 E	1.1
933991	AD1-023 C	11.29
933992	AD1-023 E	6.14
934011	AD1-025 C O2	20.82
934012	AD1-025 E O2	12.33
934061	AD1-033 C O2	6.97
934062	AD1-033 E O2	4.65
934071	AD1-034 C O2	7.83
934072	AD1-034 E O2	5.07
934141	AD1-041 C O2	7.07
934142	AD1-041 E O2	4.71
934191	AD1-046 C	4.71
934192	AD1-046 E	3.14
934201	AD1-047 C	6.75
934202	AD1-047 E	4.5
934211	AD1-048 C	3.82
934212	AD1-048 E	1.93
934391	AD1-063 C	2.1
934392	AD1-063 E	1.4
934521	AD1-076 C O2	44.5
934522	AD1-076 E O2	22.66
934571	AD1-082 C O2	8.78
934572	AD1-082 E O2	5.01
934781	AD1-105 C	8.08
934782	AD1-105 E	5.62
LTF	AD1-120	5.93
LTF	AD1-121	5.89
935111	AD1-144 C	1.68
935112	AD1-144 E	0.92
935161	AD1-151 C O2	15.11
935162	AD1-151 E O2	10.07
935211	AD1-156 C	2.56
935212	AD1-156 E	1.71
LTF	CARR	0.67
LTF	CBM-S1	3.86
LTF	CBM-S2	13.84
LTF	CBM-W1	0.21

<i>LTF</i>	<i>CBM-W2</i>	<i>17.92</i>
<i>LTF</i>	<i>CIN</i>	<i>0.13</i>
<i>LTF</i>	<i>CLIFTY</i>	<i>1.61</i>
<i>LTF</i>	<i>CPLE</i>	<i>4.75</i>
<i>LTF</i>	<i>DEARBORN</i>	<i>0.47</i>
<i>LTF</i>	<i>G-007</i>	<i>2.31</i>
<i>LTF</i>	<i>IPL</i>	<i>0.06</i>
<i>LTF</i>	<i>LGEE</i>	<i>0.05</i>
<i>LTF</i>	<i>MEC</i>	<i>1.99</i>
<i>LTF</i>	<i>O-066</i>	<i>7.73</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.53</i>
<i>LTF</i>	<i>ROSETON</i>	<i>3.84</i>
<i>292791</i>	<i>U1-032 E</i>	<i>4.87</i>
<i>297087</i>	<i>V2-040</i>	<i>0.28</i>
<i>900672</i>	<i>V4-068 E</i>	<i>0.26</i>
<i>901082</i>	<i>W1-029E</i>	<i>41.82</i>
<i>LTF</i>	<i>WEC</i>	<i>0.06</i>
<i>907092</i>	<i>X1-038 E</i>	<i>5.47</i>
<i>913392</i>	<i>Y1-086 E</i>	<i>1.99</i>
<i>916042</i>	<i>Z1-036 E</i>	<i>40.84</i>
<i>916192</i>	<i>Z1-068 E</i>	<i>1.76</i>
<i>917122</i>	<i>Z2-027 E</i>	<i>0.96</i>
<i>917592</i>	<i>Z2-099 E</i>	<i>0.38</i>
<i>918492</i>	<i>AA1-063AE OP</i>	<i>3.35</i>
<i>918512</i>	<i>AA1-065 E OP</i>	<i>3.74</i>
<i>918691</i>	<i>AA1-083</i>	<i>1.16</i>
<i>919152</i>	<i>AA1-139 E</i>	<i>5.92</i>
<i>919211</i>	<i>AA1-145</i>	<i>19.79</i>
<i>919732</i>	<i>AA2-059 E</i>	<i>0.5</i>
<i>LTF</i>	<i>AA2-074</i>	<i>3.23</i>
<i>920022</i>	<i>AA2-086 E</i>	<i>0.21</i>
<i>920042</i>	<i>AA2-088 E</i>	<i>9.15</i>
<i>920691</i>	<i>AA2-178 C</i>	<i>8.43</i>
<i>920692</i>	<i>AA2-178 E</i>	<i>3.61</i>
<i>930051</i>	<i>AB1-013 C</i>	<i>2.54</i>
<i>930052</i>	<i>AB1-013 E</i>	<i>17.02</i>
<i>930121</i>	<i>AB1-027 C</i>	<i>0.87</i>
<i>930122</i>	<i>AB1-027 E</i>	<i>1.89</i>
<i>930861</i>	<i>AB1-132 C</i>	<i>11.78</i>

930862	<i>AB1-132 E</i>	5.05
931231	<i>AB1-173 C</i>	1.9
931232	<i>AB1-173 E</i>	0.89
931241	<i>AB1-173AC</i>	1.9
931242	<i>AB1-173AE</i>	0.89
923801	<i>AB2-015 C O1</i>	7.73
923802	<i>AB2-015 E O1</i>	6.34
923831	<i>AB2-022 C</i>	2.1
923832	<i>AB2-022 E</i>	1.13
923842	<i>AB2-024 E</i>	1.49
923852	<i>AB2-025 E</i>	1.09
923862	<i>AB2-026 E</i>	0.88
923911	<i>AB2-031 C O1</i>	1.88
923912	<i>AB2-031 E O1</i>	0.93
923991	<i>AB2-040 C O1</i>	6.19
923992	<i>AB2-040 E O1</i>	5.06
924061	<i>AB2-050</i>	1.16
924071	<i>AB2-051</i>	128.86
924241	<i>AB2-068 O1</i>	177.95
924381	<i>AB2-087 C</i>	0.48
924382	<i>AB2-087 E</i>	0.22
924501	<i>AB2-099 C</i>	0.49
924502	<i>AB2-099 E</i>	0.21
924511	<i>AB2-100 C</i>	10.48
924512	<i>AB2-100 E</i>	5.16
924811	<i>AB2-134 C O1</i>	15.87
924812	<i>AB2-134 E O1</i>	15.6
925051	<i>AB2-160 C O1</i>	7.18
925052	<i>AB2-160 E O1</i>	11.71
925061	<i>AB2-161 C O1</i>	3.63
925062	<i>AB2-161 E O1</i>	5.92
925171	<i>AB2-174 C O1</i>	5.96
925172	<i>AB2-174 E O1</i>	5.39
925281	<i>AB2-186 C</i>	0.55
925282	<i>AB2-186 E</i>	0.24
925291	<i>AB2-188 C O1</i>	2.08
925292	<i>AB2-188 E O1</i>	0.93
925331	<i>AB2-190 C</i>	24.76
925332	<i>AB2-190 E</i>	10.61

925522	<i>ACI-027 E</i>	1.07
925692	<i>ACI-045 E</i>	0.92
925861	<i>ACI-065 C</i>	4.36
925862	<i>ACI-065 E</i>	7.11
926071	<i>ACI-086 C</i>	17.34
926072	<i>ACI-086 E</i>	7.89
926291	<i>ACI-107</i>	268.61
926411	<i>ACI-112 C</i>	0.68
926412	<i>ACI-112 E</i>	1.93
926441	<i>ACI-115 C</i>	1.01
926442	<i>ACI-115 E</i>	1.64
926472	<i>ACI-118 E</i>	1.07
926551	<i>ACI-134</i>	14.83
926662	<i>ACI-147 E</i>	1.25
926741	<i>ACI-159</i>	62.13
926751	<i>ACI-161 C</i>	27.16
926752	<i>ACI-161 E</i>	11.59
926771	<i>ACI-163 C</i>	1.63
926772	<i>ACI-163 E</i>	0.76
926781	<i>ACI-164 C</i>	58.41
926782	<i>ACI-164 E</i>	26.24
927041	<i>ACI-191 C</i>	17.46
927042	<i>ACI-191 E</i>	8.7
927111	<i>ACI-206 C</i>	9.15
927112	<i>ACI-206 E</i>	4.32
927221	<i>ACI-216 C OI</i>	12.11
927222	<i>ACI-216 E OI</i>	9.53

Appendix 4

(DVP - DVP) The 6PRGEORG 230/115 kV transformer (from bus 314269 to bus 314291 ckt 1) loads from 112.1% to 125.62% (**DC power flow**) of its load dump rating (220 MVA) for the tower line contingency outage of 'DVP_P7-1: LN 211-228'. This project contributes approximately 29.72 MW to the thermal violation.

CONTINGENCY 'DVP_P7-1: LN 211-228'

OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B
230.00 - 6HOPEWLL 230.00

OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA
230.00 - 6CHSTF A 230.00

OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA
230.00 - 6HOPEWLL 230.00

OPEN BUS 314278 /* ISLAND

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315120	1GRAVEL4	1.96
315121	1GRAVEL5	1.94
315122	1GRAVEL6	1.96
315074	1HOPCGN1	13.02
315075	1HOPCGN2	12.85
315077	1HOPHCF1	4.12
315078	1HOPHCF2	4.12
315079	1HOPHCF3	4.12
315080	1HOPHCF4	6.25
315076	1HOPPOLC	2.93
315073	1STONECA	10.8
315116	1SURRY 1	19.43
933471	AC2-161 C	1.13
933472	AC2-161 E	0.58
934011	AD1-025 C O2	18.66
934012	AD1-025 E O2	11.06
LTF	AMIL	0.03
LTF	BAYOU	0.07
LTF	BIG_CAJUN1	0.11
LTF	BIG_CAJUN2	0.22
LTF	BLUEG	0.19
LTF	CALDERWOOD	0.03

<i>LTF</i>	<i>CANNELTON</i>	<i>0.03</i>
<i>LTF</i>	<i>CARR</i>	<i>0.06</i>
<i>LTF</i>	<i>CATAWBA</i>	<i>< 0.01</i>
<i>LTF</i>	<i>CBM-S2</i>	<i>0.03</i>
<i>LTF</i>	<i>CELEVELAND</i>	<i>< 0.01</i>
<i>LTF</i>	<i>CHEOAH</i>	<i>0.03</i>
<i>LTF</i>	<i>CHILHOWEE</i>	<i>0.01</i>
<i>LTF</i>	<i>CHOCTAW</i>	<i>0.07</i>
<i>LTF</i>	<i>CLIFTY</i>	<i>0.82</i>
<i>LTF</i>	<i>COTTONWOOD</i>	<i>0.3</i>
<i>LTF</i>	<i>CPLE</i>	<i>0.04</i>
<i>LTF</i>	<i>DEARBORN</i>	<i>0.11</i>
<i>LTF</i>	<i>EDWARDS</i>	<i>0.06</i>
<i>LTF</i>	<i>ELMERSMITH</i>	<i>0.09</i>
<i>LTF</i>	<i>FARMERCITY</i>	<i>0.03</i>
<i>LTF</i>	<i>G-007</i>	<i>0.18</i>
<i>LTF</i>	<i>GIBSON</i>	<i>0.06</i>
<i>LTF</i>	<i>MORGAN</i>	<i>0.12</i>
<i>LTF</i>	<i>NEWTON</i>	<i>0.14</i>
<i>LTF</i>	<i>O-066</i>	<i>0.62</i>
<i>LTF</i>	<i>PRAIRIE</i>	<i>0.25</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.05</i>
<i>LTF</i>	<i>ROSETON</i>	<i>0.34</i>
<i>LTF</i>	<i>ROWAN</i>	<i>< 0.01</i>
<i>LTF</i>	<i>SANTEETLA</i>	<i>< 0.01</i>
<i>LTF</i>	<i>SMITHLAND</i>	<i>0.02</i>
<i>LTF</i>	<i>TATANKA</i>	<i>0.06</i>
<i>LTF</i>	<i>TILTON</i>	<i>0.07</i>
<i>LTF</i>	<i>TRIMBLE</i>	<i>0.04</i>
<i>LTF</i>	<i>TVA</i>	<i>0.06</i>
<i>292791</i>	<i>U1-032 E</i>	<i>5.62</i>
<i>LTF</i>	<i>UNIONPOWER</i>	<i>0.03</i>
<i>914231</i>	<i>Y2-077</i>	<i>1.66</i>
<i>924811</i>	<i>AB2-134 C O1</i>	<i>14.23</i>
<i>924812</i>	<i>AB2-134 E O1</i>	<i>13.99</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>22.19</i>
<i>925332</i>	<i>AB2-190 E</i>	<i>9.51</i>
<i>927221</i>	<i>AC1-216 C O1</i>	<i>10.86</i>
<i>927222</i>	<i>AC1-216 E O1</i>	<i>8.54</i>

Appendix 5

(DVP - DVP) The 6BERMUDA-6CHESTF A 230 kV line (from bus 314278 to bus 314286 ckt 1) loads from 111.25% to 122.91% (**DC power flow**) of its load dump rating (549 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 211T2124'. This project contributes approximately 63.98 MW to the thermal violation.

CONTINGENCY 'DVP_P4-2: 211T2124' /*_ HOPEWELL
 OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1 /*L211
 HOPEWELL CHESTERFIELD
 OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1 /*L2124
 END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315120	1GRAVEL4	4.29
315121	1GRAVEL5	4.23
315122	1GRAVEL6	4.28
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315077	1HOPHCF1	8.81
315078	1HOPHCF2	8.81
315079	1HOPHCF3	8.81
315080	1HOPHCF4	13.37
315076	1HOPPOLC	6.27
315073	1STONECA	23.11
315116	1SURRY 1	42.42
932041	AC2-012 C	5.33
932042	AC2-012 E	8.69
933471	AC2-161 C	2.52
933472	AC2-161 E	1.3
934011	AD1-025 C O2	40.18
934012	AD1-025 E O2	23.8
935111	AD1-144 C	0.97
935112	AD1-144 E	0.53
LTF	CARR	0.16
LTF	CBM-S1	0.99
LTF	CBM-S2	3.05
LTF	CBM-W1	0.62
LTF	CBM-W2	4.81
LTF	CIN	0.16

<i>LTF</i>	<i>CPLE</i>	<i>1.04</i>
<i>LTF</i>	<i>DEARBORN</i>	<i>0.06</i>
<i>LTF</i>	<i>G-007</i>	<i>0.61</i>
<i>LTF</i>	<i>IPL</i>	<i>0.1</i>
<i>LTF</i>	<i>LGEE</i>	<i>0.04</i>
<i>LTF</i>	<i>MEC</i>	<i>0.67</i>
<i>LTF</i>	<i>O-066</i>	<i>2.05</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.13</i>
<i>LTF</i>	<i>ROSETON</i>	<i>0.93</i>
<i>292791</i>	<i>U1-032 E</i>	<i>12.03</i>
<i>LTF</i>	<i>WEC</i>	<i>0.05</i>
<i>914231</i>	<i>Y2-077</i>	<i>3.54</i>
<i>924071</i>	<i>AB2-051</i>	<i>69.65</i>
<i>924811</i>	<i>AB2-134 C O1</i>	<i>30.62</i>
<i>924812</i>	<i>AB2-134 E O1</i>	<i>30.11</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>47.77</i>
<i>925332</i>	<i>AB2-190 E</i>	<i>20.47</i>
<i>925692</i>	<i>AC1-045 E</i>	<i>0.53</i>
<i>926662</i>	<i>AC1-147 E</i>	<i>0.69</i>
<i>926741</i>	<i>AC1-159</i>	<i>33.58</i>
<i>927221</i>	<i>AC1-216 C O1</i>	<i>23.37</i>
<i>927222</i>	<i>AC1-216 E O1</i>	<i>18.38</i>

Appendix 6

(DVP - DVP) The 6CHESTF B-6BASIN 230 kV line (from bus 314287 to bus 314276 ckt 1) loads from 121.99% to 124.06% (**DC power flow**) of its emergency rating (449 MVA) for the single line contingency outage of 'DVP_P1-2: LN 563'. This project contributes approximately 9.21 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 563'

OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1

/* 8CARSON

500.00 - 8MDLTHAN 500.00

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315065	1CHESTF6	33.34
315131	1EDGECMA	3.18
315132	1EDGECMB	3.18
315139	1GASTONA	1.58
315141	1GASTONB	1.58
315119	1GRAVEL3	1.24
315120	1GRAVEL4	1.26
315121	1GRAVEL5	1.24
315122	1GRAVEL6	1.26
315117	1GRAVELC	0.43
315074	1HOPCGN1	5.63
315075	1HOPCGN2	5.56
315077	1HOPHCF1	1.78
315078	1HOPHCF2	1.78
315079	1HOPHCF3	1.78
315080	1HOPHCF4	2.7
315076	1HOPPOLC	1.27
315116	1SURRY 1	12.47
314314	3LOCKS	0.06
314315	3LOCKS E	0.77
932041	AC2-012 C	3.21
932581	AC2-078 C	2.86
932591	AC2-079 C	3.07
932631	AC2-084 C	3.22
932701	AC2-093 C	23.37
933451	AC2-158 C	1.94
933461	AC2-159 C	2.55

933471	AC2-161 C	0.89
933711	AC2-194 C	0.35
933731	AC2-196 C	0.55
933991	AD1-023 C	4.54
934011	AD1-025 C O2	9.21
934041	AD1-029 C	3.98
934061	AD1-033 C O2	2.31
934071	AD1-034 C O2	5.06
934201	AD1-047 C	3.58
934331	AD1-057 C O2	3.61
934521	AD1-076 C O2	18.25
934571	AD1-082 C O2	5.05
935111	AD1-144 C	0.56
935211	AD1-156 C	1.97
LTF	CARR	0.2
LTF	CBM-S1	3.35
LTF	CBM-S2	7.31
LTF	CBM-W1	6.11
LTF	CBM-W2	17.58
LTF	CIN	1.4
LTF	CPL	2.35
LTF	IPL	0.89
LTF	LGEE	0.31
LTF	MEC	3.38
LTF	MECS	1.12
LTF	RENSSELAER	0.16
LTF	ROSETON	1.14
LTF	WEC	0.39
914231	Y2-077	0.72
LTF	AA2-074	1.6
920631	AA2-169 C	0.75
920691	AA2-178 C	3.22
930051	AB1-013 C	0.97
930401	AB1-081 C	3.05
930861	AB1-132 C	6.17
931231	AB1-173 C	1.01
931241	AB1-173AC	1.01
923801	AB2-015 C O1	3.22
923831	AB2-022 C	0.73

923851	AB2-025 C	0.31
923911	AB2-031 C O1	1.
923941	AB2-035 C	0.11
923991	AB2-040 C O1	3.28
924071	AB2-051	42.84
924151	AB2-059 C O1	3.6
924381	AB2-087 C	0.21
924391	AB2-088 C	0.15
924491	AB2-098 C	0.19
924501	AB2-099 C	0.22
924511	AB2-100 C	6.19
924811	AB2-134 C O1	7.02
925051	AB2-160 C O1	3.33
925061	AB2-161 C O1	1.87
925121	AB2-169 C	2.2
925171	AB2-174 C O1	3.2
925281	AB2-186 C	0.2
925291	AB2-188 C O1	0.79
925331	AB2-190 C	10.95
925591	AC1-034 C	2.34
925821	AC1-061	< 0.01
926071	AC1-086 C	9.08
926201	AC1-098 C	2.26
926211	AC1-099 C	0.76
926741	AC1-159	20.65
926771	AC1-163 C	0.71
927021	AC1-189 C	2.92
927111	AC1-206 C	5.47
927141	AC1-208 C	3.41
927221	AC1-216 C O1	5.36

Appendix 7

(DVP - DVP) The 6HOPEWELL-6BERMUDA 230 kV line (from bus 314303 to bus 314278 ckt 1) loads from 111.25% to 122.91% (**DC power flow**) of its load dump rating (549 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 211T2124'. This project contributes approximately 63.98 MW to the thermal violation.

CONTINGENCY 'DVP_P4-2: 211T2124' /*_ HOPEWELL
 OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1 /*L211
 HOPEWELL CHESTERFIELD
 OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1 /*L2124
 END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315120	1GRAVEL4	4.29
315121	1GRAVEL5	4.23
315122	1GRAVEL6	4.28
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315077	1HOPHCF1	8.81
315078	1HOPHCF2	8.81
315079	1HOPHCF3	8.81
315080	1HOPHCF4	13.37
315076	1HOPPOLC	6.27
315073	1STONECA	23.11
315116	1SURRY 1	42.42
932041	AC2-012 C	5.33
932042	AC2-012 E	8.69
933471	AC2-161 C	2.52
933472	AC2-161 E	1.3
934011	AD1-025 C O2	40.18
934012	AD1-025 E O2	23.8
935111	AD1-144 C	0.97
935112	AD1-144 E	0.53
LTF	CARR	0.16
LTF	CBM-S1	0.99
LTF	CBM-S2	3.05
LTF	CBM-W1	0.62
LTF	CBM-W2	4.81
LTF	CIN	0.16

<i>LTF</i>	<i>CPLE</i>	<i>1.04</i>
<i>LTF</i>	<i>DEARBORN</i>	<i>0.06</i>
<i>LTF</i>	<i>G-007</i>	<i>0.61</i>
<i>LTF</i>	<i>IPL</i>	<i>0.1</i>
<i>LTF</i>	<i>LGEE</i>	<i>0.04</i>
<i>LTF</i>	<i>MEC</i>	<i>0.67</i>
<i>LTF</i>	<i>O-066</i>	<i>2.05</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>0.13</i>
<i>LTF</i>	<i>ROSETON</i>	<i>0.93</i>
<i>292791</i>	<i>U1-032 E</i>	<i>12.03</i>
<i>LTF</i>	<i>WEC</i>	<i>0.05</i>
<i>914231</i>	<i>Y2-077</i>	<i>3.54</i>
<i>924071</i>	<i>AB2-051</i>	<i>69.65</i>
<i>924811</i>	<i>AB2-134 C O1</i>	<i>30.62</i>
<i>924812</i>	<i>AB2-134 E O1</i>	<i>30.11</i>
<i>925331</i>	<i>AB2-190 C</i>	<i>47.77</i>
<i>925332</i>	<i>AB2-190 E</i>	<i>20.47</i>
<i>925692</i>	<i>AC1-045 E</i>	<i>0.53</i>
<i>926662</i>	<i>AC1-147 E</i>	<i>0.69</i>
<i>926741</i>	<i>AC1-159</i>	<i>33.58</i>
<i>927221</i>	<i>AC1-216 C O1</i>	<i>23.37</i>
<i>927222</i>	<i>AC1-216 E O1</i>	<i>18.38</i>

Appendix 8

(DVP - DVP) The 8CHCKAHM-8ELMONT 500 kV line (from bus 314903 to bus 314908 ckt 1) loads from 117.29% to 117.86% (**DC power flow**) of its load dump rating (3144 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 563T576'. This project contributes approximately 39.06 MW to the thermal violation.

CONTINGENCY 'DVP_P4-2: 563T576' /* MIDLOTHIAN 500 500 KV
 OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON
 500.00 - 8MDLTHAN 500.00
 OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1 /* 8MDLTHAN
 500.00 - 8NO ANNA 500.00
 END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315131	1EDGECEMA	11.78
315132	1EDGECEMB	11.78
315108	1ELIZAR1	7.
315109	1ELIZAR2	6.88
315110	1ELIZAR3	7.09
315074	1HOPCGN1	10.5
315075	1HOPCGN2	10.36
315073	1STONECA	8.71
315233	1SURRY 2	62.92
315092	1YORKTN3	52.2
314557	3BETHEL C	1.05
314554	3BTLEBRO	1.02
314566	3CRESWEL	3.96
314572	3EMPORIA	0.55
314578	3HORNRTN	4.49
314582	3KELFORD	1.2
314315	3LOCKS E	1.42
314603	3SCOT NK	4.61
314617	3TUNIS	1.26
314539	3UNCAMP	3.89
314541	3WATKINS	1.08
314620	6CASHIE	1.33
314574	6EVERETS	3.37
314189	6PAPERMILL	10.95
314594	6PLYMOTH	1.37

314648	6SUNBURY	1.55
314421	6WINCHST	0.33
314651	6WINFALL	3.04
932041	AC2-012 C	18.53
932042	AC2-012 E	30.23
932531	AC2-073 C	3.89
932532	AC2-073 E	1.96
932581	AC2-078 C	5.46
932582	AC2-078 E	8.91
932591	AC2-079 C	10.89
932592	AC2-079 E	17.77
932631	AC2-084 C	12.06
932632	AC2-084 E	5.94
932701	AC2-093 C	104.49
932702	AC2-093 E	59.77
932831	AC2-110 C	2.14
932832	AC2-110 E	3.5
933061	AC2-130	3.11
933071	AC2-131 1	2.1
933081	AC2-131 2	0.96
933111	AC2-132 1	1.11
933121	AC2-132 2	0.57
933261	AC2-137 C	2.87
933262	AC2-137 E	1.87
933271	AC2-138 C	0.94
933272	AC2-138 E	1.18
933291	AC2-141 C	59.42
933292	AC2-141 E	25.36
933451	AC2-158 C	8.43
933452	AC2-158 E	8.43
933461	AC2-159 C	9.5
933462	AC2-159 E	9.5
933471	AC2-161 C	4.04
933472	AC2-161 E	2.08
933711	AC2-194 C	1.88
933712	AC2-194 E	3.04
933731	AC2-196 C	3.26
933732	AC2-196 E	2.17
933991	AD1-023 C	20.86

933992	AD1-023 E	11.36
934011	AD1-025 C O2	24.53
934012	AD1-025 E O2	14.53
934041	AD1-029 C	14.92
934042	AD1-029 E	9.83
934061	AD1-033 C O2	13.67
934062	AD1-033 E O2	9.11
934071	AD1-034 C O2	10.36
934072	AD1-034 E O2	6.71
934141	AD1-041 C O2	8.83
934142	AD1-041 E O2	5.88
934201	AD1-047 C	10.68
934202	AD1-047 E	7.12
934211	AD1-048 C	2.72
934212	AD1-048 E	1.37
934231	AD1-050 C	5.54
934232	AD1-050 E	3.03
934331	AD1-057 C O2	13.27
934332	AD1-057 E O2	7.08
934391	AD1-063 C	2.63
934392	AD1-063 E	1.75
934521	AD1-076 C O2	82.49
934522	AD1-076 E O2	42.
934571	AD1-082 C O2	10.78
934572	AD1-082 E O2	6.15
LTF	AD1-120	12.89
LTF	AD1-121	12.82
935111	AD1-144 C	3.05
935112	AD1-144 E	1.67
935161	AD1-151 C O2	44.22
935162	AD1-151 E O2	29.48
935211	AD1-156 C	2.54
935212	AD1-156 E	1.69
LTF	CARR	0.99
LTF	CBM-S1	12.82
LTF	CBM-S2	30.24
LTF	CBM-W1	20.28
LTF	CBM-W2	66.24
LTF	CIN	4.71

<i>LTF</i>	<i>CPL</i>	9.79
<i>LTF</i>	<i>G-007</i>	4.19
<i>LTF</i>	<i>IPL</i>	2.98
<i>LTF</i>	<i>LGEE</i>	1.04
<i>LTF</i>	<i>MEC</i>	12.09
<i>LTF</i>	<i>MECS</i>	2.95
<i>LTF</i>	<i>O-066</i>	14.
<i>LTF</i>	<i>RENSSELAER</i>	0.79
<i>LTF</i>	<i>ROSETON</i>	5.72
292791	<i>U1-032 E</i>	4.54
900672	<i>V4-068 E</i>	0.45
901082	<i>W1-029E</i>	79.92
<i>LTF</i>	<i>WEC</i>	1.3
907092	<i>X1-038 E</i>	9.71
913392	<i>Y1-086 E</i>	3.84
916042	<i>Z1-036 E</i>	77.7
916191	<i>Z1-068 C</i>	0.1
916192	<i>Z1-068 E</i>	3.41
916302	<i>Z1-086 E</i>	13.58
917122	<i>Z2-027 E</i>	1.86
917332	<i>Z2-043 E</i>	1.44
917342	<i>Z2-044 E</i>	0.75
917512	<i>Z2-088 E OP1</i>	5.12
917592	<i>Z2-099 E</i>	0.67
918492	<i>AA1-063AE OP</i>	5.71
918512	<i>AA1-065 E OP</i>	6.76
918532	<i>AA1-067 E</i>	1.01
918562	<i>AA1-072 E</i>	0.24
919152	<i>AA1-139 E</i>	11.57
919692	<i>AA2-053 E</i>	5.19
919702	<i>AA2-057 E</i>	4.68
919732	<i>AA2-059 E</i>	0.94
919822	<i>AA2-068 E</i>	1.38
<i>LTF</i>	<i>AA2-074</i>	6.66
920022	<i>AA2-086 E</i>	0.36
920042	<i>AA2-088 E</i>	16.01
920592	<i>AA2-165 E</i>	0.62
920631	<i>AA2-169 C</i>	2.75
920632	<i>AA2-169 E</i>	1.26

920672	AA2-174 E	0.6
920691	AA2-178 C	15.82
920692	AA2-178 E	6.78
930051	AB1-013 C	4.78
930052	AB1-013 E	31.96
930401	AB1-081 C	11.37
930402	AB1-081 E	4.87
930861	AB1-132 C	19.1
930862	AB1-132 E	8.19
931231	AB1-173 C	3.
931232	AB1-173 E	1.4
931241	AB1-173AC	3.
931242	AB1-173AE	1.4
923801	AB2-015 C O1	13.67
923802	AB2-015 E O1	11.21
923831	AB2-022 C	4.06
923832	AB2-022 E	2.19
923842	AB2-024 E	1.84
923852	AB2-025 E	1.43
923911	AB2-031 C O1	2.98
923912	AB2-031 E O1	1.47
923941	AB2-035 C	0.44
923942	AB2-035 E	0.19
923991	AB2-040 C O1	9.79
923992	AB2-040 E O1	8.01
924071	AB2-051	249.42
924151	AB2-059 C O1	13.4
924152	AB2-059 E O1	6.91
924241	AB2-068 O1	619.77
924381	AB2-087 C	0.85
924382	AB2-087 E	0.4
924391	AB2-088 C	0.57
924392	AB2-088 E	0.27
924401	AB2-089 C	2.51
924402	AB2-089 E	1.29
924491	AB2-098 C	0.79
924492	AB2-098 E	0.34
924501	AB2-099 C	0.88
924502	AB2-099 E	0.38

924511	AB2-100 C	15.26
924512	AB2-100 E	7.52
924811	AB2-134 C O1	18.7
924812	AB2-134 E O1	18.38
925051	AB2-160 C O1	6.17
925052	AB2-160 E O1	10.07
925061	AB2-161 C O1	5.09
925062	AB2-161 E O1	8.31
925121	AB2-169 C	9.76
925122	AB2-169 E	8.76
925171	AB2-174 C O1	9.32
925172	AB2-174 E O1	8.43
925281	AB2-186 C	1.05
925282	AB2-186 E	0.45
925291	AB2-188 C O1	3.9
925292	AB2-188 E O1	1.75
925331	AB2-190 C	29.16
925332	AB2-190 E	12.5
925522	AC1-027 E	2.08
925591	AC1-034 C	9.
925592	AC1-034 E	6.79
925692	AC1-045 E	1.67
925781	AC1-054 C	8.64
925782	AC1-054 E	3.98
925861	AC1-065 C	5.36
925862	AC1-065 E	8.75
926071	AC1-086 C	28.13
926072	AC1-086 E	12.8
926201	AC1-098 C	8.46
926202	AC1-098 E	5.04
926211	AC1-099 C	2.83
926212	AC1-099 E	1.66
926291	AC1-107	935.5
926662	AC1-147 E	2.41
926741	AC1-159	120.26
926751	AC1-161 C	59.42
926752	AC1-161 E	25.36
926771	AC1-163 C	2.89
926772	AC1-163 E	1.35

<i>926781</i>	<i>ACI-164 C</i>	<i>68.07</i>
<i>926782</i>	<i>ACI-164 E</i>	<i>30.58</i>
<i>927021</i>	<i>ACI-189 C</i>	<i>11.6</i>
<i>927022</i>	<i>ACI-189 E</i>	<i>5.78</i>
<i>927111</i>	<i>ACI-206 C</i>	<i>13.15</i>
<i>927112</i>	<i>ACI-206 E</i>	<i>6.22</i>
<i>927141</i>	<i>ACI-208 C</i>	<i>12.24</i>
<i>927142</i>	<i>ACI-208 E</i>	<i>5.43</i>
<i>927221</i>	<i>ACI-216 C O1</i>	<i>14.27</i>
<i>927222</i>	<i>ACI-216 E O1</i>	<i>11.22</i>

Appendix 9

(DVP - DVP) The 8ELMONT-8LADYSMITH 500 kV line (from bus 314908 to bus 314911 ckt 1) loads from 155.98% to 156.52% (**DC power flow**) of its emergency rating (2442 MVA) for the single line contingency outage of 'DVP_P1-2: LN 576'. This project contributes approximately 30.48 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 576'

OPEN BRANCH FROM BUS 314914 TO BUS 314918 CKT 1

/* 8MDLTHAN

500.00 - 8NO ANNA 500.00

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315058	1CHESTF3	6.41
315059	1CHESTF4	10.39
315060	1CHESTF5	22.04
315061	1CHESTG7	8.64
315063	1CHESTG8	8.54
315062	1CHESTS7	3.93
315064	1CHESTS8	4.38
315067	1DARBY 1	5.62
315068	1DARBY 2	5.63
315069	1DARBY 3	5.65
315070	1DARBY 4	5.65
315074	1HOPCGN1	15.08
315075	1HOPCGN2	14.88
315078	1HOPHCF2	4.77
315079	1HOPHCF3	4.77
315080	1HOPHCF4	7.24
315083	1SPRUNCA	18.62
315084	1SPRUNCB	18.62
315085	1SPRUNCC	13.81
315086	1SPRUNCD	13.81
315233	1SURRY 2	55.09
315092	1YORKTN3	50.67
314315	3LOCKS E	2.22
314309	6IRON208	0.98
314236	6NRTHEST	0.41
314421	6WINCHST	0.32
932041	AC2-012 C	18.09

932501	AC2-070 C	3.15
932531	AC2-073 C	4.17
932581	AC2-078 C	7.15
932591	AC2-079 C	11.82
932631	AC2-084 C	13.79
932701	AC2-093 C	113.43
932831	AC2-110 C	2.34
933061	AC2-130	4.4
933071	AC2-131 1	2.98
933081	AC2-131 2	1.35
933111	AC2-132 1	1.57
933121	AC2-132 2	0.8
933261	AC2-137 C	3.87
933291	AC2-141 C	54.33
933451	AC2-158 C	9.04
933461	AC2-159 C	10.73
933471	AC2-161 C	4.22
933481	AC2-162 C	4.53
933711	AC2-194 C	1.88
933731	AC2-196 C	3.16
933991	AD1-023 C	21.99
934011	AD1-025 C O2	30.48
934041	AD1-029 C	17.06
934061	AD1-033 C O2	13.27
934071	AD1-034 C O2	13.15
934141	AD1-041 C O2	9.49
934201	AD1-047 C	12.81
934211	AD1-048 C	4.49
934391	AD1-063 C	2.82
934521	AD1-076 C O2	88.09
934571	AD1-082 C O2	13.56
LTF	AD1-092	5.99
LTF	AD1-093	10.26
LTF	AD1-094	1.92
LTF	AD1-120	17.84
LTF	AD1-121	17.8
935111	AD1-144 C	3.06
935161	AD1-151 C O2	32.95
935211	AD1-156 C	3.7

<i>LTF</i>	<i>CARR</i>	<i>1.65</i>
<i>LTF</i>	<i>CBM-S1</i>	<i>25.74</i>
<i>LTF</i>	<i>CBM-S2</i>	<i>42.19</i>
<i>LTF</i>	<i>CBM-W1</i>	<i>59.72</i>
<i>LTF</i>	<i>CBM-W2</i>	<i>138.99</i>
<i>LTF</i>	<i>CIN</i>	<i>13.92</i>
<i>LTF</i>	<i>CPL</i>	<i>12.52</i>
<i>LTF</i>	<i>IPL</i>	<i>8.89</i>
<i>LTF</i>	<i>LGEE</i>	<i>3.04</i>
<i>LTF</i>	<i>MEC</i>	<i>29.72</i>
<i>LTF</i>	<i>MECS</i>	<i>13.46</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>1.32</i>
<i>LTF</i>	<i>ROSETON</i>	<i>9.55</i>
<i>297087</i>	<i>V2-040</i>	<i>0.27</i>
<i>LTF</i>	<i>WEC</i>	<i>3.73</i>
<i>LTF</i>	<i>Y3-032</i>	<i>8.73</i>
<i>LTF</i>	<i>Z1-043</i>	<i>14.67</i>
<i>LTF</i>	<i>AA2-074</i>	<i>8.52</i>
<i>920691</i>	<i>AA2-178 C</i>	<i>16.3</i>
<i>930051</i>	<i>AB1-013 C</i>	<i>4.92</i>
<i>930121</i>	<i>AB1-027 C</i>	<i>0.94</i>
<i>930861</i>	<i>AB1-132 C</i>	<i>22.44</i>
<i>931231</i>	<i>AB1-173 C</i>	<i>3.6</i>
<i>931241</i>	<i>AB1-173AC</i>	<i>3.6</i>
<i>LTF</i>	<i>AB2-013</i>	<i>8.55</i>
<i>923801</i>	<i>AB2-015 C O1</i>	<i>14.56</i>
<i>923831</i>	<i>AB2-022 C</i>	<i>4.01</i>
<i>923911</i>	<i>AB2-031 C O1</i>	<i>3.58</i>
<i>923991</i>	<i>AB2-040 C O1</i>	<i>11.74</i>
<i>924071</i>	<i>AB2-051</i>	<i>242.92</i>
<i>924241</i>	<i>AB2-068 O1</i>	<i>417.68</i>
<i>924381</i>	<i>AB2-087 C</i>	<i>0.93</i>
<i>924501</i>	<i>AB2-099 C</i>	<i>0.96</i>
<i>924511</i>	<i>AB2-100 C</i>	<i>18.71</i>
<i>924811</i>	<i>AB2-134 C O1</i>	<i>23.23</i>
<i>925051</i>	<i>AB2-160 C O1</i>	<i>9.66</i>
<i>925061</i>	<i>AB2-161 C O1</i>	<i>5.93</i>
<i>925121</i>	<i>AB2-169 C</i>	<i>10.53</i>
<i>925171</i>	<i>AB2-174 C O1</i>	<i>11.24</i>

925281	AB2-186 C	1.06
925291	AB2-188 C O1	4.02
925331	AB2-190 C	36.24
925861	AC1-065 C	5.85
926071	AC1-086 C	33.04
926201	AC1-098 C	9.68
926211	AC1-099 C	3.24
926291	AC1-107	630.46
926411	AC1-112 C	0.73
926741	AC1-159	117.13
926751	AC1-161 C	54.33
926771	AC1-163 C	3.17
926781	AC1-164 C	75.71
927041	AC1-191 C	16.51
927111	AC1-206 C	16.2
927141	AC1-208 C	14.19
927221	AC1-216 C O1	17.73

Appendix 10

(DVP - DVP) The 8MDLTHAN-8NO ANNA 500 kV line (from bus 314914 to bus 314918 ckt 1) loads from 124.62% to 125.08% (**DC power flow**) of its emergency rating (2442 MVA) for the single line contingency outage of 'DVP_P1-2: LN 574'. This project contributes approximately 24.76 MW to the thermal violation.

CONTINGENCY 'DVP_P1-2: LN 574'

OPEN BRANCH FROM BUS 314908 TO BUS 314911 CKT 1

/* 8ELMONT

500.00 - 8LDYSMTH 500.00

END

<i>Bus Number</i>	<i>Bus Name</i>	<i>Full Contribution</i>
315102	1BRUNSWICKG1	16.36
315103	1BRUNSWICKG2	16.36
315104	1BRUNSWICKG3	16.36
315105	1BRUNSWICKS1	33.98
315099	1CHESPKB	2.06
315131	1EDGECEMA	13.32
315132	1EDGECEMB	13.32
315108	1ELIZAR1	6.07
315109	1ELIZAR2	5.97
315110	1ELIZAR3	6.15
315074	1HOPCGN1	11.87
315075	1HOPCGN2	11.72
315083	1SPRUNCA	15.71
315084	1SPRUNCB	15.71
315085	1SPRUNCC	11.64
315086	1SPRUNCD	11.64
314315	3LOCKS E	1.85
932041	AC2-012 C	16.1
932501	AC2-070 C	2.04
932531	AC2-073 C	2.99
932581	AC2-078 C	6.2
932591	AC2-079 C	10.49
932631	AC2-084 C	13.04
932701	AC2-093 C	123.19
932831	AC2-110 C	1.7
933061	AC2-130	3.23
933071	AC2-131 1	2.19

933081	AC2-131 2	0.99
933111	AC2-132 1	1.15
933121	AC2-132 2	0.59
933261	AC2-137 C	2.68
933291	AC2-141 C	48.31
933451	AC2-158 C	8.36
933461	AC2-159 C	10.06
933471	AC2-161 C	3.62
933481	AC2-162 C	2.93
933501	AC2-165 C	16.08
933711	AC2-194 C	1.7
933731	AC2-196 C	2.83
933991	AD1-023 C	20.22
934011	AD1-025 C O2	24.76
934041	AD1-029 C	16.13
934061	AD1-033 C O2	11.87
934071	AD1-034 C O2	12.48
934141	AD1-041 C O2	6.77
934201	AD1-047 C	12.15
934211	AD1-048 C	3.14
934231	AD1-050 C	6.68
934331	AD1-057 C O2	14.64
934391	AD1-063 C	2.02
934521	AD1-076 C O2	81.53
934571	AD1-082 C O2	11.81
934611	AD1-087 C O2	11.55
934621	AD1-088 C O2	19.9
LTF	AD1-092	4.84
LTF	AD1-093	8.29
LTF	AD1-094	1.55
LTF	AD1-120	17.13
LTF	AD1-121	17.08
934911	AD1-123 C	1.45
935111	AD1-144 C	2.69
935161	AD1-151 C O2	22.42
935171	AD1-152 C O2	10.62
935211	AD1-156 C	3.27
935221	AD1-157 C	1.94
935231	AD1-160 C	1.42

<i>LTF</i>	<i>CARR</i>	<i>1.37</i>
<i>LTF</i>	<i>CBM-S1</i>	<i>22.24</i>
<i>LTF</i>	<i>CBM-S2</i>	<i>40.34</i>
<i>LTF</i>	<i>CBM-W1</i>	<i>47.95</i>
<i>LTF</i>	<i>CBM-W2</i>	<i>119.</i>
<i>LTF</i>	<i>CIN</i>	<i>11.13</i>
<i>LTF</i>	<i>CPLE</i>	<i>12.29</i>
<i>LTF</i>	<i>IPL</i>	<i>7.1</i>
<i>LTF</i>	<i>LGEE</i>	<i>2.43</i>
<i>LTF</i>	<i>MEC</i>	<i>24.62</i>
<i>LTF</i>	<i>MECS</i>	<i>10.23</i>
<i>LTF</i>	<i>RENSSELAER</i>	<i>1.1</i>
<i>LTF</i>	<i>ROSETON</i>	<i>7.93</i>
<i>LTF</i>	<i>WEC</i>	<i>3.</i>
<i>LTF</i>	<i>Z1-043</i>	<i>11.82</i>
<i>916191</i>	<i>Z1-068 C</i>	<i>0.08</i>
<i>916301</i>	<i>Z1-086 C</i>	<i>99.51</i>
<i>LTF</i>	<i>AA2-074</i>	<i>8.36</i>
<i>920631</i>	<i>AA2-169 C</i>	<i>3.22</i>
<i>920691</i>	<i>AA2-178 C</i>	<i>14.88</i>
<i>930051</i>	<i>AB1-013 C</i>	<i>4.49</i>
<i>930401</i>	<i>AB1-081 C</i>	<i>12.86</i>
<i>930861</i>	<i>AB1-132 C</i>	<i>21.22</i>
<i>931231</i>	<i>AB1-173 C</i>	<i>3.42</i>
<i>931241</i>	<i>AB1-173AC</i>	<i>3.42</i>
<i>LTF</i>	<i>AB2-013</i>	<i>6.91</i>
<i>923801</i>	<i>AB2-015 C O1</i>	<i>13.29</i>
<i>923831</i>	<i>AB2-022 C</i>	<i>3.61</i>
<i>923911</i>	<i>AB2-031 C O1</i>	<i>3.39</i>
<i>923941</i>	<i>AB2-035 C</i>	<i>0.49</i>
<i>923991</i>	<i>AB2-040 C O1</i>	<i>11.14</i>
<i>924021</i>	<i>AB2-043 C O1</i>	<i>4.25</i>
<i>924071</i>	<i>AB2-051</i>	<i>216.39</i>
<i>924151</i>	<i>AB2-059 C O1</i>	<i>15.15</i>
<i>924161</i>	<i>AB2-060 C O1</i>	<i>12.23</i>
<i>924241</i>	<i>AB2-068 O1</i>	<i>241.09</i>
<i>924301</i>	<i>AB2-077 C O1</i>	<i>2.7</i>
<i>924311</i>	<i>AB2-078 C O1</i>	<i>2.7</i>
<i>924321</i>	<i>AB2-079 C O1</i>	<i>2.7</i>

924381	AB2-087 C	0.86
924391	AB2-088 C	0.63
924401	AB2-089 C	3.03
924411	AB2-090 C	5.36
924491	AB2-098 C	0.83
924501	AB2-099 C	0.89
924511	AB2-100 C	17.74
924811	AB2-134 C O1	18.87
925051	AB2-160 C O1	8.03
925061	AB2-161 C O1	5.21
925121	AB2-169 C	9.78
925171	AB2-174 C O1	10.67
925221	AB2-176 C	2.21
925281	AB2-186 C	0.95
925291	AB2-188 C O1	3.67
925331	AB2-190 C	29.44
925521	AC1-027 C	0.62
925591	AC1-034 C	9.95
925611	AC1-036 C	1.26
925781	AC1-054 C	10.31
925861	AC1-065 C	4.24
926071	AC1-086 C	31.25
926201	AC1-098 C	9.15
926211	AC1-099 C	3.07
926271	AC1-105 C	7.54
926291	AC1-107	363.9
926741	AC1-159	104.34
926751	AC1-161 C	48.31
926761	AC1-162 C	37.21
926771	AC1-163 C	2.95
926781	AC1-164 C	51.59
927021	AC1-189 C	12.57
927111	AC1-206 C	15.37
927141	AC1-208 C	13.46
927221	AC1-216 C O1	14.41

***Generation Interconnection
Feasibility Study Report***

For

***PJM Generation Interconnection Request
Queue Position AD2-007***

***Hopewell – Surry 230kV
10 MW Capacity / 7.6 MW Energy***

August / 2018

Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between Colonial Trail West Solar, LLC, the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Virginia Electric and Power Company (VEPCO).

Preface

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

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

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

General

The IC has proposed a solar generating facility located in Spring Grove, VA (Surry County). The installed facilities will have a total capability of 150 MW with 81.84 MW of this output being recognized by PJM as capacity. This queue request is for an additional 7.6 MW and 10 12 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is 11/01/2019. **This study does not imply an ITO commitment to this in-service date.**

Point of Interconnection

AD2-007 will interconnect with the ITO transmission system Hopewell – Surry 230kV line #212.

Note: As Queue AB2-134 is no longer owned by the same Interconnection Customer, PJM requires evidence of ownership for site control for this AD2-007 queue is still with this IC. FERC Order 807 allows multiple projects to interconnect behind a Point of Interconnection. A shared facilities agreement is required if jointly owned common Attachment Facilities are proposed. PJM will require at the time of submittal of the System Impact Study Agreement

Queue AD2-007 (the IC) to acknowledge this requirement along with the owner of such common Attachment Facilities/all parties sharing such common Attachment Facilities.

Cost Summary

The AD2-007 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$0
Direct Connection Network Upgrades	\$0
Non Direct Connection Network Upgrades	\$0
Total Costs	\$0

Cost allocations for these upgrades will be provided in the System Impact Study Report.

Note: PJM Open Access Transmission Tariff (OATT) section 217.3A outline cost allocation rules. The rules are further clarified in PJM Manual 14A Attachment B. For New System Upgrades, the allocation of costs for a network upgrade will start with the first Queue project to cause the need for the upgrade. Later queue projects will receive cost allocation contingent on their contribution to the violation and are allocated to the queues that have not closed less than 5 years following the execution of the first Interconnection Service Agreement which identifies the need for this upgrade.

The Feasibility Study is used to make a preliminary determination of the type and scope of Attachment Facilities, Local Upgrades, and Network Upgrades that will be necessary to accommodate the Interconnection Request and to provide the Interconnection Customer a preliminary estimate of the time that will be required to construct any necessary facilities and upgrades and the Interconnection Customer's cost responsibility. The System Impact Study provides refined and comprehensive estimates of cost responsibility and construction lead times for new facilities and system upgrades. Facilities Studies will include, commensurate with the degree of engineering specificity as provided in the Facilities Study Agreement, good faith estimates of the cost, determined in accordance with Section 217 of the Tariff,

- (a) to be charged to each affected New Service Customer for the Facilities and System Upgrades that are necessary to accommodate this queue project;
- (b) the time required to complete detailed design and construction of the facilities and upgrades; and
- (c) a description of any site-specific environmental issues or requirements that could reasonably be anticipated to affect the cost or time required to complete construction of such facilities and upgrades.

Attachment Facilities

The existing AB2-134 scope of work is sufficient to accommodate this queue request from an Attachment Facilities and substation expansion perspective. The single line is shown below in Attachment 1. These costs do not include CIAC Tax Gross-up.

Non-Direct Connection Cost Estimate

Remote Terminal Work: During the Facilities Study, ITO's System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO's protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

Interconnection Customer Requirements

ITO's Facility Connection Requirements as posted on PJM's website

<http://www.pjm.com/~media/planning/plan-standards/private-dominion/facility-connection-requirements1.ashx>

Voltage Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Frequency Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Reactive Power - The Generation Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

Revenue Metering and SCADA Requirements

PJM Requirements

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

Meteorological Data Reporting Requirement

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

Network Impacts

The Queue Project AD2-007 was evaluated as a 10.0 MW (Capacity 10.0 MW) uprate to AB2-134 which is modeled as an injection tapping the Hopewell to Surry 230kV line #212 in the ITO area. Project AD2-007 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD2-007 was studied with a commercial probability of 53%. Potential network impacts were as follows:

PJM assessed the impact of the proposed Queue Project as an injection into the ITO, for compliance with NERC Reliability Criteria. The system was assessed using the summer 2021 RTEP case. When performing analysis, ITO Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under single contingency (normal and stressed system conditions). A full listing of the ITO's Planning Criteria and interconnection requirements can be found in the ITO's Facility Connection Requirements which are publicly available at: <http://www.dom.com>.

The results of these studies evaluate the system under a limited set of operating conditions and do not guarantee the full delivery of the capacity and associated energy of this proposed generation facility under all operating conditions. NERC Planning and Operating Reliability Criteria allow for the re-dispatch of generating units to resolve projected and actual deficiencies in real time and planning studies. Specifically NERC Category C Contingency Conditions (Bus Fault, Tower Line, N-1-1, and Stuck Breaker scenarios) allow for re-dispatch of generating units to resolve potential reliability deficiencies. For ITO Planning Criteria the re-dispatch of generating units for these contingency conditions is allowed as long as the projected loading does not exceed 100% of a facility Load Dump Rating. The results of these studies are discussed in more detail below.

Summer Peak Analysis - 2021

Generator Deliverability

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

None

Multiple Facility Contingency

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

None

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Contributions to previously identified circuit breakers found to be over-duty:

None

Contribution to Previously Identified Overloads

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

None

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

To be determined during Impact Study

Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

To be determined during Impact Study

New System Reinforcements

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

None

Contribution to Previously Identified System Reinforcements

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

None

Potential Congestion due to Local Energy Deliverability

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

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

Not applicable

Light Load Analysis

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

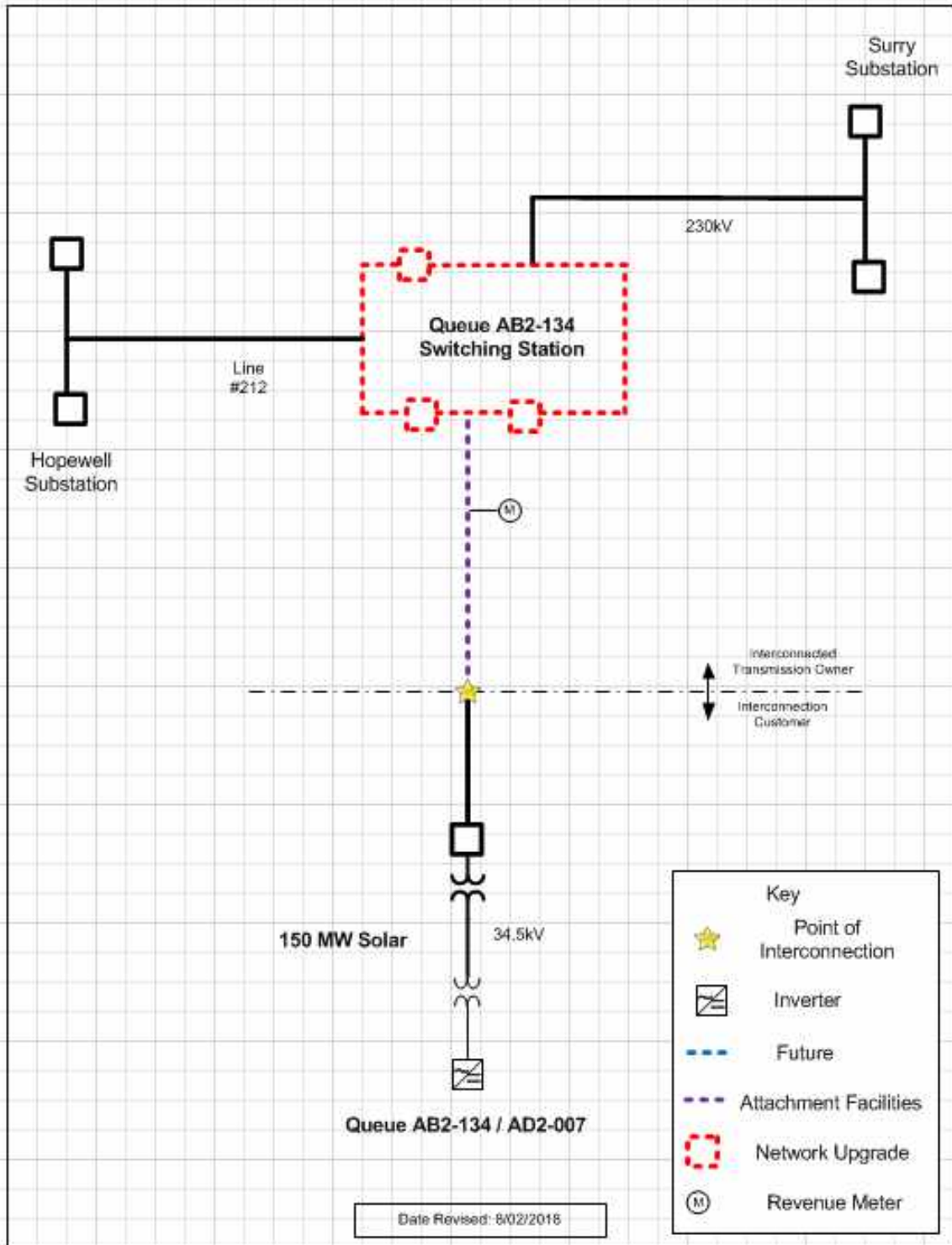
Affected System Analysis & Mitigation

Duke, Progress & TVA Impacts:

Duke Carolina, Progress, & TVA Impacts to be determined during later study phases (as applicable).

Attachment 1.

System Configuration





**Generation Interconnection
Impact Study Report
for
Queue Project AD2-007
HOPEWELL-SURRY 230 KV
4.5 MW Capacity / 7.6 MW Energy**

February, 2019

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Introduction

This System Impact Study (SIS) has been prepared in accordance with the PJM Open Access Transmission Tariff, Section 205, as well as the System Impact Study Agreement between Walnut Solar I, LLC, the Interconnection Customer (IC) and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Virginia Electric and Power Company (VEPCO).

Preface

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

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

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

The Interconnection Customer seeking to interconnect a wind or solar generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per Schedule H to the Interconnection Service Agreement and Section 8 of Manual 14D.

General

The IC has proposed a solar generating facility located in Spring Grove, VA (Surry County). The installed facilities will have a total capability of 7.6 MW with 4.5 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is 11/01/2019. **This study does not imply an ITO commitment to this in-service date.**

Queue Number	AD2-007
Project Name	HOPEWELL-SURRY 230 KV
Interconnection Customer	Colonial Trail W Solar, LLC
State	Virginia
County	Surry
Transmission Owner	Dominion
MFO	7.6
MWE	7.6
MWC	4.5
Fuel	Solar
Basecase Study Year	2021

Point of Interconnection

AD2-007 will interconnect with the Dominion ITO transmission system via a new ring bus breaker position in the AB2-134 switching station that is the scope of AD1-025 and connects on the Hopewell – Surry 230kV line # 212.

Cost Summary

The AD2-007 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$0
Direct Connection Network Upgrade	\$0
Non Direct Connection Network Upgrades	\$0
Total Costs	\$0

In addition, the AD2-007 project may be responsible for a contribution to the following costs

Description	Total Cost
System Upgrades	\$0

Cost allocations for these upgrades will be provided in the System Impact Study Report.

Transmission Owner Scope of Work

Attachment Facilities

The existing AD1-025 scope of work is sufficient to accommodate this queue request from an Attachment Facilities and substation expansion perspective. The single line is shown below in Attachment 1. These costs do not include CIAC Tax Gross-up.

Direct Connection Cost Estimate

None

Non-Direct Connection Cost Estimate

Remote Terminal Work: During the Facilities Study, ITO's System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO's protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

Incremental Capacity Transfer Rights (ICTRs)

No network upgrades identified so no study required for an increase to the CETL in the 2021/22 BRA case.

Interconnection Customer Requirements

ITO's Facility Connection Requirements as posted on PJM's website

<http://www.pjm.com/~media/planning/plan-standards/private-dominion/facility-connection-requirements1.ashx>

Voltage Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Frequency Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Reactive Power - The Generation Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

Revenue Metering and SCADA Requirements

PJM Requirements

The IC will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O Appendix 2.

Meteorological Data Reporting Requirement

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

Network Impacts

The Queue Project AD2-007 was evaluated as a 7.6 MW (Capacity 4.5 MW) injection as a tapped connection into Hopewell – Surry 230kV in the ITO area. Project AD2-007 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD2-007 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Load Flow

Generation Deliverability

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

None

Multiple Facility Contingency

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

None

Contribution to Previously Identified Overloads

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

None

Potential Congestion due to Local Energy Deliverability

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

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

None

Affected Systems

Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

None

Short Circuit

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Contributions to previously identified circuit breakers found to be over-duty:

None

Stability

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

None

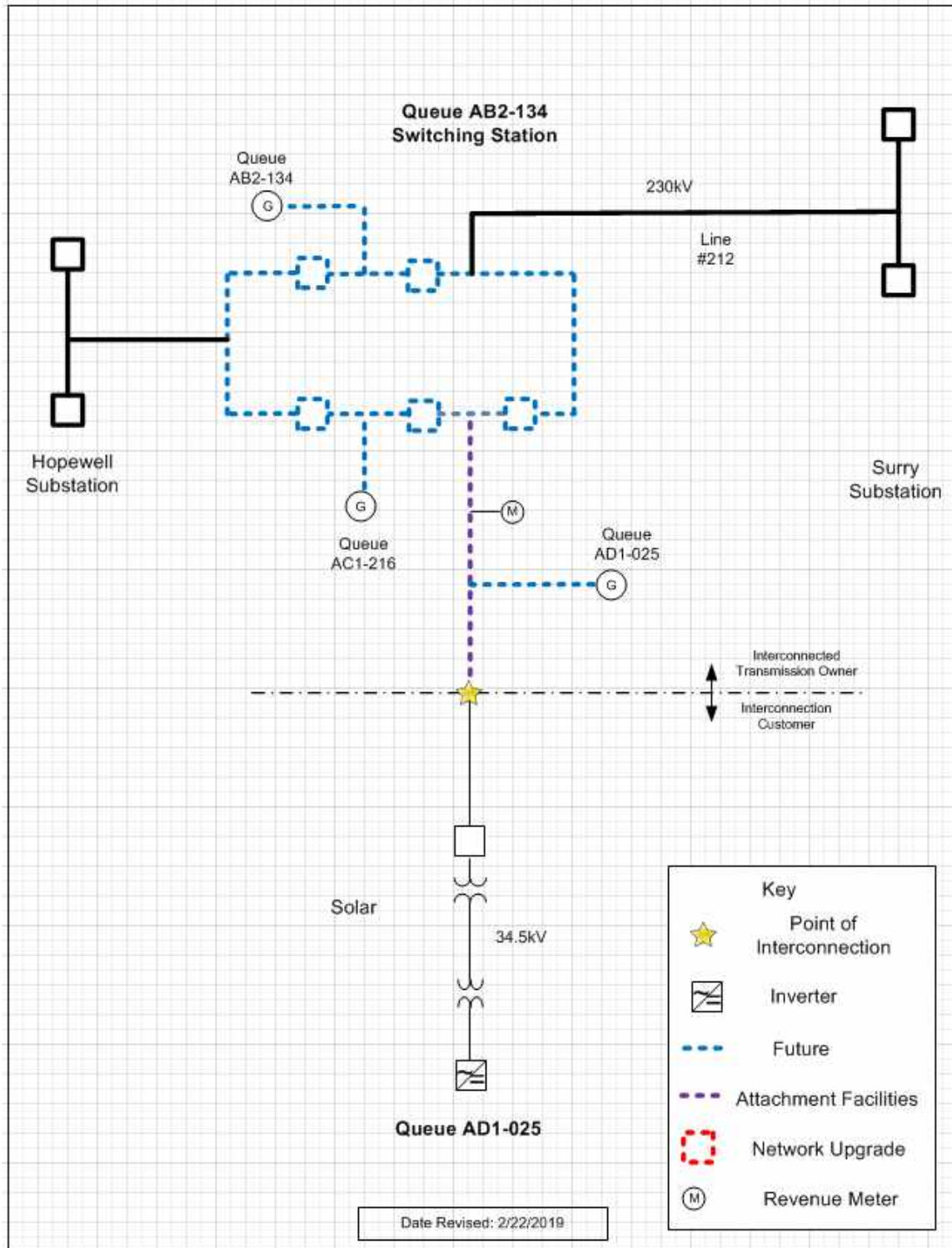
Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

No other mitigations were found to be required.

Attachment 1

Single Line Diagram



***Generation Interconnection
Feasibility Study Report***

For

***PJM Generation Interconnection Request
Queue Position AD2-008***

***Hopewell – Surry 230kV
16.4 MW Capacity / 52.1 MW Energy***

August / 2018

Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between Spring Grove Solar I, LLC, the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Virginia Electric and Power Company (VEPCO).

Preface

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

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

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

General

The IC has proposed a solar generating facility located in Spring Grove, VA (Surry County). The installed facilities will have a total capability of 150 MW with 71.2 MW of this output being recognized by PJM as capacity. This queue request is for an additional 16.4 MW and 54.8 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is 11/01/2019. **This study does not imply an ITO commitment to this in-service date.**

Point of Interconnection

AD2-008 will interconnect with the ITO transmission system Hopewell – Surry 230kV line #212.

Note: As Queue AC1-216 is no longer owned by the same Interconnection Customer, PJM requires evidence of ownership for site control for this AD2-008 queue is still with this IC. FERC Order 807 allows multiple projects to interconnect behind a Point of Interconnection. A shared facilities agreement is required if jointly owned common Attachment Facilities are proposed. PJM will require at the time of submittal of the System Impact Study Agreement

Queue AD2-007 (the IC) to acknowledge this requirement along with the owner of such common Attachment Facilities/all parties sharing such common Attachment Facilities.

Cost Summary

The AD2-008 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$0
Direct Connection Network Upgrades	\$0
Non Direct Connection Network Upgrades	\$0
Total Costs	\$0

In addition, the AD2-008 project may be responsible for a contribution to the following costs:

Description	Total Cost
New System Upgrades	\$0
Previously Identified Upgrades	\$77,850,000
Total Costs	\$77,850,000

Cost allocations for these upgrades will be provided in the System Impact Study Report.

Note: PJM Open Access Transmission Tariff (OATT) section 217.3A outline cost allocation rules. The rules are further clarified in PJM Manual 14A Attachment B. For New System Upgrades, the allocation of costs for a network upgrade will start with the first Queue project to cause the need for the upgrade. Later queue projects will receive cost allocation contingent on their contribution to the violation and are allocated to the queues that have not closed less than 5 years following the execution of the first Interconnection Service Agreement which identifies the need for this upgrade.

The Feasibility Study is used to make a preliminary determination of the type and scope of Attachment Facilities, Local Upgrades, and Network Upgrades that will be necessary to accommodate the Interconnection Request and to provide the Interconnection Customer a preliminary estimate of the time that will be required to construct any necessary facilities and upgrades and the Interconnection Customer’s cost responsibility. The System Impact Study provides refined and comprehensive estimates of cost responsibility and construction lead times for new facilities and system upgrades. Facilities Studies will include, commensurate with the degree of engineering specificity as provided in the Facilities Study Agreement, good faith estimates of the cost, determined in accordance with Section 217 of the Tariff,

- (a) to be charged to each affected New Service Customer for the Facilities and System Upgrades that are necessary to accommodate this queue project;
- (b) the time required to complete detailed design and construction of the facilities and upgrades; and
- (c) a description of any site-specific environmental issues or requirements that could reasonably be anticipated to affect the cost or time required to complete construction of such facilities and upgrades.

Attachment Facilities

The existing AC1-216 scope of work is sufficient to accommodate this queue request from an Attachment Facilities and substation expansion perspective. The single line is shown below in Attachment 1. These costs do not include CIAC Tax Gross-up.

Non-Direct Connection Cost Estimate

Remote Terminal Work: During the Facilities Study, ITO’s System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO’s protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

System Reinforcement

Violation #	Upgrade Description	Upgrade Cost
# 1	Replace the Elmont 500/230 kV transformer #1 increase its line rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to take 24-30 months to engineer and construct.	\$17,500,000
# 2	Add a second Prince George 230/115 kV transformer to increase its rating to 276.8 MVA (normal), 292.4 MVA (emergency), and 328.7 MVA (load dump). Estimated to take 24-30 months to engineer and construct.	\$5,500,000
# 3, 4	Wreck and rebuild the Hopewell – Bermuda – Chesterfield 230 kV line #228 of 11 miles increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	\$27,425,000
# 5, 6	Wreck and rebuild the Hopewell – Chesterfield 230 kV line #211 of 11 miles to increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	\$27,500,000
Total Network Upgrades		\$77,850,000

Interconnection Customer Requirements

ITO's Facility Connection Requirements as posted on PJM's website

<http://www.pjm.com/~media/planning/plan-standards/private-dominion/facility-connection-requirements1.ashx>

An Interconnection Customer entering the New Services Queue on or after October 1, 2012 with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

Voltage Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Frequency Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Reactive Power - The Generation Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

Revenue Metering and SCADA Requirements

PJM Requirements

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

Meteorological Data Reporting Requirement

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

Network Impacts

The Queue Project AD2-008 was evaluated as a 52.1 MW (Capacity 16.4 MW) uprate to AC1-216 which is modeled as an injection tapping the Hopewell to Surry 230kV line #212 in the ITO area. Project AD2-008 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD2-008 was studied with a commercial probability of 53%. Potential network impacts were as follows:

PJM assessed the impact of the proposed Queue Project as an injection into the ITO, for compliance with NERC Reliability Criteria. The system was assessed using the summer 2021 RTEP case. When performing analysis, ITO Criteria considers a transmission facility overloaded if it exceeds 94% of its emergency rating under single contingency (normal and stressed system conditions). A full listing of the ITO's Planning Criteria and interconnection requirements can be found in the ITO's Facility Connection Requirements which are publicly available at: <http://www.dom.com>.

The results of these studies evaluate the system under a limited set of operating conditions and do not guarantee the full delivery of the capacity and associated energy of this proposed generation facility under all operating conditions. NERC Planning and Operating Reliability Criteria allow for the re-dispatch of generating units to resolve projected and actual deficiencies in real time and planning studies. Specifically NERC Category C Contingency Conditions (Bus Fault, Tower Line, N-1-1, and Stuck Breaker scenarios) allow for re-dispatch of generating units to resolve potential reliability deficiencies. For ITO Planning Criteria the re-dispatch of generating units for these contingency conditions is allowed as long as the projected loading does not exceed 100% of a facility Load Dump Rating. The results of these studies are discussed in more detail below.

Contingency Descriptions

The following contingencies resulted in overloads:

Contingency Name	Description
DVP_P1-2: LN 211	CONTINGENCY 'DVP_P1-2: LN 211' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 END
DVP_P1-2: LN 228	CONTINGENCY 'DVP_P1-2: LN 228' OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END

Contingency Name	Description
DVP_P4-2: 211T2124	CONTINGENCY 'DVP_P4-2: 211T2124' /*_ HOPEWELL OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1 /*L211 HOPEWELL CHESTERFIELD OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1 /*L2124 END
DVP_P4-2: G5T228	CONTINGENCY 'DVP_P4-2: G5T228' /*_ CHESTERFIELD OPEN BRANCH FROM BUS 314286 TO BUS 314278 CKT 1 /*L228 CHESTERFIELD BERMUDA OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /*L228 BERMUDA HOPEWELL REMOVE MACHINE 5 FROM BUS 315060 /*CHESTERFIELD GEN G5 END
DVP_P4-2: H2T557	CONTINGENCY 'DVP_P4-2: H2T557' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2 /*ELMONT 500-230 (TX#2) END
DVP_P7-1: LN 211- 228	CONTINGENCY 'DVP_P7-1: LN 211-228' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END

Summer Peak Analysis - 2021

Generator Deliverability

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

None

Multiple Facility Contingency

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

None

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Contributions to previously identified circuit breakers found to be over-duty:

None

Contribution to Previously Identified Overloads

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
1	LFFB	DVP_P4-2: H2T557	DVP – DVP	8ELMONT 500/230 kV transformer	314218	314908	1	DC	146.16	146.57	LDR	1051	11.51	1

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution	Ref
	Type	Name			From	To	Cir.		Initial	Final	Type	MVA		
2	DCTL	DVP_P7-1: LN 211-228	DVP – DVP	6PRGEORG 230/115 kV transformer	314269	314291	1	DC	140.03	144.73	LDR	220	10.32	2
3	LFFB	DVP_P4-2: 211T2124	DVP – DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	DC	119.95	124.01	LDR	549	22.22	3
4	LFFB	DVP_P4-2: 211T2124	DVP – DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	DC	119.95	124.01	LDR	549	22.22	4
5	LFFB	DVP_P4-2: G5T228	DVP – DVP	6HOPEWLL-6CHESTF B 230 kV line	314303	314287	1	DC	115.46	119.01	LDR	541	20.08	5

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

To be determined during Impact Study

Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

To be determined during Impact Study

New System Reinforcements

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

None

Contribution to Previously Identified System Reinforcements

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

Violation #	Overloaded Facility	Upgrade Description	Network Upgrade Number	Upgrade Cost
# 1	8ELMONT 500/230 kV transformer	Replace the Elmont 500/230 kV transformer #1 increase its line rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to take 24-30 months to engineer and construct.	Pending	\$17,500,000
# 2	6PRGEORG 230/115 kV transformer	Add a second Prince George 230/115 kV transformer to increase its rating to 276.8 MVA (normal), 292.4 MVA (emergency), and 328.7 MVA (load dump). Estimated to take 24-30 months to engineer and construct.	Pending	\$5,500,000
# 3	6BERMUDA-6CHESTF A 230 kV line	Wreck and rebuild the Hopewell – Bermuda – Chesterfield 230 kV line #228 of 11 miles increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required.	Pending	\$27,425,000
# 4	6HOPEWLL-6BERMUDA 230 kV line			
# 5	6HOPEWLL-6CHESTF B 230 kV line	Wreck and rebuild the Hopewell – Chesterfield 230 kV line #211 of 11 miles to increase its line rating to 722 MVA (normal), 722 MVA (emergency), and 830 MVA (load dump). It is estimated to take 44-48 months to engineer, permit, and construct. A VA CPCN is required	Pending	\$27,425,000
# 6	6HOPEWLL-6CHESTF B 230 kV line			
Total New Network Upgrades				\$77,850,000

Potential Congestion due to Local Energy Deliverability

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

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

#	Contingency		Affected Area	Facility Description	Bus			Power Flow	Loading %		Rating		MW Contribution
	Type	Name			From	To	Circuit		Initial	Final	Type	MVA	
7	N-1	DVP_P1-2: LN 211	DVP – DVP	6BERMUDA-6CHESTF A 230 kV line	314278	314286	1	DC	129.54	133.85	ER	449	19.33
8	N-1	DVP_P1-2: LN 563	DVP – DVP	6CHESTF B-6BASIN 230 kV line	314287	314276	1	DC	165.29	165.81	ER	449	5.09
9	N-1	DVP_P1-2: LN 211	DVP – DVP	6HOPEWLL-6BERMUDA 230 kV line	314303	314278	1	DC	129.54	133.85	ER	449	19.33
10	N-1	DVP_P1-2: LN 228	DVP – DVP	6HOPEWLL-6CHESTF B 230 kV line	314303	314287	1	DC	140.51	144.85	ER	442	20.08

Light Load Analysis

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

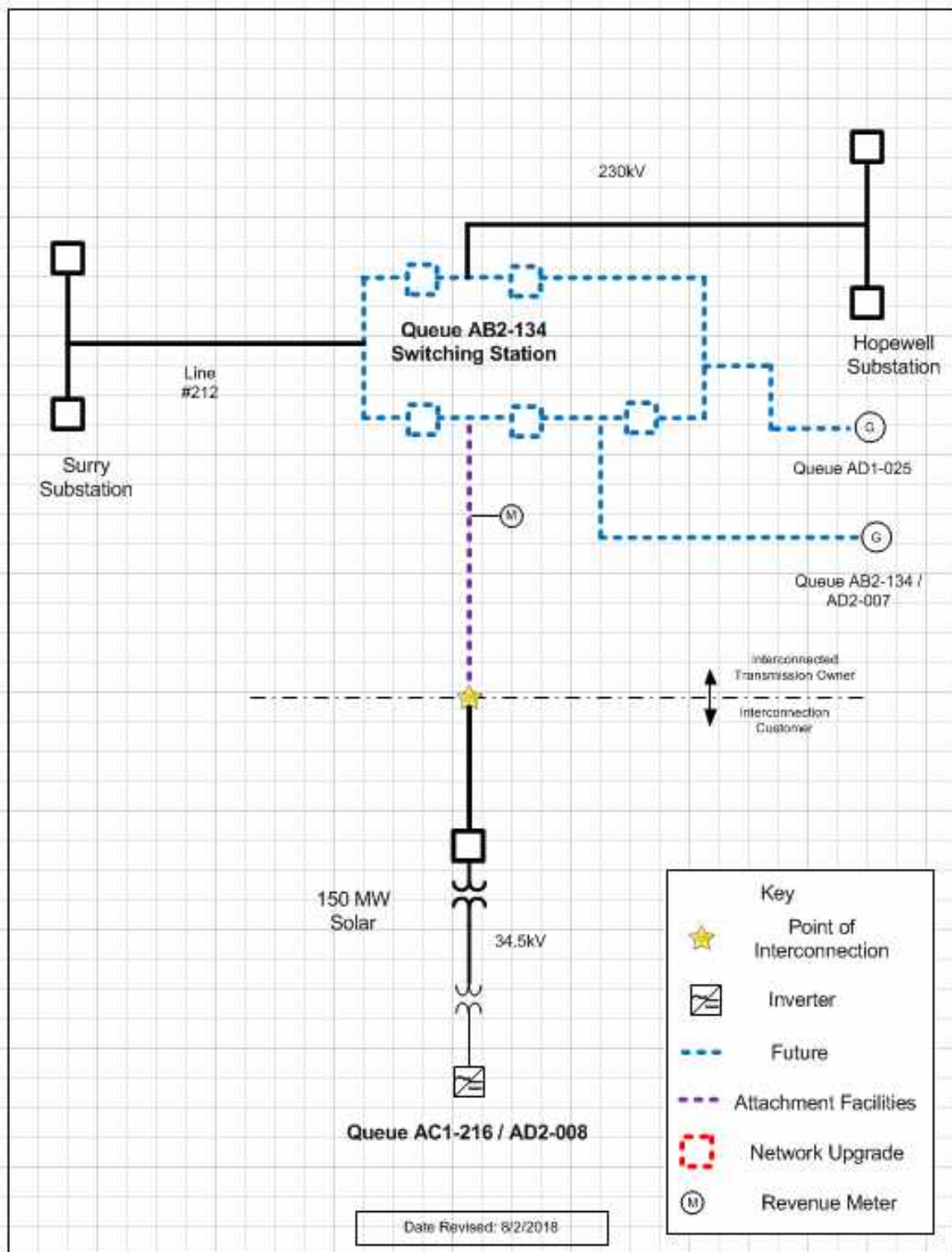
Affected System Analysis & Mitigation

Duke, Progress & TVA Impacts:

Duke Carolina, Progress, & TVA Impacts to be determined during later study phases (as applicable).

Attachment 1.

System Configuration



Attachment 2.

Flowgate Appendices

Appendices

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gauge other generators impact. When a flowgate is identified in multiple analysis the appendix is presented for only the analysis with the greatest overload.

It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

Appendix 1

(DVP - DVP) The 8ELMONT 500/230 kV transformer (from bus 314218 to bus 314908 ckt 1) loads from 146.16% to 146.57% (**DC power flow**) of its load dump rating (1051 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: H2T557'. This project contributes approximately 11.51 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: H2T557'                                /* ELMONT
  OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1           /*ELMONT TO
CHICKAHOMINY (LINE 557)
  OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1
/*CHICKAHOMINY 500-230 (TX#1)
  OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2           /*ELMONT 500-
230 (TX#2)
END
```

Bus Number	Bus Name	Full Contribution
315067	1DARBY 1	5.
315068	1DARBY 2	5.01
315069	1DARBY 3	5.02
315070	1DARBY 4	5.03
315043	1FOUR RIVERA	6.65
315044	1FOUR RIVERB	5.14
315045	1FOUR RIVERC	6.65
315046	1FOUR RIVERD	5.14
315047	1FOUR RIVERE	5.14
315048	1FOUR RIVERF	6.65
315074	1HOPCGN1	11.28
315075	1HOPCGN2	11.14
315083	1SPRUNCA	14.95
315084	1SPRUNCB	14.95
315085	1SPRUNCC	11.08
315086	1SPRUNCD	11.08
315073	1STONECA	9.36
315090	1YORKTN1	30.92
315091	1YORKTN2	32.09
314566	3CRESWEL	2.11
314572	3EMPORIA	0.36
314315	3LOCKS E	1.65
314617	3TUNIS	0.71
314539	3UNCAMP	2.19
314541	3WATKINS	0.61
314620	6CASHIE	0.72
314229	6MT RD221	1.41

314236	6NRTHEST	0.37
314189	6PAPERMILL	8.82
314594	6PLYMOTH	0.73
314250	6ROCKVILLE	0.4
314256	6ROCKVILLE E	1.15
314648	6SUNBURY	0.81
314651	6WINFALL	1.59
932041	AC2-012 C	9.62
932042	AC2-012 E	15.69
932501	AC2-070 C	2.9
932502	AC2-070 E	1.2
932531	AC2-073 C	3.1
932532	AC2-073 E	1.56
932581	AC2-078 C	4.75
932582	AC2-078 E	7.75
932591	AC2-079 C	5.79
932592	AC2-079 E	9.45
932831	AC2-110 C	1.74
932832	AC2-110 E	2.84
933061	AC2-130	3.48
933071	AC2-131 1	2.36
933081	AC2-131 2	1.07
933111	AC2-132 1	1.24
933121	AC2-132 2	0.63
933261	AC2-137 C	3.16
933262	AC2-137 E	2.02
933271	AC2-138 C	0.87
933272	AC2-138 E	1.09
933291	AC2-141 C	27.15
933292	AC2-141 E	11.59
933471	AC2-161 C	2.47
933472	AC2-161 E	1.27
933481	AC2-162 C	4.17
933482	AC2-162 E	2.15
933731	AC2-196 C	1.66
933732	AC2-196 E	1.1
933991	AD1-023 C	11.28
933992	AD1-023 E	6.14
934011	AD1-025 C O1	20.82
934012	AD1-025 E O1	12.33
934061	AD1-033 C O1	6.96
934062	AD1-033 E O1	4.64
934141	AD1-041 C O1	6.74
934142	AD1-041 E O1	4.49
934191	AD1-046 C	4.71

934192	AD1-046 E	3.14
934201	AD1-047 C	6.75
934202	AD1-047 E	4.5
934211	AD1-048 C	3.82
934212	AD1-048 E	1.93
934391	AD1-063 C	2.1
934392	AD1-063 E	1.4
934521	AD1-076 C O1	46.87
934522	AD1-076 E O1	23.87
934571	AD1-082 C O1	8.27
934572	AD1-082 E O1	4.72
934781	AD1-105 C	8.08
934782	AD1-105 E	5.62
LTF	AD1-120	5.92
LTF	AD1-121	5.88
935111	AD1-144 C	1.68
935112	AD1-144 E	0.92
935161	AD1-151 C O1	19.89
935162	AD1-151 E O1	13.26
935211	AD1-156 C	2.56
935212	AD1-156 E	1.71
936041	AD2-007	2.21
936051	AD2-008 C	3.62
936052	AD2-008 E	7.89
936151	AD2-021	0.36
936241	AD2-030 C	2.88
936242	AD2-030 E	1.47
936301	AD2-039 C	1.74
936302	AD2-039 E	2.84
936341	AD2-044 C	0.27
936342	AD2-044 E	0.31
936391	AD2-049 C	1.88
936392	AD2-049 E	1.88
936401	AD2-051 C O1	7.33
936402	AD2-051 E O1	3.15
936581	AD2-073 C	2.24
936582	AD2-073 E	1.11
936591	AD2-074 C	6.53
936592	AD2-074 E	10.65
936661	AD2-085 C	3.5
936662	AD2-085 E	5.71
936711	AD2-090 C O1	6.37
936712	AD2-090 E O1	4.25
LTF	AD2-099	4.53
937221	AD2-160 C O1	5.41

937222	AD2-160 E O1	2.83
937251	AD2-164	5.14
937441	AD2-195 C	7.75
937442	AD2-195 E	3.34
937541	AD2-215 C	1.7
937542	AD2-215 E	0.9
LTF	CARR	0.67
LTF	CBM-S1	3.85
LTF	CBM-S2	13.83
LTF	CBM-W1	0.23
LTF	CBM-W2	18.
LTF	CIN	0.12
LTF	CLIFTY	1.63
LTF	CPLE	4.75
LTF	DEARBORN	0.47
LTF	G-007	2.31
LTF	IPL	0.06
LTF	LGEE	0.04
LTF	MEC	1.98
LTF	O-066	7.74
LTF	RENSSELAER	0.53
LTF	ROSETON	3.83
292791	U1-032 E	4.87
297087	V2-040	0.28
900672	V4-068 E	0.26
901082	W1-029E	41.81
LTF	WEC	0.06
907092	X1-038 E	5.47
913392	Y1-086 E	1.99
916042	Z1-036 E	40.84
916192	Z1-068 E	1.76
917122	Z2-027 E	0.96
918492	AA1-063AE OP	3.35
918512	AA1-065 E OP	3.74
918691	AA1-083	1.17
919152	AA1-139 E	5.92
919211	AA1-145	19.85
919692	AA2-053 E	3.06
LTF	AA2-074	3.23
920042	AA2-088 E	9.15
920672	AA2-174 E	0.35
920691	AA2-178 C	8.42
920692	AA2-178 E	3.61
930051	AB1-013 C	2.54
930052	AB1-013 E	17.01

930121	AB1-027 C	0.87
930122	AB1-027 E	1.89
930861	AB1-132 C	11.77
930862	AB1-132 E	5.05
931231	AB1-173 C	1.9
931232	AB1-173 E	0.89
931241	AB1-173AC	1.9
931242	AB1-173AE	0.89
923801	AB2-015 C O1	7.73
923802	AB2-015 E O1	6.34
923831	AB2-022 C	2.1
923832	AB2-022 E	1.13
923842	AB2-024 E	1.49
923852	AB2-025 E	1.09
923862	AB2-026 E	0.88
923911	AB2-031 C O1	1.88
923912	AB2-031 E O1	0.93
923991	AB2-040 C O1	6.18
923992	AB2-040 E O1	5.06
924061	AB2-050	1.17
924071	AB2-051	128.84
924241	AB2-068 O1	177.92
924501	AB2-099 C	0.49
924502	AB2-099 E	0.21
924511	AB2-100 C	10.48
924512	AB2-100 E	5.16
924811	AB2-134 C O1	15.87
924812	AB2-134 E O1	15.07
925051	AB2-160 C O1	7.18
925052	AB2-160 E O1	11.71
925061	AB2-161 C O1	3.63
925062	AB2-161 E O1	5.92
925171	AB2-174 C O1	5.96
925172	AB2-174 E O1	5.39
925281	AB2-186 C	0.55
925282	AB2-186 E	0.24
925291	AB2-188 C O1	2.08
925292	AB2-188 E O1	0.93
925331	AB2-190 C	24.75
925332	AB2-190 E	10.61
925522	AC1-027 E	1.07
925692	AC1-045 E	0.92
925861	AC1-065 C	4.36
925862	AC1-065 E	7.11
926071	AC1-086 C	17.34

926072	AC1-086 E	7.89
926291	AC1-107	268.56
926411	AC1-112 C	0.68
926412	AC1-112 E	1.93
926472	AC1-118 E	1.07
926551	AC1-134	14.83
926662	AC1-147 E	1.25
926741	AC1-159	62.12
926751	AC1-161 C	27.15
926752	AC1-161 E	11.59
926771	AC1-163 C	1.63
926772	AC1-163 E	0.76
926781	AC1-164 C	58.41
926782	AC1-164 E	26.24
927041	AC1-191 C	17.46
927042	AC1-191 E	8.7
927221	AC1-216 C O1	12.11
927222	AC1-216 E O1	9.53

Appendix 2

(DVP - DVP) The 6PRGEORG 230/115 kV transformer (from bus 314269 to bus 314291 ckt 1) loads from 140.03% to 144.73% (**DC power flow**) of its load dump rating (220 MVA) for the tower line contingency outage of 'DVP_P7-1: LN 211-228'. This project contributes approximately 10.32 MW to the thermal violation.

CONTINGENCY 'DVP_P7-1: LN 211-228'

OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B
 230.00 - 6HOPEWLL 230.00
 OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA
 230.00 - 6CHSTF A 230.00
 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA
 230.00 - 6HOPEWLL 230.00
 OPEN BUS 314278 /* ISLAND
 END

Bus Number	Bus Name	Full Contribution
315120	1GRAVEL4	1.97
315121	1GRAVEL5	1.94
315122	1GRAVEL6	1.97
315074	1HOPCGN1	13.02
315075	1HOPCGN2	12.85
315077	1HOPHCF1	4.13
315078	1HOPHCF2	4.13
315079	1HOPHCF3	4.13
315080	1HOPHCF4	6.26
315076	1HOPPOLC	2.94
315073	1STONECA	10.8
315116	1SURRY 1	19.48
933471	AC2-161 C	1.13
933472	AC2-161 E	0.58
934011	AD1-025 C O1	18.66
934012	AD1-025 E O1	11.06
935161	AD1-151 C O1	17.83
935162	AD1-151 E O1	11.89
936041	AD2-007	1.98
936051	AD2-008 C	3.25
936052	AD2-008 E	7.07
LTF	AMIL	0.03
LTF	BAYOU	0.08
LTF	BIG_CAJUN1	0.11

LTF	BIG_CAJUN2	0.23
LTF	BLUEG	0.19
LTF	CALDERWOOD	0.03
LTF	CANNELTON	0.03
LTF	CARR	0.06
LTF	CATAWBA	< 0.01
LTF	CBM-S2	0.02
LTF	CELEVELAND	0.01
LTF	CHEOAH	0.03
LTF	CHILHOWEE	0.01
LTF	CHOCTAW	0.07
LTF	CLIFTY	0.83
LTF	COTTONWOOD	0.3
LTF	CPLE	0.04
LTF	DEARBORN	0.11
LTF	EDWARDS	0.06
LTF	ELMERSMITH	0.09
LTF	FARMERCITY	0.03
LTF	G-007	0.19
LTF	GIBSON	0.06
LTF	MORGAN	0.12
LTF	NEWTON	0.14
LTF	O-066	0.62
LTF	PRAIRIE	0.25
LTF	RENSSELAER	0.05
LTF	ROSETON	0.34
LTF	ROWAN	< 0.01
LTF	SANTEETLA	< 0.01
LTF	SMITHLAND	0.02
LTF	TATANKA	0.06
LTF	TILTON	0.07
LTF	TRIMBLE	0.04
LTF	TVA	0.06
292791	U1-032 E	5.62
LTF	UNIONPOWER	0.03
914231	Y2-077	1.66
924811	AB2-134 C O1	14.23
924812	AB2-134 E O1	13.51
925331	AB2-190 C	22.19
925332	AB2-190 E	9.51
927221	AC1-216 C O1	10.86
927222	AC1-216 E O1	8.54

Appendix 3

(DVP - DVP) The 6BERMUDA-6CHESTF A 230 kV line (from bus 314278 to bus 314286 ckt 1) loads from 119.95% to 124.01% (**DC power flow**) of its load dump rating (549 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 211T2124'. This project contributes approximately 22.22 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: 211T2124'                /*_ HOPEWELL
  OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1    /*L211
HOPEWELL CHESTERFIELD
  OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1    /*L2124
END
```

Bus Number	Bus Name	Full Contribution
315120	1GRAVEL4	4.3
315121	1GRAVEL5	4.24
315122	1GRAVEL6	4.29
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315077	1HOPHCF1	8.84
315078	1HOPHCF2	8.84
315079	1HOPHCF3	8.84
315080	1HOPHCF4	13.41
315076	1HOPPOLC	6.29
315073	1STONECA	23.11
315116	1SURRY 1	42.54
932041	AC2-012 C	5.33
932042	AC2-012 E	8.69
933471	AC2-161 C	2.52
933472	AC2-161 E	1.3
934011	AD1-025 C O1	40.18
934012	AD1-025 E O1	23.8
935111	AD1-144 C	0.97
935112	AD1-144 E	0.53
935161	AD1-151 C O1	38.39
935162	AD1-151 E O1	25.59
936041	AD2-007	4.27
936051	AD2-008 C	6.99
936052	AD2-008 E	15.23
936391	AD2-049 C	0.94
936392	AD2-049 E	0.94
937541	AD2-215 C	0.98

937542	AD2-215 E	0.52
LTF	CARR	0.16
LTF	CBM-S1	0.99
LTF	CBM-S2	3.05
LTF	CBM-W1	0.63
LTF	CBM-W2	4.82
LTF	CIN	0.16
LTF	CPLE	1.04
LTF	DEARBORN	0.06
LTF	G-007	0.61
LTF	IPL	0.1
LTF	LGEE	0.04
LTF	MEC	0.67
LTF	O-066	2.05
LTF	RENSSELAER	0.13
LTF	ROSETON	0.92
292791	U1-032 E	12.03
LTF	WEC	0.05
914231	Y2-077	3.55
924811	AB2-134 C O1	30.62
924812	AB2-134 E O1	29.09
925331	AB2-190 C	47.77
925332	AB2-190 E	20.47
925692	AC1-045 E	0.53
926662	AC1-147 E	0.69
927221	AC1-216 C O1	23.37
927222	AC1-216 E O1	18.38

Appendix 4

(DVP - DVP) The 6HOPEWELL-6BERMUDA 230 kV line (from bus 314303 to bus 314278 ckt 1) loads from 119.95% to 124.01% (**DC power flow**) of its load dump rating (549 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: 211T2124'. This project contributes approximately 22.22 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: 211T2124'                /*_ HOPEWELL
  OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1    /*L211
HOPEWELL CHESTERFIELD
  OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1    /*L2124
END
```

Bus Number	Bus Name	Full Contribution
315120	1GRAVEL4	4.3
315121	1GRAVEL5	4.24
315122	1GRAVEL6	4.29
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315077	1HOPHCF1	8.84
315078	1HOPHCF2	8.84
315079	1HOPHCF3	8.84
315080	1HOPHCF4	13.41
315076	1HOPPOLC	6.29
315073	1STONECA	23.11
315116	1SURRY 1	42.54
932041	AC2-012 C	5.33
932042	AC2-012 E	8.69
933471	AC2-161 C	2.52
933472	AC2-161 E	1.3
934011	AD1-025 C O1	40.18
934012	AD1-025 E O1	23.8
935111	AD1-144 C	0.97
935112	AD1-144 E	0.53
935161	AD1-151 C O1	38.39
935162	AD1-151 E O1	25.59
936041	AD2-007	4.27
936051	AD2-008 C	6.99
936052	AD2-008 E	15.23
936391	AD2-049 C	0.94
936392	AD2-049 E	0.94
937541	AD2-215 C	0.98

937542	AD2-215 E	0.52
LTF	CARR	0.16
LTF	CBM-S1	0.99
LTF	CBM-S2	3.05
LTF	CBM-W1	0.63
LTF	CBM-W2	4.82
LTF	CIN	0.16
LTF	CPLE	1.04
LTF	DEARBORN	0.06
LTF	G-007	0.61
LTF	IPL	0.1
LTF	LGEE	0.04
LTF	MEC	0.67
LTF	O-066	2.05
LTF	RENSSELAER	0.13
LTF	ROSETON	0.92
292791	U1-032 E	12.03
LTF	WEC	0.05
914231	Y2-077	3.55
924811	AB2-134 C O1	30.62
924812	AB2-134 E O1	29.09
925331	AB2-190 C	47.77
925332	AB2-190 E	20.47
925692	AC1-045 E	0.53
926662	AC1-147 E	0.69
927221	AC1-216 C O1	23.37
927222	AC1-216 E O1	18.38

Appendix 5

(DVP - DVP) The 6HOPEWLL-6CHESTF B 230 kV line (from bus 314303 to bus 314287 ckt 1) loads from 115.46% to 119.01% (**DC power flow**) of its load dump rating (541 MVA) for the line fault with failed breaker contingency outage of 'DVP_P4-2: G5T228'. This project contributes approximately 20.08 MW to the thermal violation.

```
CONTINGENCY 'DVP_P4-2: G5T228'                /*_ CHESTERFIELD
  OPEN BRANCH FROM BUS 314286 TO BUS 314278 CKT 1      /*L228
CHESTERFIELD BERMUDA
  OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1      /*L228 BERMUDA
HOPEWELL
  REMOVE MACHINE 5 FROM BUS 315060                  /*CHESTERFIELD GEN
G5
END
```

Bus Number	Bus Name	Full Contribution
315120	1GRAVEL4	3.96
315121	1GRAVEL5	3.91
315122	1GRAVEL6	3.95
315074	1HOPCGN1	24.99
315075	1HOPCGN2	24.67
315077	1HOPHCF1	7.93
315078	1HOPHCF2	7.93
315079	1HOPHCF3	7.93
315080	1HOPHCF4	12.03
315076	1HOPPOLC	5.64
315073	1STONECA	20.73
315116	1SURRY 1	39.13
932041	AC2-012 C	5.08
932042	AC2-012 E	8.29
933471	AC2-161 C	2.34
933472	AC2-161 E	1.2
934011	AD1-025 C O1	36.31
934012	AD1-025 E O1	21.51
935111	AD1-144 C	0.94
935112	AD1-144 E	0.51
935161	AD1-151 C O1	34.69
935162	AD1-151 E O1	23.13
936041	AD2-007	3.85
936051	AD2-008 C	6.32
936052	AD2-008 E	13.76

936391	AD2-049 C	0.96
936392	AD2-049 E	0.96
937541	AD2-215 C	0.95
937542	AD2-215 E	0.5
LTF	CARR	0.14
LTF	CBM-S1	0.61
LTF	CBM-S2	2.19
LTF	CBM-W2	2.79
LTF	CIN	< 0.01
LTF	CLIFTY	0.3
LTF	CPLE	0.76
LTF	DEARBORN	0.09
LTF	G-007	0.52
LTF	LGEE	< 0.01
LTF	MEC	0.29
LTF	O-066	1.73
LTF	RENSSELAER	0.11
LTF	ROSETON	0.8
LTF	TRIMBLE	< 0.01
292791	U1-032 E	10.79
LTF	WEC	< 0.01
914231	Y2-077	3.19
924071	AB2-051	66.52
924811	AB2-134 C O1	27.68
924812	AB2-134 E O1	26.29
925331	AB2-190 C	43.17
925332	AB2-190 E	18.5
925692	AC1-045 E	0.51
926662	AC1-147 E	0.66
926741	AC1-159	32.07
927221	AC1-216 C O1	21.12
927222	AC1-216 E O1	16.61



Generation Interconnection

Impact Study Report

for

Queue Project AD2-008

HOPEWELL-SURRY 230 KV

16.4 MW Capacity / 52.1 MW Energy

April, 2019

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Introduction

This System Impact Study (SIS) has been prepared in accordance with the PJM Open Access Transmission Tariff, Section 205, as well as the System Impact Study Agreement between Spring Grove Solar I, LLC, the Interconnection Customer (IC) and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Virginia Electric and Power Company (VEPCO).

Preface

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

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

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

The Interconnection Customer seeking to interconnect a wind or solar generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per Schedule H to the Interconnection Service Agreement and Section 8 of Manual 14D.

General

The IC has proposed a solar generating facility located in Spring Grove, VA (Surry County). The installed facilities will have a total capability of 52.1 MW with 16.4 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is 11/01/2019. **This study does not imply an ITO commitment to this in-service date.**

Queue Number	AD2-008
Project Name	HOPEWELL-SURRY 230 KV
Interconnection Customer	Spring Grove Solar I, LLC
State	Virginia
County	Surry
Transmission Owner	Dominion
MFO	52.1
MWE	52.1
MWC	16.4
Fuel	Solar
Basecase Study Year	2021

Point of Interconnection

AD2-008 will interconnect with the ITO transmission system via a new ring bus breaker position in the AB2-134 switching station that is the scope of AD1-025 and connects on the Hopewell – Surry 230kV line # 212. AD2-008 will share the Main Transformer with the AD2-007 queue.

Cost Summary

The AD2-008 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$0
Direct Connection Network Upgrade	\$0
Non Direct Connection Network Upgrades	\$0
Total Costs	\$0

In addition, the AD2-008 project may be responsible for a contribution to the following costs

Description	Total Cost
System Upgrades	\$1,674,260

Cost allocations for these upgrades will be provided in the System Impact Study Report.

Note: The Feasibility Study is used to make a preliminary determination of the type and scope of Attachment Facilities, Local Upgrades, and Network Upgrades that will be necessary to accommodate the Interconnection Request and to provide the Interconnection Customer a preliminary estimate of the time that will be required to construct any necessary facilities and upgrades and the Interconnection Customer's cost responsibility. The System Impact Study provides refined and comprehensive estimates of cost responsibility and construction lead times for new facilities and system upgrades. Facilities Studies will include, commensurate with the degree of engineering specificity as provided in the Facilities Study Agreement, good faith estimates of the cost, determined in accordance with Section 217 of the Tariff,

- (a) to be charged to each affected New Service Customer for the Facilities and System Upgrades that are necessary to accommodate this queue project;
- (b) the time required to complete detailed design and construction of the facilities and upgrades; and
- (c) a description of any site-specific environmental issues or requirements that could reasonably be anticipated to affect the cost or time required to complete construction of such facilities and upgrades.

Transmission Owner Scope of Work

Attachment Facilities

The existing AD1-025 scope of work is sufficient to accommodate this queue request from an Attachment Facilities and substation expansion perspective. The single line is shown below in Attachment 1. These costs do not include CIAC Tax Gross-up.

Direct Connection Cost Estimate

None

Non-Direct Connection Cost Estimate

Remote Terminal Work: During the Facilities Study, ITO's System Protection Engineering Department will review transmission line protection as well as anti-islanding required to accommodate the new generation and interconnection substation. System Protection Engineering will determine the minimal acceptable protection requirements to reliably interconnect the proposed generating facility with the transmission system. The review is based on maintaining system reliability by reviewing ITO's protection requirements with the known transmission system configuration which includes generating facilities in the area. This review may determine that transmission line protection and communication upgrades are required at remote substations.

Interconnection Customer Requirements

ITO's Facility Connection Requirements as posted on PJM's website

<http://www.pjm.com/~media/planning/plan-standards/private-dominion/facility-connection-requirements1.ashx>

Voltage Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment 1 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Frequency Ride Through Requirements - The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

Reactive Power - The Generation Interconnection Customer shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading to 0.95 lagging measured at the generator's terminals.

Revenue Metering and SCADA Requirements

PJM Requirements

The IC will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O Appendix 2.

Meteorological Data Reporting Requirement

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Atmospheric pressure (hectopascals)
- Irradiance
- Forced outage data

Network Impacts

The Queue Project AD2-008 was evaluated as a 52.1 MW (Capacity 16.4 MW) injection as a tapped connection into Hopewell-Surry 230kV in the ITO area. Project AD2-008 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD2-008 was studied with a commercial probability of 100%. Potential network impacts were as follows:

Contingency Descriptions

The following contingencies resulted in overloads:

Contingency Name	Contingency Definition
DVP_P4-2: H2T557	CONTINGENCY 'DVP_P4-2: H2T557' /* ELMONT OPEN BRANCH FROM BUS 314908 TO BUS 314903 CKT 1 /*ELMONT TO CHICKAHOMINY (LINE 557) OPEN BRANCH FROM BUS 314903 TO BUS 314214 CKT 1 /*CHICKAHOMINY 500-230 (TX#1) OPEN BRANCH FROM BUS 314908 TO BUS 314218 CKT 2 /*ELMONT 500-230 (TX#2) END
DVP_P7-1: LN 211-228	CONTINGENCY 'DVP_P7-1: LN 211-228' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END
DVP_P1-2: LN 228	CONTINGENCY 'DVP_P1-2: LN 228' OPEN BRANCH FROM BUS 314278 TO BUS 314286 CKT 1 /* 6BERMUDA 230.00 - 6CHSTF A 230.00 OPEN BRANCH FROM BUS 314278 TO BUS 314303 CKT 1 /* 6BERMUDA 230.00 - 6HOPEWLL 230.00 OPEN BUS 314278 /* ISLAND END
DVP_P1-2: LN 563	CONTINGENCY 'DVP_P1-2: LN 563' OPEN BRANCH FROM BUS 314902 TO BUS 314914 CKT 1 /* 8CARSON 500.00 - 8MDLTHAN 500.00 END
DVP_P1-2: LN 211	CONTINGENCY 'DVP_P1-2: LN 211' OPEN BRANCH FROM BUS 314287 TO BUS 314303 CKT 1 /* 6CHSTF B 230.00 - 6HOPEWLL 230.00 END
DVP_P4-2: 211T2124	CONTINGENCY 'DVP_P4-2: 211T2124' /*_ HOPEWLL OPEN BRANCH FROM BUS 314303 TO BUS 314287 CKT 1 /*L211 HOPEWLL CHESTERFIELD OPEN BRANCH FROM BUS 314303 TO BUS 314269 CKT 1 /*L2124

	END
DVP_P7-1: LN 212-240_D	CONTINGENCY 'DVP_P7-1: LN 212-240_D' OPEN BRANCH FROM BUS 925330 TO BUS 314538 CKT 2 /* AB2-190 TAP 230.00 - 6SURRY 230.00 OPEN BRANCH FROM BUS 924810 TO BUS 314538 CKT 1 /* AB2-134 TAP 230.00 - 6SURRY 230.00 END

In Process

In Process

Summer Peak Load Flow

Generation Deliverability

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

None

Multiple Facility Contingency

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

None

Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/DC	MW IMPACT
12675	314218	6ELMONT	DVP	314908	8ELMONT	DVP	1	DVP_P4-2: H2T557	breaker	1050.6	114.02	114.03	AC	11.41
13535	314269	6PRGEORG	DVP	314291	3PRGEORG	DVP	1	DVP_P7-1: LN 211-228	tower	219.8	136.61	141.13	AC	10.31
12600	314278	6BERMUDA	DVP	314286	6CHESTF A	DVP	1	DVP_P4-2: 211T2124	breaker	549.0	116.35	120.34	AC	22.22
13614	314278	6BERMUDA	DVP	314286	6CHESTF A	DVP	1	DVP_P7-1: LN 212-240_D	tower	549.0	105.97	110.13	AC	23.36
12595	314303	6HOPEWLL	DVP	314278	6BERMUDA	DVP	1	DVP_P4-2: 211T2124	breaker	549.0	116.37	120.36	AC	22.22
13609	314303	6HOPEWLL	DVP	314278	6BERMUDA	DVP	1	DVP_P7-1: LN 212-240_D	tower	549.0	106.0	110.15	AC	23.36

Potential Congestion due to Local Energy Deliverability

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

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection

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

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
13089	314278	6BERMUDA	DVP	314286	6CHESTF A	DVP	1	DVP_P1-2: LN 211	operation	449.32	124.79	129.05	AC	19.34
12974	314287	6CHESTF B	DVP	314276	6BASIN	DVP	1	DVP_P1-2: LN 563	operation	449.32	146.6	147.81	AC	5.4
13082	314303	6HOPEWLL	DVP	314278	6BERMUDA	DVP	1	DVP_P1-2: LN 211	operation	449.32	124.82	129.07	AC	19.34
13234	314303	6HOPEWLL	DVP	314287	6CHESTF B	DVP	1	DVP_P1-2: LN 228	operation	441.8	113.67	118.11	AC	19.9

System Reinforcements

ID	Index	Facility	Upgrade Description	AD2-008 Cost Allocation																														
12600,13614	3	6BERMUDA 230.0 kV - 6CHESTF A 230.0 kV Ckt 1	<p>DVP Description : Line #228 Bermuda – Chesterfield 230 kV: wreck and rebuild the line of 3 miles to increase its line rating to 1047 MVA (normal), 1047 MVA (emergency), and 1204 MVA (load dump). It is estimated to cost \$8,700,000 and 44-48 months to engineer, permit, and construct. A VA CPCN is required. Time Estimate : 44-48 Months Cost : \$8,700,000 AD2-008 Cost: \$1,777,595.03</p> <table border="1"> <thead> <tr> <th>Queue</th> <th>MW contribution</th> <th>Percentage of Cost</th> <th>Cost (\$8,700,000)</th> <th>Contingency Name</th> <th>Contingency Type</th> </tr> </thead> <tbody> <tr> <td>AC2-012</td> <td>13.98</td> <td>8.52%</td> <td>\$740,899.12</td> <td>211T2124'</td> <td>breaker</td> </tr> <tr> <td>AD1-025</td> <td>63.98</td> <td>38.97%</td> <td>\$3,390,752.92</td> <td>'DVP_P4-2: 211T2124'</td> <td>breaker</td> </tr> <tr> <td>AD1-151</td> <td>63.98</td> <td>38.97%</td> <td>\$3,390,752.92</td> <td>'DVP_P4-2: 211T2124'</td> <td>breaker</td> </tr> <tr> <td>AD2-008</td> <td>22.22</td> <td>13.54%</td> <td>\$1,177,595.03</td> <td>'DVP_P4-2: 211T2124'</td> <td>breaker</td> </tr> </tbody> </table> <p>Also, the below baseline/end of life upgrade is needed for AD2-008 to be operational.</p> <p>DVP Description : Line #228 Bermuda-Chesterfield 230 kV: End of Life Project ISD 2020 Time Estimate : 44-48 Months Cost : \$28,100,000 AD2-008 Cost: \$0 The above upgrade is an End of Life project. B2922. ISD:12/01/2020</p>	Queue	MW contribution	Percentage of Cost	Cost (\$8,700,000)	Contingency Name	Contingency Type	AC2-012	13.98	8.52%	\$740,899.12	211T2124'	breaker	AD1-025	63.98	38.97%	\$3,390,752.92	'DVP_P4-2: 211T2124'	breaker	AD1-151	63.98	38.97%	\$3,390,752.92	'DVP_P4-2: 211T2124'	breaker	AD2-008	22.22	13.54%	\$1,177,595.03	'DVP_P4-2: 211T2124'	breaker	\$1,177,595
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13609,12595	4	6HOPEWLL 230.0 kV - 6BERMUDA 230.0 kV Ckt 1	<p>The below upgrade is identified in a previous queue and due to the cost allocation rules, AD2-008 doesn't get any cost. However if the prior projects withdraw, AD2-008 will be re-tooled and could be the driver and get cost towards the below upgrade. Even though AD2-008 doesn't get any cost, the below upgrade is still needed for it to be operational.</p> <p>DVP: Upgrading 0.1 miles (this is 1 line span) from Hopewell-Bermuda, Time Estimate : 44-48 Months Cost : \$300,000 AD2-008 Cost: \$0</p> <p>Also, the below baseline/end of life upgrade is needed for AD2-008 to be operational.</p>	\$0																														

			<p>DVP Description : Line #228 Hopewell – Bermuda 230 kV: End of Life Project ISD 2020 Time Estimate : 44-48 Months Cost : \$28,100,000 AD2-008 Cost: \$0 The above upgrade is an End of Life project. B2922. ISD:12/01/2020</p>	
13535	2	<p>6PRGEORG 230.0 kV - 3PRGEORG 115.0 kV Ckt 1</p>	<p>The below upgrade is identified in a previous queue and due to the cost allocation rules, AD2-008 doesn't get any cost. However if the prior projects withdraw, AD2-008 will be re-tooled and could be the driver and get cost towards the below upgrade. Even though AD2-008 doesn't get any cost, the below upgrade is still needed for it to be operational.</p> <p>#n5807 – Replace the Prince George 230/115 kV transformer #1. Replace the existing Prince George 230/115kV transformer with a larger device. The work is estimated to take 18 months to complete. The existing transformer has a rating of 168MVA (normal) and 220MVA (emergency) and the new transformer will have a rating of 224MVA (normal) and 280 MVA (emergency). Estimated cost is \$3,441,235.</p> <p>AD2-008 Cost: \$0</p>	\$0

Process

12675	1	6ELMONT 230.0 kV - 8ELMONT 500.0 kV Ckt 1	<p>DVP Description : Elmont 500 – 230 kV Tx#1: replace the 500-230 kV transformer #1 increase its line rating to 1134 MVA (normal), 1203 MVA (emergency), and 1365 MVA (load dump). It is estimated to cost \$17,500,000 and 24-30 months to engineer and construct. Time Estimate : 24-30 Months Cost : \$17,500,000 AD2-008 Cost: \$496,665.37</p>			\$496,665																																																																																																				
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			TOTAL COST					\$1,674,260																																																																																																		

Flow Gate Details

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact. It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

IP Process

Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
12675	314218	6ELMONT	DVP	314908	8ELMONT	DVP	1	DVP_P4-2: H2T557	breaker	1050.6	114.02	114.03	AC	11.41

Bus #	Bus	MW Impact
292791	U1-032 E	4.82
297087	V2-040	0.29
314189	6PAPERMILL	8.8
314229	6MT RD221	1.41
314236	6NRTHST	0.38
314250	6ROCKVILLE	0.41
314256	6ROCKVILLE E	1.16
314315	3LOCKS E	1.63
314539	3UNCAMP	2.17
314541	3WATKINS	0.61
314566	3CRESWEL	2.09
314648	6SUNBURY	0.8
314651	6WINFALL	1.58
315043	1FOUR RIVERA	6.93
315044	1FOUR RIVERB	5.36
315045	1FOUR RIVERC	6.93
315046	1FOUR RIVERD	5.36
315047	1FOUR RIVERE	5.36
315048	1FOUR RIVERF	6.93
315067	1DARBY 1	5.19
315068	1DARBY 2	5.19
315069	1DARBY 3	5.21
315070	1DARBY 4	5.22
315073	1STONECA	9.26
315074	1HOPCGN1	11.17
315075	1HOPCGN2	11.02
315083	1SPRUNCA	14.88
315084	1SPRUNCB	14.88
315085	1SPRUNCC	11.03
315086	1SPRUNCD	11.03
315090	1YORKTN1	30.77
315091	1YORKTN2	31.93
901082	W1-029E	41.5
907092	X1-038 E	5.43
913392	Y1-086 E	1.98
916042	Z1-036 E	40.52
916192	Z1-068 E	1.74
917122	Z2-027 E	0.96
918691	AA1-083	1.22
919152	AA1-139 E	5.87

Bus #	Bus	MW Impact
919211	AA1-145	20.7
920042	AA2-088 E	9.07
920692	AA2-178 E	3.58
923801	AB2-015 C O1	7.66
923802	AB2-015 E O1	6.28
923831	AB2-022 C	2.08
923832	AB2-022 E	1.12
923842	AB2-024 E	1.48
923852	AB2-025 E	1.08
924061	AB2-050	1.22
924241	AB2-068 O1	176.8
924511	AB2-100 C	10.36
924512	AB2-100 E	5.1
924811	AB2-134 C O1	15.72
924812	AB2-134 E O1	14.93
925051	AB2-160 C O1	7.1
925052	AB2-160 E O1	11.59
925061	AB2-161 C O1	3.59
925062	AB2-161 E O1	5.86
925281	AB2-186 C	0.55
925282	AB2-186 E	0.23
925291	AB2-188 C O1	2.06
925292	AB2-188 E O1	0.93
925331	AB2-190 C	24.53
925332	AB2-190 E	10.51
925522	AC1-027 E	1.06
925861	AC1-065 C	4.35
925862	AC1-065 E	7.1
926291	AC1-107	266.86
926411	AC1-112 C	0.7
926412	AC1-112 E	1.93
926472	AC1-118 E	1.07
926551	AC1-134	14.9
926662	AC1-147 E	1.24
926751	AC1-161 C	26.97
926752	AC1-161 E	11.51
926781	AC1-164 C	58.36
926782	AC1-164 E	26.22
927041	AC1-191 C	17.55
927042	AC1-191 E	8.74
927221	AC1-216 C O1	12.0
927222	AC1-216 E O1	9.44
930121	AB1-027 C	0.9
930122	AB1-027 E	1.9
932041	AC2-012 C	9.55
932042	AC2-012 E	15.58
932501	AC2-070 C	2.91
932502	AC2-070 E	1.2
932531	AC2-073 C	3.09
932532	AC2-073 E	1.56
932581	AC2-078 C	4.69
932582	AC2-078 E	7.66

Bus #	Bus	MW Impact
932591	AC2-079 C	5.74
932592	AC2-079 E	9.37
932831	AC2-110 C	1.74
932832	AC2-110 E	2.84
933061	AC2-130	3.47
933071	AC2-131 1	2.35
933081	AC2-131 2	1.07
933111	AC2-132 1	1.24
933121	AC2-132 2	0.63
933261	AC2-137 C	0.64
933262	AC2-137 E	2.02
933272	AC2-138 E	1.08
933291	AC2-141 C	26.97
933292	AC2-141 E	11.51
933732	AC2-196 E	1.1
934011	AD1-025 C O1	20.63
934012	AD1-025 E O1	12.22
934061	AD1-033 C O1	6.91
934062	AD1-033 E O1	4.61
934141	AD1-041 C O1	6.72
934142	AD1-041 E O1	4.48
934211	AD1-048 C	3.82
934212	AD1-048 E	1.93
934391	AD1-063 C	2.09
934392	AD1-063 E	1.4
934571	AD1-082 C O1	8.18
934572	AD1-082 E O1	4.67
934781	AD1-105 C	8.13
934782	AD1-105 E	5.65
935111	AD1-144 C	1.67
935112	AD1-144 E	0.91
935161	AD1-151 C O1	19.71
935162	AD1-151 E O1	13.14
935211	AD1-156 C	2.52
935212	AD1-156 E	1.68
936041	AD2-007	2.19
936051	AD2-008 C	3.59
936052	AD2-008 E	7.82
936151	AD2-021	0.36
936241	AD2-030 C	2.87
936242	AD2-030 E	1.47
936301	AD2-039 C	1.74
936302	AD2-039 E	2.84
936341	AD2-044 C	0.27
936342	AD2-044 E	0.31
936391	AD2-049 C	1.87
936392	AD2-049 E	1.87
936581	AD2-073 C	2.24
936582	AD2-073 E	1.11
936591	AD2-074 C	6.36
936592	AD2-074 E	10.38
936661	AD2-085 C	3.47

Bus #	Bus	MW Impact
936662	AD2-085 E	5.65
936711	AD2-090 C O1	6.31
936712	AD2-090 E O1	4.21
937221	AD2-160 C O1	5.37
937222	AD2-160 E O1	2.81
937251	AD2-164	5.11
937541	AD2-215 C	1.68
937542	AD2-215 E	0.89
AA2-074	AA2-074	3.2
CARR	CARR	0.67
CBM-S1	CBM-S1	3.8
CBM-S2	CBM-S2	13.72
CBM-W1	CBM-W1	0.18
CBM-W2	CBM-W2	17.73
CIN	CIN	0.11
CLIFTY	CLIFTY	1.67
CPLE	CPLE	4.71
DEARBORN	DEARBORN	0.48
G-007	G-007	2.29
IPL	IPL	0.05
LGEE	LGEE	0.04
MEC	MEC	1.94
O-066	O-066	14.64
RENSSELAER	RENSSELAER	0.53
WEC	WEC	0.05

Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
13535	314269	6PRGEORG	DVP	314291	3PRGEORG	DVP	1	DVP_P7-1: LN 211-228	tower	219.8	136.61	141.13	AC	10.31

Bus #	Bus	MW Impact
292791	U1-032 E	5.62
315073	1STONECA	10.78
315074	1HOPCGN1	13.0
315075	1HOPCGN2	12.83
315076	1HOPPOLC	3.05
315077	1HOPHCF1	4.28
315078	1HOPHCF2	4.28
315079	1HOPHCF3	4.28
315080	1HOPHCF4	6.49
315116	1SURRY 1	20.18
315120	1GRAVEL4	2.04
315121	1GRAVEL5	2.01
315122	1GRAVEL6	2.04
914231	Y2-077	1.72
924811	AB2-134 C O1	14.21
924812	AB2-134 E O1	13.49
925331	AB2-190 C	22.16
925332	AB2-190 E	9.5
927221	AC1-216 C O1	10.84
927222	AC1-216 E O1	8.53
934011	AD1-025 C O1	18.64
934012	AD1-025 E O1	11.04
935161	AD1-151 C O1	17.81
935162	AD1-151 E O1	11.87
936041	AD2-007	1.98
936051	AD2-008 C	3.24
936052	AD2-008 E	7.06
AMIL	AMIL	0.03
BAYOU	BAYOU	0.08
BIG_CAJUN1	BIG_CAJUN1	0.12
BIG_CAJUN2	BIG_CAJUN2	0.24
BLUEG	BLUEG	0.19
CALDERWOOD	CALDERWOOD	0.04
CANNELTON	CANNELTON	0.03
CARR	CARR	0.06
CATAWBA	CATAWBA	0.01
CHEOAH	CHEOAH	0.03
CHILHOWEE	CHILHOWEE	0.01
CHOCTAW	CHOCTAW	0.08
CLIFTY	CLIFTY	0.84

Bus #	Bus	MW Impact
COTTONWOOD	COTTONWOOD	0.32
CPL	CPL	0.03
DEARBORN	DEARBORN	0.11
EDWARDS	EDWARDS	0.06
ELMERSMITH	ELMERSMITH	0.09
FARMERCITY	FARMERCITY	0.03
G-007	G-007	0.18
GIBSON	GIBSON	0.06
MORGAN	MORGAN	0.13
NEWTON	NEWTON	0.14
O-066	O-066	1.16
PRAIRIE	PRAIRIE	0.25
RENSELAER	RENSELAER	0.05
SANTEETLA	SANTEETLA	0.01
SMITHLAND	SMITHLAND	0.02
TATANKA	TATANKA	0.06
TILTON	TILTON	0.07
TRIMBLE	TRIMBLE	0.04
TVA	TVA	0.06
UNIONPOWER	UNIONPOWER	0.04

Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
12600	314278	6BERMUDA	DVP	314286	6CHESTF A	DVP	1	DVP_P4-2: 211T2124	breaker	549.0	116.35	120.34	AC	22.22

Bus #	Bus	MW Impact
292791	U1-032 E	12.03
315073	1STONECA	23.11
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315076	1HOPPOLC	6.53
315077	1HOPHCF1	9.17
315078	1HOPHCF2	9.17
315079	1HOPHCF3	9.17
315080	1HOPHCF4	13.91
315116	1SURRY 1	44.14
315120	1GRAVEL4	4.46
315121	1GRAVEL5	4.4
315122	1GRAVEL6	4.46
914231	Y2-077	3.69
924811	AB2-134 C O1	30.63
924812	AB2-134 E O1	29.09
925331	AB2-190 C	47.77
925332	AB2-190 E	20.47
927221	AC1-216 C O1	23.37
927222	AC1-216 E O1	18.38
934011	AD1-025 C O1	40.18
934012	AD1-025 E O1	23.8
935161	AD1-151 C O1	38.39
935162	AD1-151 E O1	25.59
936041	AD2-007	4.27
936051	AD2-008 C	7.0
936052	AD2-008 E	15.23
CARR	CARR	0.16
CBM-S1	CBM-S1	1.0
CBM-S2	CBM-S2	3.07
CBM-W1	CBM-W1	0.65
CBM-W2	CBM-W2	4.86
CIN	CIN	0.17
CPL	CPL	1.05
DEARBORN	DEARBORN	0.06
G-007	G-007	0.62
IPL	IPL	0.1
LGEE	LGEE	0.04
MEC	MEC	0.68
O-066	O-066	3.93

Bus #	Bus	MW Impact
RENSELAER	RENSELAER	0.13
WEC	WEC	0.05

In Process

Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
12595	314303	6HOPEWLL	DVP	314278	6BERMUDA	DVP	1	DVP_P4-2: 211T2124	breaker	549.0	116.37	120.36	AC	22.22

Bus #	Bus	MW Impact
292791	U1-032 E	12.03
315073	1STONECA	23.11
315074	1HOPCGN1	27.86
315075	1HOPCGN2	27.5
315076	1HOPPOLC	6.53
315077	1HOPHCF1	9.17
315078	1HOPHCF2	9.17
315079	1HOPHCF3	9.17
315080	1HOPHCF4	13.91
315116	1SURRY 1	44.14
315120	1GRAVEL4	4.46
315121	1GRAVEL5	4.4
315122	1GRAVEL6	4.46
914231	Y2-077	3.69
924811	AB2-134 C O1	30.63
924812	AB2-134 E O1	29.09
925331	AB2-190 C	47.77
925332	AB2-190 E	20.47
927221	AC1-216 C O1	23.37
927222	AC1-216 E O1	18.38
934011	AD1-025 C O1	40.18
934012	AD1-025 E O1	23.8
935161	AD1-151 C O1	38.39
935162	AD1-151 E O1	25.59
936041	AD2-007	4.27
936051	AD2-008 C	7.0
936052	AD2-008 E	15.23
CARR	CARR	0.16
CBM-S1	CBM-S1	1.0
CBM-S2	CBM-S2	3.07
CBM-W1	CBM-W1	0.65
CBM-W2	CBM-W2	4.86
CIN	CIN	0.17
CPL	CPL	1.05
DEARBORN	DEARBORN	0.06
G-007	G-007	0.62
IPL	IPL	0.1
LGEE	LGEE	0.04
MEC	MEC	0.68
O-066	O-066	3.93

Bus #	Bus	MW Impact
RENSELAER	RENSELAER	0.13
WEC	WEC	0.05

In Process

In Process

Affected Systems

Duke Energy Progress

None

In Process

In Process

Short Circuit

Short Circuit

The following Breakers are overduty

None

In Process

In Process

Stability

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

None

Stability and Reactive Power Requirement for Low Voltage Ride Through

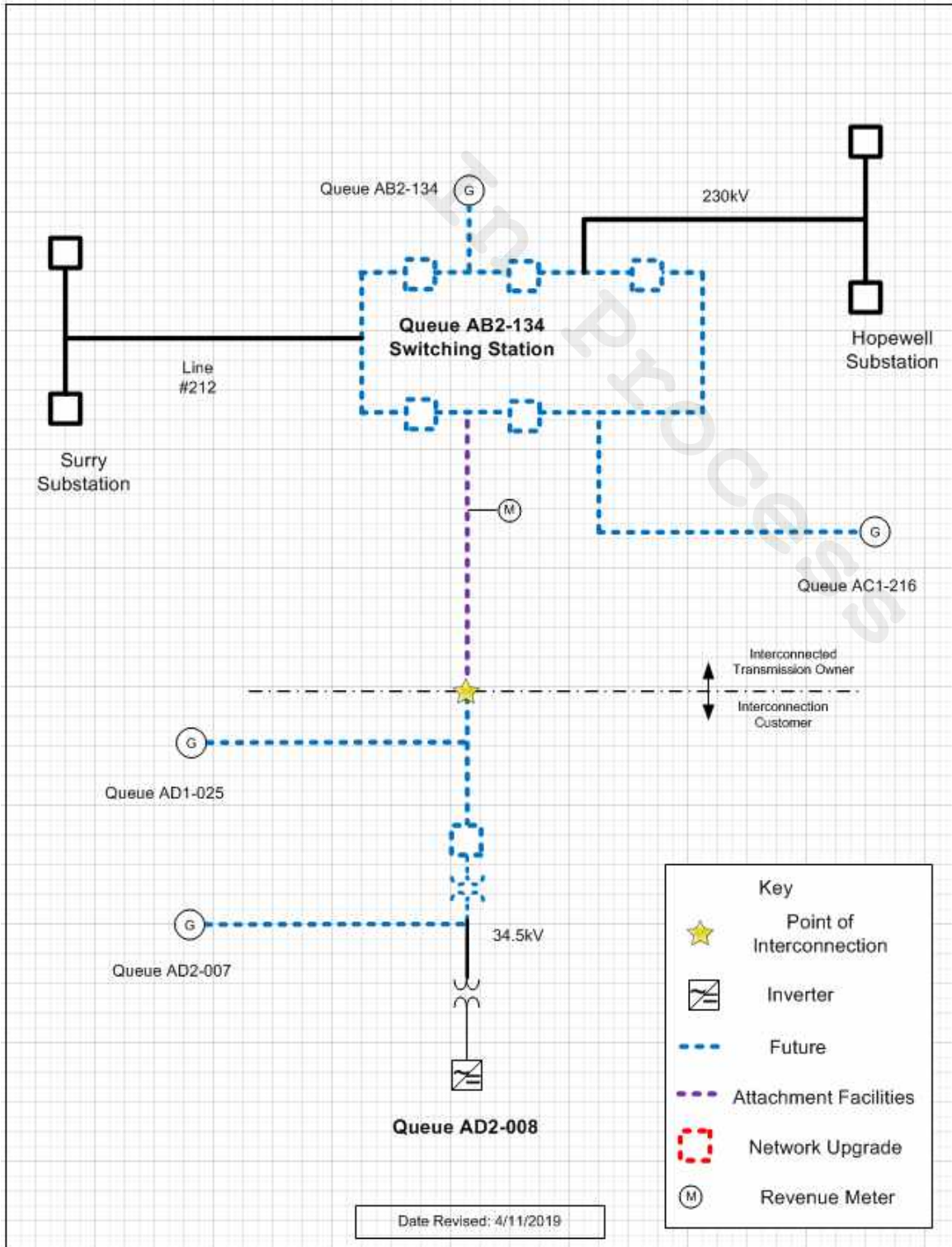
(Summary of the VAR requirements based upon the results of the dynamic studies)

No other mitigations were found to be required.

In Process

Attachment 1

Single Line Diagram



Attachment D – Interconnection Agreement



2750 Monroe Blvd.
Audubon, PA 19403

January 10, 2018

Mr. James Crawford
Spring Grove Solar II, LLC
337 Log Canoe Circle
Stevensville MD 21666

Re: AD1-025 Interim Interconnection Service Agreement

Dear Mr. Crawford:

Enclosed, for your file, is an executed copy of the Interim Interconnection Service Agreement for the above referenced project.

If you have any questions, please feel free to contact me at 610-666-8219.

Sincerely,

A handwritten signature in cursive script that reads "Marcie Gritmon".

Marcie Gritmon
Interconnection Planning Department

Encl.

12-07-17A11:17 RCVD

Service Agreement No. []

(PJM Queue AD1-025)

INTERIM INTERCONNECTION SERVICE AGREEMENT

Among

PJM INTERCONNECTION, L.L.C.

And

SPRINGGROVE SOLAR II, LLC

And

VIRGINIA ELECTRIC AND POWER COMPANY

INTERIM INTERCONNECTION SERVICE AGREEMENT

**By and Among
PJM Interconnection, L.L.C.
and**

**Spring Grove Solar II, LLC
and**

Virginia Electric and Power Company

(PJM Queue Position # AD1-025)

- 1.0 This Interim Interconnection Service Agreement ("Interim ISA"), including the Specifications attached hereto and incorporated herein, is entered into by and among PJM Interconnection, L.L.C. ("Transmission Provider" or "PJM"), Spring Grove Solar II, LLC ("Interconnection Customer"), and Virginia Electric and Power Company ("Interconnected Transmission Owner").
- 2.0 Attached are Specifications for the Customer Facility that Interconnection Customer proposes to interconnect to the Transmission Provider's Transmission System. Interconnection Customer represents and warrants that, upon completion of their construction, it will own or control the facilities identified in the Specifications attached hereto and made a part hereof. In the event that Interconnection Customer will not own the facilities, Interconnection Customer represents and warrants that it is authorized by the owners of such facilities to enter into this Interim ISA and to represent such control.
- 3.0 In order to advance the completion of its interconnection under the PJM Open Access Transmission Tariff ("Tariff"), Interconnection Customer has requested an Interim ISA and Transmission Provider has determined that Interconnection Customer is eligible under the Tariff to obtain this Interim ISA.
- 4.0 (a) In accord with Section 211 of the Tariff, Interconnection Customer, on or before the effective date of this Interim ISA, shall provide Transmission Provider (for the benefit of the Interconnected Transmission Owner) with a letter of credit from an agreed provider or other form of security reasonably acceptable to Transmission Provider in the amount of \$10,000, which amount equals the estimated costs, determined in accordance with Section 217 of the Tariff, of acquiring, designing, constructing and/or installing the facilities described in section 3.0 of the Attached Specifications. Should Interconnection Customer fail to provide such security in the amount or form required, this Interim ISA shall be terminated. Interconnection Customer acknowledges (1) that it will be responsible for the actual costs of the facilities described in the Specifications, whether greater or lesser than the amount of the payment security provided under this section, and (2) that the payment security under this section does not include any additional amounts that it will owe in the event that it executes a final Interconnection Service Agreement, as described in section 7.0(a) below.

(b) Interconnection Customer acknowledges (1) that the purpose of this Interim ISA is to expedite, at Interconnection Customer's request, the acquisition, design, construction and/or installation of certain materials and equipment, as described in the Specifications, necessary to interconnect its proposed facilities with Transmission Provider's Transmission System; and (2) that Transmission Provider's Interconnection Studies related to such facilities have not been completed, but that the identified completed Scoping Meeting, dated August 9, 2017, that included Interconnection Customer's project sufficiently demonstrated, in Interconnection Customer's sole opinion, the necessity of facilities additions to the Transmission System to accommodate Interconnection Customer's project to warrant, in Interconnection Customer's sole judgment, its request that the Interconnected Transmission Owner acquire, design, construct and/or install the equipment indicated in the Specifications for use in interconnecting Interconnection Customer's project with the Transmission System.

5.0 This Interim ISA shall be effective on the date it is executed by all Interconnection Parties and shall terminate upon the execution and delivery by Interconnection Customer and Transmission Provider of the final Interconnection Service Agreement described in section 7.0(a) below, or on such other date as mutually agreed upon by the parties, unless earlier terminated in accordance with the Tariff.

6.0 In addition to the milestones stated in Section 212.5 of the Tariff, during the term of this Interim ISA, Interconnection Customer shall ensure that its generation project meets each of the following development milestones:

NOT APPLICABLE FOR THIS INTERIM ISA

7.0 (a) Transmission Provider and the Interconnected Transmission Owner agree to provide for the acquisition, design, construction and/or installation of the facilities identified, and to the extent described, in Section 3.0 of the Specifications in accordance with Part IV of the Tariff, as amended from time to time, and this Interim ISA. Except to the extent for which the Specifications provide for interim interconnection rights for the Interconnection Customer, the parties agree that (1) this Interim ISA shall not provide for or authorize Interconnection Service for the Interconnection Customer, and (2) Interconnection Service will commence only after Interconnection Customer has entered into a final Interconnection Service Agreement with Transmission Provider and the Interconnection Transmission Owner (or, alternatively, has exercised its right to initiate dispute resolution or to have the final Interconnection Service Agreement filed with the FERC unexecuted) after completion of the Facilities Study related to Interconnection Customer's Interconnection Request and otherwise in accordance with the Tariff. The final Interconnection Service Agreement may further provide for construction of, and payment for, transmission facilities additional to those identified in the attached Specifications. Should Interconnection Customer fail to enter into such final Interconnection Service Agreement (or, alternatively, to initiate dispute resolution or request that the agreement be filed with the FERC unexecuted) within the time prescribed by the Tariff, Transmission Provider shall have the right, upon providing written notice to Interconnection Customer, to terminate this Interim ISA.

(b) In the event that Interconnection Customer decides not to interconnect its proposed facilities, as described in Section 1.0 of the Specifications to the Transmission System, it shall immediately give Transmission Provider written notice of its determination. Interconnection Customer shall be responsible for the Costs incurred pursuant to this Interim ISA by Transmission Provider and/or by the Interconnected Transmission Owner (1) on or before the date of such notice, and (2) after the date of such notice, if the costs could not reasonably be avoided despite, or were incurred by reason of, Interconnection Customer's determination not to interconnect. Interconnection Customer's liability under the preceding sentence shall include all Cancellation Costs in connection with the acquisition, design, construction and/or installation of the facilities described in section 3.0 of the Specifications. In the event the Interconnected Transmission Owner incurs Cancellation Costs, it shall provide the Transmission Provider, with a copy to the Interconnection Customer, with a written demand for payment and with reasonable documentation of such Cancellation Costs. Within 60 days after the date of Interconnection Customer's notice, Transmission Provider shall provide an accounting of, and the appropriate party shall make any payment to the other that is necessary to resolve, any difference between (i) Interconnection Customer's cost responsibility under this Interim ISA and the Tariff for Costs, including Cancellation Costs, of the facilities described in section 3.0 of the Specifications and (ii) Interconnection Customer's previous payments under this Interim ISA. Notwithstanding the foregoing, however, Transmission Provider shall not be obligated to make any payment that the preceding sentence requires it to make unless and until the Interconnected Transmission Owner has returned to it the portion of Interconnection Customer's previous payments that Transmission Provider must pay under that sentence. This Interim ISA shall be deemed to be terminated upon completion of all payments required under this paragraph (b).

(c) Disposition of the facilities related to this Interim ISA after receipt of Interconnection Customer's notice of its determination not to interconnect shall be decided in accordance with Section 211.1 of the Tariff.

8.0 Interconnection Customer agrees to abide by all rules and procedures pertaining to generation in the PJM Region, including but not limited to the rules and procedures concerning the dispatch of generation set forth in the Operating Agreement and the PJM Manuals.

9.0 In analyzing and preparing the Facilities Study or the System Impact Study if no Facilities Study is required, and in designing and constructing the Attachment Facilities, Local Upgrades and/or Network Upgrades described in the Specifications attached to this Interim ISA, Transmission Provider, the Interconnected Transmission Owner(s), and any other subcontractors employed by Transmission Provider have had to, and shall have to, rely on information provided by Interconnection Customer and possibly by third parties and may not have control over the accuracy of such information. Accordingly, NEITHER TRANSMISSION PROVIDER, THE INTERCONNECTED TRANSMISSION OWNER(S), NOR ANY OTHER SUBCONTRACTORS EMPLOYED BY TRANSMISSION PROVIDER OR INTERCONNECTED TRANSMISSION OWNER MAKES ANY WARRANTIES, EXPRESS OR IMPLIED,

WHETHER ARISING BY OPERATION OF LAW, COURSE OF PERFORMANCE OR DEALING, CUSTOM, USAGE IN THE TRADE OR PROFESSION, OR OTHERWISE, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH REGARD TO THE ACCURACY, CONTENT, OR CONCLUSIONS OF THE FACILITIES STUDY OR THE SYSTEM IMPACT STUDY IF NO FACILITIES STUDY IS REQUIRED OR OF THE ATTACHMENT FACILITIES, LOCAL UPGRADES AND/OR NETWORK UPGRADES, PROVIDED, HOWEVER, that Transmission Provider warrants that the transmission facilities described in Section 3.0 of the Specifications will be designed, constructed and operated in accordance with Good Utility Practice, as such term is defined in the Operating Agreement. Interconnection Customer acknowledges that it has not relied on any representations or warranties not specifically set forth herein and that no such representations or warranties have formed the basis of its bargain hereunder.

- 10.0 Within 120 days after the Interconnected Transmission Owner completes acquisition, design, construction and/or installation of the facilities described in Section 3.0 of the Specifications, Transmission Provider shall provide Interconnection Customer with an accounting of, and the appropriate party shall make any payment to the other that is necessary to resolve, any difference between (a) Interconnection Customer's responsibility under this Interim ISA and the Tariff for the actual cost of such equipment, and (b) Interconnection Customer's previous aggregate payments to Transmission Provider and the Interconnected Transmission Owner hereunder. Notwithstanding the foregoing, however, Transmission Provider shall not be obligated to make any payment that the preceding sentence requires it to make unless and until the Interconnected Transmission Owner has returned to it the portion of Interconnection Customer's previous payments that Transmission Provider must pay under that sentence.
- 11.0 No third party beneficiary rights are created under this Interim ISA, provided, however, that payment obligations imposed on Interconnection Customer hereunder are agreed and acknowledged to be for the benefit of the Interconnected Transmission Owner actually performing the services associated with the interconnection of the generating facilities and any associated upgrades of other facilities.
- 12.0 No waiver by either party of one or more defaults by the other in performance of any of the provisions of this Interim ISA shall operate or be construed as a waiver of any other or further default or defaults, whether of a like or different character.
- 13.0 This Interim ISA or any part thereof, may not be amended, modified, assigned, or waived other than by a writing signed by all parties hereto.
- 14.0 This Interim ISA shall be binding upon the parties hereto, their heirs, executors, administrators, successors, and assigns.
- 15.0 This Interim ISA shall not be construed as an application for service under Part II or Part III of the Tariff.

- 16.0 Any notice or request made to or by either Party regarding this Interim ISA shall be made to the representative of the other Party as indicated below.

Transmission Provider

PJM Interconnection, L.L.C.
2750 Monroe Blvd.
Audubon, PA 19403

Interconnection Customer

Spring Grove Solar II, LLC
337 Log Canoe Circle
Stevensville, Maryland
Attn: James Crawford

Interconnected Transmission Owner

Virginia Electric and Power Company
P.O. Box 26666
12th Floor One James River Plaza
Richmond, VA 23261-6666
Attn: Mr. Bob McGuire, Director Electric Transmission Project Development & Execution

- 17.0 All portions of the Tariff and the Operating Agreement pertinent to the subject of this Interim ISA are incorporated herein and made a part hereof.
- 18.0 This Interim ISA is entered into pursuant to Part IV of the Tariff.
- 19.0 Neither party shall be liable for consequential, incidental, special, punitive, exemplary or indirect damages, lost profits or other business interruption damages, by statute, in tort or contract, under any indemnity provision or otherwise with respect to any claim, controversy or dispute arising under this Interim ISA.
- 20.0 Addendum of Interconnection Customer's Agreement to Conform with IRS Safe Harbor Provisions for Non-Taxable Status. To the extent required, in accordance with Section 20.1, Schedule A to this Interim ISA shall set forth the Interconnection Customer's agreement to conform with the IRS safe harbor provisions for non-taxable status.
- 20.1 Tax Liability
- 20.1.1 Safe Harbor Provisions:

This Section 20.1.1 is applicable only to Generation Interconnection Customers. Provided that Interconnection Customer agrees to conform to all requirements of the Internal Revenue Service ("IRS") (e.g., the "safe harbor" provisions of IRS Notices

2001-82 and 88-129) that would confer nontaxable status on some or all of the transfer of property, including money, by Interconnection Customer to the Interconnected Transmission Owner for payment of the Costs of construction of the Transmission Owner Interconnection Facilities, the Interconnected Transmission Owner, based on such agreement and on current law, shall treat such transfer of property to it as nontaxable income and, except as provided in Section 20.1.2 below, shall not include income taxes in the Costs of Transmission Owner Interconnection Facilities that are payable by Interconnection Customer under the Interim Interconnection Service Agreement, the Interconnection Service Agreement or the Interconnection Construction Service Agreement. Interconnection Customer shall document its agreement to conform to IRS requirements for such non-taxable status in the Interconnection Service Agreement, the Interconnection Construction Service Agreement, and/or the Interim Interconnection Service Agreement.

20.1.2 Tax Indemnity:

Interconnection Customer shall indemnify the Interconnected Transmission Owner for any costs that Interconnected Transmission Owner incurs in the event that the IRS and/or a state department of revenue (State) determines that the property, including money, transferred by Interconnection Customer to the Interconnected Transmission Owner with respect to the construction of the Transmission Owner Interconnection Facilities is taxable income to the Interconnected Transmission Owner. Interconnection Customer shall pay to the Interconnected Transmission Owner, on demand, the amount of any income taxes that the IRS or a State assesses to the Interconnected Transmission Owner in connection with such transfer of property and/or money, plus any applicable interest and/or penalty charged to the Interconnected Transmission Owner. In the event that the Interconnected Transmission Owner chooses to contest such assessment, either at the request of Interconnection Customer or on its own behalf, and prevails in reducing or eliminating the tax, interest and/or penalty assessed against it, the Interconnected Transmission Owner shall refund to Interconnection Customer the excess of its demand payment made to the Interconnected Transmission Owner over the amount of the tax, interest and penalty for which the Interconnected Transmission Owner is finally determined to be liable. Interconnection Customer's tax indemnification obligation under this section shall survive any termination of the Interim Interconnection Service Agreement or Interconnection Construction Service Agreement.

20.1.3 Taxes Other Than Income Taxes:

Upon the timely request by Interconnection Customer, and at Interconnection Customer's sole expense, the Interconnected Transmission Owner shall appeal, protest, seek abatement of, or otherwise contest any tax (other than federal or state income tax) asserted or assessed against the Interconnected Transmission Owner for which Interconnection Customer may be required to reimburse Transmission Provider under the terms of this Interim Interconnection Service Agreement or Part VI of the Tariff. Interconnection Customer shall pay to the Interconnected Transmission Owner on a periodic basis, as invoiced by the Interconnected Transmission Owner, the Interconnected Transmission Owner's documented reasonable costs of prosecuting such appeal, protest, abatement, or other contest. Interconnection Customer and the Interconnected

Transmission Owner shall cooperate in good faith with respect to any such contest. Unless the payment of such taxes is a prerequisite to an appeal or abatement or cannot be deferred, no amount shall be payable by Interconnection Customer to the Interconnected Transmission Owner for such contested taxes until they are assessed by a final, non-appealable order by any court or agency of competent jurisdiction. In the event that a tax payment is withheld and ultimately due and payable after appeal, Interconnection Customer will be responsible for all taxes, interest and penalties, other than penalties attributable to any delay caused by the Interconnected Transmission Owner.

20.1.4 Income Tax Gross-Up

20.1.4.1 Additional Security:

In the event that Interconnection Customer does not provide the safe harbor documentation required under Section 20.1.1 prior to execution of this Interim Interconnection Service Agreement, within 15 days after such execution, Transmission Provider shall notify Interconnection Customer in writing of the amount of additional Security that Interconnection Customer must provide. The amount of Security that a Transmission Interconnection Customer must provide initially pursuant to this Interim Interconnection Service Agreement shall include any amounts described as additional Security under this Section 20.1.4 regarding income tax gross-up.

20.1.4.2 Amount:

The required additional Security shall be in an amount equal to the amount necessary to gross up fully for currently applicable federal and state income taxes the estimated Costs of Local Upgrades and Network Upgrades for which Interconnection Customer previously provided Security. Accordingly, the additional Security shall equal the amount necessary to increase the total Security provided to the amount that would be sufficient to permit the Interconnected Transmission Owner to receive and retain, after the payment of all applicable income taxes ("Current Taxes") and taking into account the present value of future tax deductions for depreciation that would be available as a result of the anticipated payments or property transfers (the "Present Value Depreciation Amount"), an amount equal to the estimated Costs of Local Upgrades and Network Upgrades for which Interconnection Customer is responsible under the Interconnection Service Agreement. For this purpose, Current Taxes shall be computed based on the composite federal and state income tax rates applicable to the Interconnected Transmission Owner at the time the additional Security is received, determined using the highest marginal rates in effect at that time (the "Current Tax Rate"), and (ii) the Present Value Depreciation Amount shall be computed by discounting the Interconnected Transmission Owner's anticipated tax depreciation deductions associated with such payments or property transfers by its current weighted average cost of capital.

20.1.4.3 Time for Payment:

Interconnection Customer must provide the additional Security, in a form and with terms as required by Sections 212.4 of the Tariff, within 15 days after its receipt of Transmission Provider's notice under this section. The requirement for additional Security under this section

shall be treated as a milestone included in the Interconnection Service Agreement pursuant to Section 212.5 of the Tariff.

20.1.5 Tax Status:

Each Party shall cooperate with the other to maintain the other Party's tax status. Nothing in this Interim Interconnection Service Agreement or the Tariff is intended to adversely affect any Interconnected Transmission Owner's tax exempt status with respect to the issuance of bonds including, but not limited to, local furnishing bonds.

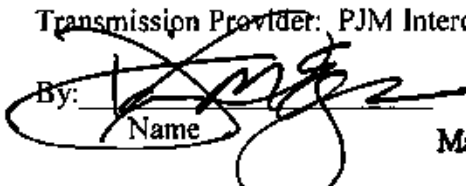
21.0 Addendum of Interconnection Requirement for all Wind or Non-synchronous Generation Facilities. To the extent required, Schedule B to this Interim ISA sets forth interconnection requirements for all wind or non-synchronous generation facilities and is hereby incorporated by reference and made a part of this Interim ISA.

22.0 Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. All Transmission Providers, Interconnected Transmission Owners, market participants, and Interconnection Customers interconnected with electric systems are to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and best practice recommendations from the electric reliability authority. All public utilities are expected to meet basic standards for electric system infrastructure and operational security, including physical, operational, and cyber-security practices.

IN WITNESS WHEREOF, Transmission Provider, Interconnection Customer and Interconnected Transmission Owner have caused this Interim ISA to be executed by their respective authorized officials.

(PJM Queue Position # AD1-025)

Transmission Provider: PJM Interconnection, L.L.C.

By:  12/22/17
Name Title Date
Manager, Interconnection Projects
David M. Egan

Printed name of signer: _____

Interconnection Customer: Spring Grove Solar II, LLC

By: E Franklin DePew Managing member 12/7/2017
Name Title Date

Printed name of signer: E Franklin DePew

Interconnected Transmission Owner: Virginia Electric and Power Company
Director

By:  Electric Transmission Project 12/12/17
Name Title Date
~~Development and Execution~~

Printed name of signer: Bob McQuire

**SPECIFICATIONS FOR
INTERIM INTERCONNECTION SERVICE AGREEMENT**

**By and Among
PJM INTERCONNECTION, L.L.C.**

And

Spring Grove Solar II, LLC

And

Virginia Electric and Power Company

(PJM Queue Position # AD1-025)

1.0 Description of Customer Facility to be interconnected with the Transmission System in the PJM Region:

a. Name of Customer Facility:

Spring Grove Solar

b. Location of Customer Facility:

3700 Colonial Trail, Spring Grove, VA

c. Size in megawatts of Customer Facility:

For Generation Interconnection Customer:

Maximum Facility Output of 150 MW}

2.0 Interconnection Rights: Interconnection Customer shall obtain Capacity Interconnection Rights in accordance with Subpart C of Part VI of the Tariff at the location specified in section 1.0b upon its execution of the final Interconnection Service Agreement described in section 7.0(a) of this Interim ISA.

3.0.A Facilities to be acquired, designed, constructed and/or installed by the Interconnected Transmission Owner under this Interim ISA:

Non Direct Connection Network Upgrades:

Complete the following activities for PJM Network Upgrade n5956, which consists of expanding the AB2-134 switching station to be a five breaker ringbus arrangement:

- Perform Facility Study level conceptual design for substation expansion.

3.0.B Facilities to be acquired, designed, constructed and/or installed by the Interconnection Customer under this Interim ISA:

None

4.0 Interconnection Customer shall be subject to the charges detailed below:

- 4.1 Attachment Facilities Charge: \$0
- 4.2 Local Upgrades Charge: \$0
- 4.3 Network Upgrades Charge: \$10,000

4.4 Cost Breakdown:

\$7,500	Direct Labor
\$0	Direct Material
\$2,500	Indirect Labor
\$0	Indirect Material
\$10,000	Total

SCHEDULES:

SCHEDULE A – INTERCONNECTION CUSTOMER’S AGREEMENT TO CONFORM WITH IRS SAFE HARBOR PROVISIONS FOR NON-TAXABLE STATUS

SCHEDULE B - INTERCONNECTION REQUIREMENTS FOR A WIND GENERATION FACILITY

SCHEDULE C - CUSTOMER FACILITY LOCATION/SITE PLAN

SCHEDULE D - SINGLE-LINE DIAGRAM

SCHEDULE A

INTERCONNECTION CUSTOMER'S AGREEMENT TO CONFORM WITH IRS SAFE HARBOR PROVISIONS FOR NON-TAXABLE STATUS

As provided in Section 20.1 of this Interim ISA and subject to the requirements thereof, Interconnection Customer represents that it meets all qualifications and requirements as set forth in Section 118(a) and 118(b) of the Internal Revenue Code of 1986, as amended and interpreted by Notice 88-129, 1988-2 C.B. 541, and as amplified and modified in Notices 90-60, 1990-2 C.B. 345, and 2001-82, 2001-2 C.B. 619 (the "IRS Notices"). Interconnection Customer agrees to conform with all requirements of the safe harbor provisions specified in the IRS Notices, as they may be amended, as required to confer non-taxable status on some or all of the transfer of property, including money, by Interconnection Customer to Interconnected Transmission Owner with respect to the payment of the Costs of construction and installation of the Transmission Owner Interconnection Facilities specified in this Interim ISA.

Nothing in Interconnection Customer's agreement pursuant to this Schedule A shall change Interconnection Customer's indemnification obligations under Section 20.1 of this Interim ISA.

SCHEDULE B

INTERCONNECTION REQUIREMENTS FOR ALL WIND AND NON-SYNCHRONOUS GENERATION FACILITIES

A. Voltage Ride Through Requirements

The Customer Facility shall be designed to remain in service (not trip) for voltages and times as specified for the Eastern Interconnection in Attachment I of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low voltage conditions, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

B. Frequency Ride Through Requirements

The Customer Facility shall be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of NERC Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency condition, irrespective of generator size, subject to the permissive trip exceptions established in PRC-024-1 (and successor Reliability Standards).

C. Supervisory Control and Data Acquisition (SCADA) Capability

The wind or non-synchronous generation facility shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the wind or non-synchronous generation facility Interconnection Customer shall determine what SCADA information is essential for the proposed wind or non-synchronous generation facility, taking into account the size of the facility and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

D. Meteorological Data Reporting Requirement (Applicable to wind generation facilities only)

The wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Wind speed (meters/second)
- Wind direction (degrees from True North)
- Atmosphere pressure (hectopascals)
- Forced outage data (wind turbine and MW unavailability)

The Transmission Provider and Interconnection Customer may mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast. All requirements for meteorological and forced outage data must be commensurate with the power production forecasting employed by the Transmission Provider. Such additional mutually agreed upon requirements for

meteorological and forced outage data are set forth below:

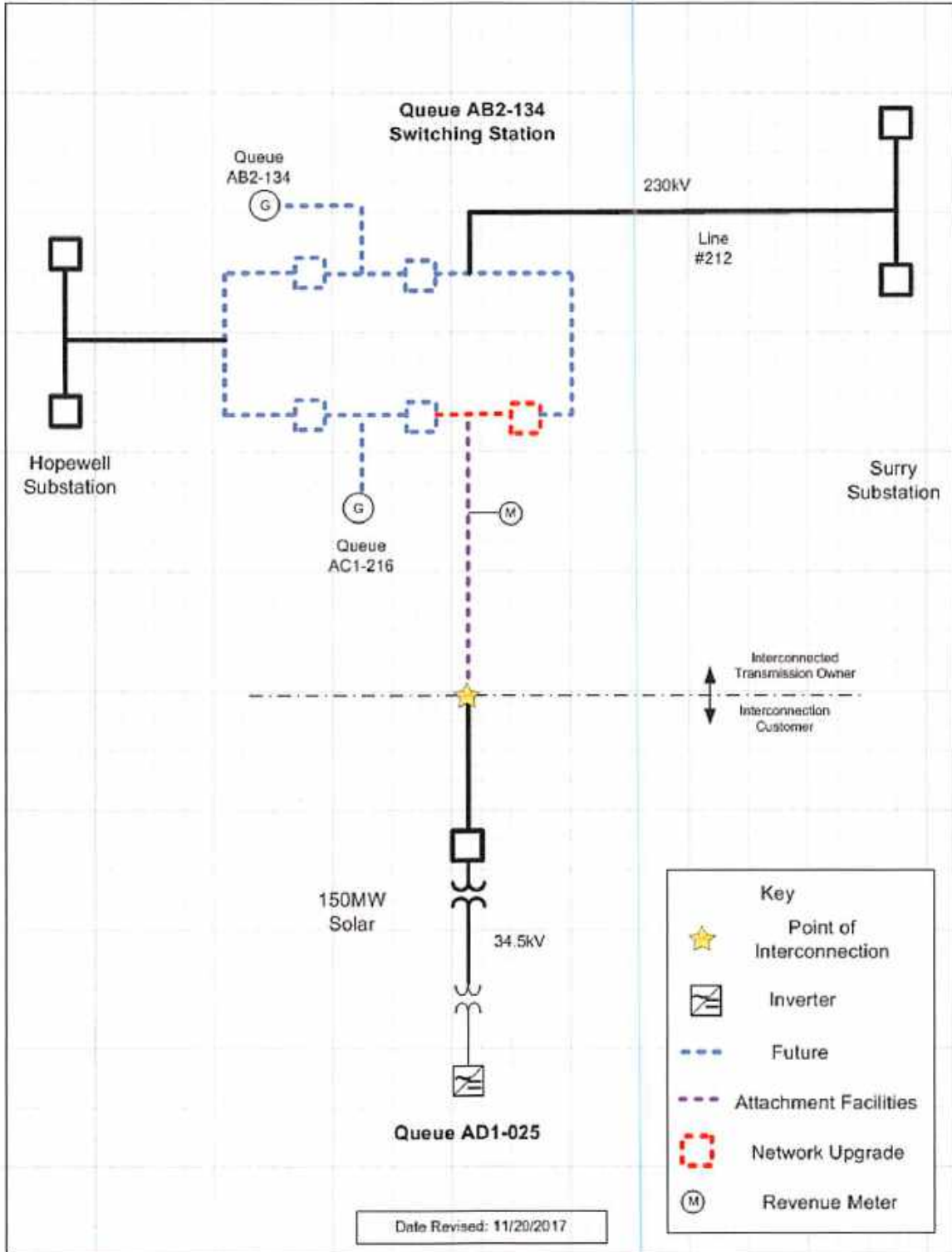
NOT APPLICABLE FOR THIS INTERIM ISA

SCHEDULE C

CUSTOMER FACILITY LOCATION/SITE PLAN



SCHEDULE D SINGLE-LINE DIAGRAM



Attachment E – Maximum Generation Capacity Certification

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

Facility Name and Location: Spring Grove Solar II
Surry, VA

Applicant's Name: Spring Grove Solar II LLC

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

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

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

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

Professional Engineer's signature:



Date:

4/20/2020



Attachment F – State Threatened and Endangered Species Review

- Virginia Department of Conservation and Recreation (VDCR)
- Virginia Department of Wildlife Resources (VDWR) – Wildlife Environmental Review Map Services (WERMS)
- *Faunal Species Survey Report*, June 2018
- *Amphibian Species Survey Report*, June 2019
- Coastal Avian Protection Zone

Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director



Rochelle Altholz
Deputy Director of
Administration and Finance

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

Nathan Burrell
Deputy Director of
Government and Community Relations

Thomas L. Smith
Deputy Director of
Operations

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

September 18, 2020

Julia Campus
Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225

Re: 39227, Spring Grove Solar II, LLC

Dear Ms. Campus:

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

According to a DCR biologist and predicted suitable habitat modeling, there is a potential for Barking treefrog (*Hyla gratiosa*, G5/S1/NL/LT) and Oak toad (*Anaxyrus quercicus*, G5/S2/NL/NL) to occur in the project area if suitable habitat exists on site. The Eastern Big-eared bat (*Corynorhinus rafinesquii macrourus*, G3G4T3/S2/NL/LE) has been documented within 1 mile of the project site and according to a DCR biologist and predicted suitable habitat modeling, there is potential for the Eastern Big-eared bat to occur in Cypress Swamp and associated wetlands.

The Barking treefrog ranges through the coastal plain from North Carolina to Florida and west to Mississippi and eastern Louisiana (NatureServe, 2009). There are disjunct populations in Delaware, Maryland, Kentucky and Tennessee, and southeastern Virginia (NatureServe, 2009). Across its range, it inhabits areas near shallow ponds in pine savannas and in low wet woods and swamps (Martof et al., 1980). In Virginia, this species breeds in fish-free vernal ponds (Pague & Young, 1991). When inactive during cold or dry seasons, they burrow under tree roots, vegetation, or in the soil; otherwise, this species is mostly arboreal and thus dependent on trees near the water (Pague & Young, 1991). Adult frogs feed on insects and other invertebrates; tadpoles consume primarily algae (VDGIF, 1993). Major threats to the Barking treefrog include continued logging of native pine, destruction of breeding ponds, and over collecting (Pague & Young, 1991). Please note that this species is currently classified as threatened by the Virginia Department of Wildlife Resources (VDWR).

The Oak toad ranges along the Coastal Plain from south Virginia south and west to Louisiana (NatureServe, 2009). Typically growing to a length of 19 to 33 mm, the oak toad has been documented in Virginia's coastal plain, south of the James River (Martof et al., 1980). This species inhabits southern pine woods where it hides under all manner of objects. Unlike most other toads, the Oak toad is active by day. Breeding occurs in shallow pools, ditches, cypress ponds and flatwood ponds from April to October, depending on the arrival of warm, heavy rains (Conant, 1991). The Oak toad does not do well in urban or suburban settings; however it might persist in some agricultural areas (Bartlett and Bartlett, 1999). It is threatened by increasing monocultures of loblolly pine and the continuous draining of remaining natural pine woodlands (Mitchell, 1991).

600 East Main Street, 24th Floor | Richmond, Virginia 23219 | 804-786-6124

State Parks • Soil and Water Conservation • Outdoor Recreation Planning
Natural Heritage • Dam Safety and Floodplain Management • Land Conservation

The Eastern big-eared bat is named for its enormous ears twice the length of its head and is extremely rare in Virginia and is currently known only from the southeastern portion of the state. Although widespread throughout the southeast, they are never found in large numbers. These bats roost singly or in small groups in hollow trees or abandoned buildings. They forage only after dark primarily in mature forests of both upland and lowland areas along permanent bodies of water (NatureServe, 2009). The details of this bat's feeding behavior and much of its natural history remain a mystery. Lack of information regarding the ecology of the Eastern big-eared bat, and their sensitivity to disturbance, make them particularly vulnerable to destruction of roost sites and feeding areas where their presence goes undetected (Handley and Schwab 1991, Harvey 1992). Threats to this species include forest destruction, particularly hollow tree removal, decreasing availability of abandoned buildings, and possibly, insecticides. Please note that this species is currently classified as endangered by the VDWR.

Due to the potential for this site to support populations of Barking treefrog and Oak Toad, DCR recommends an inventory for the resources in the study area. With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources. DCR-Division of Natural Heritage biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. Please contact Anne Chazal, Natural Heritage Chief Biologist, at anne.chazal@dcr.virginia.gov or 804-786-9014 to discuss arrangements for field work.

Due to the potential for this site to support populations of Eastern big-eared bat, DCR recommends avoidance of Cypress Swamp and associated wetlands along with the maintenance of forested buffers. These buffers should be at least 100 feet wide. If slopes are 11-25 % the buffers should be maintained at 150 feet wide and if slopes are greater than 25% buffers should be maintained at least 200 feet wide. Due to the legal status of the Eastern big-eared bat, DCR also recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDWR, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

DCR also recommends the development of an invasive species management plan for the project and the planting of Virginia native pollinator plant species that bloom throughout the spring and summer, to maximize benefits to native pollinators. DCR recommends planting these species in at least the buffer areas of the planned facility, and optimally including other areas within the project site. Guidance on plant species can be found here: <http://www.dcr.virginia.gov/natural-heritage/solar-site-native-plants-finder>. In addition, Virginia native species alternatives to the non-native species listed in the Virginia Erosion and Sediment Control Handbook (Third Edition 1992), can be found in the 2017 addendum titled "Native versus Invasive Plant Species", here: <https://www.deq.virginia.gov/Portals/0/DEQ/Water/Publications/NativeInvasiveFAQ.pdf>. Page 3 of the addendum provides a list of native alternatives for non-natives commonly used for site stabilization including native cover crop species (i.e. Virginia wildrye).

In addition, the proposed project will fragment a C2, C3 and C5 Ecological Core as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection.

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

Fragmentation occurs when a large, contiguous block of natural cover is dissected by development, and other forms of permanent conversion, into one or more smaller patches. Habitat fragmentation results in biogeographic

changes that disrupt species interactions and ecosystem processes, reducing biodiversity and habitat quality due to limited recolonization, increased predation and egg parasitism, and increased invasion by weedy species.

Therefore minimizing fragmentation is a key mitigation measure that will reduce deleterious effects and preserve the natural patterns and connectivity of habitats that are key components of biodiversity. DCR recommends efforts to minimize edge in remaining fragments, retain natural corridors that allow movement between fragments and designing the intervening landscape to minimize its hostility to native wildlife (natural cover versus lawns). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

The proposed project will cause significant fragmentation of one or more highly significant cores with very high to outstanding ecological integrity. Further investigation of these fragmentation impacts is warranted and DCR-DNH can conduct a formal fragmentation analysis upon request. This analysis would estimate direct impacts to cores and habitat fragments and indirect impacts to cores. The final products of this analysis would include an estimate of the total impact of the project in terms of acres. For more information, please contact Joe Weber, DCR Information Manager at Joseph.Weber@dcr.virginia.gov.

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

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

New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months (March 18, 2021) has passed before it is utilized.

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

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <https://vafwis.dgif.virginia.gov/fwis/> or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dwr.virginia.gov.

Should you have any questions or concerns, please contact me at 804-225-2429. Thank you for the opportunity to comment on this project.

Sincerely,



Tyler Meader
Natural Heritage Locality Liaison

CC: Amy Ewing, VDWR
Mary Major, DFQ

Literature Cited

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Species Observed within Two Miles		
Common Name	Federal Status	State Status
Bluegill	NT / NE	NT / NE
Bowfin	NT / NE	NT / NE
Bullfrog, American	NT / NE	NT / NE
Bullhead, brown	NT / NE	NT / NE
Bullhead, yellow	NT / NE	NT / NE
Chubsucker, creek	NT / NE	NT / NE
Chubsucker, lake	NT / NE	NT / NE
Copperhead, northern	NT / NE	NT / NE
Crow, American	NT / NE	NT / NE
Darter, tessellated	NT / NE	NT / NE
Eagle, bald	NT / NE	NT / NE
Earthsake, eastern smooth	NT / NE	NT / NE
Eel, American	NT / NE	NT / NE
Flier	NT / NE	NT / NE
Frog, green	NT / NE	NT / NE
Killifish, banded	NT / NE	NT / NE
Lamprey, least brook	NT / NE	NT / NE
Lizard, eastern fence	NT / NE	NT / NE
Madtom, tadpole	NT / NE	NT / NE
Mosquitofish, eastern	NT / NE	NT / NE
Mudminnow, eastern	NT / NE	NT / NE
Newt, red-spotted	NT / NE	NT / NE
Peeper, spring	NT / NE	NT / NE
Perch, pirate	NT / NE	NT / NE
Pickereel, chain	NT / NE	NT / NE
Pickereel, redbin	NT / NE	NT / NE
Pumpkinseed	NT / NE	NT / NE
Racer, northern black	NT / NE	NT / NE
Ratsnake, eastern	NT / NE	NT / NE
Salamander, Atlantic Coast Slimy	NT / NE	NT / NE
Salamander, eastern red-backed	NT / NE	NT / NE
Shiner, golden	NT / NE	NT / NE
Shiner, spotfin	NT / NE	NT / NE
Skink, common five-lined	NT / NE	NT / NE
Snake, southern ring-necked	NT / NE	NT / NE
Spadefoot, eastern	NT / NE	NT / NE
Sunfish, banded	NT / NE	NT / NE
Sunfish, bluespotted	NT / NE	NT / NE
Sunfish, mud	NT / NE	NT / NE
Sunfish, redbreast	NT / NE	NT / NE
Sunfish, redear	NT / NE	NT / NE
Toad, eastern narrow-mouthed	NT / NE	NT / NE
Toad, oak	NT / NE	NT / NE
Treefrog, barking	NT / NE	State Threatened
Treefrog, Cope's gray	NT / NE	NT / NE
Treefrog, pine woods	NT / NE	NT / NE
Turtle, eastern musk	NT / NE	NT / NE
Turtle, spotted	NT / NE	Collection Concern
Turtle, striped mud	NT / NE	NT / NE
Warmouth	NT / NE	NT / NE
Wormsnake, eastern	NT / NE	NT / NE

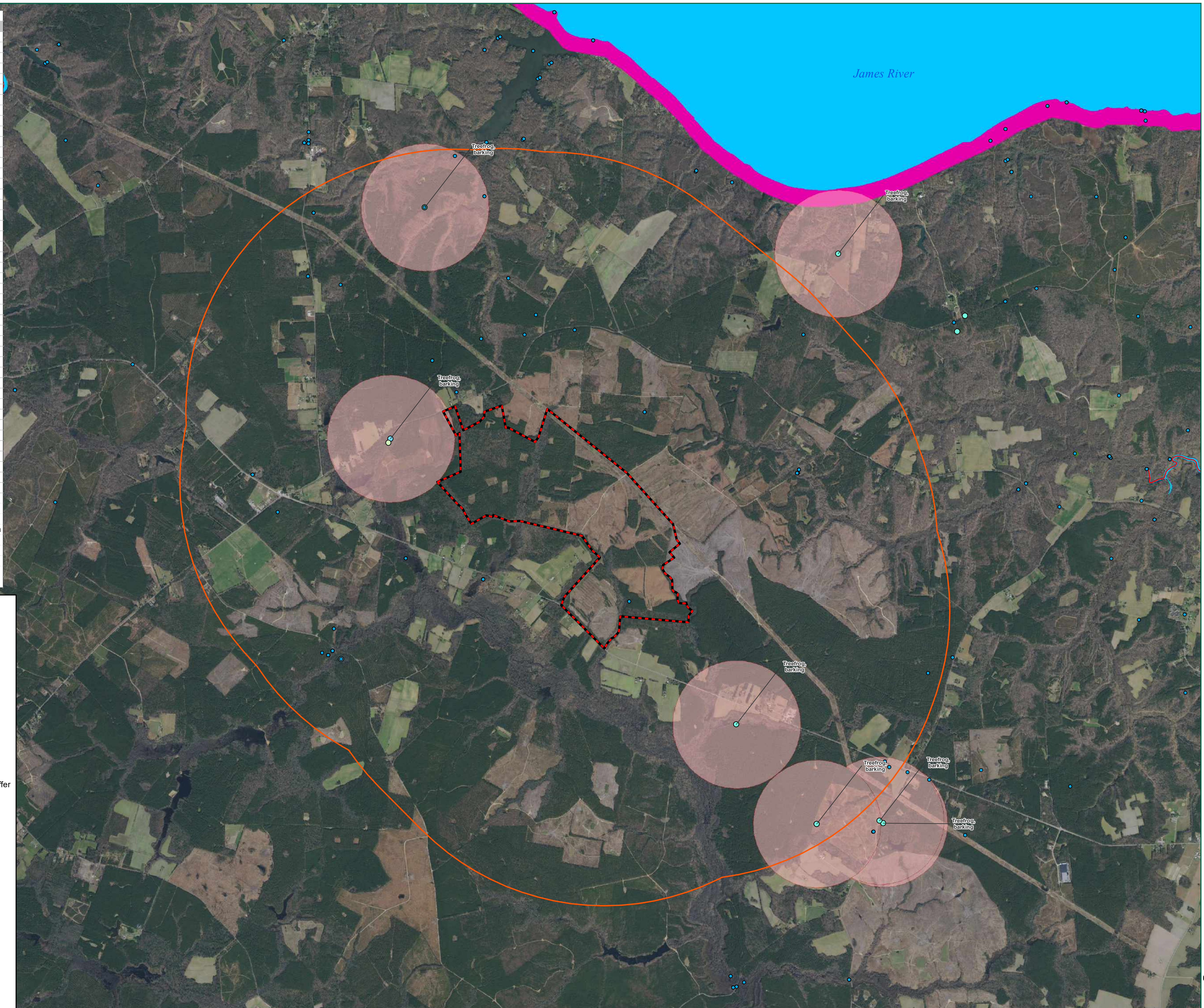
NT = Non-Threatened ; NE = Non-Endangered

Legend

- Project Study Limits - 1,036.6 Acres
- Project Limits Buffer - Two Miles
- Federal or State Listed Observation Area
- NLEB Roost Trees - Not Present
- Trout Streams - Not Present
- Threatened/Endangered Waters - Not within Buffer
- Anadromous Fish Use - Not within Buffer
- Bald Eagle Concentration Areas and Roosts - Not within Buffer
- Colonial Water Birds - Not within Buffer
- Bat Hibernacula - Not Present

FedStatus, StateStatus

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



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PROJECT NAME & LOCATION
SPRING GROVE SOLAR II LLC
 SURRY COUNTY - VIRGINIA

DATE	04/16/2020
PROJECT NUMBER	39227
PROJECT NAME	SPRING GROVE SOLAR II LLC
DESIGNED BY / DRAWN BY	L. WHEELER

NOTES:
 Project Limits are approximate.
 WERMS data from DGIF.
 Bat hibernacula include identifications of Northern long-eared bat, Tri-colored bat, Little-brown bat, Virginia big-eared bat, Gray bat, and Indiana bat.
 Aerial imagery from VGIN.

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#	DATE	DESCRIPTION

DRAWING DESCRIPTION
WILDLIFE ENVIRONMENTAL REVIEW MAP

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

Faunal Species Survey Report

Development of Solar Park in Spring Grove and Colonial Trail Tracts

Surry County, Virginia



Colonial Trail Tract Ephemeral Pool during survey effort

Prepared For:



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Appendix A. Figures

Figure 1: Spring Grove Survey Sites

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1.0 INTRODUCTION

The subject project involves the development of a solar energy park on two land parcels in Surry County, Virginia: Spring Grove (2,655.3 acres) and Colonial Trail West (1,249.8 acres), referred to collectively as the Project Study Area (PSA). Potentially suitable habitat had been identified within portions of the PSA for four Virginia Department of Game and Inland Fisheries state listed species, including the state endangered Blackbanded Sunfish (*Enneacanthus chaetodon*) and Eastern Tiger Salamander (*Ambystoma tigrinum*), as well as the state threatened Mabee's Salamander (*A. mabeei*) and Barking Treefrog (*Hyla gratiosa*). Timmons Group (Timmons) evaluated habitat suitability for the target state listed species in the PSA (Timmons 2017a, Timmons 2017b). During the habitat assessments, the PSA was determined to have areas of potential habitat for Blackbanded Sunfish, Mabee's Salamander, and Barking Treefrog. Specific sites were classified as "Good", "Marginal", and "Poor" with respect to the quality of the potential habitat and thus the likely presence of the target species. Four streams in the PSA were identified as containing "Marginal" habitat for the Blackbanded Sunfish.

Mabee's and Eastern Tiger Salamanders belong to the genus *Ambystoma*, which collectively are referred to as mole salamanders. Mole salamanders are fossorial and spend most of their adult lives in subterranean tunnels, until their breeding season when they congregate in ephemeral wetland ponds to reproduce. A total of 22 ephemeral wetland ponds were identified in the PSA as suitable habitat for Mabee's Salamander, five of which were considered "Good", 10 were considered "Marginal", and seven were considered "Poor" (Timmons 2017 a, 2017b). These suitability designations of the ephemeral ponds also apply to the Eastern Tiger Salamander. Three areas of marginal habitat for the Barking Treefrog were identified on the Colonial Trail West site (Timmons 2017a). The marginal habitat is located within palustrine wetlands associated with two perennial stream valleys that drain to a known offsite habitat location. Three Oaks Engineering (Three Oaks) was retained by Timmons to conduct specific surveys for the above-mentioned species within the identified suitable habitat areas in the PSA. Three Oaks applied for a received Collection Permits from VDGIF for conducting these surveys (Appendix C).

2.0 METHODOLOGY

The PSA was visited on March 22-23, 2018 by Three Oaks personnel Tim Savidge (Principle Investigator) and Lizzy Stokes-Cawley and by Tim Savidge and Nancy Scott on May 08-09, 2018. Specific surveys were conducted in the four perennial streams, 16 of the 22 ephemeral ponds, and the three palustrine wetlands sites that were identified as potentially suitable for the target species. The streams were labeled using the parcel name and a sequential number (i.e. Colonial Trail West Stream-1, Colonial Trail West Stream-2, Spring Grove Stream-1, Spring Grove Stream-2). The ephemeral ponds were also labeled in a similar manner (i.e. Spring Grove

Marginal-1, Spring Grove Marginal-2, etc.), as were the Barking Treefrog sites (Barking Treefrog Marginal 1-3). All sampled sites are depicted in Figures 1 and 2.

Four different types of surveys were conducted:

- 1) Electrofishing
- 2) Dip Netting
- 3) Auditory Call Surveys
- 4) Cover object surveys

Brief descriptions of the methodologies as well as the species that they targeted are provided below.

2.1 *Electrofishing*

Fish surveys were conducted using a Smith Root LR-24 backpack electrofishing unit and two dip nets. Fish surveys began at the downstream edge of the study area and proceeded upstream to either the upstream edge of the PSA, or to a point where habitat conditions for the target species were determined to no longer be present. All habitat types in the survey reach (riffle, run, pool, slack-water, etc.) were sampled. Stunned fish were placed into buckets and then identified, counted, and released live onsite. If habitat conditions, such as Beaver (*Castor canadensis*) impoundments, or deep pools were encountered, dip net sweep methods (See Section 2.2) were also employed to supplement the survey, as these conditions are not optimal for utilizing backpack electrofishing methods. In addition to fish, various salamander and frog species were also captured using these methodologies. Incidental observations of other aquatic faunal species (reptiles, freshwater mussels, aquatic snails, etc.) were also recorded. Representative photographs of habitat conditions and species captured were taken.

2.2 *Dip Netting Sweeps*

Dip net sweeps were used to target the Blackbanded Sunfish in streams, and the Mabee's Salamander and Eastern Tiger Salamander in the ephemeral pools. In addition to using dip nets in conjunction with the electrofishing methods, dip net sweeps along the banks and beneath floating vegetation were performed in all streams. This was the primary method utilized in Beaver impoundments. Captured fish were identified, recorded, and released. Aquatic frogs, turtles, and salamanders were also captured incidentally using dip netting.

The most effective survey methodology to detect mole salamander species is to sample larval individuals in the ephemeral pools. Eighteen of the ephemeral pool sites in the PSA were sampled by dip net sweeps, including all five of the ephemeral pool sites that were identified as "Good", seven of the ten "Marginal", and four of the seven "Poor". Sites that did not contain water at the time of visits were not sampled. The level of effort varied greatly between sites and

was dependent on the amount of area that contained water and the depth of the water. The survey method involved sweeping large fine mesh dip nets through the respective pools, generally beginning at the water's edge and moving toward the center. Fast, short sweeps were also conducted within mats of emergent vegetation and leaf packs. Larval salamanders were primarily captured using this method; however, adult salamanders, frogs and fish were also captured.

2.3 *Auditory Calls Surveys*

Auditory call surveys were conducted between 7:00 pm to 12:00 am on the night of May 08, 2018 at the three “Marginal” habitat sites identified for Barking Treefrog on the Colonial Trail tract, as well as at two “Good” ephemeral pond sites (Spring Grove Good 1 and 3), at three locations in wetlands adjacent to Spring Grove Stream 2 (Barking Treefrog [BTF] sites 1, 2, and 3), and at a “Poor” ephemeral pond site (BTF-4). Surveys involved listening for the distinctive calls of the male Barking Treefrog. In addition to listening for the calls, audio recordings of Barking Treefrogs were played on a smartphone to elicit responses from individuals that may have been in the area. At least 20 minutes were spent at each of the 8 locations. The audio recordings were not played until at least 10 minutes of listening time elapsed. Any amphibian calls that were heard were identified to species and noted. Recordings of calls were made to assist in the identification. No additional Barking Treefrog habitat was observed in the expanded portion of the Spring Grove tract, as the two wetland systems located there are associated with streams that had connectivity with the floodplain.

2.4 *Cover Object Surveys*

Visual encounter surveys were conducted at various locations in the PSA, primarily around the edges of ephemeral ponds, and riparian areas adjacent to streams. This entailed searching for adult salamanders under and around potential cover objects (e.g. fallen logs and rocks). Individuals observed were identified and released back under the cover object.

3.0 RESULTS

Two faunal groups, freshwater fish and amphibians were targeted during the survey efforts. The results for each group are presented below. Nomenclature for amphibians follow Martof et al. (1980) and for fish follow Rohde et al. (1994).

3.1 *Freshwater Fish*

A total of 15 freshwater fish species were found during the surveys (Table 1). Species diversity was relatively low, but consistent with the size of the waterbodies present in the PSA. In general, species abundance was correlated to water body size.

Table 1. Fish Species Collected: Combined Sites

Scientific Name	Common Name	Streams
<i>Acantharchus pomotis</i>	Mud Sunfish	SG 2, CT 2
<i>Ameiurus natalis</i>	Yellow Bullhead	SG 1, SG 2, CT 2
<i>Anguilla rostrata</i>	American Eel	SG 1, SG 2, CT 2
<i>Aphredoderus sayanus</i>	Pirate Perch	All
<i>Centrarchus macropterus</i>	Flier	SG 2, CT 1
<i>Chologaster cornuta</i>	Swampfish	SG 2, CT 2
<i>Ennecathus gloriuosus</i>	Bluespotted Sunfish	All
<i>Erimyzon oblongus</i>	Creek Chubsucker	SG 1, SG 2, CT 2
<i>Esox americanus</i>	Redfin Pickerel	All
<i>Esox niger</i>	Chain Pickerel	SG 2, CT 2
<i>Etheostoma olmstedi</i>	Tessellated Darter	SG 1, CT 2
<i>Gambusia holbrooki</i>	Eastern Mosquitofish	All
<i>Notemigonus crysoleucas</i>	Golden Shiner	SG 2
<i>Semotilus atromaculatus</i>	Creek Chub	SG 1
<i>Umbrea pygmea</i>	Eastern Mudminnow	SG 2, CT 1, CT 2

The specific results for each stream are provided below along with a brief description of habitat conditions.

3.1.1 Spring Grove Stream 1

The survey reach extended from the Colonial Trail West road crossing upstream to a point where the stream was considered too small to support the target species (Figure 1). The channel ranged from three to seven feet wide, with banks up to two feet high. The stream meandered through a mixture of riparian forest and cutover habitats. In-stream habitat was dominated by slow moving runs and pools, with scattered short riffles, created by log jams and sand bars. Water depth ranged from six inches to two feet and was running clear. The substrate consisted of sand and gravel over clay, with sporadic pockets of cobble. A total of 2,535 seconds of electroshocking and 14 dip net sweeps were employed in this reach and nine fish species were observed (Table 2).

Table 2. Fish Species Collected: Spring Grove Stream 1

Scientific Name	Common Name	Number
<i>Ameiurus natalis</i>	Yellow Bullhead	1
<i>Anguilla rostrata</i>	American Eel	2
<i>Aphredoderus sayanus</i>	Pirate Perch	3
<i>Ennecathus gloriuosus</i>	Bluespotted Sunfish	14

Table 2. Fish Species Collected: Spring Grove Stream 1 (continued)

Scientific Name	Common Name	Number
<i>Erimyzon oblongus</i>	Creek Chubsucker	2
<i>Esox americanus</i>	Redfin Pickerel	1
<i>Etheostoma olmstedi</i>	Tessellated Darter	25
<i>Gambusia holbrooki</i>	Eastern Mosquitofish	>10
<i>Semotilus atromaculatus</i>	Creek Chub	24

In addition to the fish species, four frog species, Northern Cricket Frog (*Acris crepitans*), Bullfrog (*Rana catesbeiana*), Green Frog (*R. clamitans*), and Pickerel Frog (*R. palustris*), and one aquatic snail (*Physa* sp.) were observed.

3.1.2 Spring Grove Stream 2

The survey reach extended from the downstream edge of the PSA upstream to a point where suitable habitat was no longer present (Figure 1). Habitat conditions varied widely within the surveyed reach. The downstream third of the reach was characterized as a sluggish pool/run dominated stream with a defined channel, 10-12 feet wide, with banks less than two feet high, that meandered through a forested bottomland. The substrate consisted of sand and mud over clay. Water depth ranged from six inches to two feet deep. In the middle third of the reach, the stream was impounded by a large Beaver dam complex, creating a pond ranging from 100-200 feet wide and approximately 380 feet in length. The substrate consisted of mud over clay. Maximum water depth was four feet. There were large amounts of aquatic and emergent vegetation, as well as woody debris throughout the pond. Dip netting sweeps were the primary survey methodology used in this section. In the upper third of the reach the channel transitioned from the Beaver impoundment into a disturbed bottomland wetland, becoming increasingly braided and less defined upstream. Instream habitat was characterized as short, shallow runs, feeding small pools, created by hummocks, or logjams. Water depth ranged from three inches to two feet. The substrate consisted of hard pan clay overlain with leaf pack and other organic material. A total of 1,320 seconds of electroshocking and 135 dip net sweeps were employed in this reach and 13 fish species were observed (Table 3). The Bluespotted Sunfish was particularly abundant in the stream, especially in the Beaver impounded section.

Table 3. Fish Species Collected: Spring Grove Stream 2

Scientific Name	Common Name	Number
<i>Acantharchus pomotis</i>	Mud Sunfish	7
<i>Ameiurus natalis</i>	Yellow Bullhead	4
<i>Anguilla rostrata</i>	American Eel	1
<i>Aphredoderus sayanus</i>	Pirate Perch	22
<i>Centrarchus macropterus</i>	Flier	3

Table 3. Fish Species Collected: Spring Grove Stream 2 (continued)

Scientific Name	Common Name	Number
<i>Chologaster cornuta</i>	Swampfish	3
<i>Ennecathus gloriuosus</i>	Bluespotted Sunfish	>100
<i>Erimyzon oblongus</i>	Creek Chubsucker	9
<i>Esox americanus</i>	Redfin Pickerel	2
<i>Esox niger</i>	Chain Pickerel	1
<i>Gambusia holbrooki</i>	Eastern Mosquitofish	>100
<i>Notemigonus crysoleucas</i>	Golden Shiner	2
<i>Umbrea pygmea</i>	Eastern Mudminnow	24

In addition to the fish species, two frog species, Northern Cricket Frog and Bullfrog, one salamander species, Eastern (Red-spotted) Newt (*Notophthalmus viridescens*), and one aquatic snail *Physa* sp.) were observed, all within the Beaver impoundment section of the reach.

3.1.3 Colonial Trail West Stream 1

The survey reach extended from the downstream edge of the PSA at the Colonial Trail West road crossing to the upstream edge of the PSA approximately 400 feet above the powerline crossing ROW (Figure 2). Habitat conditions varied widely within the surveyed reach. In the lower portion of the reach the channel, which flows through a forested riparian area, ranged from two to five feet wide, with banks up to one foot high. Instream habitat consisted of shallow runs and pools up to one foot deep. The substrate consisted of sand and pebble over clay. The channel then transitioned to what appeared to be an old pond bed, likely an older Beaver impoundment, that had been breached. Much of the old pond bed no longer retained water and supported large thickets of Giant Cane (*Arundinaria gigantea*), with a narrow (two feet wide), mud bottom channel running through. Portions of the old pond bed were more open and pools up to 40 feet wide contained standing water up to two feet. The stream then transitions upstream to a deep channel, approximately 25 feet wide that appeared to be impounded by a series of earthen berms in the vicinity of the powerline crossing. The upper portion of the reach (upstream of the powerline) flows through a marsh/swamp wetland complex, with very sluggish flow. A total of 2,753 seconds of electroshocking and 24 dip net sweeps were employed in this reach and six species were observed (Table 4).

Table 4. Fish Species Collected: Colonial Trail West Stream 1

Scientific Name	Common Name	Number
<i>Aphredoderus sayanus</i>	Pirate Perch	9
<i>Centrarchus macropterus</i>	Flier	1
<i>Ennecathus gloriuosus</i>	Bluespotted Sunfish	19
<i>Esox americanus</i>	Redfin Pickerel	4

Table 4. Fish Species Collected: Colonial Trail West Stream 1 (continued)

Scientific Name	Common Name	Number
<i>Gambusia holbrooki</i>	Eastern Mosquitofish	>10
<i>Umbrea pygmea</i>	Eastern Mudminnow	12

In addition to the fish species, two frog species, Northern Cricket Frog and Bullfrog, one salamander species, Eastern (Red-spotted) Newt and two turtle species, Spotted Turtle (*Clemmys guttata*) and Eastern Mud Turtle (*Kinosternon subrubrum*) were observed. The Eastern Newt was common throughout the stream.

3.1.4 Colonial Trail West Stream 2

The survey reach extended from the downstream edge of the PSA at the Colonial Trail West road crossing upstream to a point where the stream was no longer considered suitable for the target species. The channel ranged from three to seven feet wide, with banks up to two feet high. The stream meandered through a mixture of riparian forest and cutover habitats. In-stream habitat was dominated by slow moving runs and pools, with scattered short riffles, created by log jams and sand bars. There were also small (20-30 feet wide) ponded areas created by large log jams, or small Beaver dams throughout the reach. Water depth ranged from six inches to two feet and was running clear. The substrate consisted of sand and gravel over clay. Large accumulations of silt and organic material were present in the ponded areas. In several areas, the channel had hydraulic connection to the adjacent floodplain wetlands. Surveys were conducted in these areas as well and many of the same fish species captured in the channel were also found in the floodplain. A total of 1,402 seconds of electroshocking and 34 dip net sweeps were employed in this reach and 12 fish species were observed (Table 5).

Table 5. Fish Species Collected: Colonial Trail West Stream 2

Scientific Name	Common Name	Number
<i>Acantharchus pomotis</i>	Mud Sunfish	1
<i>Ameiurus natalis</i>	Yellow Bullhead	1
<i>Anguilla rostrata</i>	American Eel	3
<i>Aphredoderus sayanus</i>	Pirate Perch	20
<i>Centrarchus macropterus</i>	Flier	1
<i>Ennecathus gloriatus</i>	Bluespotted Sunfish	27
<i>Erimyzon oblongus</i>	Creek Chubsucker	2
<i>Esox americanus</i>	Redfin Pickerel	1
<i>Esox niger</i>	Chain Pickerel	1
<i>Etheostoma olmstedi</i>	Tessellated Darter	19
<i>Gambusia holbrooki</i>	Eastern Mosquitofish	>10
<i>Umbrea pygmea</i>	Eastern Mudminnow	1

In addition to the fish species, two frog species, Northern Cricket Frog and Bullfrog, two salamander species, Eastern (Red-spotted) Newt and Northern Dusky Salamander (*Desmognathus fuscus*), one freshwater mussel species, Florida Pondhorn (*Uniomerus carolinianus*), and a snail, *Pseudosuccinea* sp., were observed.

3.2 Amphibians

A total of ten amphibian species were observed (larval and/or adult forms) were found during the surveys (Table 6). Species diversity was relatively low, but consistent with the size of the waterbodies present in the PSA. In general, species abundance was correlated to water body size.

Table 6. Amphibian Species Collected: Combined Sites

Scientific Name	Common Name	Streams
<i>Acris crepitans</i>	Northern Cricket Frog	All streams, SG Good-1, CT Good-1
<i>Ambystoma maculate</i>	Spotted Salamander	SG Good-1, SG Marginal-2, CT Good-1
<i>Ambystoma opacum</i>	Marbled Salamander	SG Good-1, SG Good-3, SG Marginal-2, SG Poor-1, CT Good-1
<i>Bufo americanus</i>	American Toad	SG Good-1, SG-Good-2, SG Good-3, SG Marginal-2, SG Poor-1, CT Good-1
<i>Desgmonathus fuscus</i>	Northern Dusky Salamander	CT Stream-2
<i>Hyla crucifer</i>	Spring Peeper	SG Good-1
<i>Notophthalmus viridescens</i>	Eastern Newt	SG Good-1, SG Good-3, SG Marginal-2, SG Poor-1, CT Good-1, SG Stream-2, CT Stream-1, CT Stream-2
<i>Rana catesbeiana</i>	Bullfrog	All Streams, SG Good-1
<i>Rana clamitans</i>	Green Frog	SG Stream 1
<i>Rana palustris</i>	Pickerel Frog	SG Good-1, SG Stream 1,

3.2.1 Ephemeral Pools

The specific survey results for the individual ephemeral pools that were sampled are provided below.

3.2.1.1 Spring Grove (SG) Good-1

This relatively large pond was one of the most productive sites for salamander larvae and adults. The site was sampled by dip netting on March 22, May 08, and May 09, 2018. Cover object

surveys were also performed adjacent to the pond at these times. In addition, Auditory Calls surveys were conducted on the night of May 08, 2018. Maximum water depth in the pond was three feet; however, the majority of the pond was two feet or less. The area adjacent to the pond was logged between the time of the March and May surveys. Adult amphibians that were observed included American Toad, Northern Cricket Frog, Pickerel Frog, Eastern Newt, and Marbled Salamander. Larval amphibians observed included American Toad, Spring Peeper, Marbled Salamander, Spotted Salamander, Bullfrog, and Pickerel Frog. Calls of Spring Peeper were heard during the March site visit, and calls of the American Toad, Bullfrog, and Northern Cricket Frog were heard during the May site visit.

3.2.1.2 SG Good-2

This smaller site was mostly dry, with water present only within tire ruts at the time of the May 09, 2018 site visit. A few American Toad larvae were found in one of the ruts. A Five-lined Skink (*Eumeces fasciatus*), or (*E. inexpectatus*) and a Black Rat Snake (*Elaphe obsoleta*) were observed at this site.

3.2.1.3 SG Good-3

This relatively large pond was surprisingly mostly dry during the site visit on May 09, 2018. Water line stains on trees suggests that the site regularly holds water, two to three feet deep. A few small areas still had water up to six inches deep and two Marbled Salamander larvae were observed. Auditory call surveys were conducted on the night of May 08, 2018 and no amphibian calls were heard, which is not surprising given that the next day it was discovered that the pond was mostly dry.

3.2.1.4 SG Marginal-2

At least six small depressions separated by hummocks collectively comprised this site. The site occurred within a flatwoods area dominated by pines (*Pinus* sp.). The site was visited on May 08, 2018 and water in the majority of the depressions was less than six inches deep; however, it was at least two feet deep in a few areas. Adult amphibians observed included Northern Cricket Frog and Eastern Newt. Larval amphibians observed included American Toad, Marbled Salamander, and Spotted Salamander.

3.2.1.5 SG Marginal-3

This site consisted of a moderate sized depression that was similar to the deeper depressions in the SG Marginal-2 site. Adult amphibians observed included Northern Cricket Frog and Eastern Newt. Larval amphibians observed included American Toad and Marbled Salamander.

3.2.1.6 SG Marginal-6

This site consisted of a small depression in a forested wetland area that also encompassed SG Good-3 and SG Marginal-7. The site was mostly dry during the May 09, 2018 visit. One larval Marbled Salamander was found in a few inches of water within the pool.

3.2.1.7 SG Marginal-7

This site was similar to SG Marginal-6 and was entirely dry during the May 09, 2018 assessment with the exception of a small 15 x 20-foot section of the pool that held water up to two inches deep. Two juvenile Chain Pickerel were captured in the pool. At the time of the visit this pool had no hydraulic connection to the channel that drains to the south from this area.

3.2.1.8 SG Poor-1

This site was a relatively large, shallow, depression, that was similar to SG Marginal-3 during the May 09, 2018 site visit. A few larval Marbled Salamander and two adult Eastern Newt were observed in a few inches of water. The Northern Cricket Frog was also observed.

3.2.1.9 SG Poor-2

This small depression occurred within a cutover area and was sampled on May 08, 2018. Water depth was approximately two inches deep. One adult Eastern Newt was observed.

3.2.1.10 SG Poor-5

This small depression was associated with a channel that flowed into CT West Stream 2 was sampled on May 08, 2018. One Eastern Newt and several Northern Cricket Frogs were observed.

3.2.1.11 CT Good-1

This relatively large pond was one of the most productive sites for salamander larvae and adults. The site was sampled by dip netting on May 09, 2018. Cover object surveys were also performed adjacent to the pond at these times. Maximum water depth in the pond was three feet; however, depth in the majority of the pond was two feet or less. The area adjacent to the pond was actively being logged at the time of the visit. Adult amphibians that were observed included American Toad, Bullfrog, Northern Cricket Frog, and Eastern Newt. Larval amphibians observed included American Toad, Marbled Salamander, Spotted Salamander, Bullfrog, and Pickerel Frog. A Northern Water Snake (*Nirodea sipedon*) was also observed.

3.2.1.12 CT Good-2

This relatively large pond was entirely dry during the site visit on May 09, 2018. Water line stains on trees suggested that the site regularly held water two to three feet deep. The topography in the area that drains from the site was steeper than the rest of the area, which may contribute to it drying so quickly in the season. One adult American Toad was observed while doing cover object surveys in the dry pool.

3.2.1.13 CT Marginal-1

This relatively large, shallow depression fed a channel that eventually flows into CT Stream 2. The area adjacent to the channel was actively being logged at the time of the site visit. The only species observed at this site was the Northern Cricket Frog.

3.2.1.14 CT Marginal-2

This relatively small, shallow depression was almost entirely dry during the May 09, 2018 site visit. The only standing water occurred in a few small depressions in remnant tree stumps. No species were observed at this site.

3.2.1.15 CT Marginal-3

This relatively small, wetland seep area was saturated at the time of the May 09, 2018 site visit; however, there was very little standing water. The Northern Cricket Frog was common at this site.

3.2.1.16 CT Poor-1

This small depression occurred adjacent to the Colonial Trail West roadbed and appeared to be artificially created, or at least deepened. Water depth was 3.5 feet during the March 22 visit. Species captured included one adult Pickerel Frog, two Eastern Mudminnow, one Mud Sunfish, and one Eastern Mosquitofish.

3.2.1.17 BTF-4

A Barking Treefrog Auditory Call Survey was conducted at Site BTF-4, which was located near SG Good 3. No Barking Treefrog calls were heard at site BTF-4 during the nocturnal May 08, 2018 Auditory Call Surveys. Northern Cricket Frog was the only Species detected by Auditory Call Surveys at this site.

3.2.2 Previously Identified “Marginal” Barking Treefrog Habitat Sites on Colonial Trail Tract

There were three areas on the Colonial Trail tract that were previously identified as potentially “Marginal” Barking Treefrog habitat. These areas were stream valley palustrine wetland sites. The specific survey results for the stream valley wetland sites that were sampled for Barking Treefrog are provided below.

3.2.2.1 Colonial Tract Marginal Barking Treefrog Habitat Sites

No Barking Treefrog calls were heard at the three “Marginal” Barking Treefrog sites during the nocturnal May 08, 2018 Auditory Call Surveys. Species that were detected by Auditory Call Surveys include the American Toad, Bullfrog, and Northern Cricket Frog.

3.2.3 Additional Barking Treefrog Habitat Sites on Spring Grove Tract

Additional areas not previously identified as potential habitat for Barking Treefrog were also sampled. The results of those surveys are provided below.

3.2.3.1 Spring Grove Stream Site 2

Three locations along Spring Grove Stream Site 2 were surveyed for Barking Treefrog (BTF-1, BTF-2, and BTF-3). Site BTF-1 was located at the southern edge of the property. Site BTF-2 was located approximately 700 feet upstream from BTF-1. Site BTF-3 was located at the large beaver impoundment upstream of BTF-2. No Barking Treefrog calls were heard at the three Spring Grove Stream Site 2 sites during the nocturnal May 08, 2018 Auditory Call Surveys. Species that were detected by Auditory Call Surveys were Bullfrog, American Toad, and Northern Cricket frog.

4.0 DISCUSSION

None of the targeted species were observed within the PSA during the targeted survey efforts. Brief summaries of the results for each of the targeted species are provided below.

4.1 Blackbanded Sunfish

With the exception of the large Beaver impoundment of SG Stream-2, and a few smaller impounded, or slackwater areas in the other three streams, there was very little suitable habitat for the Blackbanded Sunfish. The large Beaver impoundment had the highest potential to support this species and the closely related Bluespotted Sunfish was abundant in this site. The ease with which the Bluespotted Sunfish was observed suggests that the sampling methodologies employed would be sufficient to detect Blackbanded Sunfish if they were present. Given the survey results, it is unlikely that the Blackbanded Sunfish occurs within the sampled portion of the PSA.

4.2 Mabee's Salamander and Eastern Tiger Salamander

Neither the Mabee's Salamander, nor the Eastern Tiger Salamander were detected during the survey effort. Two congener species, Marbled Salamander and Spotted Salamander, which are more common and ubiquitous, were observed in relatively high numbers. The results of the survey demonstrate that there are a number of high quality breeding sites for *Ambystoma* salamanders and suitable habitat within the PSA. However, neither of the target species were found during these survey efforts.

4.3 Barking Treefrog

No Barking Treefrog calls were heard during the May 08, 2018 nocturnal auditory call survey. The three sites identified as having "Marginal" habit for this species occurred in riparian wetlands associated with CT Stream Site 1 and CT Stream Site 2, respectively. Fish sampling indicated that predatory fish species such as Mud Sunfish, Flier, Redfin Pickerel, Yellow Bullhead, and others occurred in these streams, and were also captured in the adjacent floodplain.

5.0 LITERATURE CITED

Martof, B.S., Palmer, W.M., Bailey, J.R., Harrison, III J.R., 1980, *Amphibians and Reptiles of the Carolinas and Virginia*, 264 pgs., UNC Press, Chapel Hill, NC.

NatureServe. 2018. NatureServe Explorer: An online encyclopedia of life [web application]. Version. 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: May 22, 2018). Species Accessed: *Clemmys guttata*

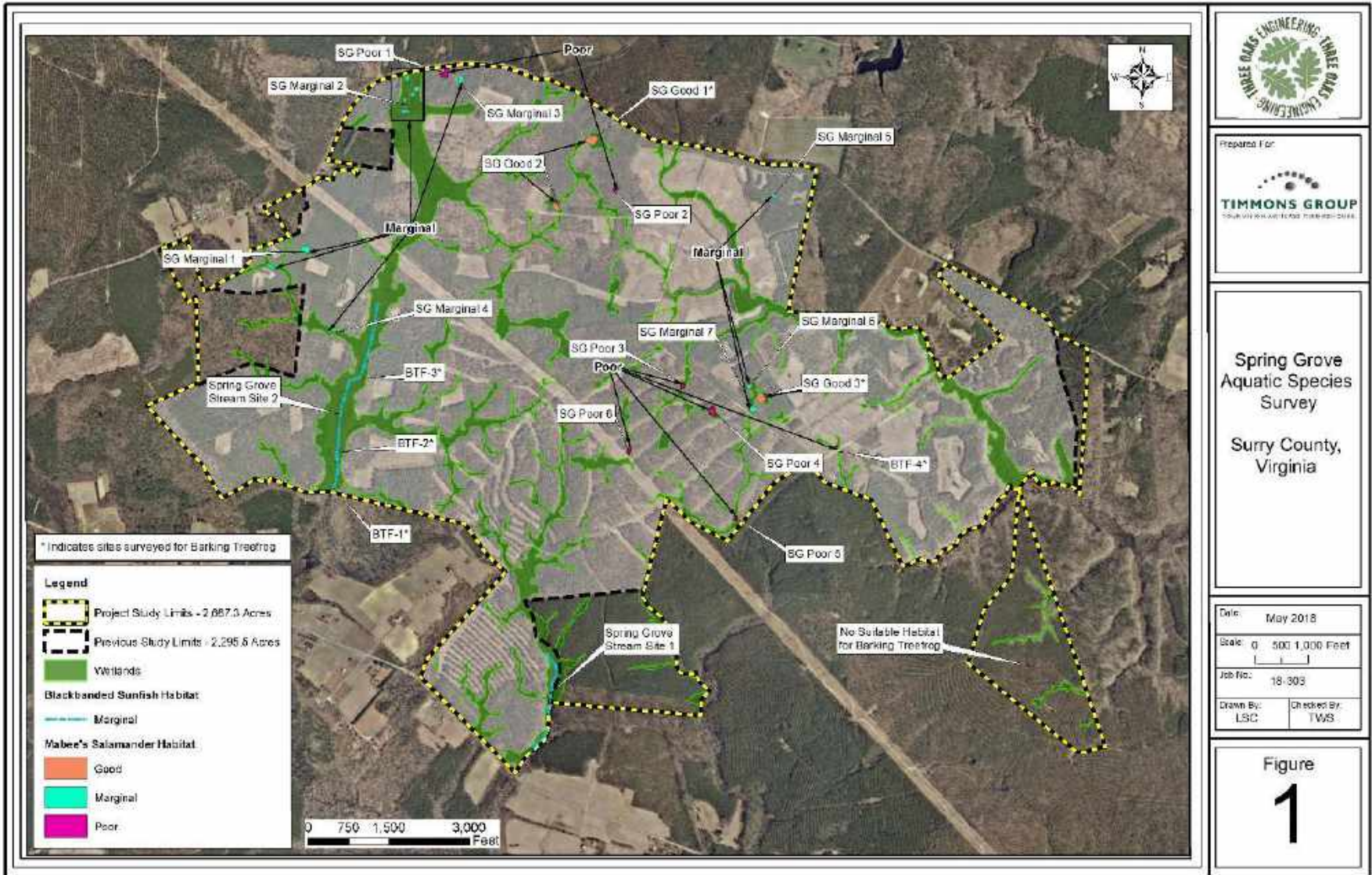
Rohde, F.C, R.G. Arndt, D.G. Lindquist, and J.F. Parnell. 1994. *Freshwater Fishes of the Carolinas, Virginia, Maryland, and Delaware*. Chapel Hill, North Carolina, The University of North Carolina Press.

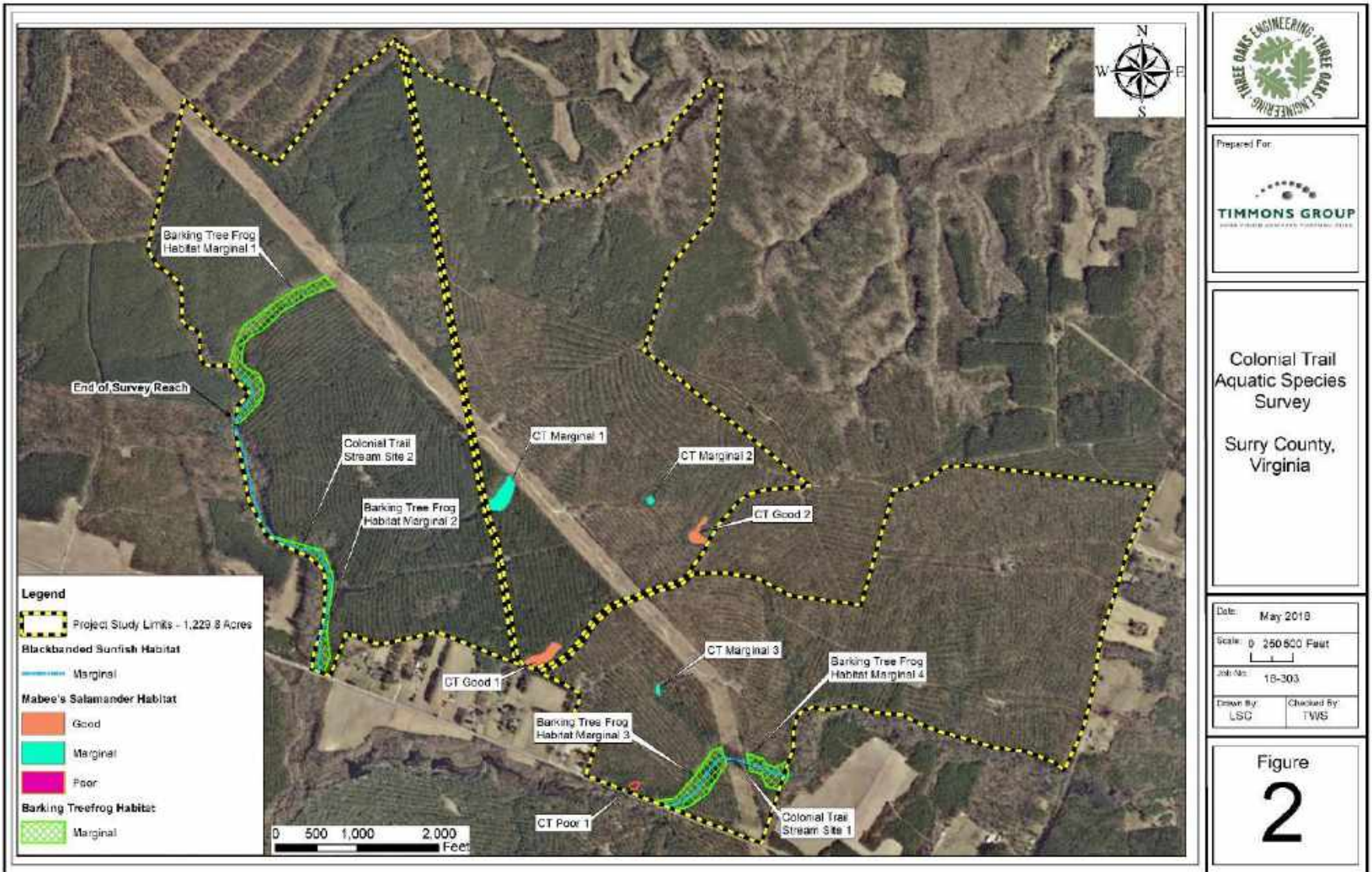
Timmons Group. 2017a. Habitat Assessment – Colonial Trail W. Solar Memo. March 28, 2017.

Timmons Group. 2017b. Habitat Assessment – Spring Grove Solar Memo. April 20, 2017.

Appendix A

Figures





Prepared For:

TIMMONS GROUP
 HIGH QUALITY. AFFORDABLE. FUTURE-READY.

Colonial Trail
 Aquatic Species
 Survey
 Surry County,
 Virginia

Date: May 2018
 Scale: 0 250 500 Feet
 Job No: 18-303
 Drawn By: LSC
 Checked By: TWIS

Figure
2

Appendix B

Representative Photographs



Creek Chub SG 1



Tessellated Darter SG Stream 1



Habitat SG 1



Creek Chubsucker SG 1



American Eel SG 1



Pirate Perch SG 1



Redfin Pickerel SG 1



Marbled Salamander SG Good-1



Pickerel Frog SG Good-1



Bullfrog Larvae SG Good-1



Florida Pondhorn CT Stream 2



Spotted Turtle CT Stream 1



Eastern Mudminnow CT Stream 1



Golden Shiner SG Stream 2



Bluespotted Sunfish SG Stream 2



Swampfish SG Stream 2



Mud Sunfish SG Stream 2



Flier SG Stream 2



Beaver Impoundment SG Stream 2



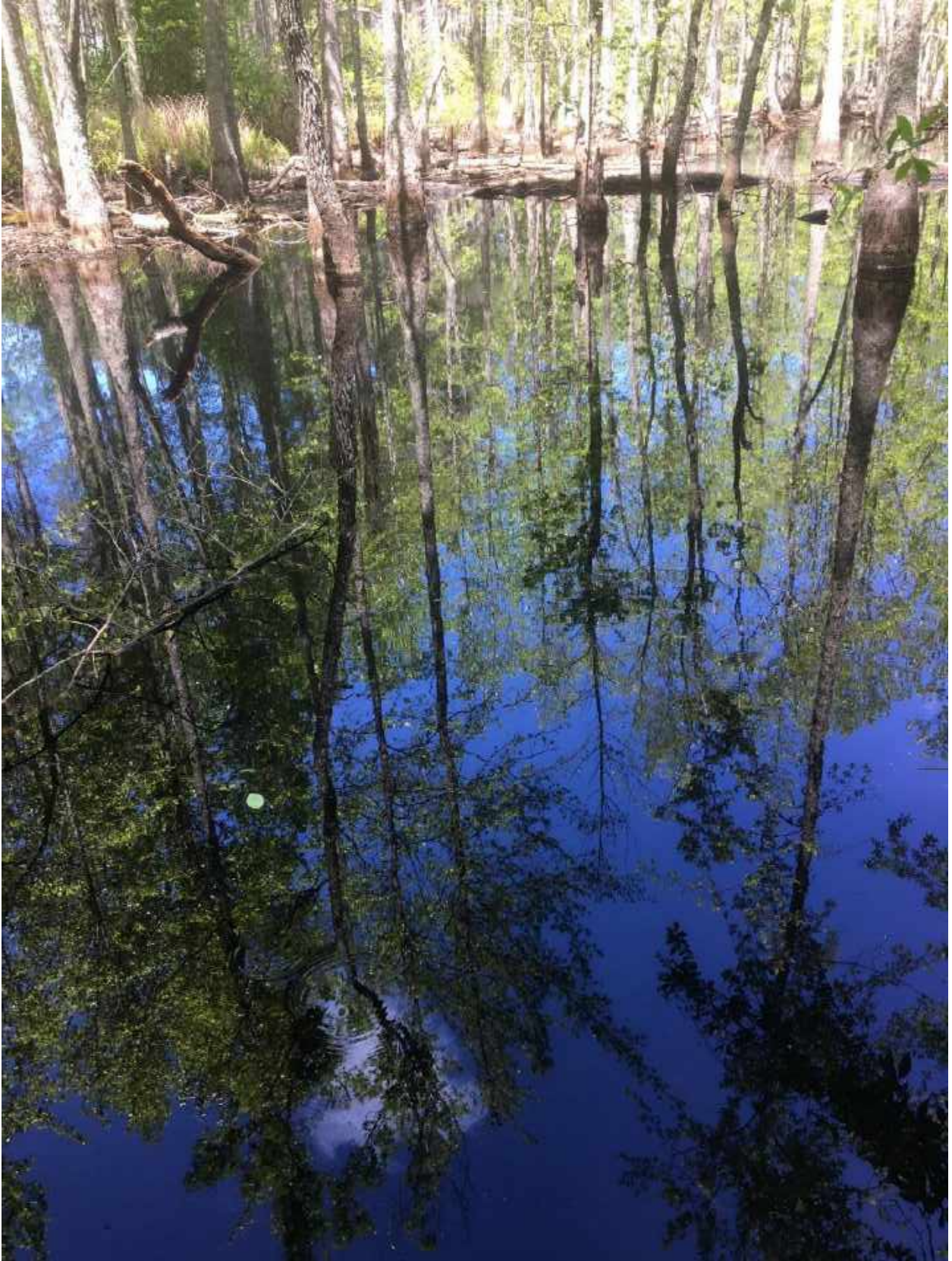
Marbled Salamander Larvae SG Good-1



Eastern Newt SG Good-1



CT Good-2 Pond Dry



CT Good-1



SG Marginal 7 Small Section of Pool Retaining Water



Juvenile Chain Pickerel SG Marginal 7

Appendix C

Threatened/Endangered Species Collection Permit



Virginia Department of Game and Inland Fisheries

7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778

(804) 367-1000 (V/TDD)

Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia & DGIF Policy E-1-90



Threatened/Endangered Species Permit

Permit Type: **New** Fee Paid: **\$20.00** VADGIF Permit No. **062228**

Permittee: **Tim Savidge**
Address: **Three Oaks Engineering**
324 Blackwell Street, Suite 1200
Durham, NC 27701
Email:

Office: **(919) 417-2314**
City/County:

Contract Species Surveys

Authorized Collection Methods: By Hand/Dip Nets/Electrofishing/Aquatic Kick Samples/Seine Nets/Traps (Minnow/Pot/Bell)/Visual Encounter (turning over rocks/logs)/Nocturnal (i.e. shining w/high-power spot light)
Authorized Waterbodies: All within the authorized county.
Authorized Marking Techniques: N/A

Authorized Counties / Cities:
Surry

SPECIAL CONDITION: Permittee **MUST** coordinate with Mike Pinder prior to any Blackbanded Sunfish sampling. Mike can be reached via phone at (540) 961-8304 or via email at mike.pinder@dgif.virginia.gov

Permittee **MUST** notify VDGIF within the 7 day period prior to each sampling event. Notification must be made via email to: collectionpermits@dgif.virginia.gov

Report Due: 31 January 2019

ANNUAL REPORTS MUST BE SUBMITTED VIA:
https://vafwis.dgif.virginia.gov/collection_permits/

STANDARD CONDITIONS ATTACHED APPLY TO THIS PERMIT.

Authorized Species:

<u>Description</u>	<u>ID Number</u>	<u>Scientific Name</u>
Barking Treefrog		<i>Hyla gratiosa</i>
Blackbanded Sunfish		<i>Enneacanthus chaetodon</i>
Mabee's Salamander		<i>Ambystoma mabeei</i>
Oak Toad		<i>Bufo quercicus</i>
Tiger Salamander		<i>Ambystoma tigrinum</i>

Authorized Sub-Permittees:

- Nancy Scott, Three Oaks Engineering
- Evan Morgan, Three Oaks Engineering
- Tom Dickinson, Three Oaks Engineering
- Mary Frazer, Three Oaks Engineering
- Nathan Howell, Three Oaks Engineering



Virginia Department of Game and Inland Fisheries

7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778

(804) 367-1000 (V/TDD)

Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia & DGIF Policy E-1-90



Threatened/Endangered Species Permit

Permit Type: **New**

Fee Paid:

\$20.00

VADGIF Permit No.

062228

Approved by:

Applicants may appeal permit decisions within 30 days of issuance. The appeal must be in writing to the Director, Department of Game and Inland Fisheries.

Title: **James E. Husband - Permits Manager**

Date: **3/12/2018**

20

Permit Effective

3/12/2018

through

12/31/2018

18

Virginia Department of Game and Inland Fisheries

P O Box 3337 Henrico, VA 23228-3337

(804) 367-6913

Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia and Policy E-1-90

THREATENED/ENDANGERED SPECIES PERMIT -- STANDARD CONDITIONS

1. Permits are issued to permittees with the understanding that if the principal permittee leaves the project the permit will be null and void and anyone desiring to continue the activities must apply for a new permit.
2. This permit, or a copy, must be carried by the permittee(s) during collection activities.
3. Permittee MUST notify the Virginia Department of Game and Inland Fisheries (VDGIF) within the seven (7) day period prior to EACH sampling event. Notification must be made via email to: collectionpermits@dgif.virginia.gov.
4. The permittee is required to submit to VDGIF a report of all specimens collected under this permit by the report due date. Report form may be found https://vafwis.dgif.virginia.gov/collection_permits/.asp. FAILURE TO RETURN THIS REPORT WILL RESULT IN NON-ISSUANCE OF FUTURE PERMITS. If no activity occurs under this permit, an email should be sent to collectionpermits@dgif.virginia.gov containing the following statement: No activity occurred under Permit #*insert permitID* during insert year (i.e. 2017). Permit reports are due by January 31.
5. Permittees shall give any and all changes of name, address, and/or phone number to the VDGIF Permits Section within no more than seven (7) days of those changes. All permittees (to include sub-permittees) shall provide DGIF with a complete home address, contact telephone number (home or cellular), and a valid e-mail address.
6. This permit does not support any activities outside of those associated with the application and proposal submitted to and approved by DGIF.
7. If incidental death or injury of threatened or endangered species occurs, the permittee is required to notify VDGIF at collectionpermits@dgif.virginia.gov within twenty-four (24) hours of occurrence. The following information must be reported: collector, date, species, location (county, quad, waterbody, and latitude and longitude to nearest second), and number collected.
8. If incidental *collection and live release* of threatened or endangered species occurs *for species other than those authorized under this permit*, the permittee is required to notify VDGIF at collectionpermits@dgif.virginia.gov within four (4) working days. The following information must be reported: collector, date, species, location (county, quad, waterbody, and specific location, either in latitude and longitude to nearest second, or by way of a photocopied 7.5' topographic map), general habitat associations, and number collected.
9. No species may be retained unless specifically authorized by this permit.
10. All traps must be marked with the name and address of the trapper or an identification number issued by VDGIF (Code of Virginia §29.1-521.7). Steel foothold traps, Conibear-style body gripping traps, and snares must be marked with a nonferrous metal tag bearing this information (Virginia Administrative Code 4 VAC 15-40-170).
11. All traps must be checked at least once a day and all captured animals removed, except completely submerged body-gripping traps which must be checked at least once every 72 hours (Code of Virginia §29.1-521.9).
12. The permittee is required to report any incidences of wildlife deaths or diseases observed during the course of collection activities. Reports should be made to: collectionpermits@dgif.virginia.gov within four (4) working days.
13. This permit satisfies only VDGIF's requirement for collection permits and is issued with the understanding that no collections will be made on Federal, state, or private property without the prior approval and necessary permits from the landowners involved. The permittee is responsible for obtaining any additional permits required for collection.
14. Sampling gear, boats, or trailers which have been used in states harboring zebra mussels must be cleaned and prepared following the guidelines specified in the attached summary prior to use in waters in the Commonwealth.
15. For safety reasons, it is recommended that all permittees display at least 100 square inches of solid blaze orange material at shoulder level within body reach and visible from 360 degrees, especially during hunting season.

Amphibian Species Survey Report

Proposed Spring Grove II Solar Site

Surry County, Virginia

Prepared For:



Timmons Groups
Richmond, Virginia

Contact Person:

Rick Thomas

Timmons Group
1001 Boulder Parkway, Suite 300
Richmond, VA 23225
Rick.thomas@timmons.com
Office 804-200-6446

June 2019

Prepared by:



324 Blackwell Street, Suite 1200
Durham, NC 27701

Contact Person:

Kate Sevick

Kate.sevick@threeoaksengineering.com
919-732-1300

Table of Contents

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3.0	Results.....	1
4.0	Discussion.....	3
5.0	Literature Cited.....	3

Appendix A. Figures

Appendix B. Threatened/Endangered Species Collection Permit

1.0 INTRODUCTION

Spring Grove II is a proposed approximately 665 acre solar development in Surry County, Virginia (Appendix A: Figure 1); referred to as the Project Study Area (PSA). Barking Treefrog (*Hyla gratiosa*), a Virginia Department of Game and Inland Fisheries (VDGIF) state threatened species, is known from or likely to occur within a two mile radius of the PSA.

Barking Treefrogs are Virginia's largest native treefrog. They breed from March to August most often utilizing fish free ephemeral ponds but have occasionally been found in areas where fish are present. Barking treefrogs are most active at night, typically sheltering in relatively low trees and shrubs during the day. They may also be found burrowed in damp soil, under logs near wetlands, or even hidden under loose tree bark. Barking Treefrogs usually call while floating in the breeding pool unlike other species which generally do not call while floating Dorcas and Gibbons (2008).

No habitat evaluations had been conducted on the site prior to the field survey. Three Oaks Engineering (Three Oaks) was retained by Timmons to conduct Barking Treefrog surveys within the PSA. Three Oaks obtained the necessary Collection Permits from VDGIF for conducting these surveys (Appendix C).

2.0 METHODOLOGY

The PSA was visited on June 11, 2019, by Kate Sevick (Permit #065019) and Tess Moody. It had rained during the evening of June 10, 2019. Temperatures were in the low 80°Fs and dropped into the low 60°Fs during the evening. An initial site visit was conducted during the early afternoon of June 11 to investigate access to the site and determine prime areas to conduct the evening Auditory Calling surveys. Based on the size of the site and the network of logging roads that were available, it was decided to conduct the Auditory Calling surveys from various locations along the logging roads (Figure 2). Investigators returned to the site around 7:00 PM to conduct the Auditory Calling Surveys.

Auditory call surveys were conducted at 12 locations within the PSA between 7:00 pm to 1:30am on the night of June 11, 2019. Surveys involved listening for the distinctive calls of the male Barking Treefrog. In addition to listening for the calls, audio recordings of Barking Treefrogs were played on a smartphone to elicit responses from individuals that may have been in the area. Any amphibian calls that were heard were identified to species and noted. Recordings of calls were made to assist in the identification.

3.0 RESULTS

One faunal group, amphibians, specifically frogs, were targeted during the survey efforts. The results are presented below. Nomenclature follows Dorcas and Gibbons (2008).

A total of five frog species, including the targeted Barking Treefrog, were heard or observed within the PSA (Table 1). Species diversity was relatively low. There was a robust population of Cricket Frogs, with lower numbers heard of the other four species (Table 2). Figure 2 displays locations within the PSA where surveys were conducted and where Barking Treefrogs were heard.

Table 1. Frog Species Identified: Complete PSA (Sites 1-12)

Scientific Name	Common Name
<i>Hyla gratiosa</i>	Barking Treefrog
<i>Anaxyrus fowleri</i>	Fowlers Toad
<i>Lithobates clamitans</i>	Green Frog
<i>Hyla femoralis</i>	Pine Woods Treefrog
<i>Acris gryllus</i>	Southern Cricket Frog

Table 2. Frog species abundance estimates for each survey site

Site	Species				
	Barking Treefrog	Fowlers Toad	Green Frog	Pine Woods Treefrog	Southern Cricket Frog
1	-	-	-	-	-
2	-	-	-	-	-
3	-	-	1+	-	Distant calls
4	-	-	-	-	-
5	-	-	-	-	Abundant
6	-	-	-	-	-
7	-	-	5-8+	-	-
8	-	-	-	-	Distant calls
9	-	Distant calls	Distant calls	-	-
10	5-8+	-	Distant calls	Distant calls	-
11	-	-	-	Distant calls	Abundant
12	-	-	-	5-10+	Abundant

An additional site (Site 13) was also surveyed. Site 13 is located along Colonial Trail West to the north of the PSA boundary. The site was surveyed to determine if the calling Barking Treefrogs heard at Site 10 were potentially located outside of the PSA. Only three species were heard which did not include Barking Treefrogs (Table 2).

Table 3. Frog Species Identified: Sites 1-13

Scientific Name	Common Name	Abundance
<i>Lithobates clamitans</i>	Green Frog	3-5+
<i>Hyla femoralis</i>	Pine Woods Treefrog	10+

Scientific Name	Common Name	Abundance
<i>Acris gryllus</i>	Southern Cricket Frog	Abundant

4.0 DISCUSSION

The targeted species, Barking Treefrog, was heard calling at one location within the PSA during the Auditory Calling Survey. The survey results indicate that there is one potential breeding site for Barking Treefrogs. Additionally, other frog species were heard calling at seven other locations within the PSA and one outside of the PSA which may also be utilized by the Barking Treefrog; however, it was not heard at these other locations.

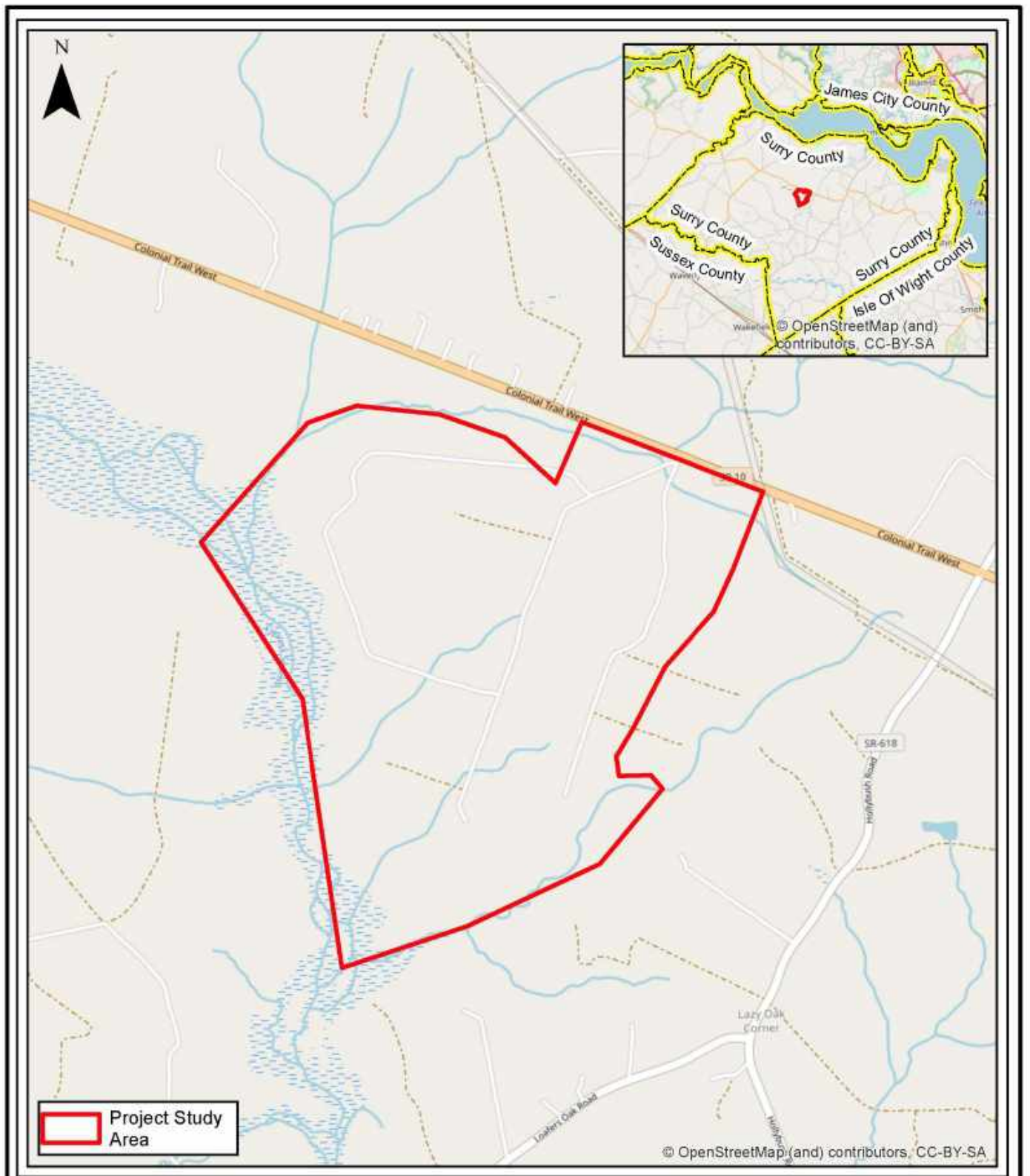
The survey results indicate that there is at least one breeding pond utilized by the Barking Treefrog within the PSA. Efforts to avoid this pond should be taken into consideration during the design of the proposed project to minimize project related effects to this population.

5.0 LITERATURE CITED

Dorcas, M. and W. Gibbons. 2008. Frogs and Toads of the Southeast. University of Georgia Press. Athens, GA. 238 pages

Appendix A

Figures



Prepared For:



TIMMONS GROUP

Amphibian Species Survey

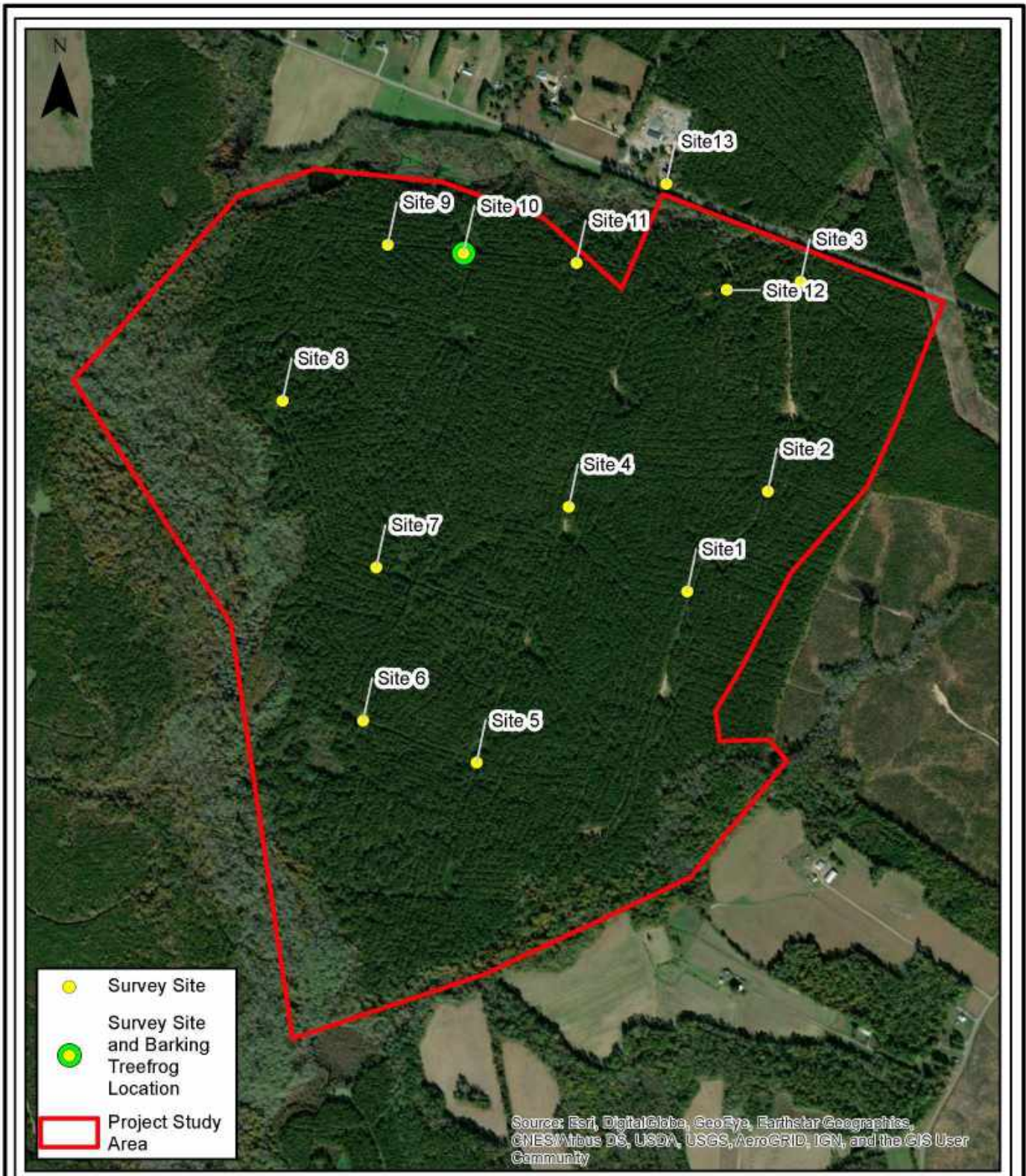
**Proposed Spring Grove II
Solar Site
Vicinity Map**



Surry County, Virginia

Date:	June 2019
Scale:	0 300 600 Feet
Job No.:	19-308
Drawn By:	KMS
Checked By:	TS

Figure

1



-  Survey Site
-  Survey Site and Barking Treefrog Location
-  Project Study Area



Prepared For:

TIMMONS GROUP

Amphibian Species Survey
 Proposed Spring Grove II
 Solar Site
 Survey Sites
 Surry County, Virginia

Date: June 2019
 Scale: 0 300 600 Feet
 Job No.: 19-308
 Drawn By: KMS Checked By: TS

Figure
2

Appendix B

Threatened/Endangered Species Collection Permit



Virginia Department of Game and Inland Fisheries
 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
 (804) 367-1000 (V/TDD)
 Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia & DGIF Policy E-1-90



Threatened/Endangered Species Permit

Permit Type: **Renewal** Fee Paid: \$20.00 VADGIF Permit No. **065019**

Permittee: **Kate Montieth Sevick**
 Address: **Three Oaks Engineering**
324 Blackwell Street, Suite 1200
Durham, NC 27701
 Email: _____

Office: (919) 698-8972
 City/County:

Contract Species Surveys/MAMAV WW Collection Line Survey

Authorized Collection Methods: By Hand/Dip Nets/Electrofishing/Aquatic Kick Samples/Seine Nets/Traps (Minnow/Pot/Bell)/Visual Encounter (turning over rocks/logs)/Nocturnal (i.e. shining w/high-power spot light)/Audio (Anurans/Birds)
Authorized Waterbodies: All within the authorized county.
Authorized Marking Techniques: N/A

Authorized Counties / Cities:
 Greenville
 Surry

SPECIAL CONDITIONS: Permittee **MUST** coordinate with Mike Pinder prior to any Blackbanded Sunfish sampling. Mike can be reached via phone at (540) 961-8304 or via email at mike.pinder@dgif.virginia.gov
 Capture, ID, and release only for Herps

PERMIT AMENDMENT 5/16/2019: This amendment adds the following:
Authorized Subpermittee: Tess Moody
Authorized Purpose: Colonial Trail West Proposed Solar Site
Authorized County: Surry

PERMIT AMENDMENT 5/13/2019: This amendment adds the following:
Authorized Purpose: MAMAC WW Collection Line Project
Authorized County: Greenville

Permittee **MUST** notify VDGIF within the 7 day period prior to each sampling event. Notification must be made via email to: collectionpermits@dgif.virginia.gov

Report Due: 31 January 2020

ANNUAL REPORTS MUST BE SUBMITTED VIA:
https://vafwis.dgif.virginia.gov/collection_permits/

STANDARD CONDITIONS ATTACHED APPLY TO THIS PERMIT.

Authorized Species:

<u>Description</u>	<u>ID Number</u>	<u>Scientific Name</u>
Barking Treefrog		<i>Hyla gratiosa</i>
Blackbanded Sunfish		<i>Enneacanthus chaetodon</i>
Mabee's Salamander		<i>Ambystoma mabeei</i>
Oak Toad		<i>Bufo quercicus</i>
Tiger Salamander		<i>Ambystoma tigrinum</i>



Virginia Department of Game and Inland Fisheries
 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
 (804) 367-1000 (V/TDD)
 Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia & DGIF Policy E-1-90



Threatened/Endangered Species Permit

Permit Type: **Renewal** Fee Paid: **\$20.00** VADGIF Permit No. **065019**

Authorized Sub-Permittees:
See Attached Sheet

Approved by: *Randall T. Francis*

Applicants may appeal permit decisions within 30 days of issuance. The appeal must be in writing to the Director, Department of Game and Inland Fisheries.

Title: **Randall T. Francis - Permits Manager**

Date: **4/2/2019**

20

Permit Effective **4/2/2019** through **12/31/2019**

19



Virginia Department of Game and Inland Fisheries

7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
(804) 367-1000 (V/TDD)



Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia & DGIF Policy E-1-90

Threatened/Endangered Species Permit

Permit Type: **Renewal**

FeePaid:

\$20.00

VADGIF Permit No.

065019

Authorized Sub-Permittees:

Nancy Scott, Three Oaks Engineering

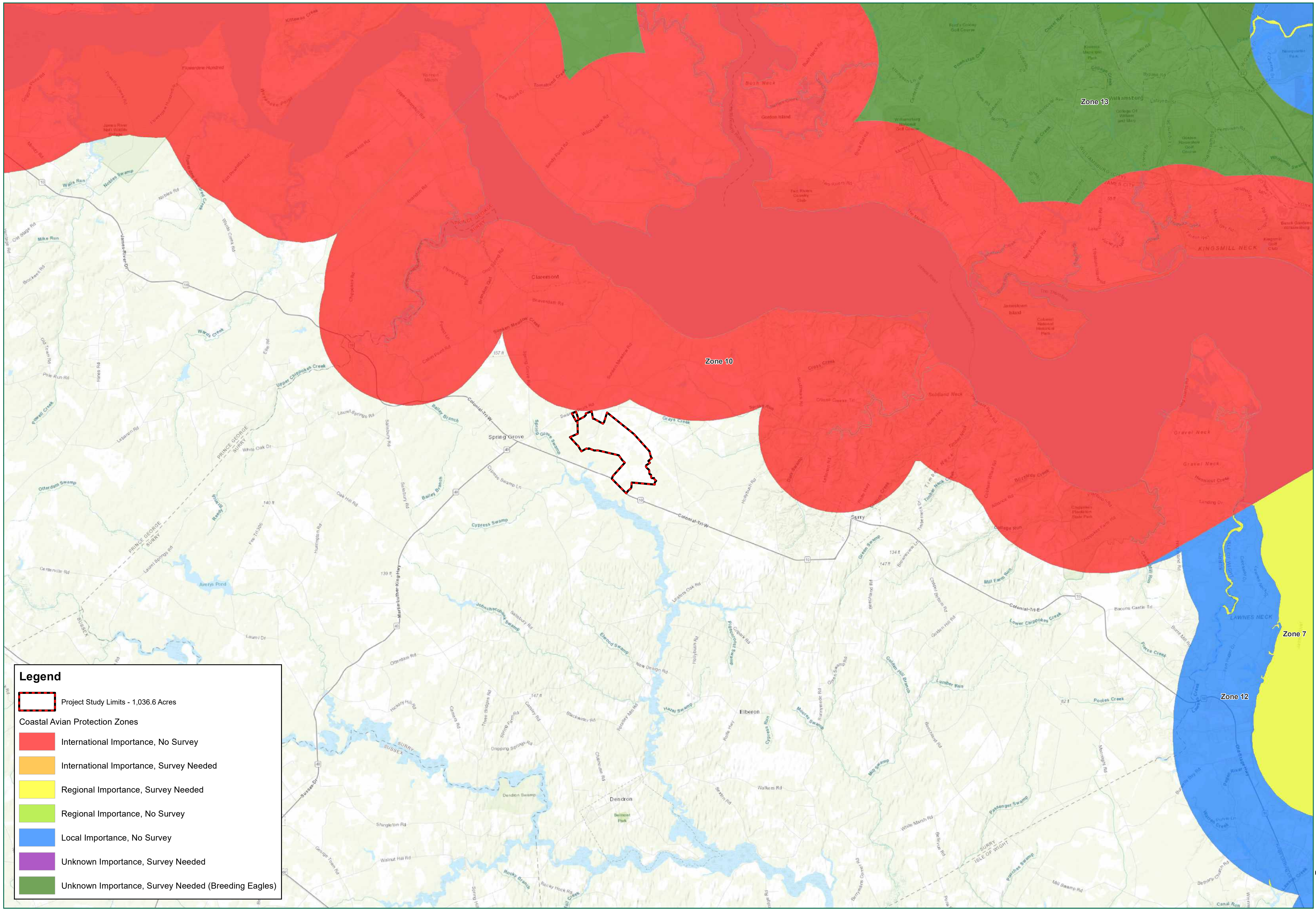
Tom Dickinson, Three Oaks Engineering

Mary Frazer, Three Oaks Engineering

Lizzy Stokes Stokes-Cawley, Three Oaks Engineering

Tim Savidge, Three Oaks Engineering

Tess Moody, Three Oaks Engineering



Legend

- Project Study Limits - 1,036.6 Acres
- Coastal Avian Protection Zones**
- International Importance, No Survey
- International Importance, Survey Needed
- Regional Importance, Survey Needed
- Regional Importance, No Survey
- Local Importance, No Survey
- Unknown Importance, Survey Needed
- Unknown Importance, Survey Needed (Breeding Eagles)

TIMMONS GROUP
 YOUR VISION ACHIEVED THROUGH OURS.
 1001 Builders Parkway, Suite 300
 Richmond, VA 23225
 TEL: 804-200-6500
 www.timmons.com

PROJECT NAME & LOCATION
 SPRING GROVE SOLAR II LLC
 SURRY COUNTY - VIRGINIA

DATE 04/16/2020
PROJECT NUMBER 39227
PROJECT NAME SPRING GROVE SOLAR II LLC
DESIGNED BY / DRAWN BY L. WHEELER

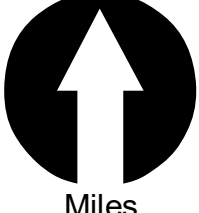
NOTES:
 Project Marker is approximate.
 Coastal Avian Protection Zone data from VCU's Virginia Coastal Zone Management Program for Virginia Only.
 Aerial imagery from ESRI.

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

REVISIONS

#	DATE	DESCRIPTION

DRAWING DESCRIPTION
 COASTAL AVIAIAN PROTECTION ZONE MAP


 Miles
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 PLANS PRINTED AS 11X17 ARE HALF SCALE
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Attachment G – Cultural Resource Analysis



COMMONWEALTH of VIRGINIA

Molly Joseph Ward
Secretary of Natural Resources

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

Julie V. Langan
Director

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www.dhr.virginia.gov

March 27, 2018

Ms. Carol Tyrer
Circa~ Cultural Resource Management, LLC
453 McLaws Circle, Suite 3
Williamsburg, VA 23185

RE: *Management Summary and Archaeological Probability Analysis, Spring Grove Property, Surry County, Virginia* (November 2017)
DHR File No. 2018-3123

Dear Ms. Tyrer:

We have received for review the document referenced above prepared by Circa~ for Urban Grid. We provide the following comments as assistance in the preparation of an application to the Department of Environmental Quality (DEQ) to operate a small solar project in Surry County.

Based on the information provided, we concur that no further archaeological study is warranted in support of this project. We have received the results of the architectural survey and will provide comments when prepared.

We look forward to working with Circa~, Urban Grid, and DEQ to bring this permitting process to a successful conclusion. If you have any questions at this time, please do not hesitate to contact me roger.kirchen@dhr.virginia.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Roger W. Kirchen".

Roger W. Kirchen, Director
Review and Compliance Division

c. Ms. Mary E. Major, DEQ

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March 28, 2018

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

RE: *Phase I Architectural Survey of the Spring Grove Solar Site, Surry County, Virginia* (January 2018;
Revised)
DHR File No. 2018-3123

Dear Ms. Major:

We have received for review the revised report referenced above prepared by Circa~ Cultural Resource Management, LLC (Circa) for Spring Grove Solar I, LLC, Spring Grove Solar II, LLC, and Urban Grid Solar Projects, on behalf of the Timmons Group, in support of an application to the Department of Environmental Quality for a Permit-by-Rule for a small renewable energy project in Surry County.

We find that the revised report addresses our March 28, 2018 comments. No further study is warranted at this time. Based on the sum of the information provided, it is our opinion that the Spring Grove Solar project will have no significant adverse impact on historic resources.

Please do not hesitate to contact me at roger.kirchen@dhr.virginia.gov with questions regarding these comments and recommendations.

Sincerely,

A handwritten signature in blue ink, appearing to read "Roger W. Kirchen".

Roger W. Kirchen, Director
Review and Compliance Division

c. Carol Tyrer, Circa

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PHASE I ARCHITECTURAL SURVEY OF THE SPRING GROVE SOLAR SITE

SURRY COUNTY, VIRGINIA

VDHR #2018-3123



Circa~ Cultural Resource Management

JANUARY 2018

**PHASE I ARCHITECTURAL SURVEY OF THE SPRING GROVE SOLAR SITE
SURRY COUNTY, VIRGINIA
VDHR # 2018-3123**

**Prepared For:
The Timmons Group
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January 2018

ABSTRACT

In December of 2017, The Timmons Group (Timmons) contracted Circa~ Cultural Resource Management, LLC (Circa~) to conduct a Phase I architectural survey of the Spring Grove Solar Site in Surry County, Virginia. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate report and are not included in this survey. This survey resurveyed three previously-recorded architectural resources and identified 11 new architectural resources.

ACKNOWLEDGEMENTS

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir and Carol D. Tyrer prepared the report. At Timmons, Rick Thomas and Laura Major provided information and maps for the survey.

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INTRODUCTION

In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia (Figures 1-3). The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trail West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The purpose of this survey was to identify any previously-recorded architectural resources within a half-mile radius of the project area and record all architectural resources over 45 years of age not previously recorded. This survey was carried out in compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) and conducted in accordance with the Secretary of the Interior's *Standards and Guidelines for Architectural Documentation* and the Commonwealth of Virginia guidelines, including the *Guidelines for Conducting Cultural Resources Survey in Virginia* (Virginia Department of Historic Resources [VDHR] 2011). In addition, the survey was conducted under the Permit by Rule (PBR) guidelines for the development of solar farms.

Spring Grove Solar I, LLC and Spring Grove Solar II, LLC, owned by Urban Grid Solar Projects, each seek to install a photovoltaic solar electric energy generating facility to provide up to 150 megawatts of electrical energy generation (the "Project") on the property located north of Colonial Trail West (Route 10) and south of Swanns Point Road (Route 610) and Beaverdam Road (Route 626). Spring Grove Solar I, LLC and Spring Grove Solar II, LLC each have separate PJM interconnection requests, AC1-216 and AD1-025 respectively. The property consists of approximately 2,676 acres that is currently used for timber production, with most of it having been recently timbered. The remaining mature timber will be removed by the current owner prior to installation of the solar facility. The Property is zoned A-R, Agricultural – Rural District. The surrounding properties are also zoned A-R. Within the A-R District, the project will be a Utility Service Major use requiring a Conditional Use Permit.

The report describes fieldwork results and makes recommendations for further work. Any recommendations provided concerning the potential eligibility of architectural resources identified during this survey were further made in accordance with the Advisory Council on Historic Preservation (ACHP) *36 CFR Part 800: Protection of Historic Properties* (1981 as amended 2000) and National Register of Historic Places Bulletin 15: *How to Apply the National Register of Historic Places Criteria for Evaluation* (1991).

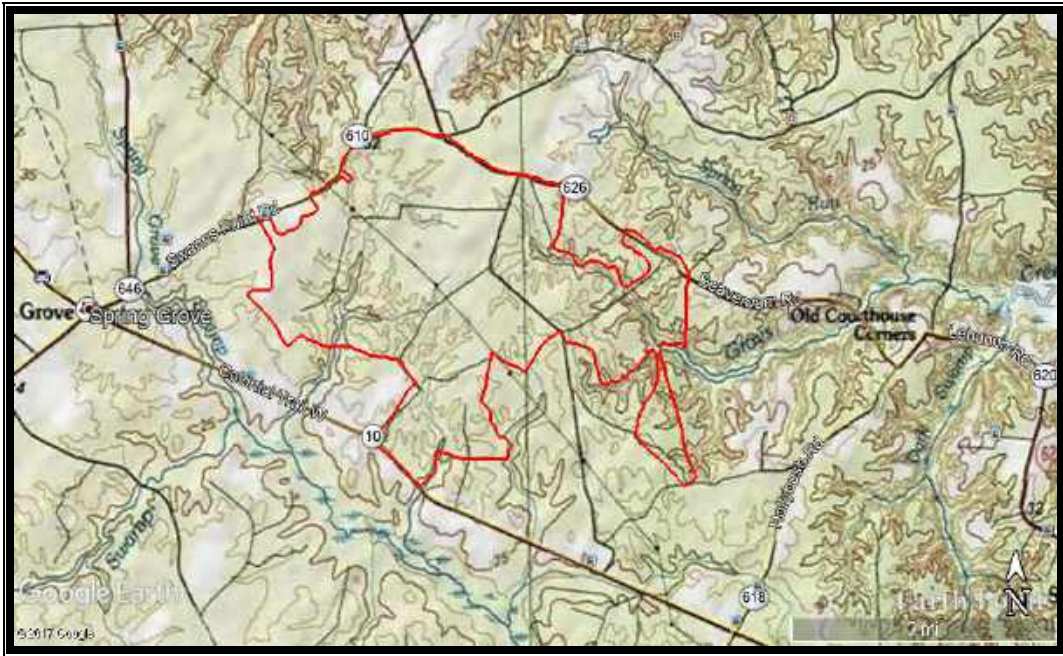


Figure 1. Approximate project location, Claremont USGS quad.



Figure 2. Detail of approximate project location, Claremont USGS quad.



Figure 3. Current (2017) aerial view of project area, from Google Earth.

This report contains a description of the project area's physical and environmental setting, an outline of meaningful historical contexts for the properties, a general research design that summarizes field methods, previous research in the area, and expected results, and, finally the survey results are described, the findings reviewed, and recommendations explained. Field notes and other project records are presently being curated in Circa~'s office in Williamsburg, Virginia. It is anticipated that these materials will eventually be transferred to VDHR in Richmond, Virginia following the conclusion of the project.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Major provided information and maps for the survey.

PROJECT DESCRIPTION

The tract is situated in the Coastal Plain physiographic province and is in a planted pine plantation. The area has been timbered and replanted at least three times in the past based on the stumps and current stand of timber. The trees are roughly 20 to 25 years old and the ground cover vegetation is open. The tract is fairly level and ranges in elevation from approximately 80 feet above mean sea level (AMSL) in the southeastern section of the tract to 100 feet AMSL in the middle and northern sections of the tract. No surface waters are located within the tract. The landform consists of a dissected upland between Cypress Swamp to the southwest and Gray's Creek to the northeast. A power line easement runs roughly east to west across the tract. The site can be accessed via gravel and dirt roads off Colonial Trail West (Route 10), Swanns Point Road, and Beaverdam Road.

RESEARCH STRATEGY AND METHODOLOGY

Research Strategy

The survey was designed to identify all architectural sites present in the project area and to obtain sufficient information to make recommendations about the further research potential of each resource based on potential eligibility to the National Register of Historic Places. To accomplish this, both documentary research and archaeological field testing was performed 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 VDHR guidelines for Phase I architectural surveys. Moreover, the field survey was conducted in compliance with statutes regarding the impact of undertakings on historic properties as summarized by the Advisory Council on Historic Preservation (36 CFR 800 [1986]). To meet Advisory Council standards, a Phase I survey must be conducted in "a reasonable and good faith effort to identify historic properties that may be affected by the undertaking" (36 CFR 800.4). The Phase I survey was performed and documented at a level that meets or exceeds these standards.

A cultural resource is gauged to be significant if at least one of four National Register of Historic Places criteria can be applied to it:

- A. Associated with significant events in the broad patterns of national history;
- B. Associated with the lives of persons significant in our past;
- C. Representative of a type, period, or method of construction, or the work of a master; and
- D. Capable of yielding important information about the past.

Typically, Criterion D applies only to archaeological sites; while Criteria A, B, And C applies to architectural resources.

Methods

Archival Research

Archival research commenced with the examination of cartographic works that are on file online with the Library of Congress, VDHR, the Library of Virginia, the Rockefeller Library, and Surry County. Online resources were used whenever possible. Efforts were made to determine whether historic road rights-of-way passed close to the project area. Data accumulated during previous archival research on historic sites throughout the region also were examined.

Architectural Field Methods

Field survey of all historic structures was conducted according to VDHR's survey procedures. A VDHR site form was completed for each structure or complex 45 years of age or older, and at least one digital color photograph was taken, usually more (see Appendix A).

CULTURAL BACKGROUND

Historic Context

Settlement to Society (1607-1750)

In December 1606, the *Discovery*, the *Susan Constant* captained by Christopher Newport, and the *Godspeed*, captained by Bartholomew Gosnold, set sail from London bound for the New World under a charter from the Virginia Company. After 18 weeks at sea, on May 13, 1607, 100 settlers arrived in Virginia on a marsh-rimmed peninsula that at high tide resembled an island. Here the colonists built an outpost called James Cittie or Jamestown, the first permanent English settlement in North America (McCartney 1997).

Within days after arriving at Jamestown, Christopher Newport, John Smith, and a small exploratory party ventured out to the falls of the James River. Populated by the powerful and independent Chickahominy Indians, this region saw its first tentative English settlement by 1613, when Sir Thomas Dale established Bermuda Hundred on the James River to the north of the project area. More settlements would follow in subsequent years as the English spread out from Jamestown along the James River. By 1609, Smith's Fort was constructed on Gray's Creek in what would become Surry County and Hog Island contained a second fort. Some of these settlements are noted on a 1606 map created by John Smith, although no settlements are noted within the project area at this time (Figure 4).



Figure 4. Detail of *Virginia discovered and described* by Captayn John Smith, 1606.

In 1618, the Virginia Company ratified its so-called Great Charter paving the way for many changes in the Colony including the establishment of representative government and a system similar to local English law (McCartney 1997). Company officials chose Virginia's governors and council, but the Company did make provisions for the colonists to elect representatives to a general assembly. The Great Charter also created a land policy, known as the headright system, under which Virginia colonists could acquire real estate and work for personal gain. Prior to this system, investors of the Virginia Company and settlers who arrived in Virginia before 1616 were eligible for 100 acres as their first dividend. Under the headright system; however, anyone who came to the Colony at their own expense and lived in Virginia for a minimum of three years, was entitled to 50 acres for every person they paid for. This policy provided prospective immigrants with an incentive to leave an overcrowded England and seek fortune in a New World and allowed investors to pool their resources to supply servants and tenants to send to Virginia to establish a "particular plantation" (McCartney 1997). These groups would purchase shares of the Virginia Company stock entitling them to 100 acres per share. The bulk of Virginia land was distributed under the headright system.

As Virginia's newly-appointed governor, Sir George Yeardley arrived in Jamestown on April 17, 1619, and quickly subdivided the Colony into four corporations: James City; Charles City; Henrico City; and Kecoughton (or Elizabeth City). Within months after the division, members of the first legislative assembly including the Governor, six councilors, and representatives or burgesses from all but one settlement, gathered in the church at Jamestown on July 30, 1619 forming the New World's first representative assembly with a mission to petition for any changes that they felt necessary. By March 1620, approximately 928 people lived in the Virginia colony including 892 whites, 32 blacks, and four Indians (McCartney 1997).

Threatened by the expanding settlements, the Indians of the Powhatan chiefdom launched an attack on the sparsely inhabited plantations along the James River on March 22, 1622. At the end of the day, an estimated 347 men, women, and children were killed, almost a third of the Colony's population (McCartney 1997). Indians returned throughout the next few days to several outlying plantations driving off settlers and burning their properties. The Governor declared martial law and ordered the colonists to come closer to Jamestown for safety. As settlers moved toward Jamestown, food shortages occurred, and contagious diseases spread quickly. Although the colonists fought back, the Indians continued to attack. The Virginia Company sympathized with the colonists but blamed them for settling too far out and urged them to return, despite the dangers (McCartney 1997).

Two years after the Indian attack, the Virginia Company dissolved in 1624. Because people with title to land in Virginia did not outright own the property, but rather paid the Virginia Company to lease the land, landowners now paid the monarch, as Virginia had become a royal colony (Robinson 1957). The monarch would still lease patents for land in the Colony, however, there was a stipulation that the land had to be seated or planted within three years, otherwise, the land would be open to claims.

In 1634, Virginia divided into eight shires or counties. James City County included what would become Surry County, parts of Charles City County, and part of New Kent County. The County had 886 inhabitants making it the most populated jurisdiction in Virginia. James City County's seat of government was at Jamestown until around 1715 to 1721 when it moved to Williamsburg. By the early 1640s, with settlements firmly established along both sides of the James River, English settlers began moving up and down the County establishing modest farms and small plantations into the Chickahominy and York river drainages and eventually further into the interior of the Colony.

In August 1641, King Charles I appointed William Berkeley Governor of Virginia. As the Crown's principal agent in Virginia, Berkeley carried out the King's instructions and worked with English officials. However, Berkeley also relied on the advice of Virginia's planter elite when drafting public policy and thus fostered the development of a deferential social order (Billings et. al. 1986).

Although Virginia signed a new Indian treaty in April 1642, the steady growth in the Colony's population and encroachment on Native land led to conflict. The second major Indian uprising occurred on April 18, 1644, claiming 400 to 500 settlers. Opechancanough was credited with leading the revolt and because of the attack, the Grand Assembly resolved to "abandon all formes of peace and familiarity" with the Natives (McCartney 1997). Captain Leonard Calvert took his ship into the Chickahominy River and helped the colonists attack the Chickahominies in their homeland. Realizing that it would be impossible to defeat the Indians completely, the burgesses sent out a search party to capture Opechancanough dead or alive. The party captured the Indian chief returning him to Jamestown. However, while the Chief remained in custody, a soldier killed him. After his death, in October 1646, Necotowance, the immediate successor of Opechancanough, concluded formal peace with the Virginia government.

As a well-established colony by 1650, Virginia boasted 5,000 residents. However, the Colony would soon experience more change. In the spring of 1652, Surry County formed from James City County territory on the lower side of the James River causing both political and economic ramifications. The shift reduced the number of James City County delegates in the General Assembly from six to four and decreased the tax base of the County. Surry County became known as the Territory of Tappahanna (Lewes 2013, Sanford, 2012). A map created by Augustine Herrmann in 1670 indicates plantations scattered along the Colony's four major rivers and across the Chesapeake Bay (Figure 5). Land records during this time also indicate that development continued to occur in the interior of the Colony.

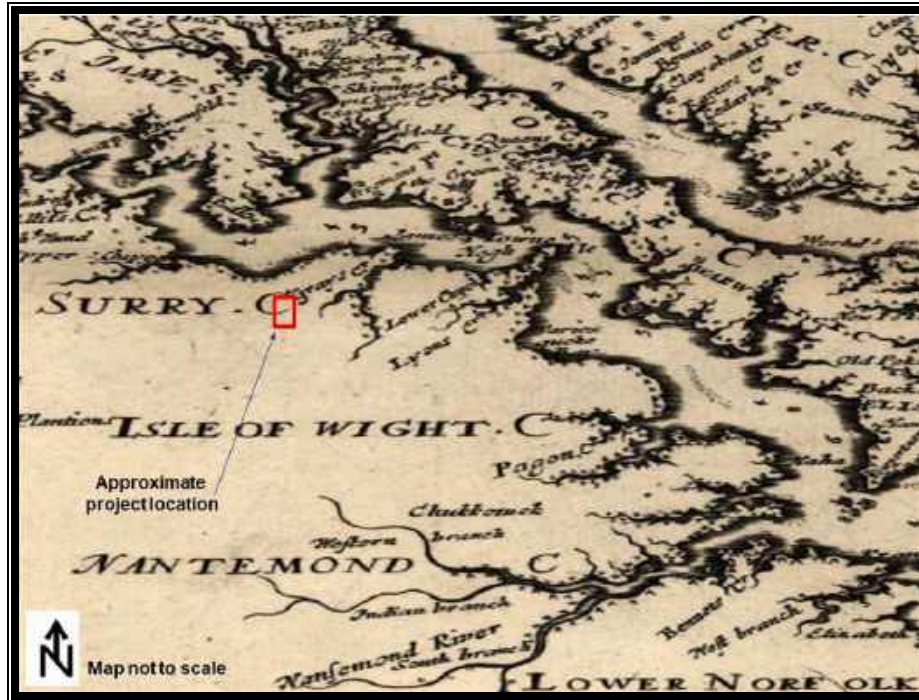


Figure 5. Detail of Virginia and Maryland as it is planted and inhabited this present year 1670, Augustine Herrman, 1673

Indians continued to attack the Colony throughout the spring of 1676. After Indians attacked his plantation, a Colony resident Nathaniel Bacon led a group of vigilantes on a retaliatory march. Governor Berkeley sent word to Bacon to cease military operations and report to Jamestown. However, Bacon ignored the orders and demanded a commission to pursue Indians. Berkeley declared Bacon and his followers' rebels and sent soldiers after them. Bacon eluded the soldiers and then attacked the friendly Occaneechee Indians, starting Bacon's Rebellion, which spread throughout Tidewater Virginia. Bacon went on to burn Jamestown on September 19, 1676 destroying the church, statehouse, and other buildings. A month later, Bacon became ill and died, and his successor, Joseph Ingram, lacked the confidence and leadership to continue the cause. By January 1677, the rebels awaited a court martial at Middle Peninsula and Ingram officially surrendered on January 16, 1677. However, Jamestown never fully recovered from Bacon's Rebellion.

With the rebellion quelled, the perennially disruptive social and economic conditions characteristic of Virginia's early years began to stabilize, and by 1700, the planter "aristocracy" that would dominate colonial life through the 18th century had taken shape in Surry County (Whittenburg 1988). During this period, much of this area relied on the large-scale production of tobacco for export. As the 17th century ended, the supply of white-indentured servant labor that had formed the backbone of Virginia's workforce slowed to a trickle. As a result, planters increasingly turned to the importation of black slave labor for the maintenance of their plantation economy. In so doing, Virginia's planter elite established a social and economic system that would endure until the Civil War.

Colony to Nation (1750-1789)

During the early to mid-18th century, rural Surry County was sparsely populated and large plantations were interspersed with small and middling farmsteads. Along the banks of the James and York rivers, many smaller-sized tracts were gradually absorbed into the plantations of Virginia's larger, more economically-successful landowners, who sought land with direct access to commercial shipping. During the 18th century, the development and improvement of inland transportation corridors led to a pattern of settlement that was more widely dispersed. Ferries plied the James and York rivers, bringing travelers from outlying areas into the peninsula (Henry 1770, Fry and Jefferson 1751, Jefferson 1787). By this time, black slaves were a prominent part of the County's population. White tenant farmers were also growing in number. This pattern of development is shown on a 1751 map of Virginia, although no development is noted within the project area at this time (Figure 6).

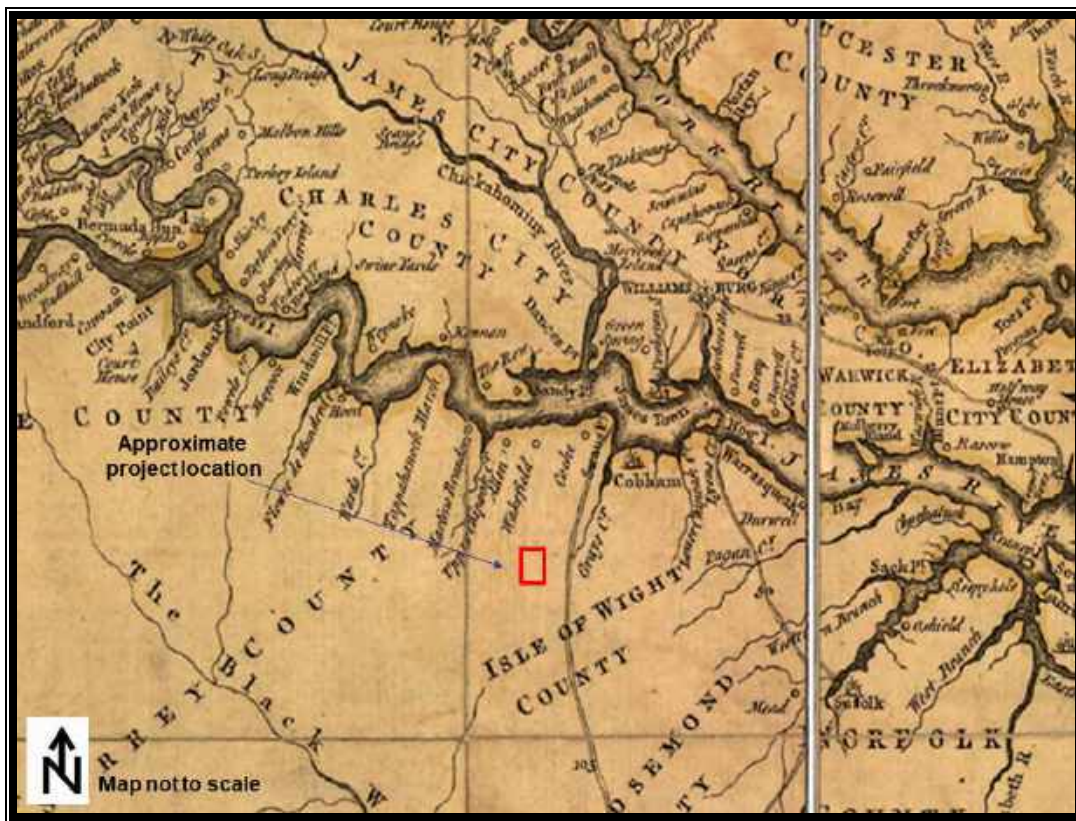


Figure 6. Detail of A map of the most inhabited part of Virginia containing the whole province of Maryland with part of Pensilvania, New Jersey and North Carolina. By Joshua Fry and Peter Jefferson, 1751

As in most other Virginia counties, Surry County residents were deeply divided during this period between loyalty to the Crown and support for the revolutionary cause. As a result, the Revolutionary War left its imprint on Surry County, as the British intruded into the area on several occasions, sometimes inflicting significant amounts of damage. In 1781, British General Charles Lord Cornwallis arrived in Petersburg, Virginia to the south of the project area with a plan to dislodge the Allied Army from Richmond. As the

British pressed these plans, the Allies retreated down the James-York Peninsula. Throughout the war, troops from both armies moved through the area, ultimately traveling to and from Yorktown, where they fought the war's conclusive battle.

Early National Period (1789-1830)

After the close of the American Revolution, Surry County recovered slowly from the effects of the war. The armies that had moved into the region had availed themselves of its food stores and livestock to meet their own needs and many prominent Virginians, who had gone heavily into debt in support of the war effort, suffered from economic difficulties that were a consequence of their patriotism. The relocation of Virginia's capital from Williamsburg to Richmond accelerated the area's decline as emphasis shifted inland toward the Piedmont. Although Tidewater's political influence diminished along with its wealth, its local economy remained viable (Colonial Williamsburg Foundation 1985).

Adding to the area's decline, nearly two centuries of intensive tobacco monoculture exhausted farmland throughout the County. This in part forced the County's economy to shift from an early reliance on tobacco as the principal crop to a more diversified agricultural economy. Corn and wheat became stronger crops along with the emergence of sawmills and gristmills. Despite the shift toward mills and other sources of income, the County remained predominantly rural with a few rudimentary roads connecting dispersed farmsteads and small hamlets. An 1825 map of Virginia created by Herman Boye indicates a few roads through the County with little development within the project area (Figure 7).

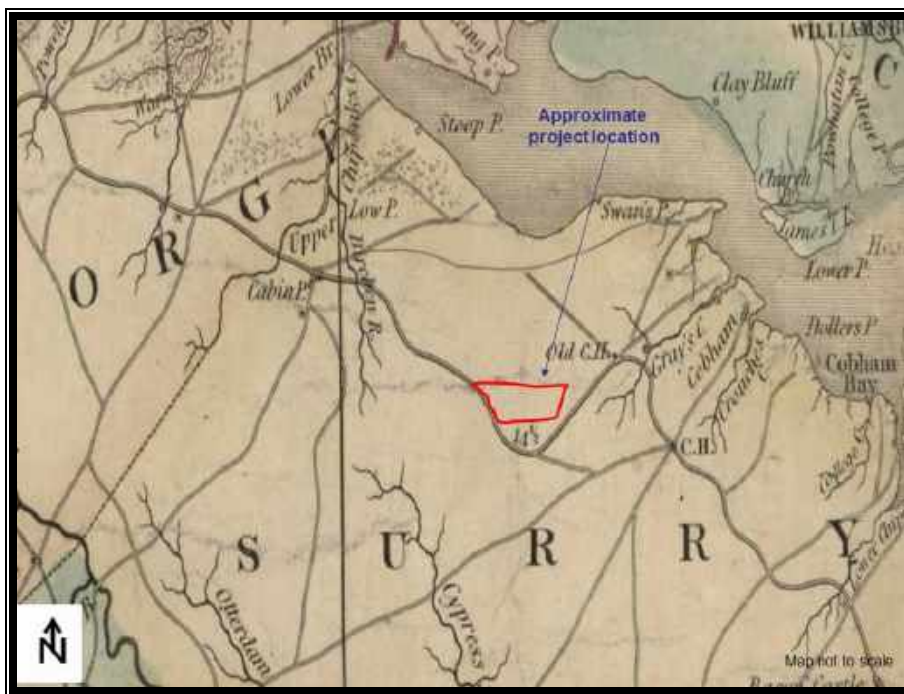


Figure 7. Detail of A map of the state of Virginia, constructed in conformity to law from the late surveys authorized by the legislature and other original and authentic documents by Herman Boye, 1825

Antebellum Period (1830-1860)

Because Virginians traditionally devoted relatively little attention to soil maintenance and improvement, by the second quarter of the 19th century Tidewater's farm lands were depleted of their nutrients and their productivity was lessened. Although farm size was reduced as families broke up large estates and redistributed them into smaller tracts, the lack of opportunity to acquire substantial tracts of good, arable acreage, coupled with fluctuations in agricultural prices, led to a general out-migration of the region's white population. In addition, members of the lower and middling classes sought better opportunities elsewhere. The opening of western lands, plus the construction of internal improvements such as canals, turnpikes, and railroads, encouraged an exodus of Tidewater's native-born population, while the relative scarcity of good agricultural lands discouraged new immigrants from settling in the region. These trends were reflected in a general decline in eastern Virginia's population that occurred between 1790 and 1890 (Colonial Williamsburg Foundation 1985).

However, by the mid-19th century, improved agricultural techniques and crop diversification led to a revitalization of the region's agricultural economy. Whereas the cultivation of tobacco once had played a vital role, emphasis shifted to a production of grain crops. As the middle of the 19th century approached, Tidewater's agriculture had evolved into a mixed-crop system and beef production and other forms of animal husbandry gained importance. More sophisticated farming methods became common, such as the use of marl to restore soil acidified by long-term tobacco production and erosion (Colonial Williamsburg Foundation 1985). In the years leading up to the Civil War, Surry County remained largely rural with its few large plantations a reminder of an earlier era of prosperity and power (Coski 1988).

Civil War (1861-1865)

Surry County residents faced the coming of war with a mixture of trepidation and resolution and within a year, they would find two rival armies literally on their doorsteps. The first shots that signaled the beginning of the Civil War were fired at Fort Sumter, South Carolina, on April 12, 1861. Neither side appears to have then realized that the issues under dispute would culminate in a long and bloody war. Citizens within several Southern states, particularly those in the more mountainous regions, were divided on the issue of secession and they had little vested interest in slavery, a major subject of contention. Further complicating matters, neither the North nor South was militarily prepared to fight. Even so, when President Lincoln issued a call to arms, he received an enthusiastic response. Several states in the upper South reacted by quickly aligning themselves with the Confederacy. Virginia, Arkansas, Tennessee, and North Carolina seceded in April and May of 1861 (Catton 1960, Wiley 1964).

Delegates from six states in the lower South convened and elected Jefferson Davis of Mississippi to a six-year term as President of the Confederate States. In June 1861, the capital of the Confederacy shifted from Montgomery, Alabama to Richmond, Virginia approximately 50 miles north of the project area. From then on, the focus of the war was on Virginia, especially the region in and around Richmond and the territory separating it

from Washington, D.C., the Federal capital. This resulted in war activities devastating much of Virginia's landscapes (Wiley 1964).

Immediately after Virginia joined the Confederacy, General Robert E. Lee was detailed as military advisor to President Davis and several armies were put into the field. In spring 1862, when a large Union Army under General George B. McClellan threatened Richmond, General Joseph Johnston united the Confederate armies under his command. Lee, meanwhile, continued to serve as advisor to President Davis until Johnston was wounded at Seven Pines, at which point Lee was made commander-in-chief. One of Lee's responsibilities was to see that Richmond, as the Confederate capital, was well defended. His application to that task proved important, for by the time the war ended, seven campaigns had been launched against Richmond, two of which came within sight of the City (Miller 1911, National Park Service [NPS] 1990).

The strategic placement of small bodies of troops defended the approaches to Richmond initially, enabling the Army of Northern Virginia to pursue other objectives. During that period, the energies of the Confederate government were drawn in so many directions that the defense of the capital proceeded haltingly. Lee, who made his superiors aware of his concerns about Richmond's safety, fortified the James River below the mouth of the Appomattox River by having earthworks erected at old Fort Powhatan, Jamestown Island, and Hardins Bluff; he also had water batteries built at Mulberry Island and Day's Point (Miller 1911, NPS 1990). These military positions were intended to prevent Union naval vessels from moving up the James River toward Richmond, circumventing any defenses the Confederates might build on the peninsula.

Confederate cartographers made maps that are comprehensive, which depicted not only the lay of the land, but also specific sites at which buildings were located. Their maps shed a considerable amount of light on how rural Surry Count developed during the mid-1860s (Figures 8 - 11). These maps show the project area as primarily open with little to no development around the area.

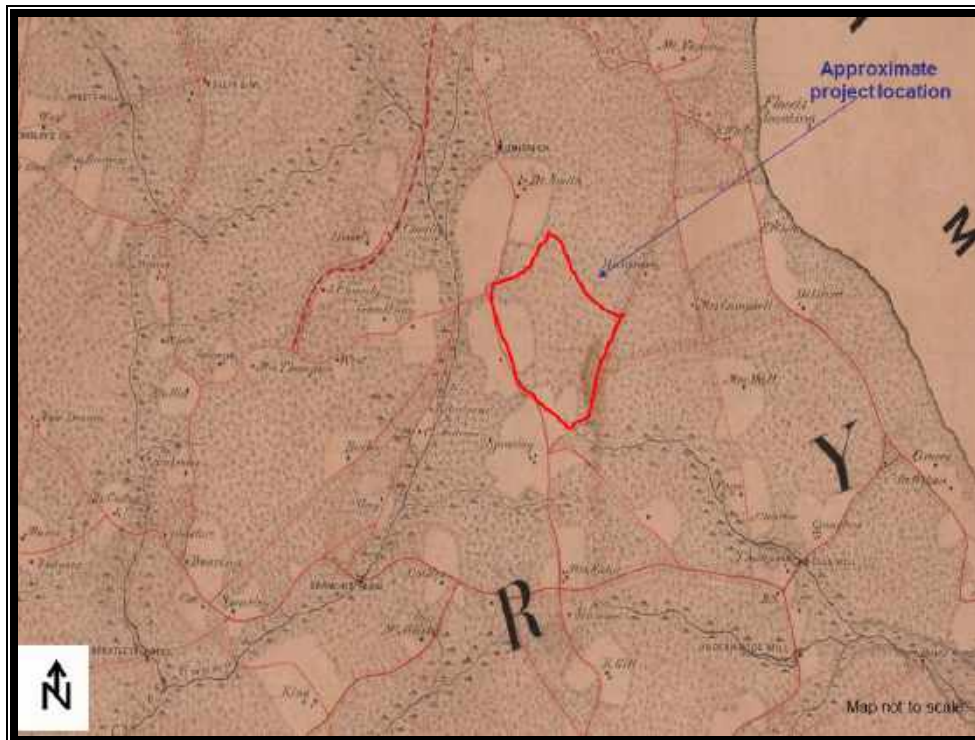


Figure 8. Detail of *Map of Surry, Sussex and Southampton counties, Virginia*. Albert H. Campbell and Charles E. Cassell, Confederate States of America, Army, Dept. of Northern Virginia, Chief Engineer's Office, 1863.

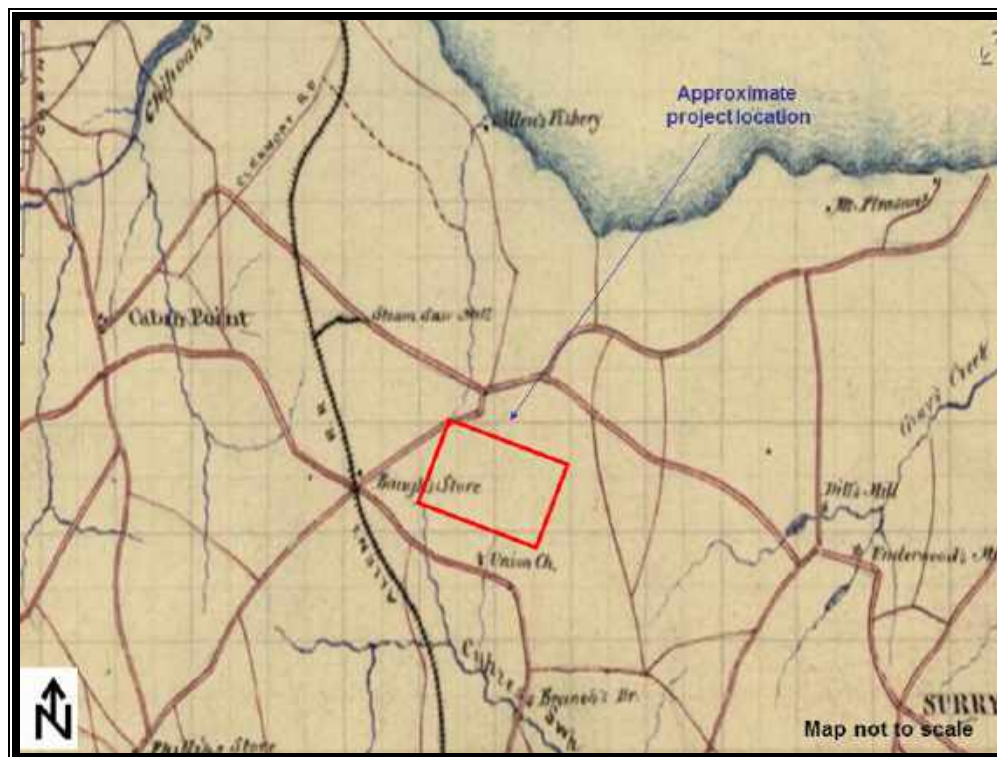


Figure 9. Detail of *Charles City, Pr. George and Surry counties, Virginia* by Jedediah Hotchkiss, 1867.

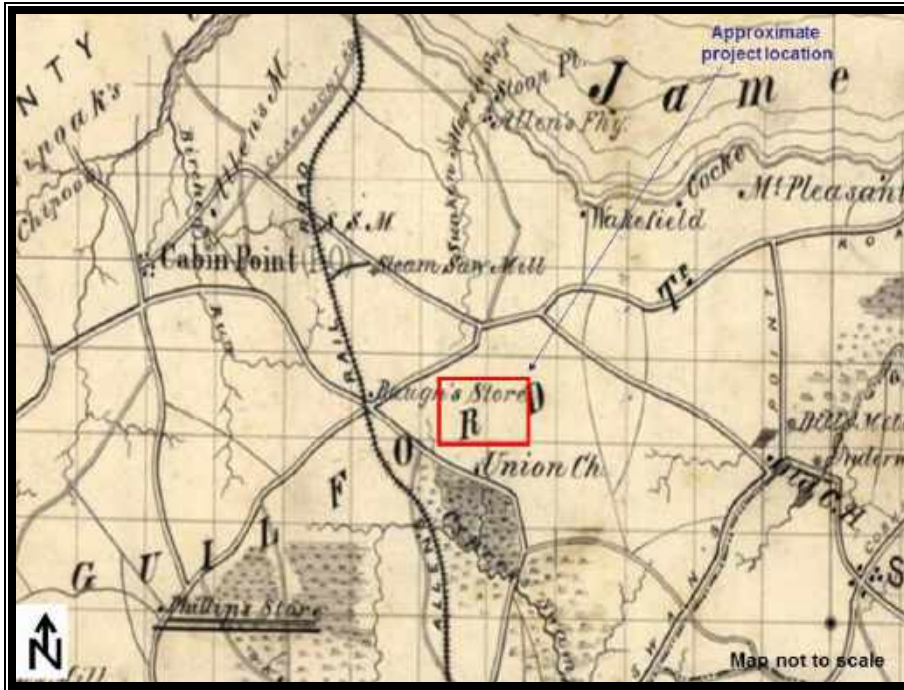


Figure 10. Detail of *Preliminary map of Surry County, Virginia* by Jedediah Hotchkiss, 1871.

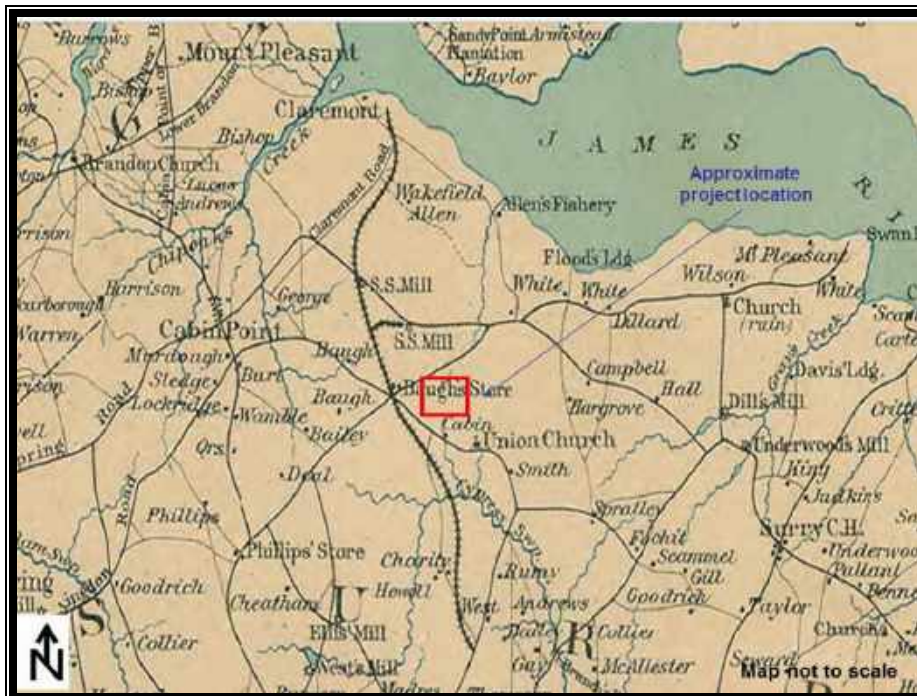


Figure 11. Detail of *Preliminary map of a part of the south side of James River, Va.: from surveys and reconnaissances*, Confederate States of America. Army of Northern Virginia. Engineer Office, 1891.

Reconstruction and Growth (1865-1917)

Though it had seen only limited military action, Surry County suffered a terrible economic toll because of the Civil War. Plantations suffered the ravages of war, with destroyed fences, devastated fields, and virtually no remaining livestock or draft animals. Real property in the County valued at a million dollars before the war was worth only half that by the war's end. Perhaps the most damaging effect of the war on the County was the complete destruction of the antebellum system of slave labor. For much of the early part of the war, Surry County lay behind Union lines, and up to 90% of local slaves took this opportunity to flee their masters, many of them winding up as refugees in large Freedman's camps on the Lower Peninsula (Coski 1988).

World War I to World War II (1917-1945) and The New Dominion (1945 to present)

Though still overwhelmingly rural, Surry County entered the 20th century slowly, but steadily, taking advantage of the technological benefits of a modern, industrialized society. Transportation during this period still depended to some degree on the James River. Ferries linked the County with James City County and other areas and the steamship Pocahontas carried mail, freight, and passengers on the James River until 1918. Many local roads were hard-surfaced during the 1920s and were incorporated into the State Secondary Highway system by 1932. With new and better roads, automobiles and trucks began to supersede rail and river transportation through the County. It was now easier to reach Richmond, Williamsburg, and Newport News, and property values in Surry County increased as a result (Tyler 1984). Maps of the area drawn during this period show these new transportation lines as well as no development within the project area (Figures 12 and 13).

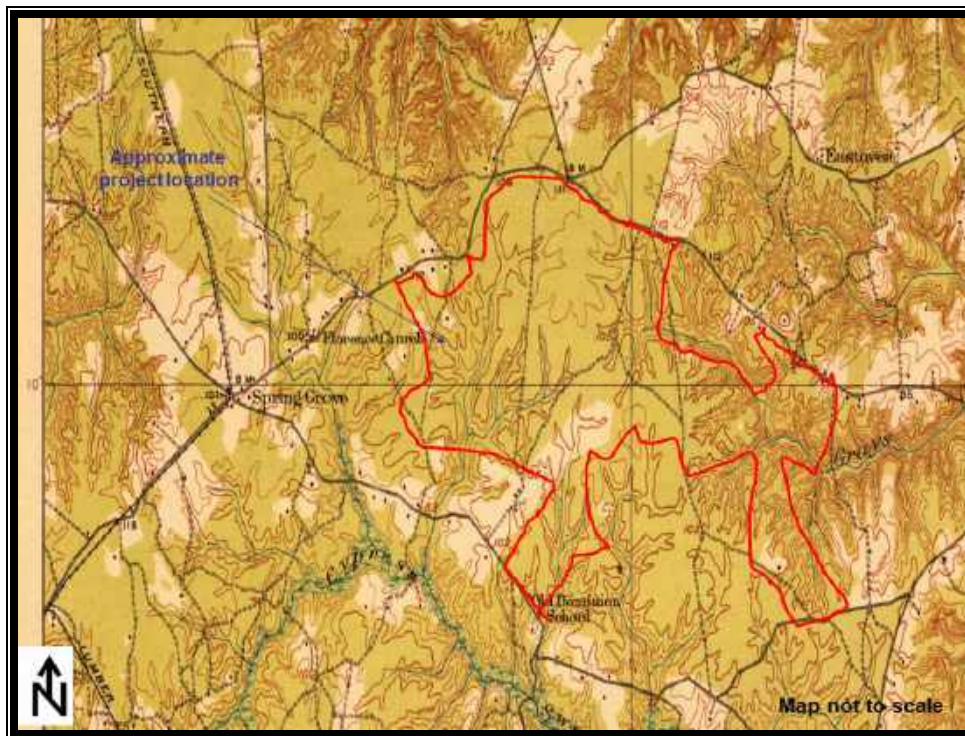


Figure 12. Detail of 1919 Surry quad.



Figure 13. Detail of 1954 Claremont quad.

Agriculture remained the mainstay of Surry County's economy until the mid-20th century, but after World War II other industries, including timber, brick making, sand and gravel, ethanol, and marine construction, became increasingly important. Today the County is marked with small farmstead and crossroads towns. Quadrangle maps of the area drawn during the second half of the 20th century show no development (Figure 14).

Property History

The Spring Grove property, located on Route 10, consists of one parcel (Tax Map #12-29). This parcel can be traced through Surry County real estate records from the present to 1889 (Tables 1 - 7). In the first half of the 20th century, Albert Ochsner acquired six parcels of land in Surry County that included the project area. All the deeds for these transactions indicated that the properties were unencumbered at the time of the transfer.

In September 1951, Ochsner sold several parcels including the project area to the Continental Can Company. This Company merged with Spain Lumber Company to form the Continental Group, Inc., which sold the property to Continental Hopewell Woodlands, Inc. in January 1982. They retained the property for two years and in 1984 sold the property to KMI Continental Sawtimber, Inc. This Company retained the property for five years and in 1989 sold the property to Glawson Properties, Inc.

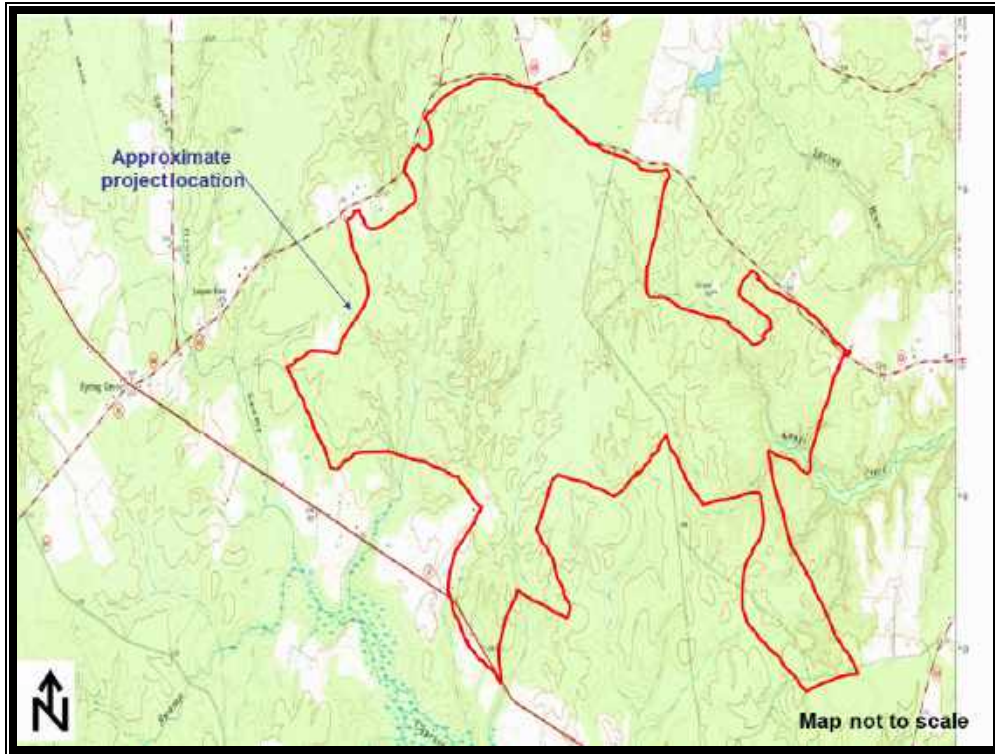


Figure 14. Detail of 1966 Claremont quad.

Glawson Properties, Inc. retained the property for less than a year and in 1990 sold the property to Earl Barrs. That same year, Barrs sold the property to the Spring Grove Land Association, who is listed in the Surry County real estate records as the current owners of Parcel 12-29.

Table 1. Deed Research for Spring Grove Property Tax Map #12-29.

Grantor	Grantee	Book/Page	Date
Earl D. Barrs	Spring Grove Land Association	117/658	7/16/1990
Glawson Properties, Inc.	Earl D. Barrs	116/233	2/14/1990
KMI Continental Sawtimber, Inc.	Glawson Properties, Inc.	115/536	12/19/1989
Continental Hopewell Woodlands, Inc.	KMI Continental Sawtimber, Inc.	99/683	12/31/1984
The Continental Group, formerly the Continental Can Company	Continental Hopewell Woodlands, Inc.	93/639	1/1/1982
Albert and Helen Kerr Ochsner	The Continental Can Company	51/601	9/25/1951

Table 2. Deed Research for Spring Grove Property, Bullards Tract.

Grantor	Grantee	Book/Page	Date
B. F. and Annie L. Holmes	A. H. Ochsner	35/151	6/29/1915
W. Stanley Burt and J. Gordon Bohannon, Special Commissioners (chancery suit L. B. Bullard vs. B. F. Holmes)	Benj. F. Holmes	34/593	7/24/1914
M. D. and Martha Fearear	L. B. Bullard	29/696	8/28/1902

Table 3. Deed Research for Spring Grove Property, Oakland Tract.

Grantor	Grantee	Book/Page	Date
R. E. Lewis, C. S. and Susie B. Lewis	A. H. Ochsner	33/641	5/27/1912
W. O. and Annye Moss Rogers	R. E. Lewis and C. S. Lewis	33/259	5/19/1911
Clara E. and David Hollenback	W. O. Rogers	33/166	2/18/1911
B. D. Edwards, Sheriff and administrator of Caleb P. Persing estate	Clara E. Hollenback	31/465	12/7/1906
Edward and C. A. Smith	Caleb Persing	23/798	4/18/1889

Table 4. Deed Research for Spring Grove Property, Floods Tract.

Grantor	Grantee	Book/Page	Date
Sarah Louise and Robert Phelps, Ruth and C. H. Hall, executors of will of John Saltmarsh	A. H. Ochsner	39/301	3/1/1927

Table 5. Deed Research for Spring Grove Property, Rogers Tract.

Grantor	Grantee	Book/Page	Date
W. O. Rogers **	Helen Kerr Ochsner	48/91	10/25/1946

** See Table 5 for additional information.

Table 6. Deed Research for Spring Grove Property, Gayle Tract.

Grantor	Grantee	Book/Page	Date
W. H. and Marjorie Gayle	Helen Kerr Ochsner	46/489	2/26/1945
Lora Stone Lovell, widow of Walter J. Lovell	W. H. Gayle (Gale)	46/268	6/17/1944
Daniel Stone	Alma Stone, Lora Stone Lovell, and Walter Lovell	39/305	12/2/1922
Frank Armistead, O. L. Shewmake, Thomas Howerton, R. W. Arnold, and W. Stanley Burt, Special Commissioners (chancery suit Anton Ujbely et. al. vs. James River Colonization Company)	Daniel Stone	37/751	2/5/1921
Daniel and Maria Stone	James River Colonization Company	36/234	3/29/1918

Table 7. Deed Research for Spring Grove Property, Arrington Tract.

Grantor	Grantee	Book/Page	Date
Oscar L. Shewmake, trustee	Albert Ochsner	41/24	12/7/1929

PREVIOUSLY-RECORDED CULTURAL RESOURCES

Circa~ performed an archival search for the Spring Grove property using the Virginia Department of Historic Resources (VDHR) online V-CRIS system on February 1, 2017 and updated the review November 18, 2017. This research was completed to determine if historic resources exist within the project area boundaries. The search identified two archaeological resources and 17 architectural resource within a one-mile radius of the

project area boundaries. Table 8 lists all the resources within one mile of the project area boundaries. Figures 15 and 16 show the approximate project area boundaries (yellow-shaded area) and resources within proximity. Any resources colored green on the map are within one mile of the project area boundaries. Of the resources identified, no archaeological resources and no architectural resources were identified within the project area.

In addition, two Phase I surveys have been completed to the northeast of the project area outside of the one-mile radius. Howard McCord and William T. Buchanan completed *An Archaeological Survey of Proposed Improvements to Virginia Route 31 and the James River Ferry Approaches in Charles City, James City, and Surry Counties* for the Virginia Department of Transportation (VDOT) in 1977. Timothy A. Thompson, Lori Cousins, Martha McCartney, and Sam Margolin completed a *Phase I Report on Cultural Resources: Route 31 Study – James River Crossing* in 1988 for Virginia Commonwealth University (VCU). Circa~ reviewed these survey areas in V-CRIS and noted 21 archaeological resources in Surry County within their survey borders. These sites include a mix of Native American and historic resources spread throughout their project areas to the north and east of the Circa~ project area.

Table 8. Resources Within a One-Mile Radius of Project Area Boundaries.

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation on V-CRIS Form
<i>Archaeological Resources</i>				
44SY0210	No date	Indeterminate site	Phase I survey 3/10/88 and 5/27/97	None made
44SY0211	Native American	Indeterminate site	Phase I survey 3/14/88	None made
<i>Architectural Resources</i>				
090-0010	ca. 1770	Floods, located on Route 610, site includes one house	Historic American Building Survey (HABS) 10/58	None made
090-0012	ca. 1724	Olde Glebe aka The Old Glebe aka Glebe House of Southwark Parish, 3700 Colonial Trail West, site includes one parsonage, one smokehouse, one barn, one secondary dwelling, and two sheds	HABS survey 10/58 Phase II survey 4/5/78 Phase I survey 7/7/17	Listed on the Virginia Landmark Register (VLR) 10/21/75 Listed on the National Register of Historic Places 5/17/76
090-0081	ca. 1860	Gregory House, located on Route 646, site includes one house, one shed, and one garage	Phase I survey 3/19/88	VDHR determined not eligible 10/11/88
090-5070	ca. 1950	Surry Hunt Club, 3526 Colonial Trail West, site includes one clubhouse, one shelter, one pole barn, and one animal shelter	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5071	ca. 1950	House, 3800 Colonial Trail West, site includes one house, one garage, and one shed	Phase I survey 7/7/17	Recommended not eligible 7/7/17

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation on V-CRIS Form
090-5072	ca. 1960	Mobile home, 3870 Colonial Trail West	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5073	ca. 1972	House, 4038 Colonial Trail West	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5074	ca. 1914	House, 4322 Colonial Trail West, site includes one house, one barn, three sheds, one well house, and one well	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5075	ca. 1901	House, 5104 Colonial Trail West, site includes one house, two barns, and one well	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5076	ca. 1960	Mobile home, 5777 Hollybush Road, site includes one mobile home, two pole barns, one shed, and seven silos	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5077	ca. 1964	House, 5899 Hollybush Road, site includes one house, one barn, one well house, and one well	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5078	ca. 1972	House, 6180 Hollybush Road, site includes one house, one garage, and one shed	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5079	ca. 1960	House, 6442 Hollybush Road, site includes one house, one shed, and one well house	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5080	ca. 1970	Mobile home, 6626 Hollybush Road, site includes one mobile home and two sheds	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5081	ca. 1972	House, 6678 Hollybush Road, site includes one house, one shed, and one well	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5082	ca. 1972	House, 6850 Hollybush Road	Phase I survey 7/7/17	Recommended not eligible 7/7/17
090-5086	ca. 1966	House, 5700 Beaverdam Road	Phase I survey 7/7/17	Recommended not eligible 7/7/17

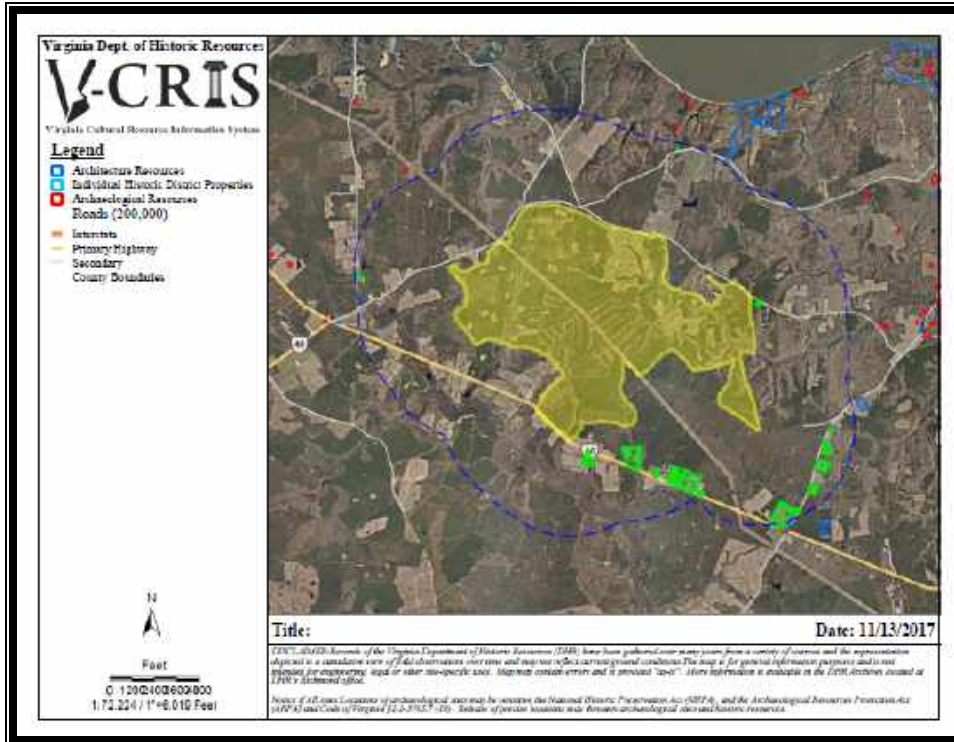


Figure 15. VDHR V-CRIS map showing previously-inventoried resources within a one-mile radius of the project location.

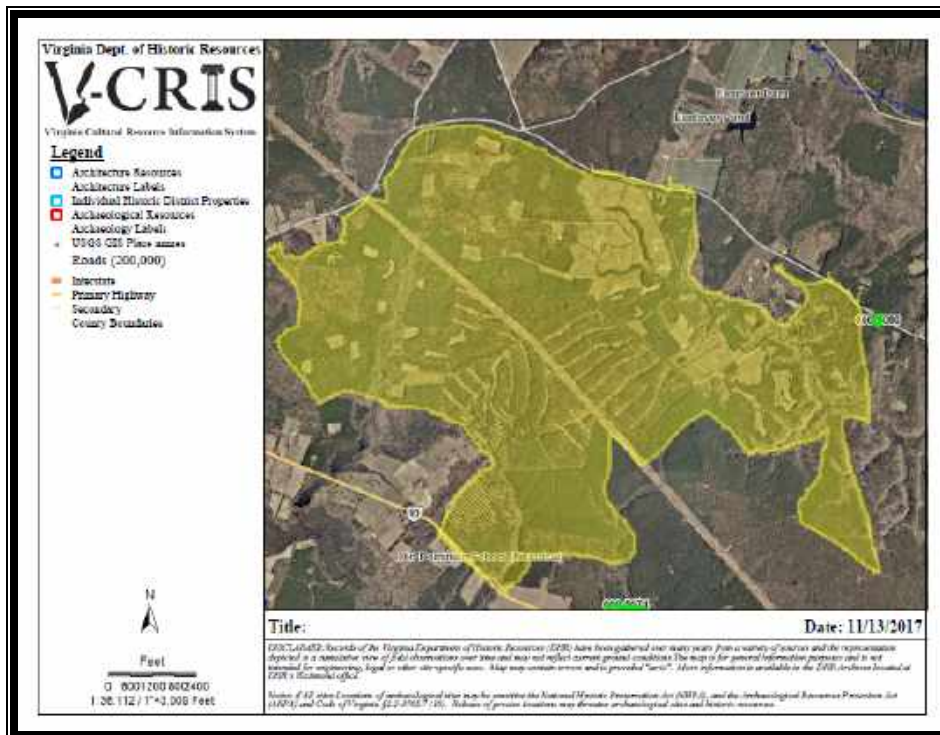


Figure 16. Detail view of VDHR V-CRIS map showing previously-inventoried resources within proximity to the project location.

RESULTS

Circa~ conducted a site visit and field survey of the project area in December 2017. The purpose of the field survey is to provide specific information concerning the location, nature, and distribution of architectural resources within the project area and the APE. The survey began with a review of the project area during which Circa~ identified three previously-identified architectural resources and 14 new architectural resources situated within the APE; none of the resources are situated directly within the project area boundaries (Figure 17). The resources were then mapped and recorded using the VDHR Reconnaissance Level Survey forms. Color digital photographs were taken of the exterior, where possible. Once the information had been collected, it was then entered into the VDHR V-CRIS system. See Appendix A for the completed V-CRIS forms. A brief description of each building is presented below.

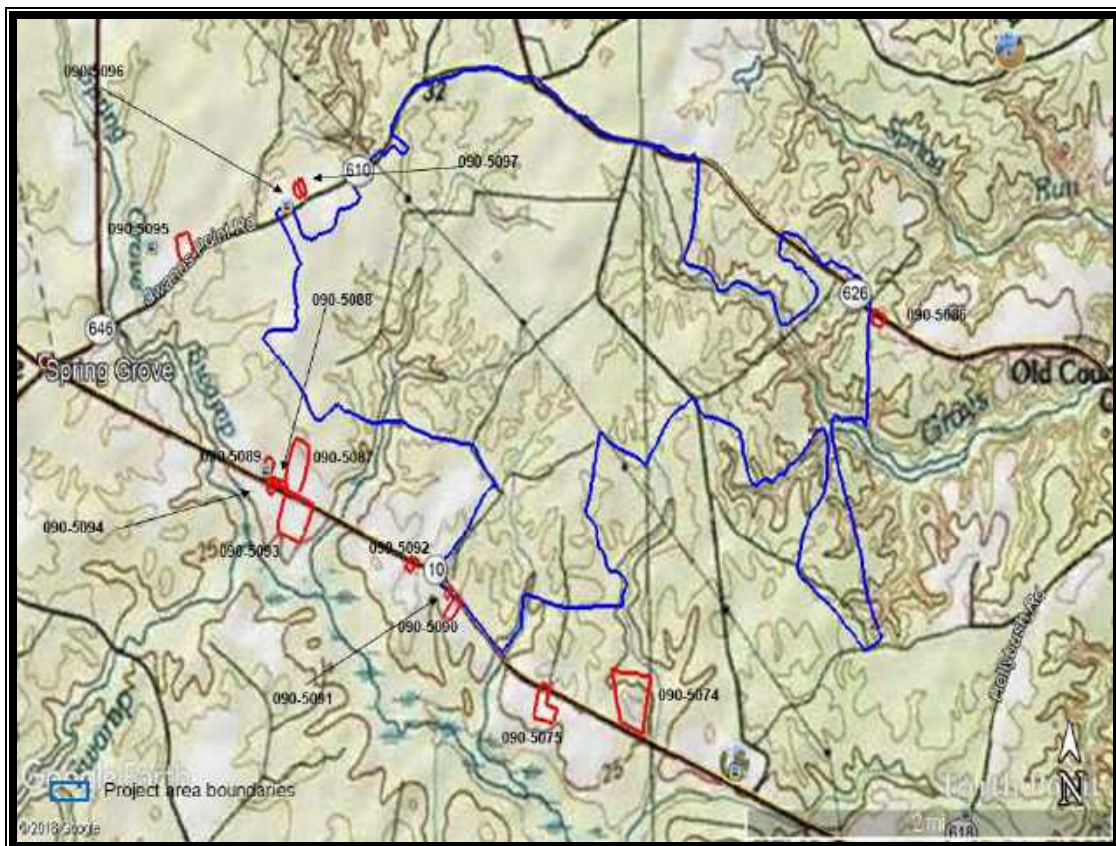


Figure 17. Map showing location of previously-identified and newly-identified architectural resources in red within the APE, which is outlined in blue.

Previously-Identified Architectural Resources

Site 090-5074, House, 4322 Colonial Trail West

On the north side of Colonial Trail West, there is a circa 1914 house with one barn, three sheds, one well house, and one well. Circa~ identified this resource during a Phase I survey in the fall of 2017. This building is situated on an approximately 69.00-acre

parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. A mowed lawn with mature trees and plantings surrounds the house (Figure 18). Facing south, the building is set on a fairly-level grade that slopes gently to the south. Many of the trees are planted in front of the house, partially obscuring the façade and making it difficult to discern specific construction materials. A review of the Surry County real estate records indicates that the building was built circa 1914. Given the vernacular style and use of concrete-block, composition siding, and standing-seam metal, this date is probably accurate.

House

This circa 1914, one-and-a-half-story, one-bay, side-gable, vernacular style, wood-frame house is clad in painted-white composition siding and rests on a concrete-block foundation with one central-interior Flemish-bond brick chimney (Plate 1). The roof is covered in standing-seam metal. There is a one-story, one-bay, shed roof, wood-frame screened-in porch. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations; some of the windows have been covered with plastic. The entrance on the façade is a single-leaf, wood-panel door with lights.

No changes have been made to this building since the previous survey.

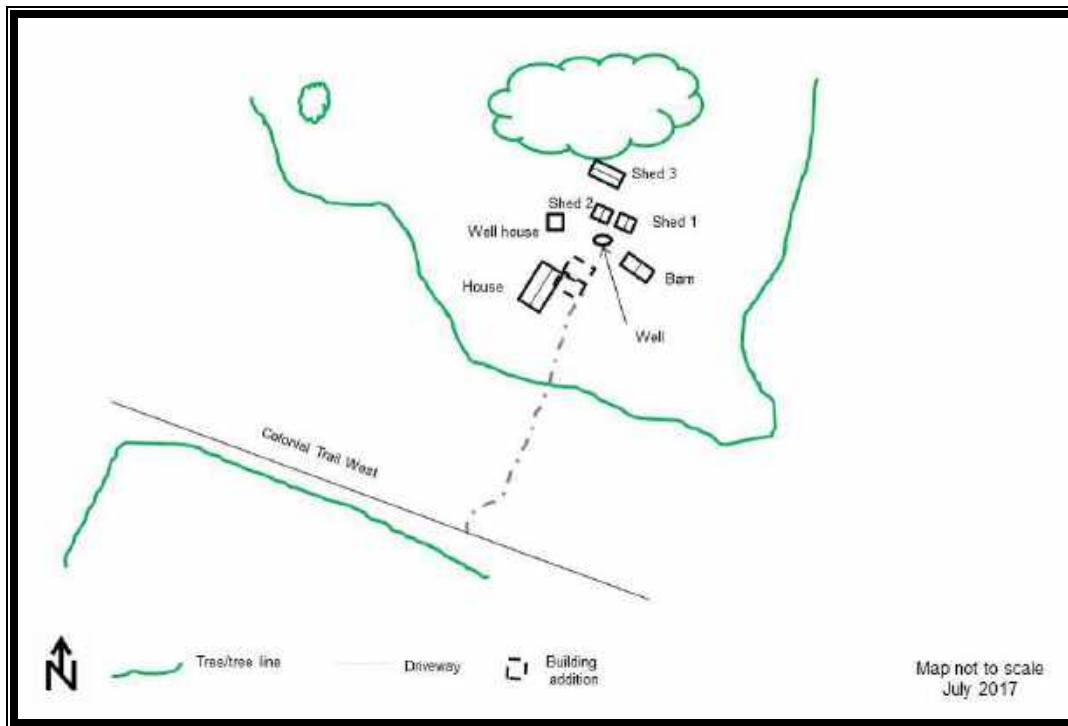


Figure 18. Site plan for Site 090-5074.



Plate 1. View of Site 090-5074, House, Façade and elevations, looking northwest.

There is a one-story, one-bay, front-gable, wood-frame addition attached to the façade clad in painted-white composition siding and resting on a concrete-block foundation (see Plate 1). The roof is covered in standing-seam metal with metal gutters and downspouts. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. No entrance is visible on the addition.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the north elevation of the addition clad in painted-white composition siding and resting on a concrete-block foundation (see Plate 1). The roof is covered in standing-seam metal. No windows are visible on the addition. The entrance on the addition is a single-leaf, wood-panel door.

Barn

To the northeast of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame barn clad in painted-red vertical wood siding (Plate 2). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal with overhanging eaves and exposed rafter tails. No windows are visible on the barn. The entrance on the façade is not visible.

No changes have been made to this building since the previous survey.



Plate 2. View of Site 090-5074, House and outbuildings, looking north.

Shed 1

To the north of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame shed clad in painted-red vertical wood siding (see Plate 2). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is a single-leaf, plywood door.

No changes have been made to this building since the previous survey.

Shed 2

To the north of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame shed clad in painted-red vertical wood siding (see Plate 2). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is a double-leaf, plywood door.

No changes have been made to this building since the previous survey.

Shed 3

To the north of the house, there is a circa 1914, one-story, multiple-bay, side-gable, wood-frame shed clad in wood siding (see Plate 2). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

No changes have been made to this building since the previous survey.

Well house

To the north of the house, there is a circa 1914, one-story, one-bay, shed roof, concrete-block well house resting partially below grade on a concrete-block foundation (see Plate 2). The roof is covered in asphalt shingles. No windows are visible on the well house. The entrance on the façade is not visible.

No changes have been made to this building since the previous survey.

Well

To the north of the house, there is a circa 1914, round, poured-concrete well resting slightly above grade (see Plate 2). The top is covered with a poured-concrete well cap.

No changes have been made to this well since the previous survey.

Site 090-5075, House, 5104 Colonial Trail West

On the south side of Colonial Trail West, there is a circa 1901 house with two barns and one well. Circa~ identified this resource during a Phase I survey in the fall of 2017. This building is situated on an approximately 97.5-acre parcel away from Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the house. Large open agricultural fields separate the house from Colonial Trail West. A mowed lawn with mature trees and plantings surrounds the house (Figure 19). Facing north, the building is set on a fairly-level grade that slopes gently to the north and west. A tree line is visible to the south and a wooden utility pole is situated along the driveway. A wood post and wire fence surrounds a portion of the property. A review of the Surry County real estate records indicates that the building was built circa 1901. Given the Colonial revival style and use of wood weatherboard, and standing-seam metal, this date is probably accurate.

House

This circa 1901, two-story, three-bay, side-gable, Colonial Revival style, wood-frame house is clad in painted-white wood weatherboard with two interior end Flemish-bond brick chimneys (Plate 3). The foundation is not visible due to mature foundation plantings. The roof is covered in standing-seam metal. There is a one-bay brick stoop under a shed roof pediment. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with lights.

No changes have been made to this building since the previous survey.

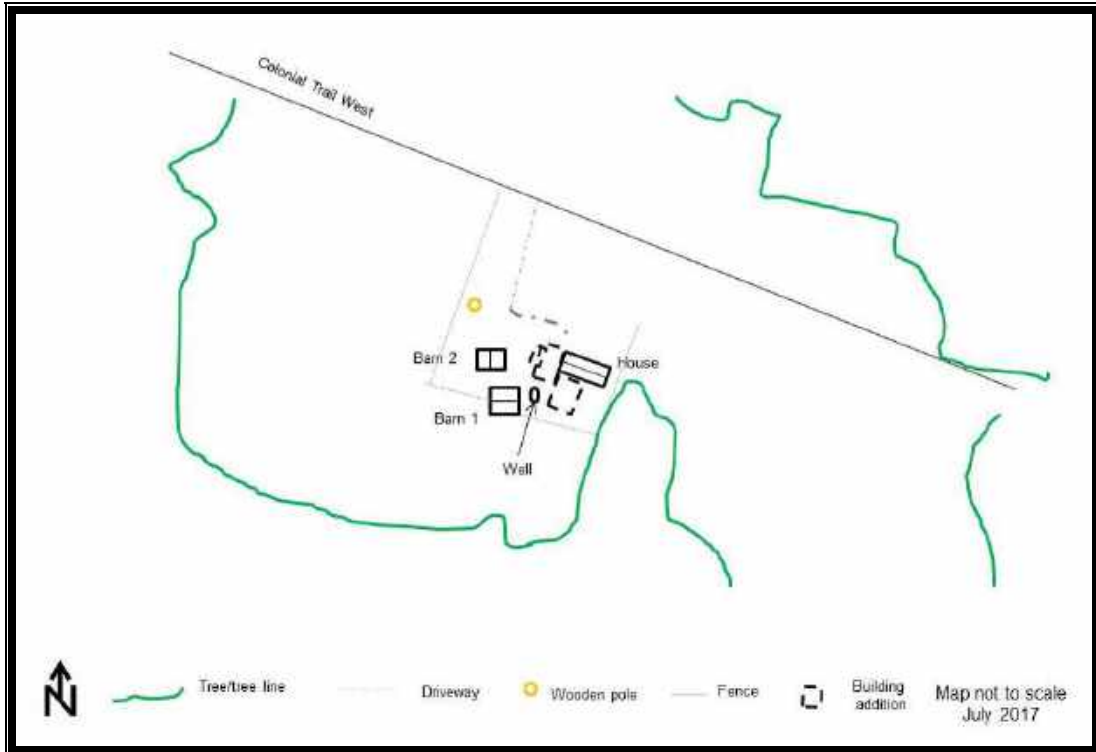


Figure 19. Site plan for Site 090-5075.



Plate 3. View of Site 090-5075, House, façade, looking south.

There is a two-story, one-bay, front-gable, wood-frame addition attached to the side (west) elevation clad in painted-white wood weatherboard and resting on a concrete-block foundation with two interior end Flemish-bond brick chimneys with corbelled caps (Plate 4). The roof is covered in standing-seam metal. There is a one-bay, poured-concrete stoop. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the rear (south) elevation clad in painted-white vertical wood siding with screening above, resting on a raised concrete-block foundation (Plate 5). The roof is covered in standing-seam metal. No windows are visible on the addition. The entrance on the addition is a single-leaf, screen door.

There is a one-story, two-bay, shed roof, wood-frame addition attached to the west elevation of the addition clad in painted-white wood weatherboard and resting on a concrete-block foundation (see Plate 5). The roof is covered in standing-seam metal. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door covered by a metal storm door.



Plate 4. View of Site 090-5075, House, additions, looking southeast.



Plate 5. View of Site 090-5075, House, additions, and Well, looking northeast.

Barn 1

To the southwest of the house, there is a circa 1901, one-story, three-bay, side-gable, wood-frame barn clad in vertical wood siding and resting on a concrete-block foundation (Plate 6). The siding is starting to deteriorate and has been removed in some places exposing the wood framing. The roof is covered in standing-seam metal. No windows are visible on the barn. The entrance on the façade consists of three double-leaf openings.

No changes have been made to this building since the previous survey.

Barn 2

To the southwest of the house, there is a circa 1901, one-story, two-bay, side-gable, wood-frame barn clad in wood siding and resting on a concrete-block pier foundation (see Plate 6). The roof is covered in standing-seam metal. There are window openings on the rear (west) elevation covered by hinged wood siding. The entrance on the façade is not visible.

No changes have been made to this building since the previous survey.

Well

To the north of the house, there is a circa 1901, round, poured-concrete well resting slightly above grade (see Plate 5). The top is covered with a poured-concrete well cap.

No changes have been made to this well since the previous survey.



Plate 6. View of Site 090-5075, Barns 1 and 2, looking southeast.

Site 090-5086, House, 5700 Beaverdam Road

On the south side of Beaverdam Road, there is a circa 1966 house. Circa~ identified this resource during a Phase I survey in the fall of 2017. This building is situated on an approximately 15.00-acre parcel away from Beaverdam Road with a single-lane gravel driveway leading from Beaverdam Road to the house. An unmaintained mowed lawn with mature trees and foundation plantings surrounds the house, which is situated in a clearing (Figure 20). Facing north, the building is set on a fairly-level grade that slopes gently to the north toward the road. A review of the Surry County real estate records indicates that the building was built circa 1966. Given the vernacular style and use of concrete-block, this date is probably accurate. The records also indicated three outbuildings on this parcel; however, these buildings were not accessible at the time and survey.

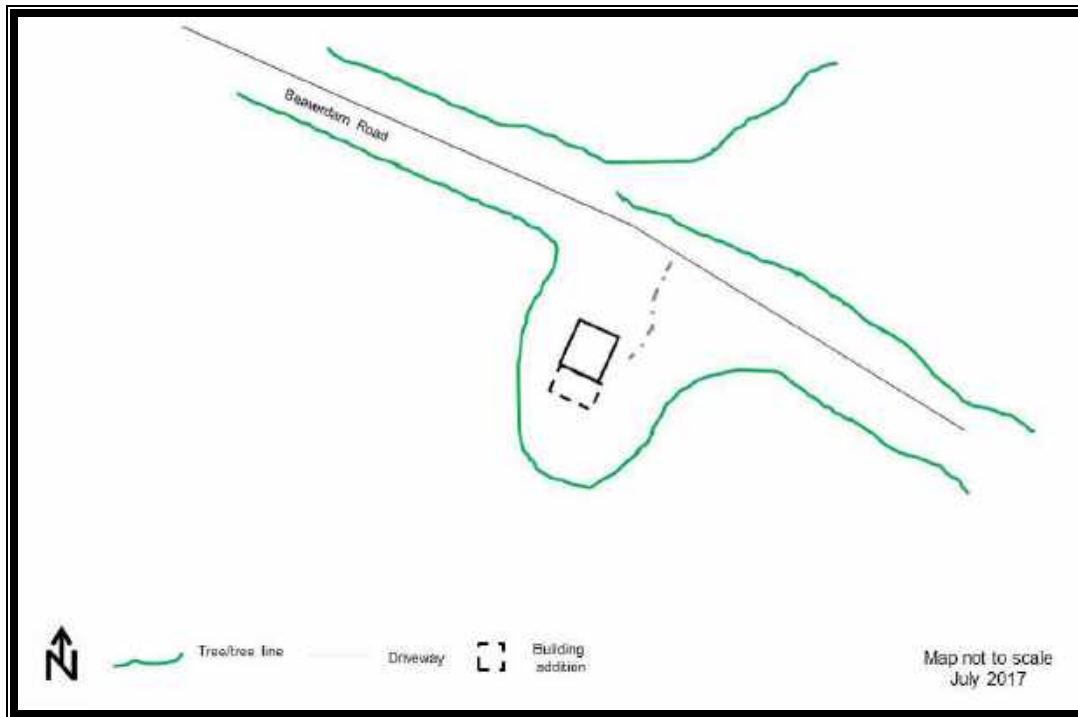


Figure 20. Site plan for Site 090-5086.

House

This circa 1966, one-story, five-bay, hipped roof, vernacular style, concrete-block house rests on a concrete-block foundation with one interior end concrete-block chimney with a corbelled cap and metal vent cap (Plate 7). The roof is covered in asphalt shingles with a boxed cornice and metal vent at the roof peak. There is a one-bay, poured-concrete stoop. Sash, double-hung, 1/1, metal-frame windows with brick sills are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with lights covered by a metal storm door.

There is a one-story, three-bay, shed roof, concrete-block addition attached to the rear (south) elevation resting on a concrete-block foundation (see Plate 7). The roof is covered in asphalt shingles with metal gutters and downspouts. Sash, double-hung, 1/1, metal-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door with lights covered by a metal storm door.

No changes have been made to this building since the previous survey.



Plate 7. View of Site 090-5086, House, looking southwest.

Newly-Identified Architectural Resources

Site 090-5087, House, 6426 Colonial Trail West Road

On the north side of Colonial Trail West, there is a circa 1900 farmstead with one house, four silos, one mobile home, one equipment shed, one pump house, one wood shed, two sheds, two pole barns, and one well. This building is situated on an approximately 50.00-acre parcel well away from Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the east of the house. Several single-lane gravel roads lead north of the end of the driveway between the outbuildings. Large open agricultural fields are visible to the east and west of the farmstead and a mowed lawn with mature trees and plantings surrounds the house (Figure 21). Facing southeast, the building is set on a fairly-level grade that slopes gently to the south and east. A tree line is visible to the north and west and a wooden utility pole is situated along the driveway with additional poles to the north of the house and adjacent to the silo cluster. Overhead utility lines run to the north of the house. There is a wood pole with a metal satellite dish attached visible at the southeastern corner of the house and above-ground storage tanks are situated on the eastern and western side of the house. A review of the Surry County real estate records indicates that the building was built circa 1900. Given the Colonial Revival style and use of composition siding, and concrete-block, this date is probably accurate.

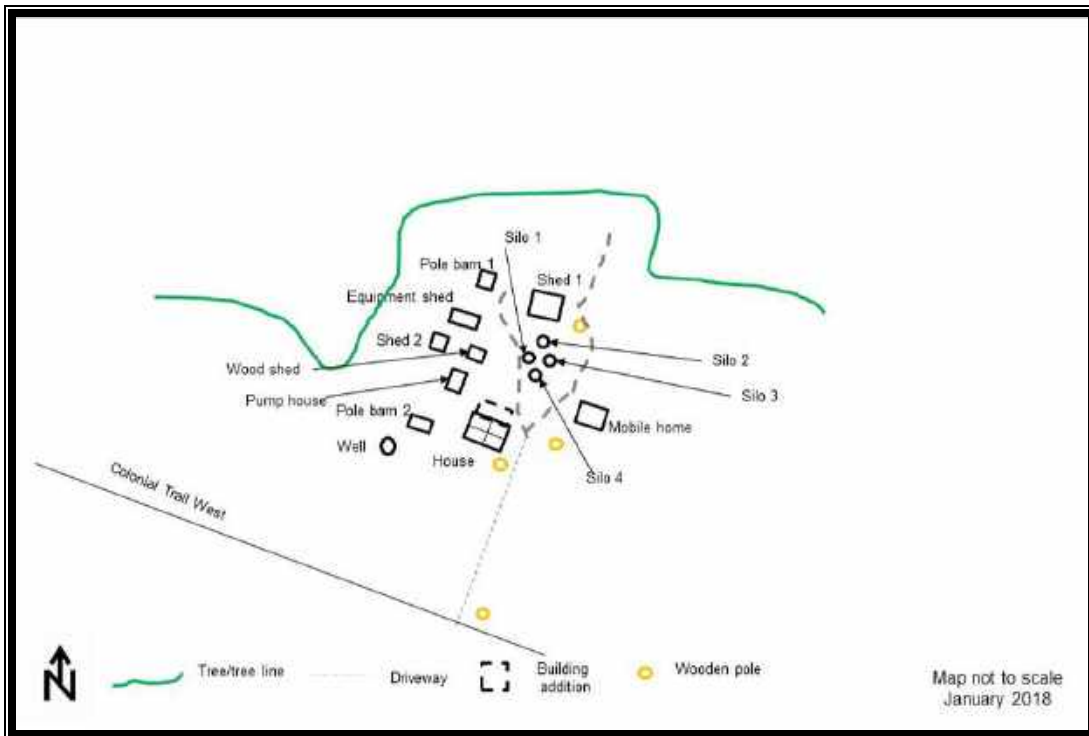


Figure 21. Site plan for Site 090-5087.

House

This circa 1900, two-story, three-bay, cross-gable, Colonial Revival style, wood-frame house is clad in painted-white composition siding and rests on a raised concrete-block foundation with an English basement with two interior end Flemish-bond brick chimneys with corbelled caps and one central interior Flemish-bond brick chimney (Plates 8 and 9). The roof is covered in asphalt shingles with cornice returns and a front-gable pediment in the center bay. There is a one-story, full-width, hipped roof enclosed porch with painted-white composition siding on the lower portion and screening above with sash, double-hung, 6/6, wood-frame windows on the western side. The porch is deteriorated. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations with one fixed, nine-light, diamond-shaped window in the central pediment. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, one-bay, hipped roof, wood-frame addition attached to the rear (north) elevation clad in painted-white composition siding and resting on a concrete-block pier foundation (Plate 10). The roof is covered in asphalt shingles with a boxed cornice. Sash, double-hung, 1/1, metal-frame windows are typical on the addition. No entrance is visible on the addition.



Plate 8. View of Site 090-5087, Farmstead complex, looking northwest.



Plate 9. View Site 090-5087, House, façade, looking north.



Plate 10. View of Site 090-5087, House, façade, side elevation, and addition, Equipment shed, Pump house, and Wood shed, looking northwest.

Silo 1

To the north of the house, there is a circa 1900, one-story, one-bay, pyramidal roof, metal-frame, round silos clad in metal siding (Plate 11). The foundation is not visible due to other buildings around the silo. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the façade is a single-leaf, metal door.

Silo 2

To the north of the house, there is a circa 1900, one-story, one-bay, pyramidal roof, metal-frame, round silos clad in metal siding (see Plate 11). The foundation is not visible due to other buildings around the silo. The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the facade.

Silo 3

To the north of the house, there is a circa 1900, one-story, one-bay, pyramidal roof, metal-frame, round silos clad in metal siding (see Plate 11). The foundation is not visible due to other buildings around the silo. The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the facade.



Plate 11. View of Site 090-5087, Silos 1 – 4, Equipment shed, Pole barn 1, and Shed 1, looking northwest.

Silo 4

To the north of the house, there is a circa 1900, one-story, one-bay, flat roof, metal-frame, round silos clad in metal siding with a conical base resting on metal supports resting on the ground (see Plate 11). The roof is covered in standing-seam metal with a conveyor belt at the roof line. A metal chute leads from the conveyor belt to the center of the roof. No windows are visible on the silo. No entrance is visible on the façade.

Mobile Home

To the east of the house, there is a circa 1960s, one-story, four-bay, side-gable, metal-frame mobile home clad in corrugated metal siding and resting partially on a metal trailer and partially on a Flemish-bond brick pier foundation (Plates 12 and 13). The mobile home is a double-wide trailer that is not fully attached in the center. The roof is covered in asphalt shingles. Single and paired, sash, double-hung, 6/6, metal-frame windows are typical on the façade and elevations. Some of the window panes have been broken and some are covered with plastic. A few of the windows are flanked by decorative painted-brown wood shutters. The entrance on the façade is a single-leaf, metal door with one light covered by a metal screen door.



Plate 12. View of Site 090-5087, Mobile home, facade, looking north.



Plate 13. View Site 090-5087, Mobile home, façade and side elevation, looking northwest.

Equipment Shed

To the northwest of the house, there is a circa 1900, one-story, multiple-bay, side-gable, wood-frame equipment shed resting on a round wood posts (Plate 14). The roof is covered in standing-seam metal with exposed rafter tails. The equipment shed is open on all sides.



Plate 14. View of Site 090-5087, House, Pole barn 1 and 2, Pump house, Wood shed, Shed 2, and Equipment shed, looking northeast.

Pump House

To the west of the house, there is a circa 1900, one-story, one-bay, front-gable, concrete-block pump house resting on a concrete-block foundation (Plate 15). The roof is covered in asphalt shingles. No windows are visible on the pump house. The entrance on the façade is a single-leaf, wood-panel door. A row of cinder blocks is stacked along the side (south) elevation.



Plate 15. View of Site 090-5087, House, façade, Pole barn 1 and 2, Pump house, Wood shed, Shed 2, and Equipment shed, looking west.

Wood Shed

To the west of the house, there is a circa 1900, one-story, multiple-bay, side-gable, wood-frame wood shed clad in wood siding and resting on a raised concrete-block foundation (see Plates 14 and 15). The roof is covered in standing-seam metal. No windows are visible on the wood shed. The entrance on the façade is not visible.

Shed 1

To the north of the house, there is a circa 1900, one-story, multiple-bay, side-gable, wood-frame shed clad in vertical wood siding (see Plate 11). The foundation is not visible due to other buildings situated around the shed. The roof is covered in standing-seam metal. No windows are visible on the shed. Several of the bays are open.

Shed 2

To the west of the house, there is a circa 1900, one-story, one-bay, shed roof, wood-frame shed clad in painted-white vertical wood siding and resting on a concrete-block foundation (see Plates 14 and 15). The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

Pole Barn 1

To the northwest of the house, there is a circa 1900, one-story, one-bay, side-gable, wood-frame pole barn resting on the ground (see Plates 14 and 15). The pole barn is open on all sides. The roof is covered in asphalt shingles.

Pole Barn 2

To the west of the house, there is a circa 1900, one-story, one-bay, side-gable, wood-frame pole barn resting on the ground (see Plates 14 and 15 and 16). The pole barn is open on all sides. The roof is covered in asphalt shingles.



Plate 16. View of Site 090-5087, Pole barn 2, Well, Pump house, Wood shed, Shed 2, Equipment Shed, and Silos 1 – 4, looking north.

Well

To the southwest of the house, there is a circa 1900, round, poured-concrete well resting slightly above grade (see Plate 16). A poured-concrete well cap covers the top of the well.

Site 090-5088, House, 6478 Colonial Trail West Road

On the north side of Colonial Trail West, there is a circa 1950s house with one garage and one well. This building is situated on an approximately 0.77-acre parcel very close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the west of the house. A mowed lawn with scattered mature trees surrounds the house (Figure 22). Facing south, the building is set on a fairly-level grade that slopes gently to the south. An above-ground storage tank is situated on the eastern side of the house. A review of the Surry County real estate records did not indicate a construction date for the house. However, given the Minimal Traditional style and use of composition siding and concrete-block, the building was probably built in the 1950s.

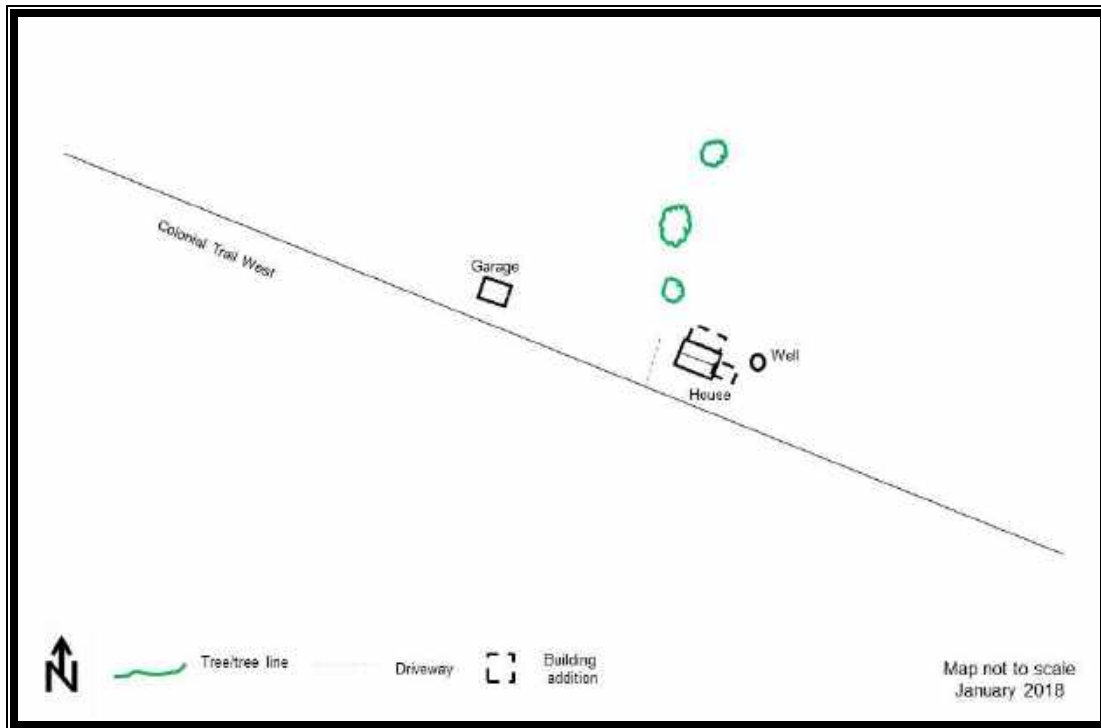


Figure 22. Site plan for Site 090-5088.

House

This circa 1950s, one-story, three-bay, side-gable, Minimal Traditional style, wood-frame house is clad in painted-gray composition siding and rests on a raised concrete-block foundation (Plate 17). The roof is covered in asphalt shingles with overhanging eaves and metal gutters and downspouts. There is a one-story, three-bay, wood porch under a shed roof supported by square painted-white wood posts. Sash, double-hung, 6/6, metal-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with a fanlight.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the rear (north) elevation clad in painted-gray composition siding and resting on a raised concrete-block foundation (Plate 18). The roof is covered in asphalt shingles. Sash, double-hung, 4/4, metal-frame windows are typical on the addition. No entrance is visible on the addition.

There is a one-half-story, one-bay, shed roof, concrete-block addition attached to the side (east) elevation resting on a concrete-block foundation (Plate 19). The roof is covered in asphalt shingles. No windows are visible on the addition. No entrance is visible on the addition.



Plate 17. View Site 090-5088, House, façade, looking north.



Plate 18. View of Site 090-5088, House, façade, side elevation, and addition, looking east.



Plate 19. View of Site 090-5088, House, side elevation and additions, Garage, and Well, looking west.

Garage

To the west of the house, there is a circa 1950s, one-and-a-half-story, one-bay, front-gable, concrete-block garage with painted-gray wood siding on the gable end resting on a concrete-block foundation (see Plate 19 and 20 and 21). The roof is covered in standing-seam metal with a metal vent near the façade. Fixed, one-light, wood-frame windows are typical on the façade and elevations with one sash, double-hung, 6/6, wood-frame window in the rear (west) gable end. The entrance on the façade is a double-leaf, sliding plywood door. There is a double-leaf, wood-panel door in the façade gable end. There is a single-leaf, wood door on the side (south) elevation.

Well

To the east of the house, there is a circa 1950s, round, concrete-block well resting above grade (see Plate 19). A poured-concrete well cap covers the top of the well.



Plate 20. View of Site 090-5088, Garage, façade and side elevation, looking west.



Plate 21. View of Site 090-5088, Garage, rear elevation looking east.

Site 090-5089, House, 6594 Colonial Trail West Road

On the north side of Colonial Trail West, there is a circa 1930 house with two sheds. This building is situated on an approximately 10.00-acre parcel away from Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the west of the house. A mowed lawn with mature trees and plantings surrounds the house (Figure 23). Facing south, the building is set on a fairly-level grade that slopes gently to the south. A tree line is visible to the north and west and a wooden utility pole is situated along the driveway with additional poles to the west of the house. There is a metal satellite dish visible to the west of the house and an above-ground storage tank is situated on the eastern side of the house. Abandoned vehicles are scattered throughout the property. A review of the Surry County real estate records indicates that the building was built circa 1930. Given the Colonial Revival style and use of composition siding, Flemish-bond brick patterns, and concrete-block, this date is probably accurate.

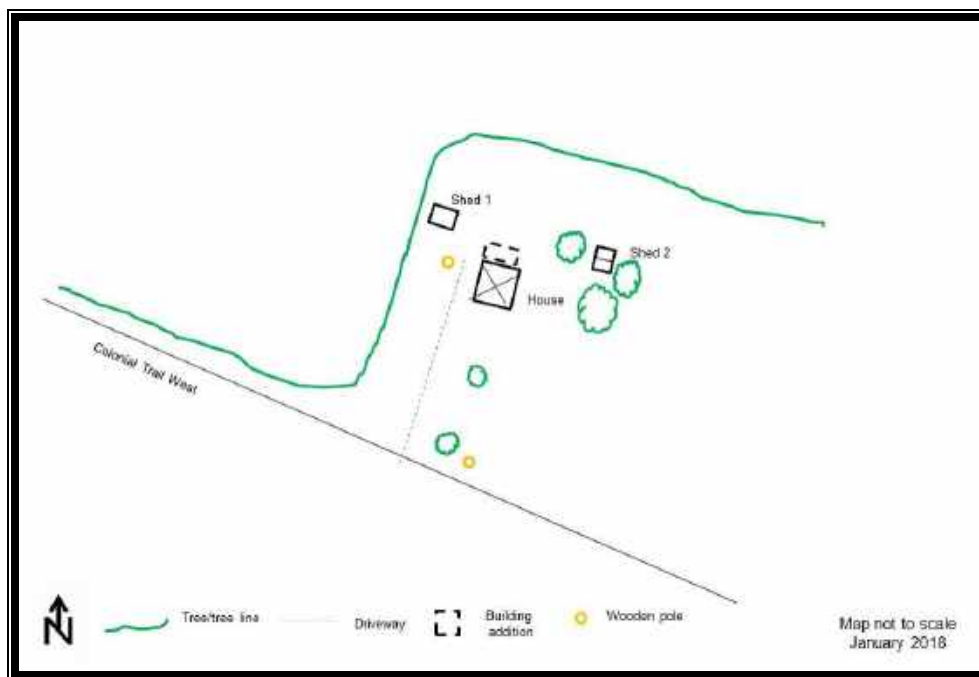


Figure 23. Site plan for Site 090-5089.

House

This circa 1930, two-and-a-half-story, two-bay, hipped roof, Colonial Revival style, foursquare form, wood-frame house is clad in painted-white composition siding and rests on a Flemish-bond brick pier foundation with one central interior concrete-block chimney with a corbelled cap (Plate 22). The roof is covered in standing-seam metal with one hipped roof dormer on the façade slope. The dormer has one fixed, one-light, wood-frame window. There is a one-story, full-width, wood porch under a hipped roof supported by square painted-white wood posts resting on painted-blue concrete-block pillars. Two poured-concrete steps lead from the porch to the front yard. Paired, sash, double-hung, 4/1, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door covered by a metal storm door.



Plate 22. View of Site 090-5089, House, façade, and Shed 1, looking north.

There is a one-story, one-bay, flat roof, wood-frame addition attached to the rear (north) elevation clad in painted-white composition siding and rests on a Flemish-bond brick pier foundation (Plate 23). The roof is covered in standing-seam metal. Paired, sash, double-hung, 4/1, wood-frame windows are typical on the addition. No entrance is visible on the addition.

Shed 1

To the west of the house, there is a circa 1930, one-story, one-bay, shed roof, wood-frame shed clad in vertical wood siding and resting on a concrete-block foundation (see Plate 22 and 24). The roof is covered in asphalt shingles with a boxed cornice. No windows are visible on the shed. The entrance on the façade is not visible.

Shed 2

To the east of the house, there is a circa 1930, one-story, one-bay, side-gable, wood-frame shed clad in wood siding (Plate 25). The foundation is not visible due to overgrown vegetation. The shed is almost completely covered in overgrowth and is starting to collapse. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is not visible.



Plate 23. View of Site 090-5089, House, façade, side elevation, and addition, and Shed 1, looking northwest.



Plate 24. View of Site 090-5089, Shed 1, façade and side elevation, looking north.



Plate 25. View of Site 090-5089, Shed 2, looking north.

Site 090-5090, House, 5407 and 5433 Colonial Trail West Road

On the south side of Colonial Trail West, there is a circa 1930s house with one barn, one shed, and one well. This building is situated on an approximately 49.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. Large open agricultural fields are visible to the south and east of the house and a mowed lawn surrounds the house with a large overgrown shrub at the northwestern corner of the house (Figure 24). Facing northeast, the building is set on a fairly-level grade that slopes gently to the east. A tree line is visible to the south and west and a wooden utility pole is situated to the north of the house with overhead utility lines to the northeast of the house and parallel to Colonial Trail West. An above-ground storage tank is situated on the southern side of the house. A review of the Surry County real estate records did not indicate a construction date for the house. However, given the Colonial Revival style and use of composition siding, and concrete-block, the building was probably built in the 1930s.

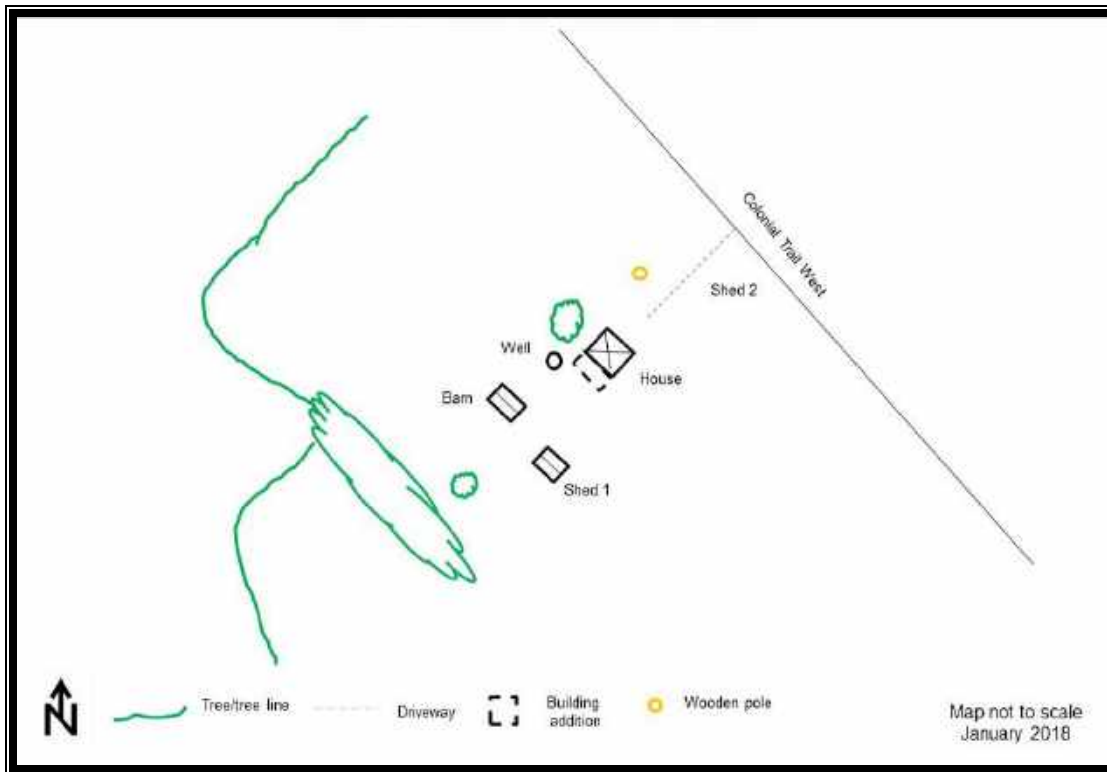


Figure 24. Site plan for Site 090-5090.

House

This circa 1930s, two-story, two-bay, hipped roof, Colonial Revival style, foursquare form, wood-frame house is clad in painted-white composition siding and rests on a concrete-block foundation with one central interior concrete-block chimney with a corbelled cap (Plate 26). The roof is covered in standing-seam metal with metal gutters and downspouts. There is a one-story, full-width, hipped roof porch enclosed with painted-white composition siding and screening. Two poured-concrete steps lead from the porch to the front yard. Sash, double-hung, 6/6, wood-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the rear (south) elevation clad in painted-white composition siding and resting on a concrete-block foundation (Plates 27 and 28). The roof is covered in standing-seam metal. No windows are visible on the addition. No entrance is visible on the addition.



Plate 26. View of Site 090-5090, House, facade, Barn, and Shed, looking south.



Plate 27. View of Site 090-5090, House, side elevation and addition, Barn, side elevation, and Well, looking southeast.



Plate 28. View of Site 090-5090, House, façade, side elevation, and addition, and Barn, façade and side elevation, looking southwest.

Barn

To the southwest of the house, there is a one-story, one-bay, front-gable, concrete-block barn resting on a concrete-block foundation (see Plates 27, 28, and 29). The roof is covered in standing-seam metal with overhanging eaves and exposed rafter tails. The roof is starting to deteriorate, and vines are starting to overtake a portion of the roof. No windows are visible on the façade; fixed, nine-light, metal-frame windows are typical on the side (north and south) elevations. The entrance on the façade is a double-leaf, vertical wood panel door.

Shed

To the south of the house, there is a one-story, one-bay, front-gable, wood-frame shed clad in vertical wood siding and resting on a poured-concrete slab-on-grade foundation (see Plate 29). The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is not visible.

Well

To the southwest of the house, there is a circa 1930s, round, poured-concrete well resting slightly above grade (see Plate 27). A poured-concrete well cap and plywood sheet covers the top of the well.



Plate 29. View of Site 090-5090, House, side elevation and addition, Barn, façade and side elevation, and Shed, looking southwest.

Site 090-5091, House, 5459 Colonial Trail West Road

On the south side of Colonial Trail West, there is a circa 1964 house with two sheds. This building is situated on an approximately 1.00-acre parcel away from Colonial Trail West. Large open agricultural fields are visible to the east of the house and a mowed lawn with mature trees and plantings surrounds the house (Figure 25). Facing northeast, the building is set on a fairly-level grade with a tree line visible to the south and west. A modern metal chain link fence runs along the eastern and southern sides of the property and wooden utility poles are situated along Colonial Trail West with overhead utility lines running parallel to Colonial Trail West. There is a wood pole with a mercury vapor light attached visible at the western side of the house and an above-ground storage tank is situated on the northeastern side of the house. A review of the Surry County real estate records indicates that the building was built circa 1964. Given the vernacular style and use of composition siding, and concrete-block, this date is probably accurate.

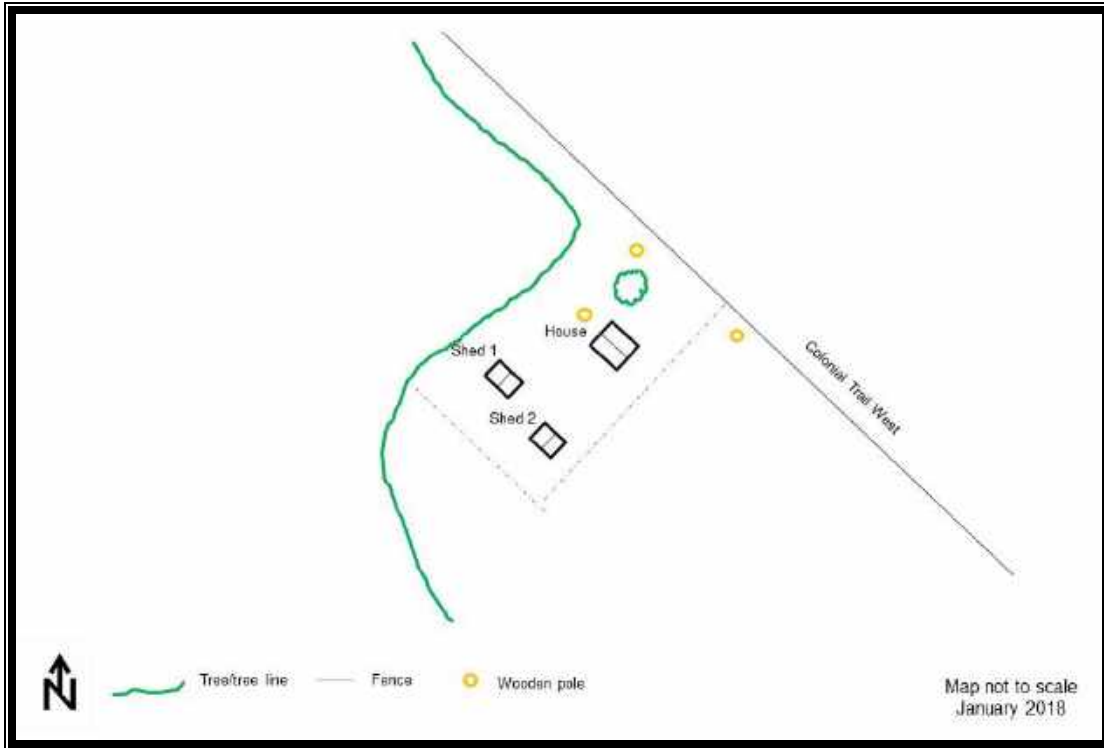


Figure 25. Site plan for Site 090-5091.

House

This circa 1964, one-story, three-bay, side-gable, vernacular style, wood-frame house is clad in painted-beige composition siding and rests on a raised concrete-block foundation with one central interior Flemish-bond chimney (Plate 30). The center bay projects under a front-gable. The roof is covered in asphalt shingles with overhanging eaves and metal gutters and downspouts. Sash, double-hung, 2/2, metal-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. There is one picture window on the façade that consists of one fixed, one-light, metal-frame window flanked by sash, double-hung, 2/2, metal-frame windows flanked by painted black wood shutters. Paired, sash, double-hung, 1/1, metal-frame windows are typical on the elevations. Fixed, one-light, metal-frame windows flank the entrance on the façade. The entrance on the façade is a single-leaf, wood-panel door with lights covered by a metal storm door.



Plate 30. View of Site 090-5091, House, façade, and Shed 1, looking south.

Shed 1

To the south of the house, there is a circa 1964, one-story, one-bay, front-gable, concrete-block shed resting on a concrete-block foundation (see Plate 30). The roof is covered in asphalt shingles. Sash, double-hung, 1/1, metal-frame windows are typical on the side (north and south) elevations. The entrance on the façade is a single-leaf opening.

Shed 2

To the southwest of the house, there is a circa 1964, one-story, one-bay, front-gable, concrete-block shed resting on a concrete-block foundation (Plate 31). The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a single-leaf, vertical wood plank door.

Site 090-5092, House, 5717 Colonial Trail West Road

On the south side of Colonial Trail West, there is a circa 1900 house with one garage and one well house. This building is situated on an approximately 4.81-acre parcel close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the north of the house. A mowed lawn with scattered mature trees and plantings surround the house (Figure 26). Facing north, the building is set on a fairly-level grade that slopes gently to the north. A metal flag pole resting on a raised poured-concrete base is visible in the front yard and a wooden utility pole is situated along the driveway with overhead utility lines running parallel to Colonial Trail West. A review of the Surry County real estate records indicates that the building was built circa 1900. Given the Colonial Revival style and use of wood weatherboard, and concrete-block, this date is probably accurate.



Plate 31. View of Site 090-5091, House, façade and side elevation, and Shed 2, looking southeast.

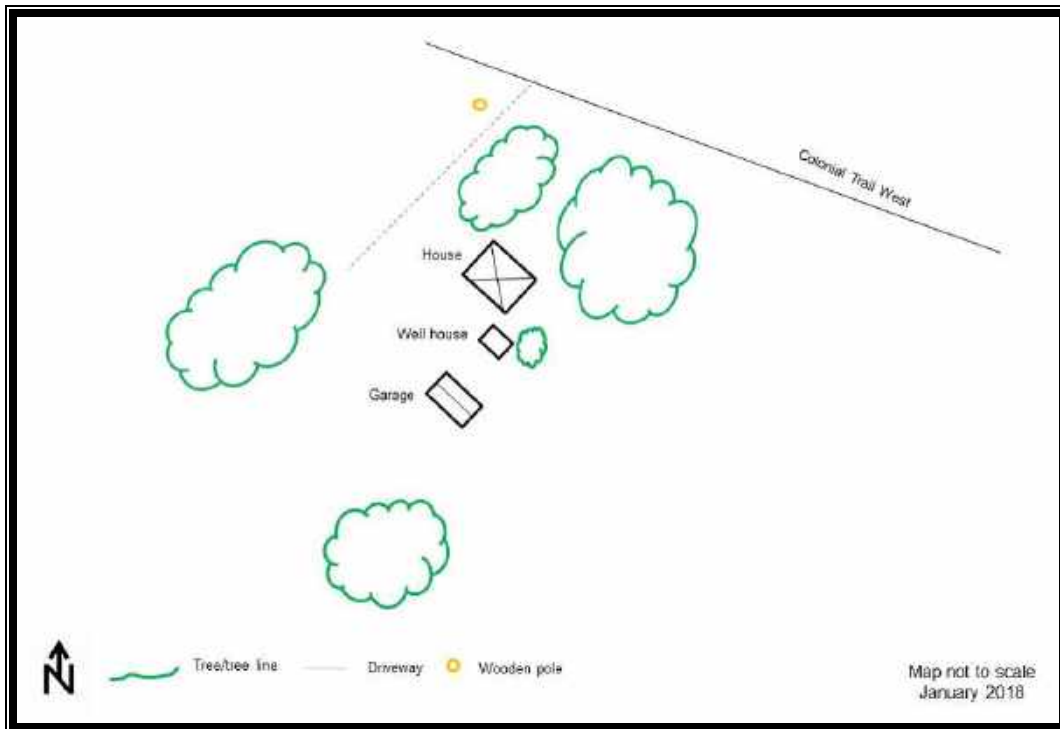


Figure 26. Site plan for Site 090-5092.

House

This circa 1900, two-story, three-bay, hipped roof, Colonial Revival style, wood-frame house is clad in painted-blue wood weatherboard and rests on a concrete-block foundation with two interior end Flemish-bond brick chimneys with corbelled caps (Plate 32). The roof is covered in standing-seam metal with overhanging eaves. There is a one-story, full-width, poured-concrete porch under a hipped roof supported by tapered painted-white wood posts resting on Flemish-bond brick piers. Two Flemish-bond brick steps lead from the porch to the front yard. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with lights.



Plate 32. View of Site 090-5092, House, facade, looking south.

Garage

To the south of the house, there is a circa 1900, one-story, one-story, one-bay, front-gable, wood-frame garage clad in wood siding and resting on a raised concrete-block foundation (Plates 33 and 34). The roof is covered in asphalt shingles. No windows are visible on the façade; sash, double-hung, 4/4, metal-frame windows are typical on the side (north and south) elevations. The entrance on the façade is a roll-up metal garage door.



Plate 33. View of Site 090-5092, Garage, facade, looking south.



Plate 34. View of Site 090-5092, Garage, side elevation, and Well house, looking southwest.

Well House

To the south of the house, there is a circa 1900, one-story, one-bay, shed roof, concrete-block well house resting on a concrete-block foundation (Plate 35). The roof is covered in standing-seam metal. No windows are visible on the well house. The entrance on the façade is not visible.



Plate 35. View of Site 090-5092, House, façade and side elevation, and Well house, looking southwest.

Site 090-5093, House, 6379 Colonial Trail West Road

On the south side of Colonial Trail West, there is a circa 1910 house with one barn and one shed. This building is situated on an approximately 26.00-acre parcel away from Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the south of the house. Open fields are visible to the east and west of the house and a mowed lawn with scattered mature trees and plantings surround the house, some partially obscuring the façade from view (Figure 27). Facing north, the building is set on a fairly-level grade that slopes gently to the north with a tree line to the south. A wooden utility pole is situated at the western edge of the property along Colonial Trail West with overhead utility lines running parallel to Colonial Trail West. There is a second wooden utility pole on the eastern side of the house. A review of the Surry County real estate records indicates that the building was built circa 1910. Given the vernacular style and use of wood weatherboard, and concrete-block, this date is probably accurate.

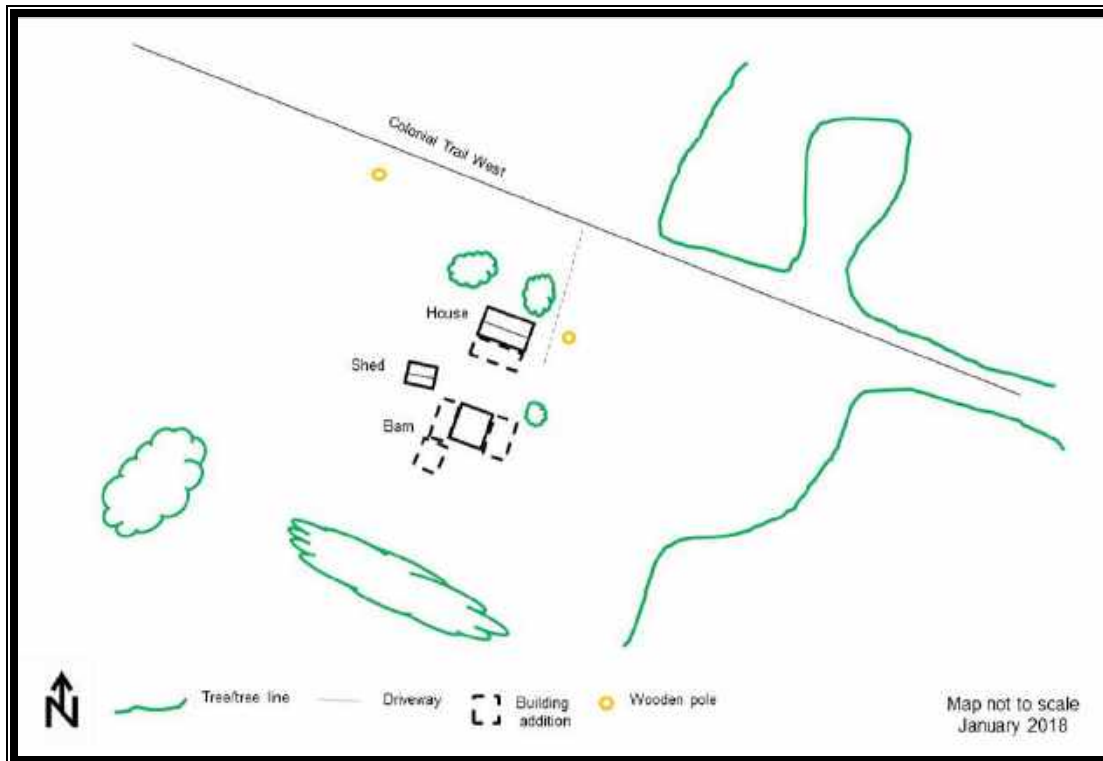


Figure 27. Site plan for Site 090-5093.

House

This circa 1910, two-story, five-bay, side-gable, vernacular style, wood-frame house is clad in painted-white wood weatherboard and rests on a concrete-block foundation with one exterior end Flemish-bond brick chimney with a corbelled cap (Plate 36). The roof is covered in standing-seam metal with cornice returns with a metal weather vane in the center of the roofline. There is a one-story, two-bay, screened-in porch under a hipped roof. Sash, double-hung, 6/6, wood-frame and sash, double-hung, 4/1, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door covered by a wooden screen door.

There is a one-story, five-bay, side-gable, wood-frame addition attached to the rear (south) elevation clad in painted-white wood weatherboard and resting on a concrete-block foundation with one central interior Flemish-bond brick chimney with a corbelled cap (Plates 37 and 38). The roof is covered in standing-seam metal with overhanging eaves. Single and triple, sash, double-hung, 1/1, wood-frame windows and paired, sash, double-hung, 6/6 wood-frame and paired, sash, double-hung, 3/1, wood-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door covered by a wooden screen door.



Plate 36. View of Site 090-5093, House, facade, looking south.



Plate 37. View of Site 090-5093, House, facade, side elevation, and addition, looking southeast.



Plate 38. View of Site 090-5093, House, façade, side elevation and addition, Barn, and Shed, looking southwest.

Barn

To the south of the house, there is a circa 1910, one-and-a-half-story, one-bay, gambrel roof, wood-frame barn clad in wood siding and resting on a concrete-block pier foundation (Plate 39). The roof is covered in standing-seam metal with exposed rafter tails. No windows are visible on the shed apart from one fixed, one-light, wood-frame eyebrow window in the gable end. The entrance on the façade is a double-leaf, vertical wood plank door.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (east) elevation clad in wood siding and resting on a concrete-block pier foundation (see Plate 39). The roof is covered in standing-seam metal. No windows are visible on the addition. The northern elevation of the addition is open.

There is a one-story, five-bay, shed roof, wood-frame addition attached to the side (west) elevation clad in wood siding and resting on a concrete-block foundation (see Plate 39). The roof is covered in standing-seam metal with exposed rafter tails. Fixed, one-light, wood-frame windows are typical on the addition. The entrance on the addition consists of two paired, single-leaf openings.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the south elevation of the addition clad in wood siding and resting on a concrete-block foundation (see Plate 39). The roof is covered in standing-seam metal. The top half of the addition is open on three sides.



Plate 39. View of Site 090-5093, Barn, façade, side elevation, and additions, looking southeast.

Shed

To the southwest of the house, there is a circa 1910, one-story, one-bay, front-gable, wood-frame shed clad in painted-white vertical wood siding (Plate 40). The foundation is not visible due to the building's placement on the landscape. The roof is covered in asphalt shingles with overhanging eaves. No windows are visible on the shed. The entrance on the façade is a double-leaf, vertical wood plank door.

Site 090-5094, House, 6547 Colonial Trail West Road

On the south side of Colonial Trail West, there is a circa 1952 house with one shed and one secondary dwelling. This building is situated on an approximately 17.46-acre parcel with the main house away from Colonial Trail West and the secondary dwelling close to Colonial Trail West. A grass strip and overgrown bushes separate the secondary dwelling from Colonial Trail West. A single-lane dirt driveway leading from Colonial Trail West to the house. A mowed lawn with scattered mature trees and plantings surround the house (Figure 28). Facing north, the building is set on a fairly-level grade with open fields to the east and west of the house. A wooden utility pole is situated along the driveway with overhead utility lines running parallel to Colonial Trail West. There is a second wooden utility pole to the east of the house. A review of the Surry County real estate records indicates that the building was built circa 1952. Given the Minimal Traditional style and use of composition siding, and concrete-block, this date is probably accurate.



Plate 40. View of Site 090-5093, House, façade and side elevation, Barn, and Shed, looking southwest.

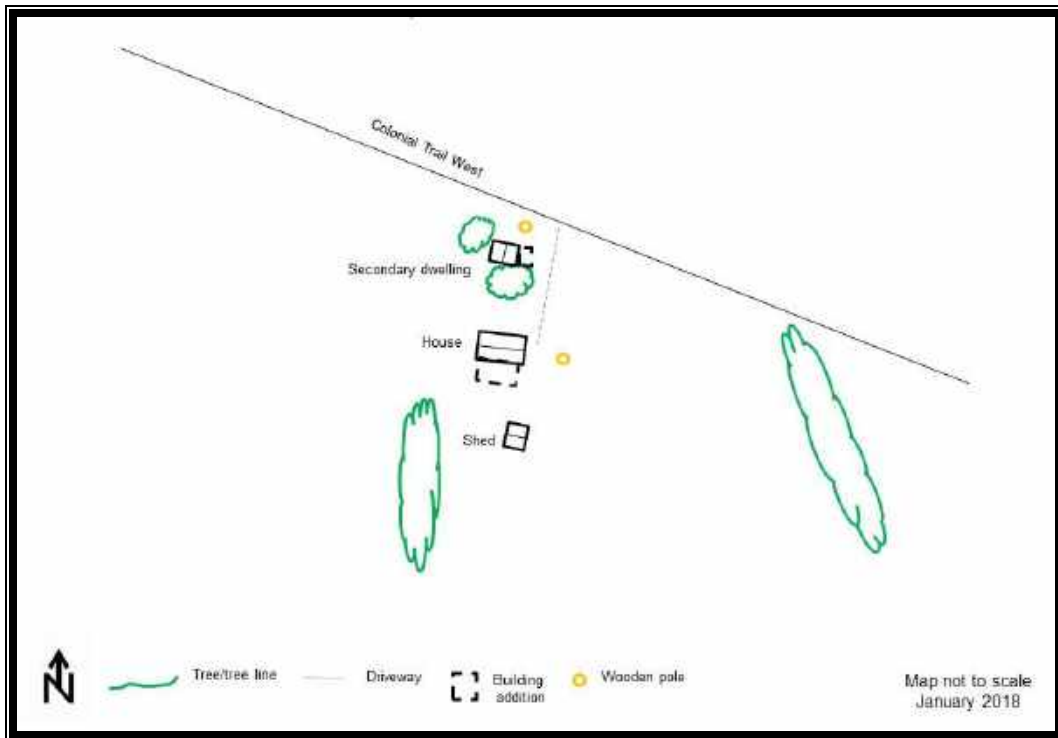


Figure 28. Site plan for Site 090-5094.

House

This circa 1952, one-story, three-bay, side-gable, Minimal Traditional style, wood-frame house is clad in painted-white composition siding and rests on a raised concrete-block foundation with two interior end Flemish-bond brick chimneys with corbelled caps (Plates 41 and 42). The roof is covered in asphalt shingles. There is a one-story, three-bay, wood porch under a shed roof supported by tapered painted-white wood posts. The porch was enclosed at one time with paired, sash, double-hung, 1/1, metal-frame windows still visible on the northern end of the porch. Single and paired, sash, double-hung, 4/4, wood-frame and sash, double-hung, 2/2, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.



Plate 41. View of Site 090-5094, entrance to site, looking south.



Plate 42. View of Site 090-5094, House, façade, side elevation, and addition, and Shed, looking southwest.

There is a one-story, two-bay, shed roof, wood-frame addition attached to the rear (south) elevation clad in painted-white composition siding and resting on a raised concrete-block foundation (see Plate 42). The roof is covered in asphalt shingles with metal gutters. Sash, double-hung, 2/2, metal-frame windows are typical on the addition. No entrance is visible on the addition.

Shed

To the south of the house, there is a circa 1952, one-story, one-bay, side-gable, concrete-block shed resting on a concrete-block foundation (see Plate 42). The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

Secondary Dwelling

To the northwest of the house, there is a circa 1900, one-and-a-half-story, three-bay, front-gable, wood-frame house clad in peeling painted-white wood weatherboard and resting on a concrete-block foundation with one central interior Flemish-bond brick chimney with a corbelled cap (Plate 43). The building is starting to collapse, and overgrowth is starting to overtake the building. The roof is covered in standing-seam metal. There is a one-story, full-width wood porch under a shed roof that has collapsed. The shed roof was once supported by peeling painted-white square wood posts. The wood framing is exposed where the roof was once attached to the main block of the building. Sash, double-hung, 4/4, wood-frame windows are typical on the façade and elevations; many of the window panes are missing. The entrance on the façade is a single-leaf, wood-panel door that is partially coming off the hinges.



Plate 43. View Site 090-5094, Secondary dwelling, façade and addition, looking south.

There is a one-story, two-bay, shed roof, wood-frame addition attached to the side (east) elevation clad in painted-white wood weatherboard and resting on a concrete-block foundation (see Plate 43). The roof is covered in standing-seam metal. Paired, fixed, one-light, wood-frame windows are typical on the addition with some window panes missing. The entrance on the addition is a single-leaf, wood-panel door.

Site 090-5095, House, 915 Swanns Point Road

On the west side of Swanns Point Road, there is a circa 1967 house with two sheds, one silo, and one equipment shed. This building is situated on an approximately 36.10-acre parcel away from Swanns Point Road with a single-lane gravel driveway leading from Swanns Point Road to the north of the house. A mowed lawn with scattered mature trees and foundation plantings surround the house (Figure 29). Facing southeast, the building is set on a fairly-level grade that slopes gently to the south and east. Overhead utility lines run parallel to Swanns Point Road with a tree line visible to the northwest of the house. There is an above-ground storage tank situated on the eastern side of the house. A review of the Surry County real estate records indicates that the building was built circa 1967. Given the ranch style and use of Flemish-bond brick patterns and asphalt shingles, this date is probably accurate.

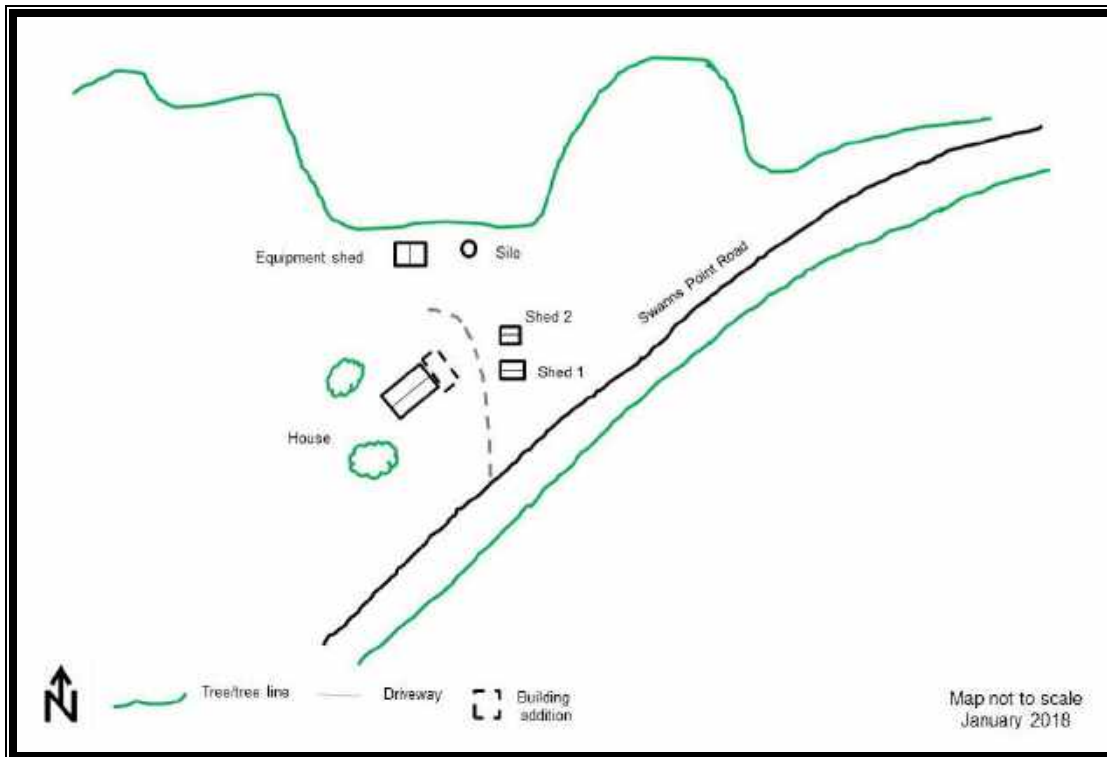


Figure 29. Site plan for Site 090-5095.

House

This circa 1967, one-story, four-bay, side-gable, ranch style, Flemish-bond brick house rests on a Flemish-bond brick foundation with one central interior Flemish-bond brick chimney with a corbelled cap (Plate 44). The center bay projects under a front gable. The roof is covered in asphalt shingles with overhanging eaves and metal gutters and downspouts. There is a one-story, one-bay, Flemish-bond brick porch under the roof overhang supported by square painted-white wood posts. Three stone steps lead from the porch to the front yard. Single and triple, sash, double-hung, 1/1, vinyl replacement windows are typical on the façade and elevations. Some of the windows are flanked by painted-white wood shutters. There is one bay window on the projecting bay that consists of one fixed, one-light, vinyl replacement window flanked by sash, double-hung, 1/1, vinyl replacement windows under a metal hipped roof hood. The entrance on the façade is a single-leaf, wood-panel door with sidelights covered by a metal screen door.



Plate 44. View of Site 090-5095, House, façade and addition, looking north.

There is a one-story, one-bay, side-gable, Flemish-bond brick addition attached to the side (east) elevation resting on a Flemish-bond brick foundation (Plate 45). The roof is covered in asphalt shingles with metal gutters and downspouts. Sash, double-hung, 1/1, vinyl replacement windows are typical on the addition. The entrance on the addition is a roll-up metal garage door with lights.

Shed 1

To the east of the house, there is a circa 1967, one-story, one-bay, front-gable, concrete-block shed resting on a concrete-block foundation (Plate 46). The roof is covered in asphalt shingles with overhanging eaves. No windows are visible on the façade, fixed, two-light, wood-frame windows are typical on the side (north and south) elevations. The entrance on the façade is a single-leaf, wood-panel door.

Shed 2

To the east of the house, there is a circa 1967, one-story, one-bay, front-gable, painted-white concrete-block shed resting on a concrete-block foundation (see Plate 46). The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a single-leaf, vertical wood plank door.

Silo

To the east of the house, there is a circa 1967, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (Plate 47). The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the façade is not visible.



Plate 45. View of Site 090-5095, House, façade, side elevation and addition, looking north.



Plate 46. View of Site 090-5095, House, addition, and Sheds 1 and 2, looking north.



Plate 47. View of Site 090-5095, House addition, Sheds 1 and 2, and Silo, looking north.

Equipment Shed

To the north of the house, there is a circa 1967, one-story, three-bay, side-gable, wood-frame equipment shed clad in wood siding resting on a poured-concrete slab-on-grade foundation (Plate 48). The roof is covered in corrugated metal with overhanging eaves and exposed rafter tails. No windows are visible on the equipment shed. The façade and side (south) elevations are open.

Site 090-5096, House, 1585 Swanns Point Road

On the west side of Swanns Point Road, there is a circa 1957 house with one canopy and one garage. This building is situated on an approximately 1.47-acre parcel away from Swanns Point Road with a single-lane gravel driveway leading from Swanns Point Road to the west of the house. A mowed lawn with scattered mature trees surround the house (Figure 30). Facing west, the building is set on a fairly-level grade that slopes gently to the south and west. There is a wooden utility pole at the end of the driveway and to the south of the house with overhead utility lines running parallel to Swanns Point Road and parallel to the driveway. A tree line visible to the north and west of the house. A review of the Surry County real estate records indicates that the building was built circa 1957. Given the vernacular style and use of composition siding and concrete block, this date is probably accurate.



Plate 48. View of Site 090-5095, House, addition, and Equipment shed, looking north.

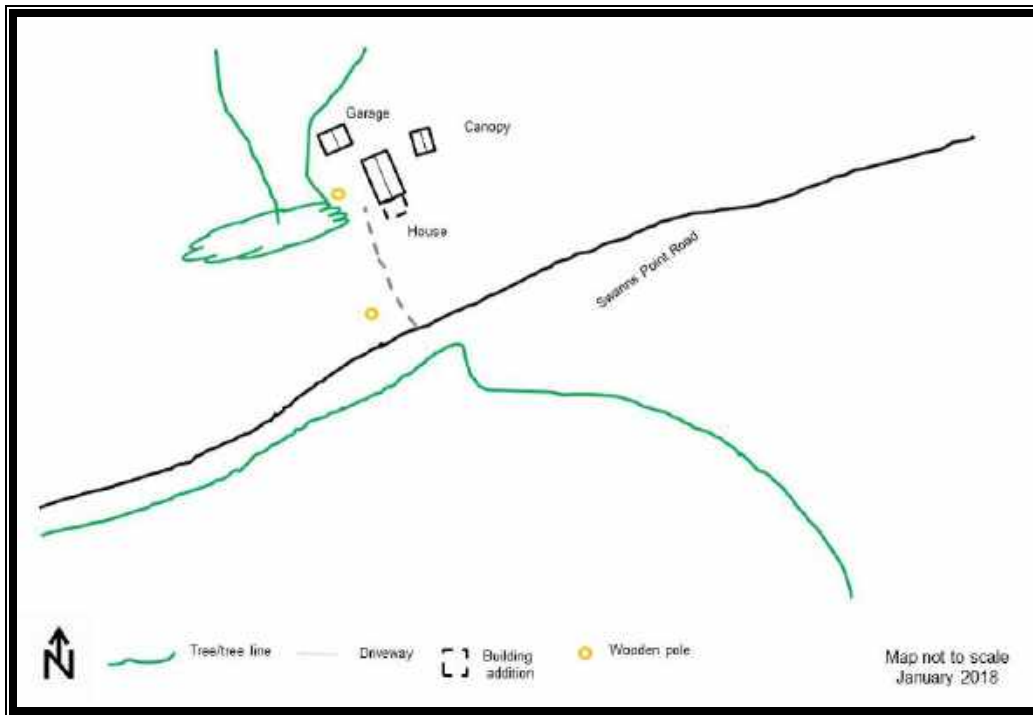


Figure 30. Site plan for Site 090-5096.

House

This circa 1957, one-story, three-bay, side-gable, vernacular style, wood-frame house is clad in painted-gray composition siding and rests on a raised concrete-block foundation with one central interior concrete-block chimney (Plate 49). The roof is covered in standing-seam metal with overhanging eaves and metal gutters and downspouts. There is a one-story, one-bay wood porch surrounded by painted-white latticework obscuring the view of the porch. Single and triple, sash, double-hung, 1/1, metal-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door. There is a one-story, full-width, shed roof, screened-in porch on the side (north) elevation resting on a wood-pier foundation.



Plate 49. View of Site 090-5096, House, façade, side elevation, and addition, Canopy, and Garage, looking north.

There is a one-story, one-bay, side-gable, wood-frame addition attached to the side (south) elevation clad in painted-gray composition siding and resting on a raised concrete-block foundation (see Plate 49). The roof is covered in asphalt shingles with a boxed cornice. Sash, double-hung, 2/2, metal-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door covered by a decorative metal storm door.

Canopy

To the northeast of the house, there is a circa 1957, one-story, one-bay, front-gable, wood-frame canopy resting on the ground (see Plate 49). The roof is covered in asphalt shingles. The canopy is open on all sides.

Garage

To the north of the house, there is a circa 1957, one-story, two-bay, front-gable, wood-frame garage clad in painted-white composition siding and resting on a poured-concrete slab-on-grade foundation (see Plate 49). The roof is covered in asphalt shingles. No windows are visible on the garage. The entrance on the façade consists of two roll-up metal garage doors.

Site 090-5097, House, 1603 Swanns Point Road

On the west side of Swanns Point Road, there is a circa 1969 house with three sheds and one well house. This building is situated on an approximately 0.68-acre parcel away from Swanns Point Road with a single-lane gravel driveway leading from Swanns Point Road to the east of the house. A mowed lawn with scattered mature trees surround the house (Figure 31). Facing east, the building is set on a fairly-level grade that slopes gently to the south. Overhead utility lines run parallel to Swanns Point Road with a tree line visible to the north and west of the house. There is a metal satellite dish visible in the front yard. A review of the Surry County real estate records indicates that the building was built circa 1969. Given the ranch style and use of Flemish-bond brick patterns and asphalt shingles, this date is probably accurate.

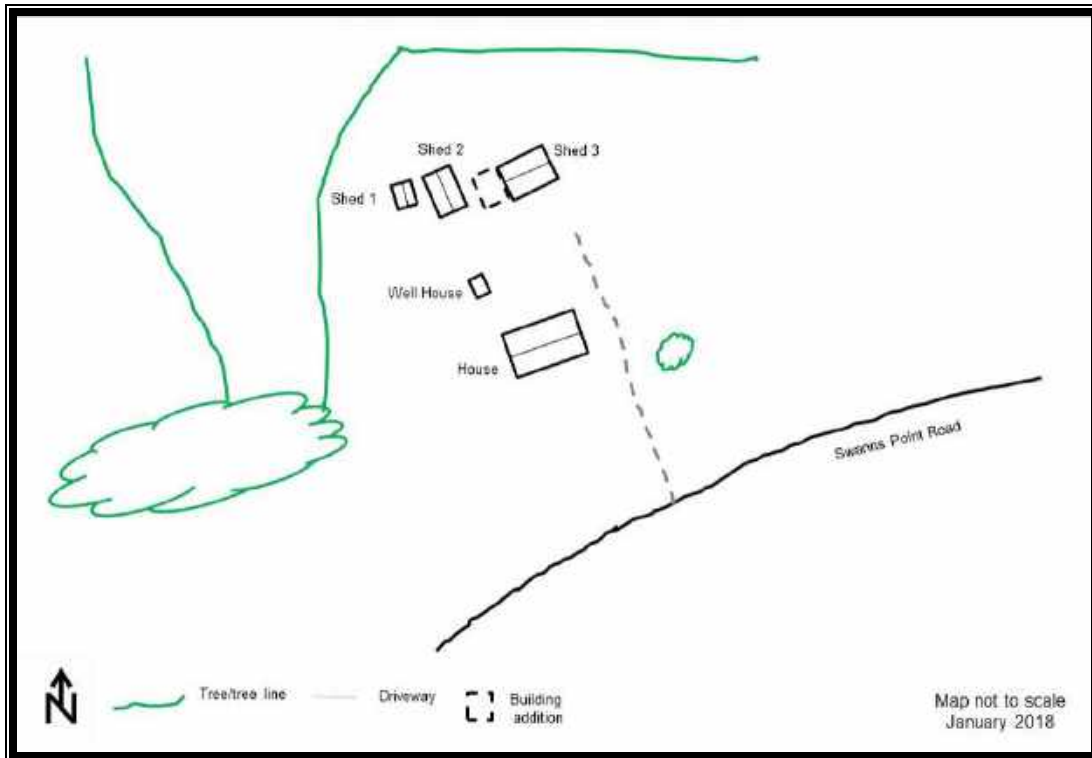


Figure 31. Site plan for Site 090-5097.

House

This circa 1969, one-story, six-bay, side-gable, ranch style, Flemish-bond brick house rests on a Flemish-bond brick foundation (Plate 50). The roof is covered in asphalt shingles with metal gutters and downspouts. There is a one-bay, Flemish-bond brick stoop with two Flemish-bond brick steps leading from the stoop to the front yard. Single and paired, sash, double-hung, 1/1, metal-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.



Plate 50. View of Site 090-5097, House, façade, looking northwest.

Shed 1

To the northwest of the house, there is a circa 1969, one-story, one-bay, front-gable, wood-frame shed clad in painted-gray composition siding and resting on a wood pier foundation (Plate 51). The roof is covered in asphalt shingles with overhanging eaves. No windows are visible on the shed. The entrance on the façade is a roll-up metal garage door.

Shed 2

To the north of the house, there is a circa 1969, one-story, one-bay, front-gable, wood-frame shed clad in plywood siding (see Plate 51). The foundation is not visible due to the building's placement on the landscape. The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a double-leaf, plywood door.



Plate 51. View of Site 090-5097, House, façade and side elevation, Shed 1 and 2, and Well house, looking north.

Shed 3

To the north of the house, there is a circa 1969, one-story, two-bay, side-gable, wood-frame shed clad in plywood siding and resting on a concrete-block foundation (Plate 52). The roof is covered in asphalt shingles with overhanging eaves. No windows are visible on the façade; sash, double-hung, 2/2, metal-frame windows are typical on the side (east) elevation. The entrance on the façade consists of two double-leaf, plywood doors.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (west) elevation clad in plywood siding and resting on a concrete-block foundation (see Plate 52). The roof is covered in asphalt shingles with a boxed cornice. No windows are visible on the addition. No entrance is visible on the addition.

Well House

To the northwest of the house, there is a circa 1969, one-half-story, one-bay, shed roof, concrete-block well house resting on a concrete-block foundation situated partially below grade (see Plate 51). The roof is covered on corrugated metal. No windows are visible on the well house. The entrance on the façade is not visible.



Plate 52. View of Site 090-5097, House, façade and side elevation, and Shed 3, looking north.

CONCLUSIONS AND RECOMMENDATIONS

Previously-Identified Architectural Resources

Site 090-5074

Site 090-5074, the circa 1914 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). Several additions have been added to the main block of the house, reducing the integrity of the original design. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Site 090-5075

Site 090-5075, the circa 1901 house, appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). Several additions have been added to the main block of the house, reducing the integrity

of the original design. In addition, Colonial Revival style houses such as this one are common throughout Surry County and Virginia. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Site 090-5086

Site 090-5086, the circa 1966 house, appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Newly-Identified Architectural Resources

090-5087

Site 090-5087, the circa 1900 farmstead, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a Colonial Revival style, which is common in Surry County with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

090-5088

Site 090-5088, the circa 1950s house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

090-5089

Site 090-5089, the circa 1930 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early- to mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a Colonial Revival style, which is common in Surry County with several examples within the APE. However, the house is also a foursquare form, which is not a common form found in Surry County among the previously-identified sites within the County. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially individually eligible for the National Register of Historic Places under Criteria A, B, or C. If a future historic district encompassing foursquare form houses in Surry County were to be identified, this site may contribute to such a district. Circa~ recommends no further architectural survey work on this resource.

090-5090

Site 090-5090, the circa 1930s house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early- to mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a Colonial Revival style, which is common in Surry County with several examples within the APE. However, the house is also a foursquare form, which is not a common form found in Surry County among the previously-identified sites within the County. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially individually eligible for the National Register of Historic Places under Criteria A, B, or C. If a future historic district encompassing foursquare form houses in Surry County were to be identified, this site may contribute to such a district. Circa~ recommends no further architectural survey work on this resource.

090-5091

Site 090-5091, the circa 1964 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

090-5092

Site 090-5092, the circa 1900 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a Colonial Revival style, which is common in Surry County with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

090-5093

Site 090-5093, the circa 1910 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

090-5094

Site 090-5094, the circa 1952 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

090-5095

Site 090-5095, the circa 1967 house, appears to be occupied and in fair to good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a ranch style, which is common in Surry County and throughout Virginia with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with

the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

090-5096

Site 090-5096, the circa 1957 house, appears to be occupied and in fair to good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

090-5097

Site 090-5097, the circa 1969 house, appears to be occupied and in fair to good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a ranch style, which is common in Surry County and throughout Virginia with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Table 9. Summary of identified resources and recommendations

Site	Type	National Register Eligibility	Recommendation
090-5074	ca. 1914 house	No	No further work
090-5075	ca. 1901 house	No	No further work
090-5086	ca. 1966 house	No	No further work
090-5087	ca. 1900 farmstead	No	No further work
090-5088	ca. 1950s house	No	No further work
090-5089	ca. 1930 house	Not individually eligible	No further work
090-5090	ca. 1930s house	Not individually eligible	No further work
090-5091	ca. 1964 house	No	No further work
090-5092	ca. 1900 house	No	No further work
090-5093	ca. 1910 house	No	No further work
090-5094	ca. 1952 house	No	No further work
090-5095	ca. 1967 house	No	No further work
090-5096	ca. 1957 house	No	No further work
090-5097	ca. 1969 house	No	No further work

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APPENDIX A
VDHR V-CRIS FORMS

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 4322 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 4322 Colonial Trail West Route 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	69

Site Description:

July 2017: On the north side of Colonial Trail West, there is a circa 1914 house with one barn, three sheds, one well house, and one well. This building is situated on an approximately 69.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Many of the trees are planted in front of the house, partially obscuring the façade and making it difficult to discern specific construction materials.

January 2018: No changes have been made to this resource since the previous survey.

Surveyor Assessment:

July 2017: The circa 1914 house with outbuildings appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). Several additions have been added to the main block of the house, reducing the integrity of the original design. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

January 2018: No changes have been made to this resource since the previous survey. Circa~ maintains that this building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation:	Recommended Not Eligible
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Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1914Ca
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Architectural Style:	Vernacular
Form:	No Data
Number of Stories:	1.5
Condition:	Fair
Interior Plan:	No Data

Threats to Resource: None Known

Architectural Description:

July 2017: This circa 1914, one-and-a-half-story, one-bay, side-gable, vernacular style, wood-frame house is clad in painted-white composition siding and rests on a concrete-block foundation with one central-interior Flemish-bond brick chimney. The roof is covered in standing-seam metal. There is a one-story, one-bay, shed roof, wood-frame screened-in porch. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations; some of the windows have been covered with plastic. The entrance on the façade is a single-leaf, wood-panel door with lights.

There is a one-story, one-bay, front-gable, wood-frame addition attached to the façade clad in painted-white composition siding and resting on a concrete-block foundation. The roof is covered in standing-seam metal with metal gutters and downspouts. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. No entrance is visible on the addition.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the north elevation of the addition clad in painted-white composition siding and resting on a concrete-block foundation. The roof is covered in standing-seam metal. No windows are visible on the addition. The entrance on the addition is a single-leaf, wood-panel door.

January 2018: No changes have been made to this resource since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Partial Width	Wood	Screened/Enclosed
Windows	Double-hung	Wood	No Data
Roof	Side Gable	Metal	No Data
Chimneys	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1914
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the northeast of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame barn clad in painted-red vertical wood siding. The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal with overhanging eaves and exposed rafter tails. No windows are visible on the barn. The entrance on the façade is not visible.

January 2018: No changes have been made to this resource since the previous survey.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1914
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame shed clad in painted-red vertical wood

siding (noted as Shed 1 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is a single-leaf, plywood door.

January 2018: No changes have been made to this resource since the previous survey.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	No Data

Secondary Resource #3

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1914
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame shed clad in painted-red vertical wood siding (noted as Shed 2 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is a double-leaf, plywood door.

January 2018: No changes have been made to this resource since the previous survey.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	No Data

Secondary Resource #4

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1914
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, one-story, multiple-bay, side-gable, wood-frame shed clad in wood siding (noted as Shed 3 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

January 2018: No changes have been made to this resource since the previous survey.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Roof	Side Gable	Metal	No Data

Secondary Resource #5

Resource Category: Domestic
Resource Type: Well House
Architectural Style: No discernible style
Form: No Data

Date of Construction: 1914
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, one-story, one-bay, shed roof, concrete-block well house resting partially below grade on a concrete-block foundation. The roof is covered in asphalt shingles. No windows are visible on the well house. The entrance on the façade is not visible.

January 2018: No changes have been made to this resource since the previous survey.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Shed	Asphalt	No Data

Secondary Resource #6

Resource Category: Domestic
Resource Type: Well
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1914
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, round, poured-concrete well resting slightly above grade. The top is covered with a poured-concrete well cap.

January 2018: No changes have been made to this resource since the previous survey.

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: No Data
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: No Data
Survey Date: 12/15/2017
Dhr Library Report Number: No Data

Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a ½-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

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Wiley, Bell I.
1964 Embattled Confederates, An Illustrated History of Southerners at War.

Property Information

Property Names

Name Explanation Function/Location	Name House, 5104 Colonial Trail West
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Property Evaluation Status

Not Evaluated

Property Addresses

Current - 5104 Colonial Trail West Route 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	97.5

Site Description:

July 2017: On the south side of Colonial Trail West, there is a circa 1901 house with two barns and one well. This building is situated on an approximately 97.5-acre parcel away from Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the house. Large open agricultural fields separate the house from Colonial Trail West. A mowed lawn with mature trees and plantings surrounds the house. Facing north, the building is set on a fairly-level grade that slopes gently to the north and west. A tree line is visible to the south and a wooden utility pole is situated along the driveway. A wood post and wire fence surrounds a portion of the property.

January 2018: No changes have been made to this resource since the previous survey.

Surveyor Assessment:

July 2017: The circa 1901 house appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). Several additions have been added to the main block of the house, reducing the integrity of the original design. In addition, Colonial Revival style houses such as this one are common throughout Surry County and Virginia. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

January 2018: No changes have been made to this resource since the previous survey. Circa~ maintains that this building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation:	Recommended Not Eligible
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Ownership

Ownership Category Private	Ownership Entity No Data
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Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1901Ca
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Architectural Style:	Colonial Revival
Form:	No Data
Number of Stories:	2.0
Condition:	Good

Interior Plan: *No Data*
Threats to Resource: None Known

Architectural Description:

July 2017: This circa 1901, two-story, three-bay, side-gable, Colonial revival style, wood-frame house is clad in painted-white wood weatherboard with two interior end Flemish-bond brick chimneys. The foundation is not visible due to mature foundation plantings. The roof is covered in standing-seam metal. There is a one-bay brick stoop under a shed roof pediment. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with lights.

There is a two-story, one-bay, front-gable, wood-frame addition attached to the side (west) elevation clad in painted-white wood weatherboard and resting on a concrete-block foundation with two interior end Flemish-bond brick chimneys with corbelled caps. The roof is covered in standing-seam metal. There is a one-bay, poured-concrete stoop. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the rear (south) elevation clad in painted-white vertical wood siding with screening above, resting on a raised concrete-block foundation. The roof is covered in standing-seam metal. No windows are visible on the addition. The entrance on the addition is a single-leaf, screen door.

There is a one-story, two-bay, shed roof, wood-frame addition attached to the west elevation of the addition clad in painted-white wood weatherboard and resting on a concrete-block foundation. The roof is covered in standing-seam metal. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door covered by a metal storm door.

January 2018: No changes have been made to this resource since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Porch	Stoop/Deck	Brick	Square
Windows	Double-hung	Wood	<i>No Data</i>
Roof	Side Gable	Metal	<i>No Data</i>
Chimneys	Interior End	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1901
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the southwest of the house, there is a circa 1901, one-story, three-bay, side-gable, wood-frame barn clad in vertical wood siding and resting on a concrete-block foundation (noted as Barn 1 on the site plan). The siding is starting to deteriorate and has been removed in some places exposing the wood framing. The roof is covered in standing-seam metal. No windows are visible on the barn. The entrance on the façade consists of three double-leaf openings.

January 2018: No changes have been made to this resource since the previous survey.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Side Gable	Metal	<i>No Data</i>

Secondary Resource #2

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Architectural Style: No discernible style
Form: *No Data*

Date of Construction: 1901
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the southwest of the house, there is a circa 1901, one-story, two-bay, side-gable, wood-frame barn clad in wood siding and resting on a concrete-block pier foundation (noted as Barn 2 on the site plan). The roof is covered in standing-seam metal. There are window openings on the rear (west) elevation covered by hinged wood siding. The entrance on the façade is not visible.

January 2018: No changes have been made to this resource since the previous survey.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Windows	Boarded Up/Covered	Wood	No Data
Roof	Side Gable	Metal	No Data

Secondary Resource #3

Resource Category: Domestic
Resource Type: Well
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1901
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1901, round, poured-concrete well resting slightly above grade. The top is covered with a poured-concrete well cap.

January 2018: No changes have been made to this resource since the previous survey.

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: No Data
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: No Data
Survey Date: 12/15/2017
Dhr Library Report Number: No Data

Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the

report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065
Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a 1/2-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

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Herrmann, Augustine

1670 Virginia and Maryland in 1670.

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Smith, John
1606 Virginia / discovered and discribed

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No date Deed, wills, inventories, surveyors records, plat books, tax assessors books, land tax records, personal property tax records.

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1953 Surry quadrangle sheet.

1965 Surry quadrangle sheet.

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Wiley, Bell I.
1964 Embattled Confederates, An Illustrated History of Southerners at War.

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 5700 Beaverdam Road

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 5700 Beaverdam Road Route 626

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	15

Site Description:

July 2017: On the south side of Beaverdam Road, there is a circa 1966 house. This building is situated on an approximately 15.00-acre parcel away from Beaverdam Road with a single-lane gravel driveway leading from Beaverdam Road to the house. A unmaintained mowed lawn with mature trees and foundation plantings surrounds the house, which is situated in a clearing. Facing north, the building is set on a fairly-level grade that slopes gently to the north toward the road.

January 2018: No changes have been made to this resource since the previous survey.

Surveyor Assessment:

July 2017: The circa 1966 house appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

January 2018: No changes have been made to this resource since the previous survey. Circa~ maintains that this building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation:	Recommended Not Eligible
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Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1966Ca
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Architectural Style:	Vernacular
Form:	No Data
Number of Stories:	1.0
Condition:	Good
Interior Plan:	No Data
Threats to Resource:	None Known

Architectural Description:

July 2017: This circa 1966, one-story, five-bay, hipped roof, vernacular style, concrete-block house rests on a concrete-block foundation with one interior end concrete-block chimney with a corbelled cap and metal vent cap. The roof is covered in asphalt shingles with a boxed cornice and metal vent at the roof peak. There is a one-bay, poured-concrete stoop. Sash, double-hung, 1/1, metal-frame windows with brick sills are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with lights covered by a metal storm door.

There is a one-story, three-bay, shed roof, concrete-block addition attached to the rear (south) elevation resting on a concrete-block foundation. The roof is covered in asphalt shingles with metal gutters and downspouts. Sash, double-hung, 1/1, metal-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door with lights covered by a metal storm door.

January 2018: No changes have been made to this resource since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Porch	Stoop/Deck	Concrete	Square
Windows	Double-hung	Metal	No Data
Roof	Hipped	Asphalt	No Data
Chimneys	Interior End	Concrete	Block

Secondary Resource Information

Secondary Resource #1

Resource Category: No Data
Resource Type: No Data
Architectural Style: No Data
Form: No Data
Date of Construction: No Data
Condition: No Data
Threats to Resource: No Data
Architectural Description:
 No Data

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: No Data
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: No Data
Survey Date: 12/15/2017
Dhr Library Report Number: No Data
Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for

architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a ½-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

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1977 An Archaeological Survey of Proposed Improvements to Virginia Route 21 and the James River Ferry Approaches in Charles City, James City, and Surry Counties.

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Sanford, Douglas
2012 "Investigating the Slave Building at Walnut Valley Plantation (44SY0262) Surry County, Virginia." Quarterly Bulletin of Archaeological Society of Virginia 67, No. 1.

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Wiley, Bell I.
1964 Embattled Confederates, An Illustrated History of Southerners at War.

Property Information

Property Names

Name Explanation	Name
Function/Location	Farmstead, 6426 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 6426 Colonial Trail West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	50

Site Description:

January 2018: On the north side of Colonial Trail West, there is a circa 1900 farmstead with one house, four silos, one mobile home, one equipment shed, one pump house, one wood shed, two sheds, two pole barns, and one well. This building is situated on an approximately 50.00-acre parcel well away from Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the east of the house. Several single-lane gravel roads lead north of the end of the driveway between the outbuildings. Large open agricultural fields are visible to the east and west of the farmstead and a mowed lawn with mature trees and plantings surrounds the house. Facing southeast, the building is set on a fairly-level grade that slopes gently to the south and east. A tree line is visible to the north and west and a wooden utility pole is situated along the driveway with additional poles to the north of the house and adjacent to the silo cluster. Overhead utility lines run to the north of the house. There is a wood pole with a metal satellite dish attached visible at the southeastern corner of the house and above-ground storage tanks are situated on the eastern and western side of the house.

Surveyor Assessment:

January 2018: Site 090-5087, the circa 1900 farmstead, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a Colonial revival style, which is common in Surry County with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1900Ca
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Architectural Style:	Colonial Revival
Form:	<i>No Data</i>
Number of Stories:	2.0
Condition:	Fair
Interior Plan:	<i>No Data</i>
Threats to Resource:	None Known

Architectural Description:

January 2018: This circa 1900, two-story, three-bay, cross-gable, Colonial Revival style, wood-frame house is clad in painted-white composition siding and rests on a raised concrete-block foundation with an English basement with two interior end Flemish-bond brick chimneys with corbelled caps and one central interior Flemish-bond brick chimney. The roof is covered in asphalt shingles with cornice returns and a front-gable pediment in the center bay. There is a one-story, full-width, hipped roof enclosed porch with painted-white composition siding on the lower portion and screening above with sash, double-hung, 6/6, wood-frame windows on the western side. The porch is deteriorated. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations with one fixed, nine-light, diamond-shaped window in the central pediment. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, one-bay, hipped roof, wood-frame addition attached to the rear (north) elevation clad in painted-white composition siding and resting on a concrete-block pier foundation. The roof is covered in asphalt shingles with a boxed cornice. Sash, double-hung, 1/1, metal-frame windows are typical on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Full-Width	Wood	Screened/Enclosed
Windows	Double-hung	Wood	No Data
Windows	Fixed	Wood	No Data
Roof	Cross Gable	Asphalt	No Data
Chimneys	Interior End	Brick	Flemish Bond
Chimneys	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Silo
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the north of the house, there is a circa 1900, one-story, one-bay, pyramidal roof, metal-frame, round silo clad in metal siding (noted as Silo 1 on the site plan). The foundation is not visible due to other buildings around the silo. The roof is covered in standing seam metal. No windows are visible on the silo. The entrance on the façade is a single-leaf, metal door.

Secondary Resource #2

Resource Category: Agriculture/Subsistence
Resource Type: Silo
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the north of the house, there is a circa 1900, one-story, one-bay, pyramidal roof, metal-frame, round silo clad in metal siding (noted as Silo 2 on the site plan). The foundation is not visible due to other buildings around the silo. The roof is covered in standing seam metal. No windows are visible on the silo. No entrance is visible on the facade.

Secondary Resource #3

Resource Category: Agriculture/Subsistence
Resource Type: Silo
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1900

Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the north of the house, there is a circa 1900, one-story, one-bay, pyramidal roof, metal-frame, round silo clad in metal siding (noted as Silo 3 on the site plan). The foundation is not visible due to other buildings around the silo. The roof is covered in standing seam metal. No windows are visible on the silo. No entrance is visible on the facade.

Secondary Resource #4

Resource Category: Agriculture/Subsistence
Resource Type: Silo
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the north of the house, there is a circa 1900, one-story, one-bay, flat roof, metal-frame, round silo clad in metal siding with a conical base resting on metal supports resting on the ground (noted as Silo 4 on the site plan). The roof is covered in standing seam metal with a conveyor belt at the roof line. A metal chute leads from the conveyor belt to the center of the roof. No windows are visible on the silo. No entrance is visible on the facade.

Secondary Resource #5

Resource Category: Domestic
Resource Type: Mobile Home/Trailer
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1960
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the east of the house, there is a circa 1960s, one-story, four-bay, side-gable, metal-frame mobile home clad in corrugated metal siding and resting partially on a metal trailer and partially on a Flemish-bond brick pier foundation. The mobile home is a double-wide trailer that is not fully attached in the center. The roof is covered in asphalt shingles. Single and paired, sash, double-hung, 6/6, metal-frame windows are typical on the facade and elevations. Some of the window panes have been broken and some are covered with plastic. A few of the windows are flanked by decorative painted-brown wood shutters. The entrance on the facade is a single-leaf, metal door with one light covered by a metal screen door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Brick	Flemish Bond
Structural System and Exterior Treatment	Steel Frame	Metal	Siding
Windows	Double-hung	Metal	<i>No Data</i>
Roof	Side Gable	Asphalt	<i>No Data</i>

Secondary Resource #6

Resource Category: Domestic
Resource Type: Shed - Vehicle
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the northwest of the house, there is a circa 1900, one-story, multiple-bay, side-gable, wood-frame equipment shed resting on a round wood posts. The roof is covered in standing seam metal with exposed rafter tails. The equipment shed is open on all sides.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Post-in-ground	Wood	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Other
Roof	Side Gable	Metal	<i>No Data</i>

Secondary Resource #7

Resource Category: Domestic
Resource Type: Shed - Wood
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the west of the house, there is a circa 1900, one-story, multiple-bay, side-gable, wood-frame wood shed clad in wood siding and resting on a raised concrete-block foundation. The roof is covered in standing seam metal. No windows are visible on the wood shed. The entrance on the façade is not visible.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Roof	Side Gable	Metal	<i>No Data</i>

Secondary Resource #8

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the north of the house, there is a circa 1900, one-story, multiple-bay, side-gable, wood-frame shed clad in vertical wood siding (noted as Shed 1 on the site plan). The foundation is not visible due to other buildings situated around the shed. The roof is covered in standing seam metal. No windows are visible on the shed. Several of the bays are open.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Side Gable	Metal	<i>No Data</i>

Secondary Resource #9

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the west of the house, there is a circa 1900, one-story, one-bay, shed roof, wood-frame shed clad in painted-white vertical wood siding and resting on a concrete-block foundation (noted as Shed 2 on the site plan). The roof is covered in standing seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Shed	Metal	<i>No Data</i>

Secondary Resource #10

Resource Category: Agriculture/Subsistence
Resource Type: Pole Barn
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the northwest of the house, there is a circa 1900, one-story, one-bay, side-gable, wood-frame pole barn resting on the ground (noted as Pole Barn 1 on the site plan). The pole barn is open on all sides. The roof is covered in asphalt shingles.

Secondary Resource #11

Resource Category: Agriculture/Subsistence
Resource Type: Pole Barn
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the west of the house, there is a circa 1900, one-story, one-bay, side-gable, wood-frame pole barn resting on the ground (noted as Pole Barn 2 on the site plan). The pole barn is open on all sides. The roof is covered in asphalt shingles.

Secondary Resource #12

Resource Category: Domestic
Resource Type: Well
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the southwest of the house, there is a circa 1900, round, poured concrete well resting slightly above grade. A poured-concrete well cap covers the top of the well.

Secondary Resource #13

Resource Category: Agriculture/Subsistence
Resource Type: Pump House
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the west of the house, there is a circa 1900, one-story, one-bay, front-gable, concrete-block pump house resting on a concrete-block foundation. The roof is covered in asphalt shingles. No windows are visible on the pump house. The entrance on the façade is a single-leaf, wood-panel door. A row of cinder blocks is stacked along the side (south) elevation.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 12/15/2017
Dhr Library Report Number: *No Data*

Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

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Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

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Property Information

Property Names

Name Explanation	Name
Function/Location	House, 6478 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 6478 Colonial Trail West West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	.8

Site Description:

January 2018: On the north side of Colonial Trail West, there is a circa 1950s house with one garage and one well. This building is situated on an approximately 0.77-acre parcel very close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the west of the house. A mowed lawn with scattered mature trees surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. An above-ground storage tank is situated on the eastern side of the house.

Surveyor Assessment:

January 2018: Site 090-5088, the circa 1950s house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1950Ca
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Architectural Style:	Minimal Traditional
Form:	<i>No Data</i>
Number of Stories:	1.0
Condition:	Fair
Interior Plan:	<i>No Data</i>
Threats to Resource:	None Known

Architectural Description:

January 2018: This circa 1950s, one-story, three-bay, side-gable, Minimal traditional style, wood-frame house is clad in painted-gray composition siding and rests on a raised concrete-block foundation. The roof is covered in asphalt shingles with overhanging eaves and metal gutters and downspouts. There is a one-story, three-bay, wood porch under a shed roof supported by square painted-white wood posts. Sash,

double-hung, 6/6, metal-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with a fanlight.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the rear (north) elevation clad in painted-gray composition siding and resting on a raised concrete-block foundation. The roof is covered in asphalt shingles. Sash, double-hung, 4/4, metal-frame windows are typical on the addition. No entrance is visible on the addition.

There is a one-half-story, one-bay, shed roof, concrete-block addition attached to the side (east) elevation resting on a concrete-block foundation. The roof is covered in asphalt shingles. No windows are visible on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Partial Width	Wood	Posts
Windows	Double-hung	Metal	No Data
Roof	Side Gable	Asphalt	No Data

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Garage
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1950
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the west of the house, there is a circa 1950s, one-and-a-half-story, one-bay, front-gable, concrete-block garage with painted-gray wood siding on the gable end resting on a concrete-block foundation. The roof is covered in standing seam metal with a metal vent near the façade. Fixed, one-light, wood-frame windows are typical on the façade and elevations with one sash, double-hung, 6/6, wood-frame window in the rear (west) gable end. The entrance on the façade is a double-leaf, sliding plywood door. There is a double-leaf, wood-panel door in the façade gable end. There is a single-leaf, wood door on the side (south) elevation.

Number of Stories: 1.5

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Windows	Fixed	Wood	No Data
Windows	Double-hung	Wood	No Data
Roof	Front Gable	Metal	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Well
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1950
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the east of the house, there is a circa 1950s, round, concrete-block well resting above grade. A poured-concrete well cap covers the top of the well.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 12/15/2017
Dhr Library Report Number: *No Data*

Project Staff/Notes:

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Property Notes:

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Wiley, Bell I.
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Property Information

Property Names

Name Explanation	Name
Function/Location	House, 6594 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 6594 Colonial Trail West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting: Rural

Acreage: 10

Site Description:

January 2018: On the north side of Colonial Trail West, there is a circa 1930 house with two sheds. This building is situated on an approximately 10.00-acre parcel away from Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the west of the house. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. A tree line is visible to the north and west and a wooden utility pole is situated along the driveway with additional poles to the west of the house. There is a metal satellite dish visible to the west of the house and an above-ground storage tank is situated on the eastern side of the house. Abandoned vehicles are scattered throughout the property.

Surveyor Assessment:

January 2018: Site 090-5089, the circa 1930 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early- to mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a Colonial revival style, which is common in Surry County with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1930Ca
Historic Time Period:	World War I to World War II (1917 - 1945)
Historic Context(s):	Domestic
Architectural Style:	Colonial Revival
Form:	No Data
Number of Stories:	2.5
Condition:	Fair
Interior Plan:	No Data
Threats to Resource:	None Known

Architectural Description:

January 2018; This circa 1930, two-and-a-half-story, two-bay, hipped roof, Colonial Revival style, wood-frame house is clad in painted-white

composition siding and rests on a Flemish-bond brick pier foundation with one central interior concrete-block chimney with a corbelled cap. The roof is covered in standing seam metal with one hipped roof dormer on the façade slope. The dormer has one fixed, one-light, wood-frame window. There is a one-story, full-width, wood porch under a hipped roof supported by square painted-white wood posts resting on painted-blue concrete-block pillars. Two poured-concrete steps lead from the porch to the front yard. Paired, sash, double-hung, 4/1, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door covered by a metal storm door.

There is a one-story, one-bay, flat roof, wood-frame addition attached to the rear (north) elevation clad in painted-white composition siding and rests on a Flemish-bond brick pier foundation. The roof is covered in standing seam metal. Paired, sash, double-hung, 4/1, wood-frame windows are typical on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Brick	Flemish Bond
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Full-Width	Wood	Posts
Windows	Double-hung	Wood	No Data
Windows	Fixed	Wood	No Data
Roof	Hipped	Metal	No Data
Chimneys	Interior Central	Concrete	Block
Dormer	Hipped	Wood	No Data

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1930
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the west of the house, there is a circa 1930, one-story, one-bay, shed roof, wood-frame shed clad in vertical wood siding and resting on a concrete-block foundation (noted as Shed 1 on the site plan). The roof is covered in asphalt shingles with a boxed cornice. No windows are visible on the shed. The entrance on the façade is not visible.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Shed	Asphalt	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1930
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the east of the house, there is a circa 1930, one-story, one-bay, side-gable, wood-frame shed clad in wood siding (noted as Shed 2 on the site plan). The foundation is not visible due to overgrown vegetation. The shed is almost completely covered in overgrowth and is starting to collapse. The roof is covered in standing seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and	Wood Frame	Wood	Siding

Exterior Treatment Roof	Side Gable	Metal	<i>No Data</i>
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Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 12/15/2017
Dhr Library Report Number: *No Data*

Project Staff/Notes:

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Property Notes:

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1988 "Past and Present in Charles City County," in James P. Whittenburg and John M. Coski (eds.), *Four Centuries of the Southern Experience: Charles City County, Virginia, from the Age of Discovery to the Modern Civil Rights Struggle*, pp. 1-14. Unpublished manuscript in the archives of the Virginia Department of Historic Resources, Richmond, Virginia.

Wiley, Bell I.
1964 *Embattled Confederates, An Illustrated History of Southerners at War*.

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 5407 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 5407 Colonial Trail West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	49

Site Description:

January 2018: On the south side of Colonial Trail West, there is a circa 1930s house with one barn, one shed, and one well. This building is situated on an approximately 49.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. Large open agricultural fields are visible to the south and east of the house and a mowed lawn surrounds the house with a large overgrown shrub at the northwestern corner of the house. Facing northeast, the building is set on a fairly-level grade that slopes gently to the east. A tree line is visible to the south and west and a wooden utility pole is situated to the north of the house with overhead utility lines to the northeast of the house and parallel to Colonial Trail West. An above-ground storage tank is situated on the southern side of the house.

Surveyor Assessment:

January 2018: Site 090-5090, the circa 1930s house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early- to mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a Colonial revival style, which is common in Surry County with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1930Ca
Historic Time Period:	World War I to World War II (1917 - 1945)
Historic Context(s):	Domestic
Architectural Style:	Colonial Revival
Form:	<i>No Data</i>
Number of Stories:	2.0
Condition:	Fair
Interior Plan:	<i>No Data</i>
Threats to Resource:	None Known
Architectural Description:	

January 2018; This circa 1930s, two-story, two-bay, hipped roof, Colonial revival style, wood-frame house is clad in painted-white composition siding and rests on a concrete-block foundation with one central interior concrete-block chimney with a corbelled cap. The roof is covered in standing seam metal with metal gutters and downspouts. There is a one-story, full-width, hipped roof porch enclosed with painted-white composition siding and screening. Two poured-concrete steps lead from the porch to the front yard. Sash, double-hung, 6/6, wood-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the rear (south) elevation clad in painted-white composition siding and resting on a concrete-block foundation. The roof is covered in standing seam metal. No windows are visible on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Full-Width	Wood	Screened/Enclosed
Windows	Double-hung	Wood	No Data
Roof	Hipped	Metal	No Data
Chimneys	Interior Central	Concrete	Block

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1930
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018; To the southwest of the house, there is a one-story, one-bay, front-gable, concrete-block barn resting on a concrete-block foundation. The roof is covered in standing seam metal with overhanging eaves and exposed rafter tails. The roof is starting to deteriorate, and vines are starting to overtake a portion of the roof. No windows are visible on the façade; fixed, nine-light, metal-frame windows are typical on the side (north and south) elevations. The entrance on the façade is a double-leaf, vertical wood panel door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Windows	Fixed	Metal	No Data
Roof	Front Gable	Metal	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1930
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018; To the south of the house, there is a one-story, one-bay, front-gable, wood-frame shed clad in vertical wood siding and resting on a poured-concrete slab-on-grade foundation. The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is not visible.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Slab	Concrete	Stuccoed/Parged

Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Asphalt	<i>No Data</i>

Secondary Resource #3

Resource Category: Domestic
Resource Type: Well
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1930
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the southwest of the house, there is a circa 1930s, round, poured concrete well resting slightly above grade. A poured-concrete well cap and plywood sheet covers the top of the well.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 12/15/2017
Dhr Library Report Number: *No Data*

Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

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Henry, John
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1787 A Map of the Country between Albemarle Sound and Lake Erie.

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Smith, John
1606 Virginia / discovered and discribed

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No date Deed, wills, inventories, surveyors records, plat books, tax assessors books, land tax records, personal property tax records.

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1953 Surry quadrangle sheet.

1965 Surry quadrangle sheet.

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Wiley, Bell I.

1964 *Embattled Confederates, An Illustrated History of Southerners at War*.

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 5459 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 5459 Colonial Trail West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	1

Site Description:

January 2018; On the south side of Colonial Trail West, there is a circa 1964 house with two sheds. This building is situated on an approximately 1.00-acre parcel away from Colonial Trail West. Large open agricultural fields are visible to the east of the house and a mowed lawn with mature trees and plantings surrounds the house. Facing northeast, the building is set on a fairly-level grade with a tree line visible to the south and west. A modern metal chain link fence runs along the eastern and southern sides of the property and wooden utility poles are situated along Colonial Trail West with overhead utility lines running parallel to Colonial Trail West. There is a wood pole with a mercury vapor light attached visible at the western side of the house and an above-ground storage tank is situated on the northeastern side of the house.

Surveyor Assessment:

January 2018; Site 090-5091, the circa 1964 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1964Ca
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Architectural Style:	Vernacular
Form:	<i>No Data</i>
Number of Stories:	1.0
Condition:	Fair
Interior Plan:	<i>No Data</i>
Threats to Resource:	None Known

Architectural Description:

January 2018; This circa 1964, one-story, three-bay, side-gable, vernacular style, wood-frame house is clad in painted-beige composition siding

and rests on a raised concrete-block foundation with one central interior Flemish-bond chimney. The center bay projects under a front-gable. The roof is covered in asphalt shingles with overhanging eaves and metal gutters and downspouts. Sash, double-hung, 2/2, metal-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. There is one picture window on the façade that consists of one fixed, one-light, metal-frame window flanked by sash, double-hung, 2/2, metal-frame windows flanked by painted black wood shutters. Paired, sash, double-hung, 1/1, metal-frame windows are typical on the elevations. Fixed, one-light, metal-frame windows flank the entrance on the façade. The entrance on the façade is a single-leaf, wood-panel door with lights covered by a metal storm door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Windows	Double-hung	Metal	No Data
Roof	Fixed	Metal	No Data
Chimneys	Side Gable	Asphalt	No Data
	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1964
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the south of the house, there is a circa 1964, one-story, one-bay, front-gable, concrete-block shed resting on a concrete-block foundation (noted as Shed 1 on the site plan). The roof is covered in asphalt shingles. Sash, double-hung, 1/1, metal-frame windows are typical on the side (north and south) elevations. The entrance on the façade is a single-leaf opening.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Windows	Double-hung	Metal	No Data
Roof	Front Gable	Asphalt	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1964
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the southwest of the house, there is a circa 1964, one-story, one-bay, front-gable, concrete-block shed resting on a concrete-block foundation (noted as Shed 2 on the site plan). The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a single-leaf, vertical wood plank door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Front Gable	Asphalt	No Data

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 12/15/2017
Dhr Library Report Number: *No Data*

Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

Circa~
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- Herrmann, Augustine
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- 1871 Preliminary map of Surry County, Virginia.
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1787 A Map of the Country between Albemarle Sound and Lake Erie.
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1988 Phase I Report on Cultural Resources, Route 31, James River Crossing.
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- Wiley, Bell I.
1964 Embattled Confederates, An Illustrated History of Southerners at War.

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 5717 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 5717 Colonial Trail West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	4.8

Site Description:

January 2018: On the south side of Colonial Trail West, there is a circa 1900 house with one garage and one well house. This building is situated on an approximately 4.81-acre parcel close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the north of the house. A mowed lawn with scattered mature trees and plantings surround the house. Facing north, the building is set on a fairly-level grade that slopes gently to the north. A metal flag pole resting on a raised poured-concrete base is visible in the front yard and a wooden utility pole is situated along the driveway with overhead utility lines running parallel to Colonial Trail West.

Surveyor Assessment:

January 2018; Site 090-5092, the circa 1900 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a Colonial revival style, which is common in Surry County with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1900Ca
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Architectural Style:	Colonial Revival
Form:	<i>No Data</i>
Number of Stories:	2.0
Condition:	Fair
Interior Plan:	<i>No Data</i>
Threats to Resource:	None Known

Architectural Description:

January 2018: This circa 1900, two-story, three-bay, hipped roof, Colonial revival style, wood-frame house is clad in painted-blue wood

weatherboard and rests on a concrete-block foundation with two interior end Flemish-bond brick chimneys with corbelled caps. The roof is covered in standing seam metal with overhanging eaves. There is a one-story, full-width, poured-concrete porch under a hipped roof supported by tapered painted-white wood posts resting on Flemish-bond brick piers. Two Flemish-bond brick steps lead from the porch to the front yard. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with lights.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Porch	1-Story Full-Width	Wood	Posts
Windows	Double-hung	Wood	No Data
Roof	Hipped	Metal	No Data
Chimneys	Interior End	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Garage
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the south of the house, there is a circa 1900, one-story, one-bay, front-gable, wood-frame garage clad in wood siding and resting on a raised concrete-block foundation. The roof is covered in asphalt shingles. No windows are visible on the façade; sash, double-hung, 4/4, metal-frame windows are typical on the side (north and south) elevations. The entrance on the façade is a roll-up metal garage door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Windows	Double-hung	Metal	No Data
Roof	Front Gable	Asphalt	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Well House
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1900
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the south of the house, there is a circa 1900, one-story, one-bay, shed roof, concrete-block well house resting on a concrete-block foundation. The roof is covered in standing seam metal. No windows are visible on the well house. The entrance on the façade is not visible.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Shed	Metal	No Data

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 12/15/2017
Dhr Library Report Number: *No Data*

Project Staff/Notes:

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Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

Circa~
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Wiley, Bell I.
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Property Information

Property Names

Name Explanation	Name
Function/Location	House, 6379 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 6379 Colonial Trail West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	26

Site Description:

January 2018: On the south side of Colonial Trail West, there is a circa 1910 house with one barn and one shed. This building is situated on an approximately 26.00-acre parcel away from Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the south of the house. Open fields are visible to the east and west of the house and a mowed lawn with scattered mature trees and plantings surround the house, some partially obscuring the façade from view. Facing north, the building is set on a fairly-level grade that slopes gently to the north with a tree line to the south. A wooden utility pole is situated at the western edge of the property along Colonial Trail West with overhead utility lines running parallel to Colonial Trail West. There is a second wooden utility pole on the eastern side of the house.

Surveyor Assessment:

January 2018: Site 090-5093, the circa 1910 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1910Ca
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Architectural Style:	Vernacular
Form:	<i>No Data</i>
Number of Stories:	2.0
Condition:	Fair
Interior Plan:	<i>No Data</i>
Threats to Resource:	None Known

Architectural Description:

January 2018: This circa 1910, two-story, five-bay, side-gable, vernacular style, wood-frame house is clad in painted-white wood weatherboard

and rests on a concrete-block foundation with one exterior end Flemish-bond brick chimney with a corbelled cap. The roof is covered in standing seam metal with cornice returns with a metal weather vane in the center of the roof line. There is a one-story, two-bay, screened-in porch under a hipped roof. Sash, double-hung, 6/6, wood-frame and sash, double-hung, 4/1, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door covered by a wooden screen door.

There is a one-story, five-bay, side-gable, wood-frame addition attached to the rear (south) elevation clad in painted-white wood weatherboard and resting on a concrete-block foundation with one central interior Flemish-bond brick chimney with a corbelled cap. The roof is covered in standing seam metal with overhanging eaves. Single and triple, sash, double-hung, 1/1, wood-frame windows and paired, sash, double-hung, 6/6 wood-frame and paired, sash, double-hung, 3/1, wood-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door covered by a wooden screen door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Porch	1-Story Partial Width	Wood	Screened/Enclosed
Windows	Double-hung	Wood	No Data
Roof	Side Gable	Metal	No Data
Chimneys	Exterior End	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1910
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the south of the house, there is a circa 1910, one-and-a-half-story, one-bay, gambrel roof, wood-frame barn clad in wood siding and resting on a concrete-block pier foundation. The roof is covered in standing seam metal with exposed rafter tails. No windows are visible on the shed apart from one fixed, one-light, wood-frame eyebrow window in the gable end. The entrance on the façade is a double-leaf, vertical wood plank door.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (east) elevation clad in wood siding and resting on a concrete-block pier foundation. The roof is covered in standing seam metal. No windows are visible on the addition. The northern elevation of the addition is open.

There is a one-story, five-bay, shed roof, wood-frame addition attached to the side (west) elevation clad in wood siding and resting on a concrete-block foundation. The roof is covered in standing seam metal with exposed rafter tails. Fixed, one-light, wood-frame windows are typical on the addition. The entrance on the addition consists of two paired, single-leaf openings.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the south elevation of the addition clad in wood siding and resting on a concrete-block foundation. The roof is covered in standing seam metal. The top half of the addition is open on three sides.

Number of Stories: 1.5

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Windows	Fixed	Wood	No Data
Roof	Gambrel	Metal	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1910
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the southwest of the house, there is a circa 1910, one-story, one-bay, front-gable, wood-frame shed clad in painted-white vertical wood siding. The foundation is not visible due to the building's placement on the landscape. The roof is covered in asphalt shingles with overhanging eaves. No windows are visible on the shed. The entrance on the façade is a double-leaf, vertical wood plank door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Asphalt	No Data

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: No Data
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: No Data
Survey Date: 12/15/2017
Dhr Library Report Number: No Data

Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

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Wiley, Bell I.

1964 *Embattled Confederates, An Illustrated History of Southerners at War*.

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 6547 Colonial Trail West

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 6547 Colonial Trail West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	17.5

Site Description:

January 2018: On the south side of Colonial Trail West, there is a circa 1952 house with one shed and one secondary dwelling. This building is situated on an approximately 17.46-acre parcel with the main house away from Colonial Trail West and the secondary dwelling close to Colonial Trail West. A grass strip and overgrown bushes separate the secondary dwelling from Colonial Trail West. A single-lane dirt driveway leading from Colonial Trail West to the house. A mowed lawn with scattered mature trees and plantings surround the house. Facing north, the building is set on a fairly-level grade with open fields to the east and west of the house. A wooden utility pole is situated along the driveway with overhead utility lines running parallel to Colonial Trail West. There is a second wooden utility pole to the east of the house.

Surveyor Assessment:

January 2018: Site 090-5094, the circa 1952 house, appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1952Ca
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Architectural Style:	Minimal Traditional
Form:	<i>No Data</i>
Number of Stories:	1.0
Condition:	Fair
Interior Plan:	<i>No Data</i>
Threats to Resource:	None Known

Architectural Description:

January 2018: This circa 1952, one-story, three-bay, side-gable, Minimal traditional style, wood-frame house is clad in painted-white

composition siding and rests on a raised concrete-block foundation with two interior end Flemish-bond brick chimneys with corbelled caps. The roof is covered in asphalt shingles. There is a one-story, three-bay, wood porch under a shed roof supported by tapered painted-white wood posts. The porch was enclosed at one time with paired, sash, double-hung, 1/1, metal-frame windows still visible on the northern end of the porch. Single and paired, sash, double-hung, 4/4, wood-frame and sash, double-hung, 2/2, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, two-bay, shed roof, wood-frame addition attached to the rear (south) elevation clad in painted-white composition siding and resting on a raised concrete-block foundation. The roof is covered in asphalt shingles with metal gutters. Sash, double-hung, 2/2, metal-frame windows are typical on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Partial Width	Wood	Screened/Enclosed
Windows	Double-hung	Wood	<i>No Data</i>
Windows	Double-hung	Metal	<i>No Data</i>
Roof	Side Gable	Asphalt	<i>No Data</i>
Chimneys	Interior End	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1952
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the south of the house, there is a circa 1952, one-story, one-bay, side-gable, concrete-block shed resting on a concrete-block foundation. The roof is covered in standing seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Side Gable	Metal	<i>No Data</i>

Secondary Resource #2

Resource Category: Domestic
Resource Type: Secondary Dwelling
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1900
Condition: Deteriorated
Threats to Resource: None Known

Architectural Description:

January 2018: To the northwest of the house, there is a circa 1900, one-and-a-half-story, three-bay, front-gable, wood-frame house clad in peeling painted-white wood weatherboard and resting on a concrete-block foundation with one central interior Flemish-bond brick chimney with a corbelled cap. The building is starting to collapse, and overgrowth is starting to overtake the building. The roof is covered in standing seam metal. There is a one-story, full-width wood porch under a shed roof that has collapsed. The shed roof was once supported by peeling painted-white square wood posts. The wood framing is exposed where the roof was once attached to the main block of the building. Sash, double-hung, 4/4, wood-frame windows are typical on the façade and elevations; many of the window panes are missing. The entrance on the façade is a single-leaf, wood-panel door that is partially coming off the hinges.

There is a one-story, two-bay, shed roof, wood-frame addition attached to the side (east) elevation clad in painted-white wood weatherboard and resting on a concrete-block foundation. The roof is covered in standing seam metal. Paired, fixed, one-light, wood-frame windows are typical on the addition with some window panes missing. The entrance on the addition is a single-leaf, wood-panel door.

Number of Stories:	1.5		
Exterior Components			
Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Porch	1-Story Full-Width	Wood	Posts
Windows	Double-hung	Wood	<i>No Data</i>
Roof	Front Gable	Metal	<i>No Data</i>
Chimneys	Interior Central	Brick	Flemish Bond

Historic District Information	
Historic District Name:	<i>No Data</i>
Local Historic District Name:	<i>No Data</i>
Historic District Significance:	<i>No Data</i>

CRM Events	
Event Type: Survey:Phase I/Reconnaissance	
Project Review File Number:	<i>No Data</i>
Investigator:	Dawn Muir-Frost
Organization/Company:	Circa~ Cultural Resource Management, LLC
Sponsoring Organization:	<i>No Data</i>
Survey Date:	12/15/2017
Dhr Library Report Number:	<i>No Data</i>
Project Staff/Notes:	<p>January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2.676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.</p> <p>The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.</p>

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Project Bibliographic Information:	<p>Circa~ 2018 Phase I Architectural Survey of the Spring Grove Solar Site, Surry County, Virginia.</p> <p>Advisory Council on Historic Preservation 1986 "36 CFR Part 800 – Protection of Historic Properties (incorporating amendments effective August 5, 2004)" Regulations of the Advisory Council on Historic Preservation Governing the Section 106 Review Process.</p> <p>Billings, Warren M., John E. Selby, and Thad W. Tate 1986 Colonial Virginia: A History.</p> <p>Boye, Herman 1825 A map of the state of Virginia, constructed in conformity to law from the late surveys authorized by the legislature and other original and authentic documents.</p> <p>Campbell, A. H. 1864 Preliminary Map of a Part of the South Side of the James River.</p>

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Wiley, Bell I.

1964 *Embattled Confederates, An Illustrated History of Southerners at War*.

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 915 Swanns Point Road

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 915 Swanns Point Road 610

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting: Rural

Acreeage: 36.1

Site Description:

January 2018: On the west side of Swanns Point Road, there is a circa 1967 house with two sheds, one silo, and one equipment shed. This building is situated on an approximately 36.10-acre parcel away from Swanns Point Road with a single-lane gravel driveway leading from Swanns Point Road to the north of the house. A mowed lawn with scattered mature trees and foundation plantings surround the house. Facing southeast, the building is set on a fairly-level grade that slopes gently to the south and east. Overhead utility lines run parallel to Swanns Point Road with a tree line visible to the northwest of the house. There is an above-ground storage tank situated on the eastern side of the house.

Surveyor Assessment:

January 2018: Site 090-5095, the circa 1967 house, appears to be occupied and in fair to good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a ranch style, which is common in Surry County and throughout Virginia with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1967Ca
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Architectural Style:	Ranch
Form:	No Data
Number of Stories:	1.0
Condition:	Good
Interior Plan:	No Data
Threats to Resource:	None Known

Architectural Description:

January 2018: This circa 1967, one-story, four-bay, side-gable, ranch style, Flemish-bond brick house rests on a Flemish-bond brick foundation

with one central interior Flemish-bond brick chimney with a corbelled cap. The center bay projects under a front gable. The roof is covered in asphalt shingles with overhanging eaves and metal gutters and downspouts. There is a one-story, one-bay, Flemish-bond brick porch under the roof overhang supported by square painted-white wood posts. Three stone steps lead from the porch to the front yard. Single and triple, sash, double-hung, 1/1, vinyl replacement windows are typical on the façade and elevations. Some of the windows are flanked by painted-white wood shutters. There is one bay window on the projecting bay that consists of one fixed, one-light, vinyl replacement window flanked by sash, double-hung, 1/1, vinyl replacement windows under a metal hipped roof hood. The entrance on the façade is a single-leaf, wood-panel door with sidelights covered by a metal screen door.

There is a one-story, one-bay, side-gable, Flemish-bond brick addition attached to the side (east) elevation resting on a Flemish-bond brick foundation. The roof is covered in asphalt shingles with metal gutters and downspouts. Sash, double-hung, 1/1, vinyl replacement windows are typical on the addition. The entrance on the addition is a roll-up metal garage door with lights.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Brick	Flemish Bond
Structural System and Exterior Treatment	Masonry	Brick	Flemish Bond
Porch	1-Story Partial Width	Wood	Posts
Windows	Double-hung	Vinyl	No Data
Windows	Bay	Vinyl	No Data
Roof	Side Gable	Asphalt	No Data
Chimneys	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1967
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the east of the house, there is a circa 1967, one-story, one-bay, front-gable, concrete-block shed resting on a concrete-block foundation (noted as Shed 1 on the site plan). The roof is covered in asphalt shingles with overhanging eaves. No windows are visible on the façade, fixed, two-light, wood-frame windows are typical on the side (north and south) elevations. The entrance on the façade is a single-leaf, wood-panel door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Windows	Fixed	Wood	No Data
Roof	Front Gable	Asphalt	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1967
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the east of the house, there is a circa 1967, one-story, one-bay, front-gable, painted-white concrete-block shed resting on a concrete-block foundation (noted as Shed 2 on the site plan). The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a single-leaf, vertical wood plank door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Front Gable	Asphalt	<i>No Data</i>

Secondary Resource #3

Resource Category: Agriculture/Subsistence
Resource Type: Silo
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1967
Condition: Fair
Threats to Resource: None Known

Architectural Description:
 January 2018: To the east of the house, there is a circa 1967, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation. The roof is covered in standing seam metal. No windows are visible on the silo. The entrance on the façade is not visible.

Secondary Resource #4

Resource Category: Domestic
Resource Type: Shed - Vehicle
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1967
Condition: Fair
Threats to Resource: None Known

Architectural Description:
 January 2018: To the north of the house, there is a circa 1967, one-story, three-bay, side-gable, wood-frame equipment shed clad in wood siding resting on a poured-concrete slab-on-grade foundation. The roof is covered in corrugated metal with overhanging eaves and exposed rafter tails. No windows are visible on the equipment shed. The façade and side (south) elevations are open.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Slab	Concrete	Stuccoed/Parged
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Roof	Side Gable	Metal	<i>No Data</i>

Historic District Information	
Historic District Name:	<i>No Data</i>
Local Historic District Name:	<i>No Data</i>
Historic District Significance:	<i>No Data</i>

CRM Events	
Event Type: Survey:Phase I/Reconnaissance	
Project Review File Number:	<i>No Data</i>
Investigator:	Dawn Muir-Frost
Organization/Company:	Circa~ Cultural Resource Management, LLC
Sponsoring Organization:	<i>No Data</i>
Survey Date:	12/15/2017
Dhr Library Report Number:	<i>No Data</i>
Project Staff/Notes:	

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trail West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Project Bibliographic Information:

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Smith, John
1606 Virginia / discovered and discribed

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1965 Surry quadrangle sheet.

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Wiley, Bell I.
1964 Embattled Confederates, An Illustrated History of Southerners at War.

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 1585 Swanns Point Road

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 1585 Swanns Point Road 610

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	1.5

Site Description:

January 2018: On the west side of Swanns Point Road, there is a circa 1957 house with one canopy and one garage. This building is situated on an approximately 1.47-acre parcel away from Swanns Point Road with a single-lane gravel driveway leading from Swanns Point Road to the west of the house. A mowed lawn with scattered mature trees surround the house. Facing west, the building is set on a fairly-level grade that slopes gently to the south and west. There is a wooden utility pole at the end of the driveway and to the south of the house with overhead utility lines running parallel to Swanns Point Road and parallel to the driveway. A tree line is visible to the north and west of the house.

Surveyor Assessment:

January 2018: Site 090-5096, the circa 1957 house, appears to be occupied and in fair to good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa- recommends no further architectural survey work on this resource.

Surveyor Recommendation:	Recommended Not Eligible
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Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1957Ca
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Architectural Style:	Vernacular
Form:	<i>No Data</i>
Number of Stories:	1.0
Condition:	Good
Interior Plan:	<i>No Data</i>
Threats to Resource:	None Known

Architectural Description:

January 2018: This circa 1957, one-story, three-bay, side-gable, vernacular style, wood-frame house is clad in painted-gray composition siding and rests on a raised concrete-block foundation with one central interior concrete-block chimney. The roof is covered in standing seam metal

with overhanging eaves and metal gutters and downspouts. There is a one-story, one-bay wood porch surrounded by painted-white latticework obscuring the view of the porch. Single and triple, sash, double-hung, 1/1, metal-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door. There is a one-story, full-width, shed roof, screened-in porch on the side (north) elevation resting on a wood-pier foundation.

There is a one-story, one-bay, side-gable, wood-frame addition attached to the side (south) elevation clad in painted-gray composition siding and resting on a raised concrete-block foundation. The roof is covered in asphalt shingles with a boxed cornice. Sash, double-hung, 2/2, metal-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door covered by a decorative metal storm door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Partial Width	Wood	Square
Porch	1-Story Full-Width	Wood	Screened/Enclosed
Windows	Double-hung	Metal	No Data
Roof	Side Gable	Metal	No Data
Chimneys	Interior Central	Concrete	Block

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Carport
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1957
Condition: Good
Threats to Resource: None Known

Architectural Description:

January 2018: To the northeast of the house, there is a circa 1957, one-story, one-bay, front-gable, wood-frame canopy resting on the ground. The roof is covered in asphalt shingles. The canopy is open on all sides.

Secondary Resource #2

Resource Category: Domestic
Resource Type: Garage
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1957
Condition: Good
Threats to Resource: None Known

Architectural Description:

January 2018: To the north of the house, there is a circa 1957, one-story, two-bay, front-gable, wood-frame garage clad in painted-white composition siding and resting on a poured-concrete slab-on-grade foundation. The roof is covered in asphalt shingles. No windows are visible on the garage. The entrance on the façade consists of two roll-up metal garage doors.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Slab	Concrete	Stuccoed/Parged
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Roof	Front Gable	Asphalt	No Data

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data

Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 12/15/2017
Dhr Library Report Number: *No Data*

Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Bibliographic Information

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Property Notes:

No Data

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1965 Surry quadrangle sheet.

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Wiley, Bell I.
1964 Embattled Confederates, An Illustrated History of Southerners at War.

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 1603 Swann Point Road

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 1603 Swann Point Road 610

County/Independent City(s):	Surry (County)
Incorporated Town(s):	Spring Grove
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting: Rural

Acreage: .1

Site Description:

January 2018: On the west side of Swanns Point Road, there is a circa 1969 house with three sheds and one well house. This building is situated on an approximately 0.68-acre parcel away from Swanns Point Road with a single-lane gravel driveway leading from Swanns Point Road to the east of the house. A mowed lawn with scattered mature trees surround the house. Facing east, the building is set on a fairly-level grade that slopes gently to the south. Overhead utility lines run parallel to Swanns Point Road with a tree line visible to the north and west of the house. There is a metal satellite dish visible in the front yard.

Surveyor Assessment:

January 2018: Site 090-5097, the circa 1969 house, appears to be occupied and in fair to good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). The house is a ranch style, which is common in Surry County and throughout Virginia with several examples within the APE. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa- recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
Date of Construction:	1969Ca
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Architectural Style:	Ranch
Form:	No Data
Number of Stories:	1.0
Condition:	Good
Interior Plan:	No Data
Threats to Resource:	None Known

Architectural Description:

January 2018: This circa 1969, one-story, six-bay, side-gable, ranch style, Flemish-bond brick house rests on a Flemish-bond brick foundation. The roof is covered in asphalt shingles with metal gutters and downspouts. There is a one-bay, Flemish-bond brick stoop with two Flemish-bond

brick steps leading from the stoop to the front yard. Single and paired, sash, double-hung, 1/1, metal-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Brick	Flemish Bond
Structural System and Exterior Treatment	Masonry	Brick	Flemish Bond
Porch	Stoop/Deck	Brick	Square
Windows	Double-hung	Metal	No Data
Roof	Side Gable	Asphalt	No Data

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1969
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the northwest of the house, there is a circa 1969, one-story, one-bay, front-gable, wood-frame shed clad in painted-gray composition siding and resting on a wood pier foundation (noted as Shed 1 on the site plan). The roof is covered in asphalt shingles with overhanging eaves. No windows are visible on the shed. The entrance on the façade is a roll-up metal garage door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Wood	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Roof	Front Gable	Asphalt	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style
Form: No Data
Date of Construction: 1969
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the north of the house, there is a circa 1969, one-story, one-bay, front-gable, wood-frame shed clad in plywood siding (noted as Shed 2 on the site plan). The foundation is not visible due to the building's placement on the landscape. The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a double-leaf, plywood door.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Plywood/Particle Board	Siding
Roof	Front Gable	Asphalt	No Data

Secondary Resource #3

Resource Category: Domestic
Resource Type: Shed
Architectural Style: No discernible style

Form: *No Data*
Date of Construction: 1969
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the north of the house, there is a circa 1969, one-story, two-bay, side-gable, wood-frame shed clad in plywood siding and resting on a concrete-block foundation (noted as Shed 3 on the site plan). The roof is covered in asphalt shingles with overhanging eaves. No windows are visible on the façade; sash, double-hung, 2/2, metal-frame windows are typical on the side (east) elevation. The entrance on the façade consists of two double-leaf, plywood doors.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (west) elevation clad in plywood siding and resting on a concrete-block foundation. The roof is covered in asphalt shingles with a boxed cornice. No windows are visible on the addition. No entrance is visible on the addition.

Number of Stories: 1

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Plywood/Particle Board	Siding
Windows	Double-hung	Metal	<i>No Data</i>
Roof	Side Gable	Asphalt	<i>No Data</i>

Secondary Resource #4

Resource Category: Domestic
Resource Type: Well House
Architectural Style: No discernible style
Form: *No Data*
Date of Construction: 1969
Condition: Fair
Threats to Resource: None Known

Architectural Description:

January 2018: To the northwest of the house, there is a circa 1969, one-half-story, one-bay, shed roof, concrete-block well house resting on a concrete-block foundation situated partially below grade. The roof is covered on corrugated metal. No windows are visible on the well house. The entrance on the façade is not visible.

Number of Stories: .5

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Shed	Metal	<i>No Data</i>

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir-Frost
Organization/Company: Circa- Cultural Resource Management, LLC
Sponsoring Organization: *No Data*
Survey Date: 12/15/2017
Dhr Library Report Number: *No Data*

Project Staff/Notes:

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Bibliographic Information

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No Data

Property Notes:

No Data

Project Bibliographic Information:

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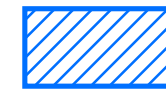
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APPENDIX B
PROJECT AREA MAP

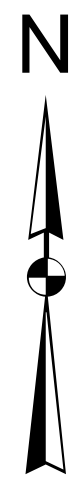


Legend

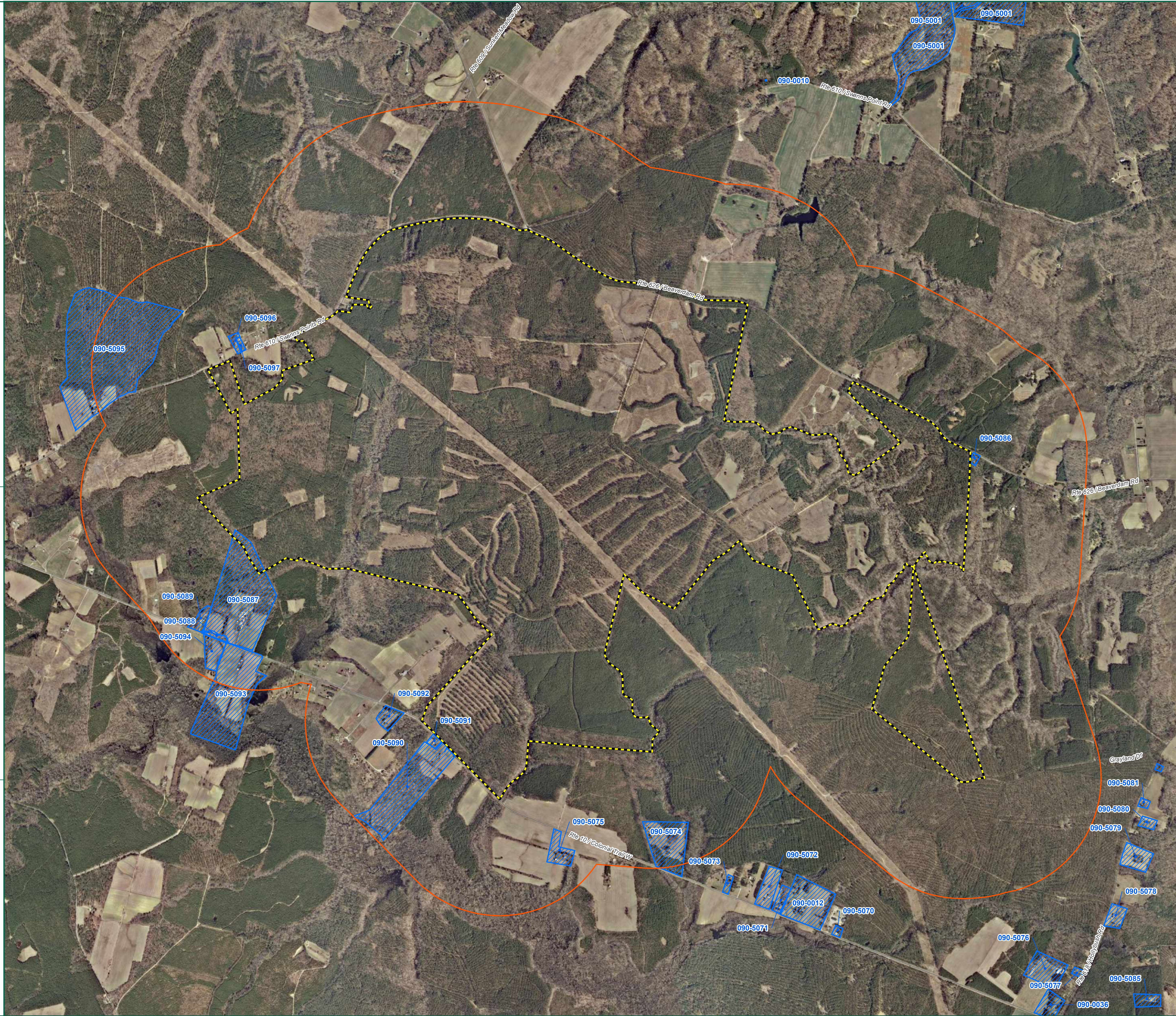
-  Project Study Limits - 2,667.3 Acres
-  Half Mile Project Buffer
-  Architecture Resources

NOTES:

1. PROJECT STUDY LIMITS WERE PROVIDED BY URBAN GRID AND DO NOT NECESSARILY MATCH PARCEL BOUNDARIES.
2. ARCHITECTURE RESOURCES SOURCED FROM VCRIS.



0 500 1,000 2,000
Feet



THIS DRAWING PREPARED AT THE
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YOUR VISION ACHIEVED THROUGH OURS.

DATE
02/02/2018
DRAWN BY
L. MAJOR
DESIGNED BY
L. MAJOR
CHECKED BY
R. THOMAS

SCALE
1" = 1,000'

Site Development	Residential	Infrastructure	Technology	Environmental



TIMMONS GROUP

SPRING GROVE SOLAR SITE SURRY COUNTY, VIRGINIA ARCHITECTURE RESOURCES MAP

JOB NO.
39227
SHEET NO.
1 of 1



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 1111 East Main Street, Suite 1400, Richmond, VA 23219

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www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

March 21, 2018

Ms Carol Tyer
Circa Cultural Resources Management, LLC
453 McLaws Circle, Suite 3
Williamsburg, VA 23185

Re: Review of Spring Grove Phase IA Archaeological Assessment and Waiver of Archaeological Phase 1 Survey Requirement under Permit by Rule for Small Renewable Energy Projects

Ms Tyer,

I have reviewed *Management Summary and Archaeological Probability Analysis Spring Grove Property Surry County, Virginia* dated February 2017. Based on the information presented in the document, the proposed Spring Grove Solar Farm tract appears to have a long standing land use based on timber production and harvesting. The tract was formerly under timber company ownership and has likely been subjected to rotational clear cutting throughout much of the 20th century. Contemporary images of the project area document a very high degree of ground disturbance.

Interior areas of Sussex County removed from water sources have been shown to have very low prehistoric site probability. The Phase IA research did not document any evidence for historic occupation and the tract has likely been in woodlands/ timber production for much of the historic period.

Given the extensive, project area-wide level of disturbance coupled with a generally low site probability, DEQ concurs that no additional Phase 1 Archaeological Survey work is warranted. Requirements for Phase I Architectural Survey remain unchanged.

Sincerely,

A handwritten signature in cursive script, appearing to read "Chris Egghart".

Chris Egghart
Cultural Resources Specialist

Circa~ Cultural Resource Management, L.L.C.
453 McLaws Circle, Suite 3
Williamsburg, Virginia 23185
(757) 220-5023

Management Summary and Archaeological Probability Analysis
Spring Grove Property
Surry County, Virginia
May 2017

Introduction

In February and May 2017, Circa~ Cultural Resource Management, L.L.C. (Circa~) conducted a walkover of the approximately 2,287.1-acre Spring Grove property located in Surry County, Virginia (Figures 1 and 2). The project area is bordered by Beaverdam Road to the north and rural forested land to the south, east, and west. The walkover was completed by Carol D. Tyrer, Principal Investigator. Historic research and graphics were completed by Dawn Muir-Frost, Architectural Historian and Historian.

Environmental Background

The primary reasons for incorporating environmental studies into archaeological projects are: to learn of possible environmental constraints or lack of constraints; to determine the presence or absence of critical resources that might have influenced site distribution, etc.; and to discover environmental factors -- erosion, deposition, subsidence, and historic land use patterns -- that might influence the integrity of archaeological sites once they have formed. Keeping these objectives in mind, a brief environmental summary of the project area is provided below.



Figure 1. Approximate project location, Claremont USGS quad.



Figure 2. Detail of approximate project location, Claremont USGS quad.

The tract is situated in the Coastal Plain physiographic province and is located in a planted pine plantation. The area has been timbered and replanted at least three times in the past based on the stumps and current stand of timber. The trees are roughly 20 to 25 years old and the ground cover vegetation is open. The tract is fairly level and ranges in elevation from approximately 80 feet above mean sea level (AMSL) in the southeastern section of the tract to 100 feet AMSL in the middle and northern sections of the tract. No surface waters are located within the tract. The landform consists of a dissected upland between Cypress Swamp to the southwest and Gray's Creek to the northeast. A powerline easement runs roughly east to west across the tract. The site can be accessed via gravel and dirt roads off Route 10 and Beaverdam Road.

Aerial photos from 1990 to the present show the timbering activities within the project area during the last 26 years. No other development has occurred within the project area during this period (Figures 3 - 9).

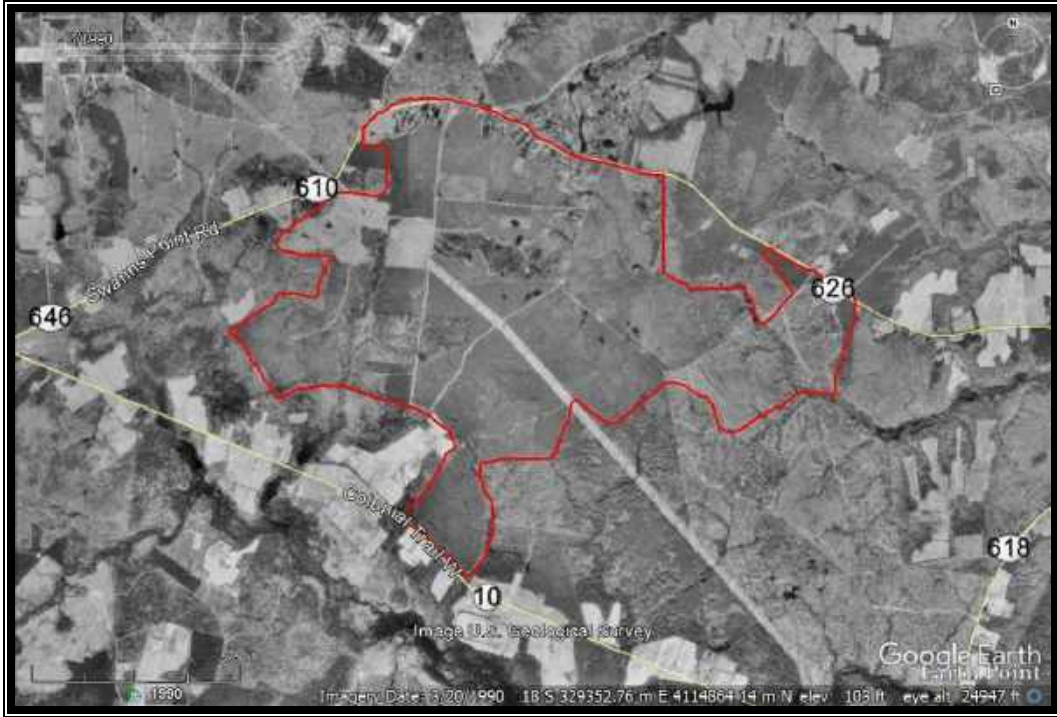


Figure 3. 1990 aerial view of project area, from Google Earth.

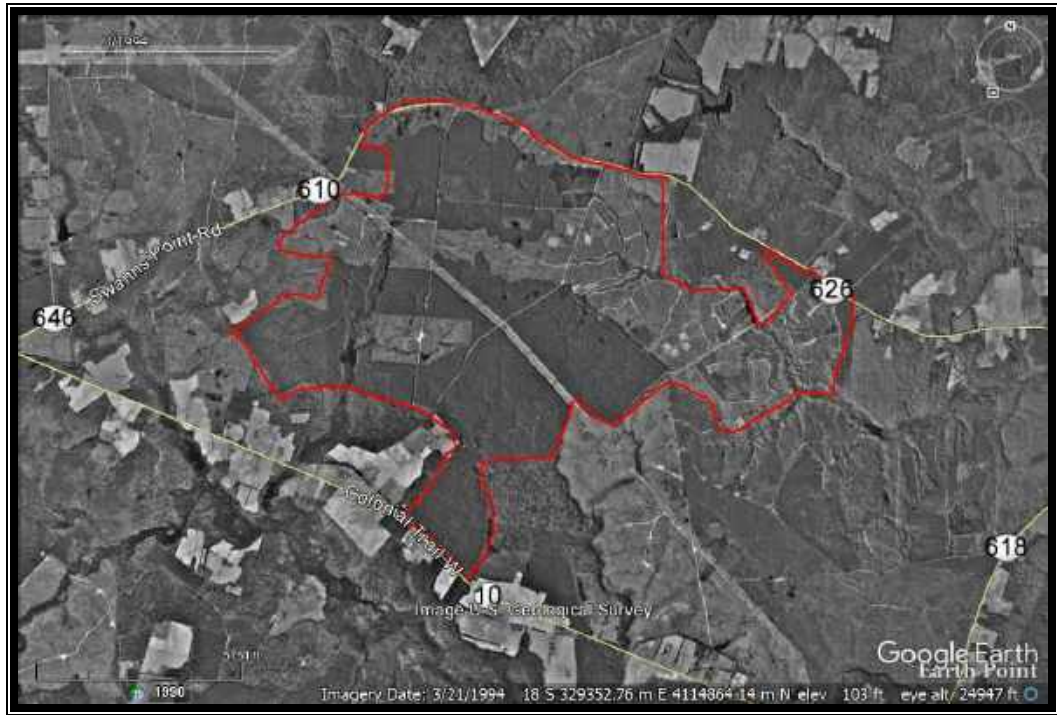


Figure 4. 1994 aerial view of project area, from Google Earth.



Figure 5. 2003 aerial view of project area, from Google Earth.

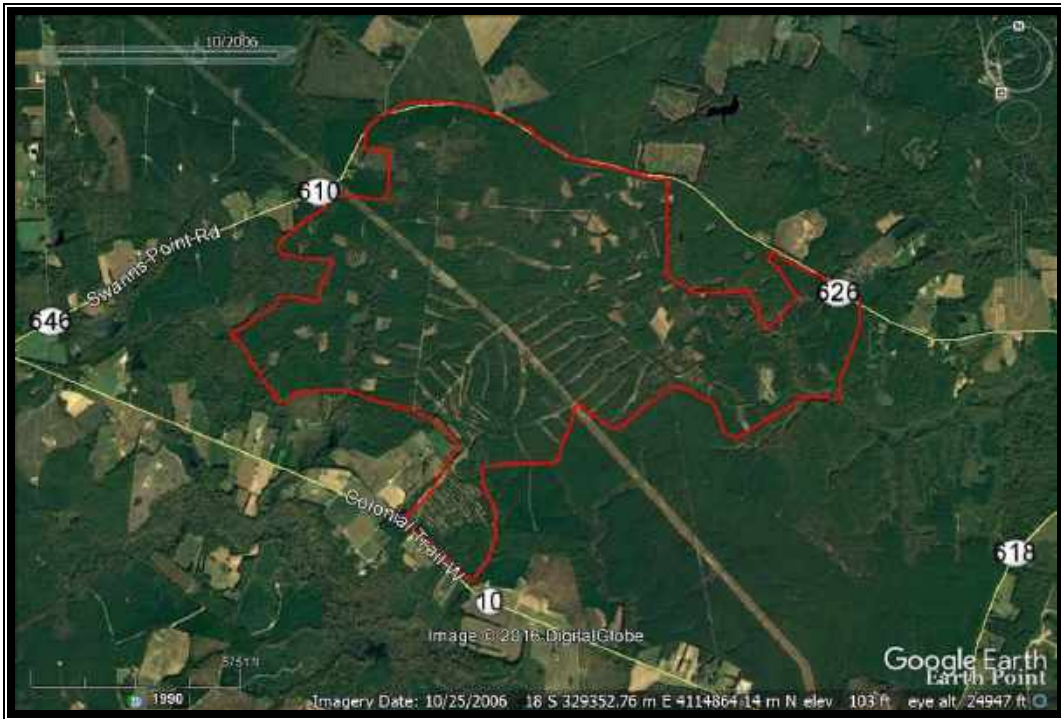


Figure 6. 2006 aerial view of project area, from Google Earth.

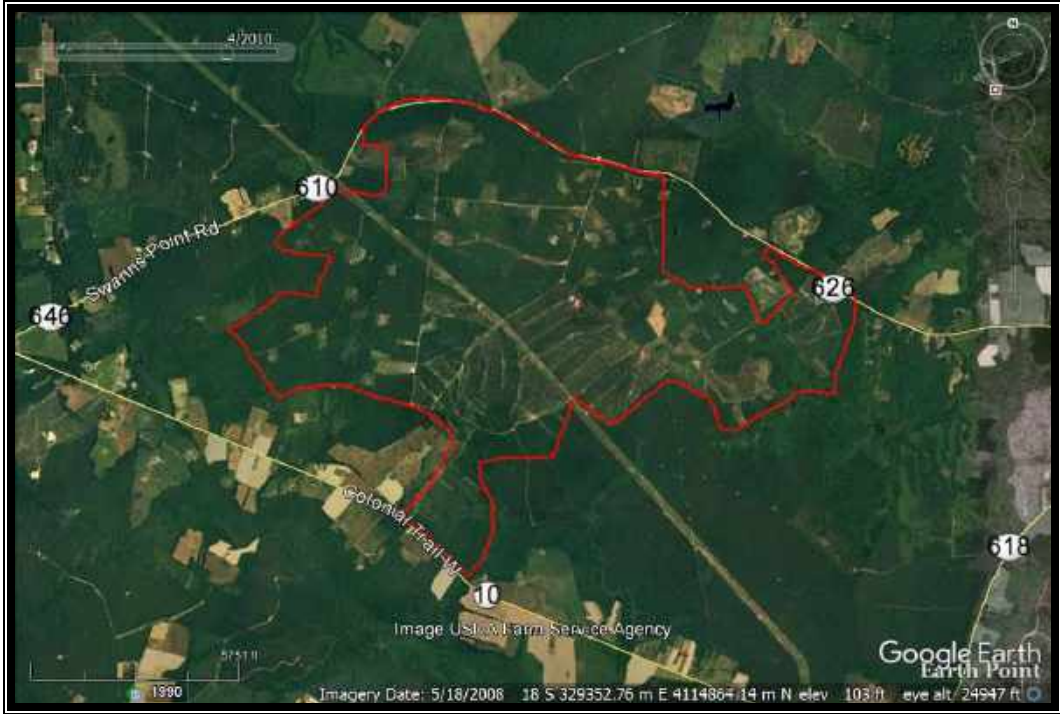


Figure 7. 2010 aerial view of project area, from Google Earth.

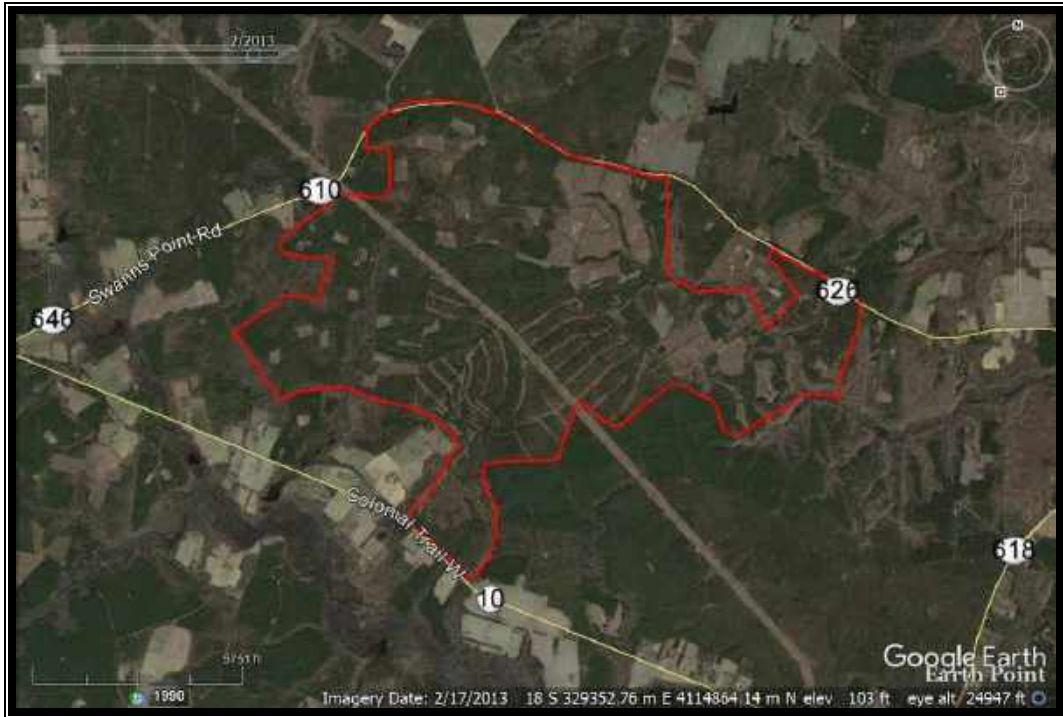


Figure 8. 2013 aerial view of project area, from Google Earth.

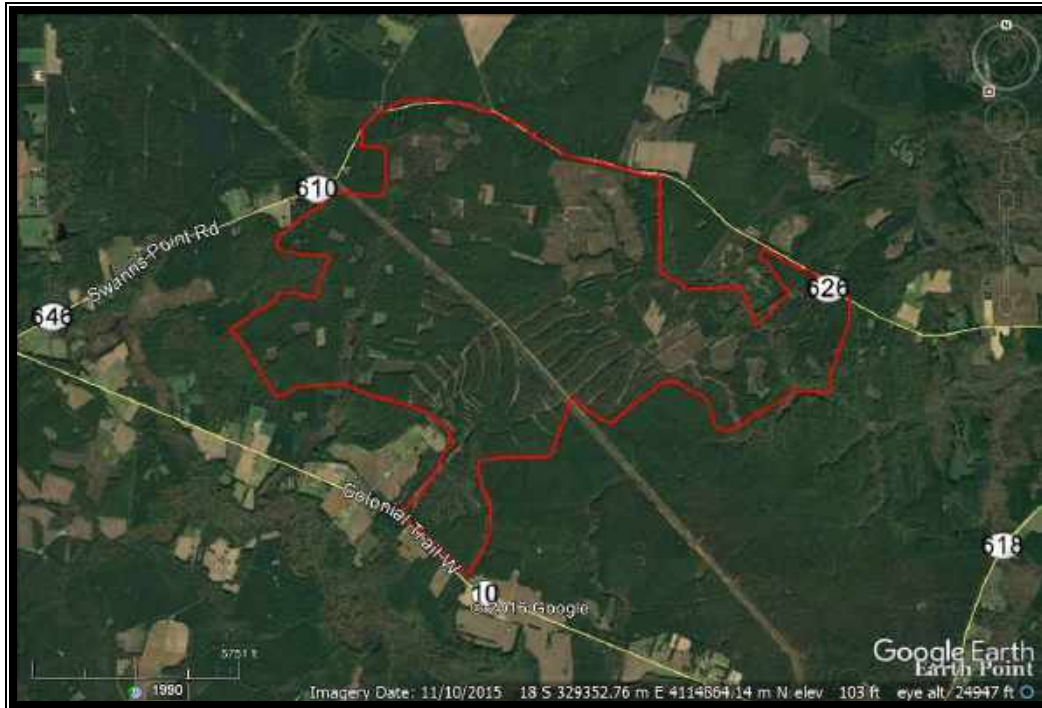


Figure 9. Current (2017) aerial view of project area, from Google Earth.

Soils

At least 19 different soil types and soil type variants exist within the project area. These soil types and variants include Nevarc-Remlik complex, 6% to 10% slopes; Craven fine sandy loam, 2% to 6% slopes; Jedburg loam, 0% to 2% slopes; Montross silt loam, 2% to 6% slopes; Craven-Slagle complex, 2% to 6% slopes; Nevarc-Remlik complex, 10% to 15% slopes; Kinston loam, 0% to 2% slopes, frequently flooded; Rains fine sandy loam, 0% to 2% slopes; Craven fine sandy loam, 6% to 10% slopes; Nevarc-Remlik complex, 15% to 25% slopes; Bibb fine sandy loam, 0% to 2% slopes, frequently flooded; Nevarc-Remlik complex, 25% to 65% slopes; Emporia fine sandy loam, 2% to 6% slopes; Burrowsville loamy sand, 2% to 6% slopes; Craven fine sandy loam, 0% to 2% slopes; Nevarc-Remlik complex, 2% to 6% slopes; Montross silt loam, 0% to 2% slopes; Craven clay loam, 6% to 10% slopes, severely eroded; and Slagle fine sandy loam, 2% to 6% slopes; (Natural Resources Conservation Service [NRCS] 2017). Each of these types and variants are described below including references to drainage, hunting and gathering potential, and horticultural and agricultural productivity potential. Further, conclusions regarding the suitability of each for historic and Native American occupation and archaeological site probability are also explained.

Soils maps and associated data provide an analysis of soil types within a geographic area. Despite comprehensive and detailed coverage of most areas by soils surveyors, researchers often miss microenvironments due to their small footprints. Unfortunately, resource rich microenvironments were often common sites of cultural activity. As such, this analysis of archaeological potential is a “best-guess” using the best available data.

Well-drained, agriculturally- and horticulturally-productive soils proximal to transportation corridors were the best choices for historic period occupation. Secondary areas, such as those containing wet soils and acid soils, after improvement such as drainage and liming also may have also been suitable choices for historic occupation. No navigable waterways exist within the project area; thus, water travel is not a factor in the site probability analysis of this tract.

Areas of wet soils may have been attractive to Native American cultures. In these areas, edible herbaceous plant species may have been gathered and faunal species browsing these areas may have been hunted with success. Well-drained soils proximal to these resource-rich areas may have made adequate hunting and gathering campsites where the hunted and gathered resources were processed. These sites would have left an observable archaeological footprint. Little archaeological evidence would be located within the wet areas, the immediate locale of resource procurement.

Areas containing gravelly soils may have been especially attractive to stone tool-manufacturing Native American cultures but the level of attraction may have depended on the type and quality of the gravels available in these locations. Well-drained soils proximal to quarry-able, gravel-rich areas would have made adequate lithic material procurement campsites but in this case, archaeological materials may be located at both the campsites and the quarry sites.

Soils Identified Within the Project Area

Nevarc-Remlik complex, 6% to 10% slopes (28C) is the primary soil identified within the project area covering approximately 23% of the western, southern, eastern, and central portions of the project tract (Figure 10 and Table 1). Craven fine sandy loam, 2% to 6% slopes (10B) is identified within the northern, western, eastern, southern, and central portions of the project area covering approximately 17% of the project tract. Jedburg loam, 0% to 2% slopes (17A) is identified within the southern, northern, western, and central portions of the project area covering approximately 12% of the project tract. Montross silt loam, 2% to 6% slopes (24B) is identified within the northern, central, and western portions of the project area covering approximately 10% of the project tract. Craven-Slagle complex, 2% to 6% slopes (12B) is identified within the northern, southern, eastern, and central portions of the project area covering approximately 10% of the project tract. Nevarc-Remlik complex, 10% to 15% slopes (28D) is identified within the eastern and central portions of the project area covering approximately 6% of the project tract. Kinston loam, 0% to 2% slopes, frequently flooded (20A) is identified within the western, central, and southern portions of the project area covering approximately 6% of the project tract. Rains fine sandy loam, 0% to 2% slopes (31A) is identified within the northern and central portions of the project area covering approximately 5% of the project tract. Craven fine sandy loam, 6% to 10% slopes (10C) is identified within the western and central portions of the project area covering approximately 3% of the project tract. Nevarc-Remlik complex, 15% to 25% slopes (28E) is identified within the central and eastern portions of the project area covering approximately 3% of the project tract. Bibb fine sandy loam, 0% to 2% slopes, frequently flooded (2A) is identified within the southern portion of the project area covering approximately 2% of the project tract.

Nevarc-Remlik complex, 25% to 65% slopes (28F) is identified within the eastern portion of the project area covering approximately 1% of the project tract. Emporia fine sandy loam, 2% to 6% slopes (14B) is identified within the eastern portion of the project area covering approximately less than 1% of the project tract. Burrowsville loamy sand, 2% to 6% slopes (5B) is identified within the eastern portion of the project area covering approximately less than 1% of the project tract. Craven fine sandy loam, 0% to 2% slopes (10A) is identified within the northern portion of the project area covering approximately less than 1% of the project tract. Nevarc-Remlik complex, 2% to 6% slopes (28B) is identified within the western and central portion of the project area covering approximately less than 1% of the project tract. Montross silt loam, 0% to 2% slopes (24A) is identified within the western portion of the project area covering approximately less than 1% of the project tract. Craven clay loam, 6% to 10% slopes, severely eroded (11C3) is identified within the southern portion of the project area covering approximately less than 1% of the project tract. Slagle fine sandy loam, 2% to 6% slopes (33B) is identified within the western portion of the project area covering approximately less than 1% of the project tract. Water makes up the remaining approximately 1% of the project area.

Table 1. Soils Identified Within the Project Area Boundaries.

Soil Symbol	Soil Name	Acres Within the Project Area	Percentage Within the Project Area
28C	Nevarc-Remlik complex, 6% to 10% slopes	547.1	23%
10B	Craven fine sandy loam, 2% to 6% slopes	413.4	17%
17A	Jedburg loam, 0% to 2% slopes	292.2	12%
24B	Montross silt loam, 2% to 6% slopes	234.3	10%
12B	Craven-Slagle complex, 2% to 6% slopes	226.4	10%
28D	Nevarc-Remlik complex, 10% to 15% slopes	140.8	6%
20A	Kinston loam, 0% to 2% slopes, frequently flooded	135.2	6%
31A	Rains fine sandy loam, 0% to 2% slopes	112.2	5%
10C	Craven fine sandy loam, 6% to 10% slopes	70.7	3%
28E	Nevarc-Remlik complex, 15% to 25% slopes	64.9	3%
2A	Bibb fine sandy loam, 0% to 2% slopes, frequently flooded	35.1	2%
28F	Nevarc-Remlik complex, 25% to 65% slopes	20.0	1%
14B	Emporia fine sandy loam, 2% to 6% slopes	10.4	Less than 1%
5B	Burrowsville loamy sand, 2% to 6% slopes	7.9	Less than 1%
10A	Craven fine sandy loam, 0% to 2% slopes	7.2	Less than 1%
28B	Nevarc-Remlik complex, 2% to 6% slopes	4.9	Less than 1%
24A	Montross silt loam, 0% to 2% slopes	2.7	Less than 1%
11C3	Craven clay loam, 6% to 10% slopes, severely eroded	1.7	Less than 1%
33B	Slagle fine sandy loam, 2% to 6% slopes	1.0	Less than 1%

Nevarc Soil (28C, 28D, 28E, 28F, 28B)

Nevarc soil a very-deep, moderately-well-drained, slowly-permeable soil that formed in marine sediments found on marine terraces of the Coastal Plain (NRCS 2017). Depth to bedrock is over 72 inches and quartz gravel ranges from 0% to 15% throughout the solum with 0% to 35% in the substratum in this extremely acid to moderately acid soil. This soil features a high to very high surface runoff. Most areas of this soil are in pine and mixed hardwood forest.

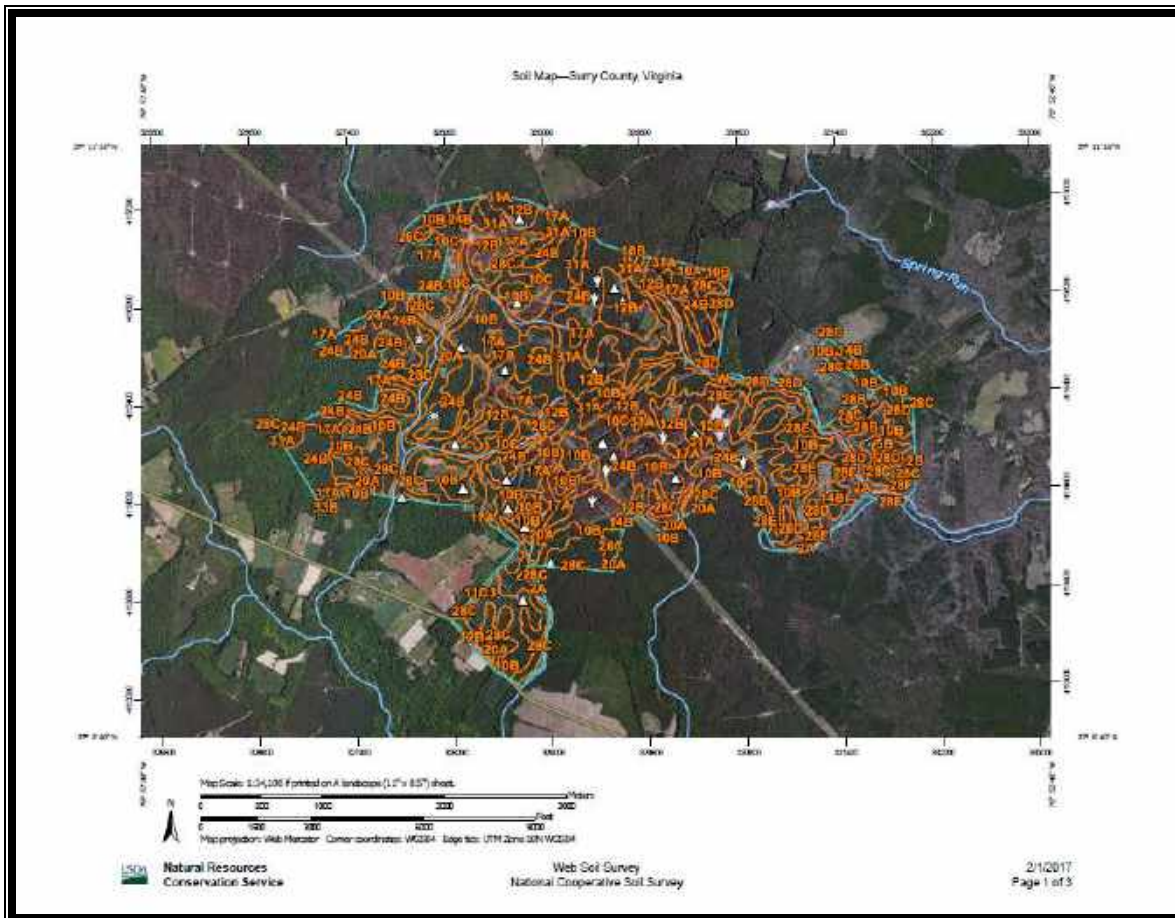


Figure 10. Project area soil map, from NRCS website.

Remlik Soil (28C, 28D, 28E, 28F, 28B)

Remlik soil is a very-deep, well-drained, moderately- to moderately-rapidly permeable soil that formed in loamy and sandy textured fluvial and marine sediments found on side slopes of the Coastal Plain (NRCS 2017). Solum thickness ranges from 30 inches to over 60 inches in this extremely acid to moderately acid soil. Gravel ranges from 0% to 35% throughout the solum. This soil also features a medium to very rapid surface runoff. Most of this soil is in pine and mixed hardwood forest with a small acreage on sloping areas farmed or in pasture.

Craven Soil (10B, 12B, 10C, 10A, 11C3)

Craven soil is a very-deep, moderately-well-drained, slowly-permeable soil formed in marine sediments found on the uplands of the Atlantic Coastal Plain (NRCS 2017). Bedrock is over 60 inches below the ground surface in this extremely acid to strongly acid soil. This soil supports both crops and woodland. Cultivated areas can support corn, soybeans, tobacco, cotton, small grains, peanuts, and pasture. Woodland areas can support loblolly pine, red maple, sweet gum, water oak, southern red oak, yellow poplar, black gum, white oak, post oak, American holly, and other overstory species. Understory species include bitter gall berry, sourwood, flowering dogwood, wax myrtle, blueberry, Carolina Jessamine, large gall berry, honeysuckle, and summer sweet clethera.

Jedburg Soil (17A)

Jedburg soil is a nearly-level, somewhat-poorly-drained, moderately-slowly-permeable soil formed in loamy and silty marine or fluvial sediments found on broad flats or slightly depressed areas on terraces on the Coastal Plain (NRCS 2017). This soil is very strongly acid to moderately acid and features a slow surface runoff. Most of this soil is planted in pines with understory species of myrtle, blackberry, gall berry, and broom sedge common. Some areas are cleared for row crops or pasture, or have been cleared and replanted in pines.

Montross Soil (24B, 24A)

Montross soil is a very-deep, moderately-well-drained, moderately-slowly-permeable soil that formed in fluvial sediments found on nearly level to gently slopes of the Coastal Plain (NRCS 2017). Solum thickness ranges from 60 inches to over 80 inches and coarse rock fragments make up 0% to 5% of the solum in this extremely acid to strongly acid soil. This soil featured a moderately slow to slow surface runoff. This soil is mostly used for woodland and some pasture. Where wooded, this soil can support a mixed hardwood and pine forest. A small acreage of this soil is in cropland and can support corn, soybeans, barley, and wheat.

Slagle Soil (12B, 33B)

Slagle soil is a very-deep, moderately-well-drained, moderately-slowly- to slowly-permeable soil found within marine terraces and uplands of the Atlantic Coastal Plain (NRCS 2017). Bedrock is located over 75 inches below the ground surface in this extremely acid to strongly acid soil. This soil is mainly used for crops and forestry. Where cultivated, this soil can support corn, soybeans, peanuts, and tobacco. Where wooded, the soil can support loblolly pine, Virginia pine, sweet gum, red maple, southern red oak, water oak, yellow poplar, and hickory.

Kinston Soil (20A)

Kinston soil is a very-deep, poorly-drained, moderately-permeable soil formed in marine sediments found on floodplains of the Coastal Plain (NRCS 2017). Solum thickness ranges from 40 inches to 72 inches and depth to bedrock is over 72 inches in this strongly acid to very strongly acid soil. Content of rock fragments is 0% to 3% throughout the solum. This soil features a negligible surface runoff. Most of this soil is in forest with limited pasture and crop growth. Where cleared, this soil can support growing pasture, corn, soybeans, and general farm crops. Where wooded, this soil can support water-tolerant hardwoods such as sweet gum, black gum, water oak, poplar, hickory, beech, elm, and ironwood. Loblolly pines are also found in some drained areas.

Rains Soil (31A)

Rains soil is a very-deep, poorly-drained, moderately-permeable soil that formed in marine and fluviomarine sediments on flats, depressions, and Carolina Bays of the Southern Coastal Plain (NRCS 2017). Depth to bedrock is over 80 inches in this extremely acid to strongly acid soil. This soil also features a negligible surface runoff. Most of this soil is in forest or cropland. Where cleared, this soil can support corn,

soybeans, and small grains. Where wooded, this soil can support pond pine, loblolly pine, and hardwoods.

Bibb Soil (2A)

Bibb soil a very-deep, poorly-drained, moderately-permeable soil with a very slow surface runoff that formed in stratified loamy and sandy alluvium found on floodplains of streams in the Coastal Plain (NRCS 2017). This soil is extremely acid to strongly acid and is commonly flooded. This soil is dominantly native woodland consisting of sweet gum, loblolly pine, water oak, red maple, willow oak, green ash, bald cypress, swamp tupelo, and black willow. A few areas have been cleared, drained, and are used for pasture.

Emporia Soil (14B)

Emporia soil is very-deep, well-drained, moderately-slowly- to slowly-permeable soil found on the uplands of the Atlantic Coastal Plain (NRCS 2017). Bedrock is over 72 inches below the ground surface in this very strongly acid to moderately acid soil. This soil supports both crops and woodland. Cultivated areas can support peanuts, soybeans, corn, tobacco, and cotton. Woodland areas can support loblolly pine, Virginia pine, red maple, sweet gum, oak, and hickory.

Burrowsville Soil (5B)

Burrowsville soil is a very-deep, moderately-well-drained, slowly-permeable soil that formed in stratified marine and fluvial sediments found on the Coastal Plain (NRCS 2017). Solum thickness ranges from 40 inches to over 70 inches and depth to fragipan ranges from 18 inches to 36 inches in this extremely acid to strongly acid soil. Rounded quartz gravel ranges from 0% to 15% by volume throughout the solum. This soil features a slow to rapid surface runoff and this soil commonly has a perched water table at a depth of 1.50 feet to 3.00 feet during wet periods from December to April. Most of this soil is used for growing corn, soybeans, peanuts, and small grains. Where wooded, this soil can support loblolly pine and a mixed hardwood forest.

Previous Research

Circa~ performed an archival search for the Spring Grove property using the Virginia Department of Historic Resources (VDHR) online V-CRIS system on February 1, 2017. This research was completed to determine if historic resources exist within the project area boundaries. The search identified no archaeological resources and one architectural resource within a one-mile radius of the project area boundaries. Table 2 lists all of the resources within one mile of the project area boundaries. Figures 11 and 12 show the approximate project area boundaries (yellow-shaded area) and resources within close proximity. Any resources colored green on the map are within one mile of the project area boundaries. Of the resources identified, no archaeological resources and no architectural resources were identified within the project area.

In addition, two Phase I surveys have been completed to the northeast of the project area outside of the one-mile radius. Howard McCord and William T. Buchanan completed *An Archaeological Survey of Proposed Improvements to Virginia Route 31 and the James*

River Ferry Approaches in Charles City, James City, and Surry Counties for the Virginia Department of Transportation (VDOT) in 1977. Timothy A. Thompson, Lori Cousins, Martha McCartney, and Sam Margolin completed a *Phase I Report on Cultural Resources: Route 31 Study – James River Crossing* in 1988 for Virginia Commonwealth University (VCU). Circa~ reviewed these survey areas in V-CRIS and noted 201 archaeological resources in Surry County within their survey borders. These sites include a mix of Native American and historic resources spread throughout their project areas to the north and east of the Circa~ project area.

Table 2. Resources Within a One-Mile Radius of Project Area Boundaries.

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation on V-CRIS Form
<i>Architectural Resources</i>				
090-0010	ca. 1770	Floods, located on Route 610, site includes one house	Historic American Building Survey (HABS) 10/58	None made

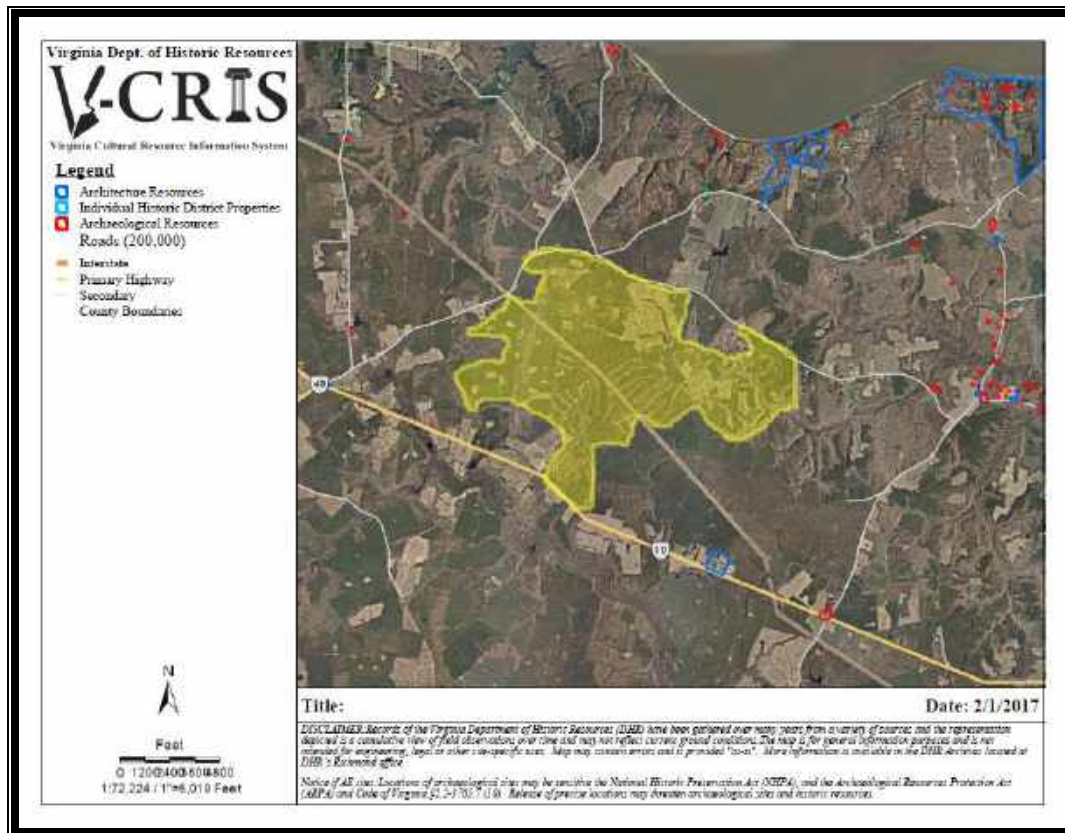


Figure 11. VDHR V-CRIS map showing previously-inventoried resources within a one-mile radius of the project location.

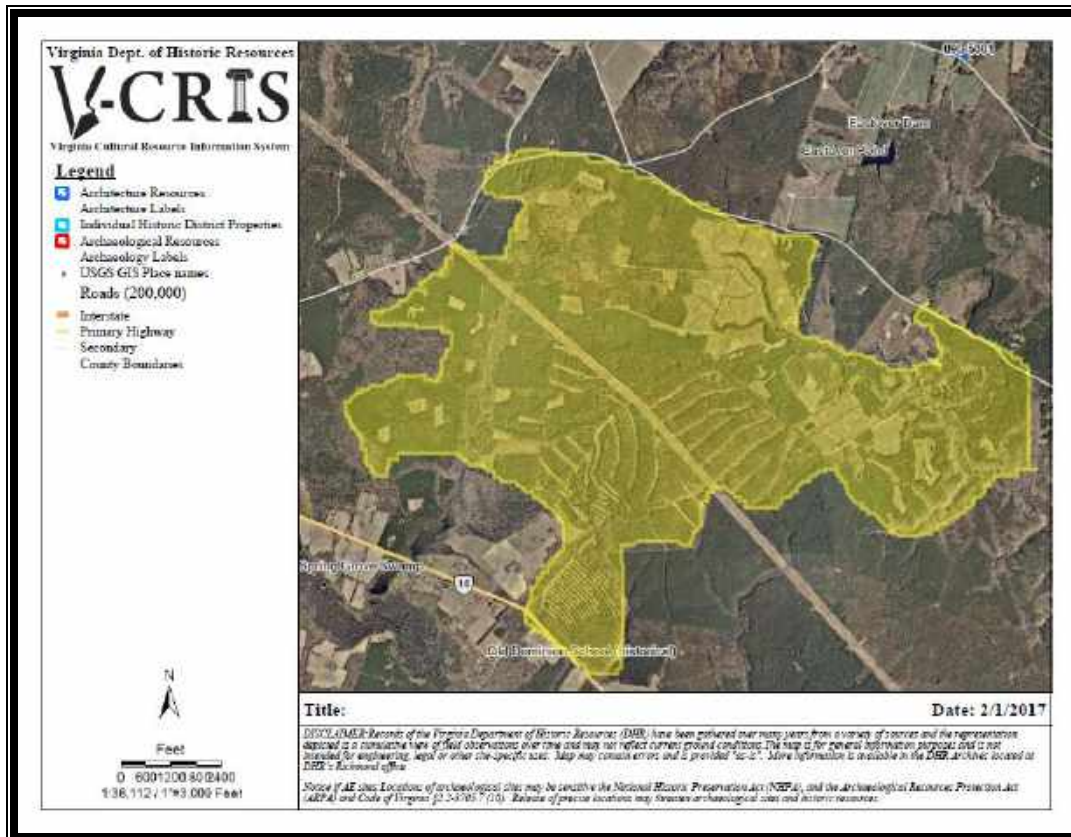


Figure 12. Detail view of VDHR V-CRIS map showing previously-inventoried resources within close proximity to the project location.

Property History

The Spring Grove property, located on Route 10, consists of one parcel (Tax Map #12-29). This parcel can be traced through Surry County real estate records from the present to 1889 (Tables 3 - 9). In the first half of the 20th century, Albert Ochsner acquired six parcels of land in Surry County that included the project area. All of the deeds for these transactions indicated that the properties were unencumbered at the time of the transfer.

In September 1951, Ochsner sold several parcels including the project area to the Continental Can Company. This Company merged with Spain Lumber Company to form the Continental Group, Inc., which sold the property to Continental Hopewell Woodlands, Inc. in January 1982. They retained the property for two years and in 1984 sold the property to KMI Continental Sawtimber, Inc. This Company retained the property for five years and in 1989 sold the property to Glawson Properties, Inc.

Glawson Properties, Inc. retained the property for less than a year and in 1990 sold the property to Earl Barrs. That same year, Barrs sold the property to the Spring Grove Land Association, who is listed in the Surry County real estate records as the current owners of Parcel 12-29.

Table 3. Deed Research for Spring Grove Property Tax Map #12-29.

Grantor	Grantee	Book/Page	Date
Earl D. Barrs	Spring Grove Land Association	117/658	7/16/1990
Glawson Properties, Inc.	Earl D. Barrs	116/233	2/14/1990
KMI Continental Sawtimber, Inc.	Glawson Properties, Inc.	115/536	12/19/1989
Continental Hopewell Woodlands, Inc.	KMI Continental Sawtimber, Inc.	99/683	12/31/1984
The Continental Group, formerly the Continental Can Company	Continental Hopewell Woodlands, Inc.	93/639	1/1/1982
Albert and Helen Kerr Ochsner	The Continental Can Company	51/601	9/25/1951

Table 4. Deed Research for Spring Grove Property, Bullards Tract.

Grantor	Grantee	Book/Page	Date
B. F. and Annie L. Holmes	A. H. Ochsner	35/151	6/29/1915
W. Stanley Burt and J. Gordon Bohannon, Special Commissioners (chancery suit L. B. Bullard vs. B. F. Holmes)	Benj. F. Holmes	34/593	7/24/1914
M. D. and Martha Fearear	L. B. Bullard	29/696	8/28/1902

Table 5. Deed Research for Spring Grove Property, Oakland Tract.

Grantor	Grantee	Book/Page	Date
R. E. Lewis, C. S. and Susie B. Lewis	A. H. Ochsner	33/641	5/27/1912
W. O. and Annye Moss Rogers	R. E. Lewis and C. S. Lewis	33/259	5/19/1911
Clara E. and David Hollenback	W. O. Rogers	33/166	2/18/1911
B. D. Edwards, Sheriff and administrator of Caleb P. Persing estate	Clara E. Hollenback	31/465	12/7/1906
Edward and C. A. Smith	Caleb Persing	23/798	4/18/1889

Table 6. Deed Research for Spring Grove Property, Floods Tract.

Grantor	Grantee	Book/Page	Date
Sarah Louise and Robert Phelps, Ruth and C. H. Hall, executors of will of John Saltmarsh	A. H. Ochsner	39/301	3/1/1927

Table 7. Deed Research for Spring Grove Property, Rogers Tract.

Grantor	Grantee	Book/Page	Date
W. O. Rogers **	Helen Kerr Ochsner	48/91	10/25/1946

** See Table 5 for additional information.

Table 8. Deed Research for Spring Grove Property, Gayle Tract.

Grantor	Grantee	Book/Page	Date
W. H. and Marjorie Gayle	Helen Kerr Ochsner	46/489	2/26/1945
Lora Stone Lovell, widow of Walter J. Lovell	W. H. Gayle (Gale)	46/268	6/17/1944
Daniel Stone	Alma Stone, Lora Stone Lovell, and Walter Lovell	39/305	12/2/1922

Grantor	Grantee	Book/Page	Date
Frank Armistead, O. L. Shewmake, Thomas Howerton, R. W. Arnold, and W. Stanley Burt, Special Commissioners (chancery suit Anton Ujbely et. al. vs. James River Colonization Company)	Daniel Stone	37/751	2/5/1921
Daniel and Maria Stone	James River Colonization Company	36/234	3/29/1918

Table 9. Deed Research for Spring Grove Property, Arrington Tract.

Grantor	Grantee	Book/Page	Date
Oscar L. Shewmake, trustee	Albert Ochsner	41/24	12/7/1929

Maps of the area drawn during the mid- to late-19th century and 20th century show the property as open land with no development throughout the 19th century and into the late 20th century (Figures 13 – 18).

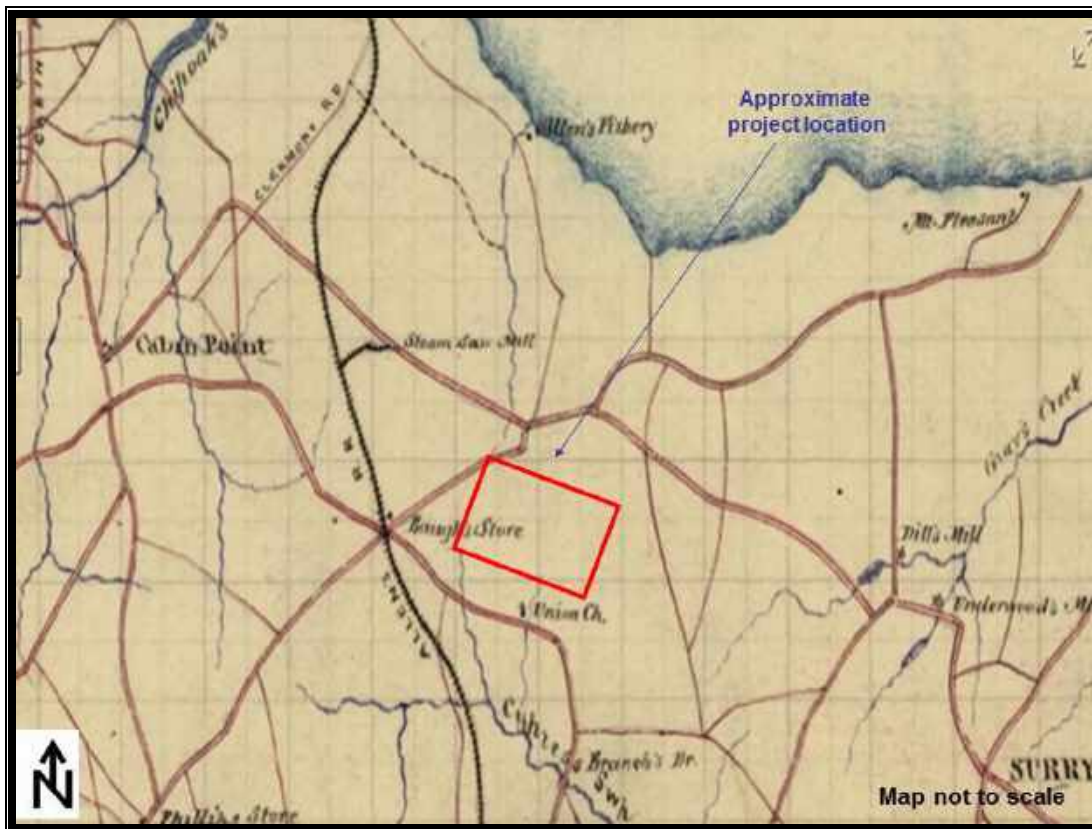


Figure 13. Detail of *Charles City, Pr. George and Surry counties, Virginia* by Jedediah Hotchkiss, 1867.

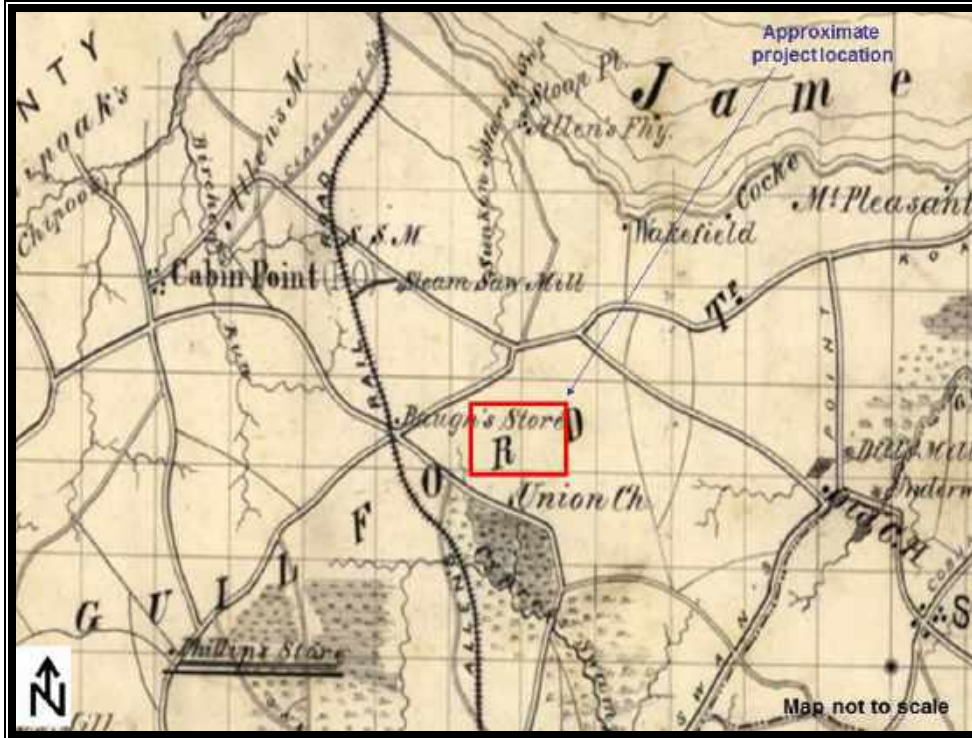


Figure 14. Detail of *Preliminary map of Surry County, Virginia* by Jedediah Hotchkiss, 1871.

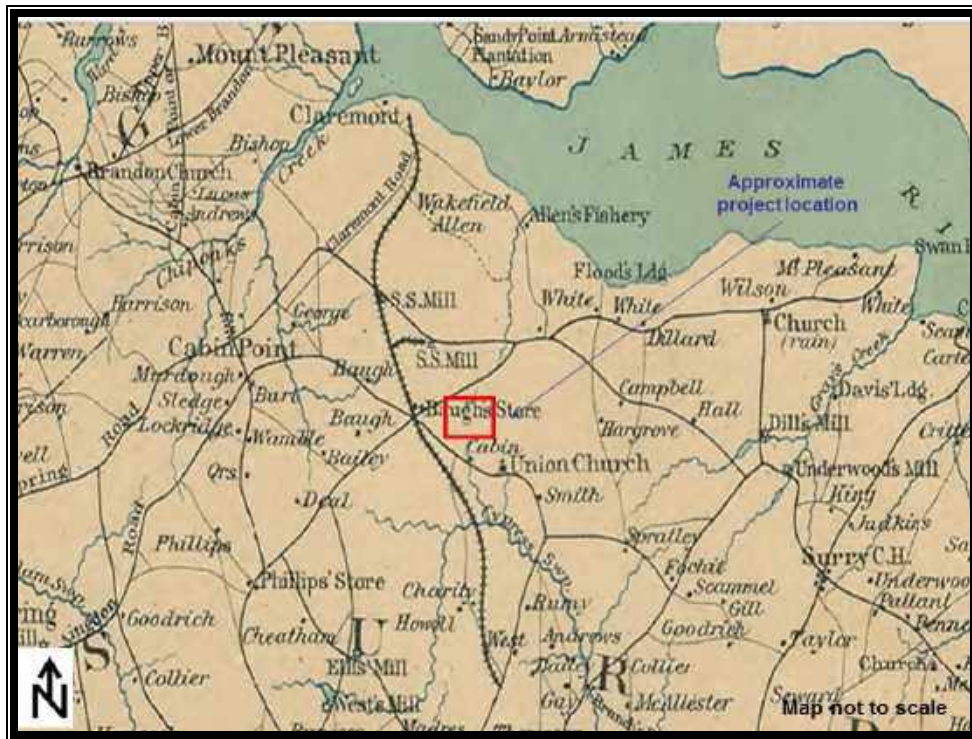


Figure 15. Detail of *Preliminary map of a part of the south side of James River, Va.: from surveys and reconnaissances*, Confederate States of America. Army of Northern Virginia. Engineer Office, 1891.



Figure 16. Detail of 1919 Surry quad.



Figure 17. Detail of 1954 Claremont quad.

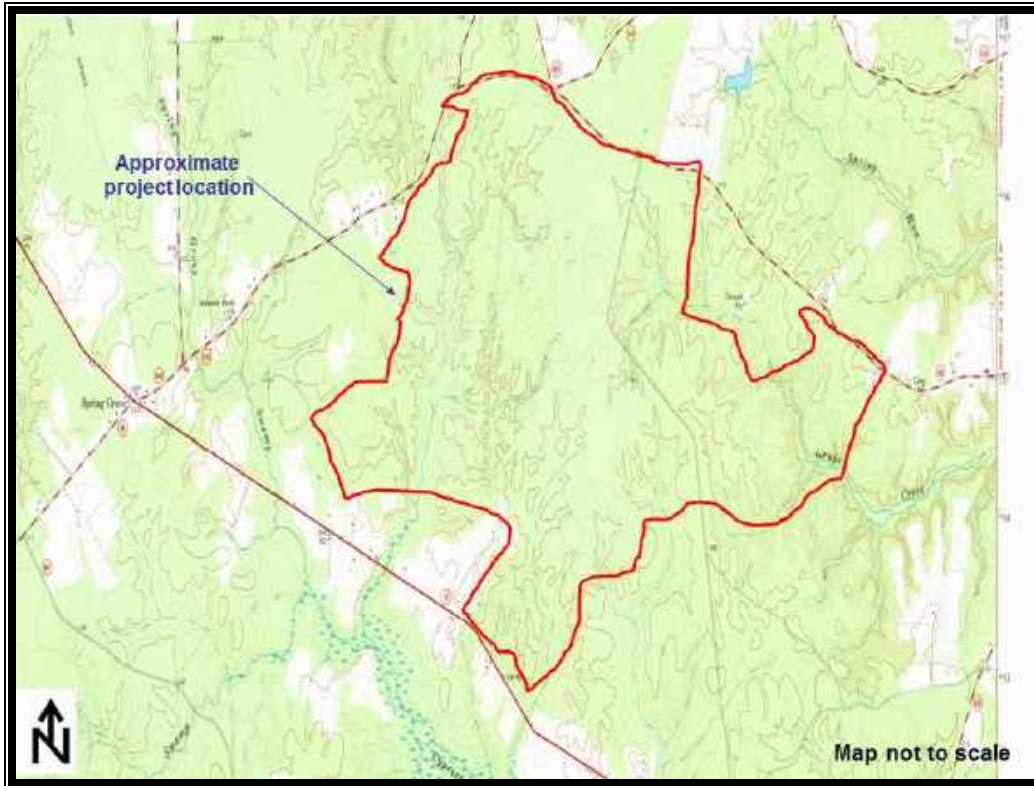


Figure 18. Detail of 1966 Claremont quad.

Results and Summary

This study was conducted to provide information on the current condition of the property, as well as to assess the potential for the presence of archaeological or architectural resources within the project area and a review of structures located adjacent to the project area. Fieldwork was completed in February 2017 and included a pedestrian walkover of the tract to identify any obvious archaeological or architectural resources and the site potential of various landforms. All open, exposed areas were inspected for the presence of artifacts and signs of cultural features. In addition, judgmental shovel tests were excavated to sample the stratigraphy of the landforms. Plates 1 through 18 at the end of the summary show the current condition of the project tract.

Not including natural processes such as flooding, erosion, forest fires, global warming, and so on, four chief human processes have had the greatest effect on the condition of the property: clearing of wooded areas; plowing; the development and improvement of transportation corridors; and the development of parcels within the tract. The clearing of floral material and the harvesting of timber have impacted the project tract. Depending on the process of clearing or timber harvesting, it can have a detrimental effect on archaeological resources ranging from mild to severe. Probably the most potentially destructive stage of the logging process occurs when cut trees are dragged to a staging area. The tires on the vehicles that perform this task can gouge and tear up the ground. This is especially the case when the ground is wet or saturated as is common in portions of the project area. Because this kind of damage to the landscape is also an erosion hazard, most logging companies now abide by a set of conditions known as “best

management practices,” which require the use of special tires, and restrict harvesting during rainy conditions. In addition, the removal of stumps, either by grubbing or by excavation, also has a detrimental effect on archaeological resources; within the project area Circa~ noted that the stumps were removed and portions of the project area was plowed. In most cases, archaeological resources situated directly in the path of a logging or farm road have been destroyed, or at the very least, severely compromised. The majority of the project tract has been clear-cut of timber at least three times, possibly more. Judgmental shovel tests revealed disturbed soil profiles throughout the project tract. In addition, Circa~ completed a walkover of the areas that had been recently cleared and the soil turned up. Shovel tests excavated in the plowed areas revealed fragments of tree limbs and subsoil mixed in with the Stratum A soil.

Predictive Factors of Prehistoric Site Distribution

High-probability areas for the locations of prehistoric Native American sites must consider multiple factors and will always include low relief, adequately-drained soils, and proximity to water. It is assumed that, prior to the disruption of the economy through European encroachment and disruption of traditional land use, settlement choice was based mainly on environmental factors and that this was especially so prior to the emergence of a paramount chiefdom among the Algonkians of the Coastal Plain of the James, York, and Rappahannock drainages, and the shifting of political and social boundaries that occurred during that time and, more so, from the 17th century on.

For this exercise, variables looked at included relief, soils, distance to water, and elevation. Each one is outlined briefly below.

Low Relief

Generally, areas of high relief are eliminated from consideration of areas of potential archaeological sensitivity, as they are not considered habitable and, in prehistoric times, were not used as dwelling and camping spots. Accordingly, low relief is a base factor for prehistoric Native American site prediction.

Based on a fine-contoured topographic map (five-foot intervals), all areas of low relief (e.g., less than 15% slope) are viewed as potentially-habitable terrain, if soil factors indicate that drainage is sufficient. It should be noted here that, for outlining areas of high-site potential, the contour map was relied on, as was the slope ranges indicated from soils mapping data.

Although slope is included in formal soil series definitions, the mapping areas can often include pockets of differential relief that were considered too small to be practical to map. Consequently, areas of high relief indicated by the series definition can sometimes make for faulty predictions by eliminating isolated areas of high potential for site locations. Within the one-mile buffer of the project area, only one 19th to 20th century archaeological site and three 18th century houses were previously identified. However, several archaeological surveys were completed to the north and northeast of the project area in 1998 by VCU and in 2011 by William and Mary Center for Archaeological Research (WMCAR). These surveys located prehistoric Native American sites on well-

drained soils near water sources. When locations of these sites were looked at individually, however, it was found that prehistoric sites were located on small elevated landforms along the stream channels at the base of more sloping areas that had been subsumed under a broad category that did not accurately reflect the true relief of the site location. Within the project area, these landforms fall within the 100-foot Resource Protection Area (RPA) and will be avoided by development. In addition, prehistoric Native American sites were located on the edges of uplands within 300 feet of a water source.

Soils and Drainage

The soils category, broken down at the soil series level (or soil series complexes), is used as a general indicator of drainage. Looking at the soils on the project area, the minority are classified as well-drained or moderately-well-drained. By themselves, these adequately-drained soils are not looked at as indicators of site potential; rather, they operate as such when combined with low relief and distance to water. However, poorly-drained soils are factors that, by themselves, can be indicators of low-site potential, depending on the severity of the drainage impediment.

Within the project area, the poorly-drained soils are located along the edges of the stream channels and in low flats. The least well drained of these types of soils—and the ones that factor most importantly in defining areas of low potential—are classified as “hydric” types (i.e., soils that are saturated or, in some cases, inundated, for extended periods, and that support wetlands vegetation).

A look at soils correlated with the data at hand on site locations noted to the northeast and east of the project area indicates that the Craven fine sandy loam, Craven-Slagle complex, and Emporia fine sandy loam contains the largest numbers of sites, both prehistoric and historic. It should also be noted the soil types are mapped with 2% to 6% slopes and are mostly located on the uplands and along the streams and marshes.

Given this situation, all soils that have adequate drainage are therefore looked at as having equal potential for prehistoric site locations if factors such as water and low relief are considered. As discussed above, poorly-drained soils may work by themselves as a factor that eliminates high-site potential, while other factors should be taken into consideration when looking at locations where better soils for human occupation are present.

Distance to Water

The distance of a site from water is normally assumed to indicate, above all else, the accessibility of a potential location of potable water; however, depending on the type of water, its proximity to a site may also signal resource potential (aquatic food resource, wetland plants, etc.) and, in the case of larger streams and rivers, convenient access to transportation routes.

For the present study, the distance to water is the nearest mapped source, based on modern cartographic data. Unless an otherwise unknown source such as an unmapped

spring is known and located, this method is the only way to look at this factor. The caveat that other sources now extinct may have been closer to the sites should be considered. In many cases, sites may have had water sources such as springs that have dried up and since become reduced to silted concavities and intermittently dry drainway swales. This scenario is undoubtedly true in many cases but, unfortunately, cannot be predicted from mapping data or, in many cases, cannot be positively demonstrated on the ground.

A common-sense approach would indicate that most sites would be located as close to water as possible and, for the most part, this conventional wisdom proved true. However, the distance range proved rather large. For example, broken down by 100-foot intervals (assuming 0 as adjacent) from a present-day water source, roughly 65% of the previously-identified sites were located in the 0 to 100-foot range of water. At the same time, simply looking at where most of the sites were located indicated that some sites were located in a broad range of 100 to 400 feet from water. Only two sites, minor components on later-period historic sites, were located farther away from water within the 1,000 to 1,200-foot range.

Elevation

Elevational placement of a site may relate to multiple factors but, in general, lower elevations that are not located in low-lying floodplains, depressions, and wetlands are assumed to indicate proximity to a water source or, in some cases, proximity to aquatic or wetland resources. However, at higher elevations, other factors such as locations of greatest mast cover may be at work.

A review of the previously-identified sites to the northeast and east indicated that most the sites are located in the 0 to 25-foot AMSL range, typical in this area as Surry County is fairly level with relief mostly restricted to the stream channels. It must be kept in mind, however, that sampling error in which certain parts of the County have been surveyed and some have not been surveyed probably also plays a part.

Predicative Factors of Historic Site Distribution

The most influential historical studies of settlement patterns in the coastal plain have emphasized the importance of economic and ecological factors in the process by which Euro-Americans distributed themselves across the landscape. From the standpoint of cultural resource management, this “descriptive,” or “functional,” approach is most useful in creating a testable model of historic settlement patterns, considering variables such as soil type, the availability of fresh water, proximity to neighbors, and access to transportation routes (Edwards and Brown 1993: 288).

Over time, the relative importance of locational variables has shifted in response to economic, technological, and social developments. Accordingly, this site predictability model examines historic site settlement patterns during two broadly-defined periods: the “colonial” era (circa 1650 - 1800) during which tobacco was the mainstay of the region’s economy, and the 19th century (circa 1800 - 1920), when grain crops replaced tobacco as the mainstay of the agricultural system. Analyzing the available evidence from

previously-identified sites and map-projected resources, it is possible to define key environmental factors to consider in projecting patterns in historic settlement at the site over time, and then use these patterns to create a testable model.

Colonial Period Settlement

European settlement in the area began in the early 17th century, when large tracts of prime river land were granted to the Virginia's elite tobacco planters. Since the James River served as the primary artery of transportation and communication during the colonial period, planters and tenants alike settled initially in the fertile river valley. In his quantitative study of settlement patterns in colonial James City and York counties, Craig Lukezic discovered that soil type, more than any other consideration, determined where Chesapeake tobacco planters chose to live. Tobacco dominated the Virginia economy from the beginnings of English settlement in Tidewater through the American Revolution, and correspondingly dictated the nature of social and race relations. Since tobacco was overwhelmingly important as a staple crop, Lukezic hypothesized, it should follow that planters would choose to settle on lands most conducive to growing this crop. When he examined statistically the relative importance of a variety of environmental factors in site selection, including soils, access to drinking water, proximity of navigable waterways, and distance from the nearest neighbor, Lukezic discovered that soil type, above all, was the most significant locational factor affecting colonial settlement (Campbell 1954; Lukezic 1990).

Tobacco plants grow best in gently-sloped (2% to 6%), well-drained, loosely-structured soils such as light sand or sandy loam. The taste of the tobacco is also strongly influenced by soils, the best flavor imparted by those with siliceous parentage. Using data supplied by the Soil Conservation Service, United States Department of Agriculture, Lukezic (1990) ranked soils according to their suitability for tobacco cultivation. Using this information, it is possible to test Lukezic's model, with the assumption that colonial era settlement would have been concentrated within those areas characterized by soils that yielded the best tobacco crops.

Though soil type is critical to the success of tobacco cultivation, topography is also an important consideration. Since tobacco plants will not mature properly if the roots are deprived of oxygen (e.g. by flooding), gently-sloping soils in the range of 2% to 6% provide the ideal drainage for healthy plants. Once again, a review of the colonial sites identified near the project area were examined, indicated that most the sites were situated on slopes of 2% to 6%, with a few sites characterized by slopes of 10% or less.

The distance of identified colonial sites to water and site elevation were also considered, though the variability of these factors between sites suggested, as Lukezic had noted for James City and York counties, that these considerations were not as important as soil and slope in influencing settlement patterns. Among these sites, the distance from water ranged widely between 0 and 1,600 feet, with a mean distance of 800 feet. Similarly, elevations varied between 30 and 185 feet AMSL, with an average elevation of 78 feet AMSL.

In conclusion, it appears that Lukezic's model for predicting Tidewater settlement patterns in the colonial period holds equally true for this section of Surry County based on the locations of previously-identified sites. The primary considerations in defining areas of high probability for colonial sites therefore should be soil type and slope, with an emphasis on soils of the Kempsville-Emporia complex with slopes of 10% or less. The probability of locating colonial period resources diminishes accordingly on soil types and slopes less conducive to growing tobacco. In addition, in the colonial period, structures were generally placed near the edges of fields to maximize the field size and crop output.

19th Century Settlement

By the latter years of the 18th century, all Tidewater planters, great or small, were beginning to feel the pinch of a sputtering, century-old tobacco economy. After a few decades of prosperity, tobacco prices once again were on the decline by the 1760s and 1770s. Severe economic problems in England precipitated by the costly Seven Years' War reverberated throughout the colonies. Faced with economic ruin, English merchants began calling in their debts, undermining the very foundation of the Tidewater economic system. For some time, Virginians of all ranks had relied on British credit to maintain, and gradually increase, their consumption of imported goods, thereby raising their standard of living. This constriction of credit threatened to topple even the most prominent planters. Meanwhile, decades of intensive tobacco farming had simply exhausted all the best tobacco land, making it difficult—if not impossible—to boost production to counteract dwindling prices (Kaplan 1993: 55, 67).

By the beginning of the 19th century, a fundamental shift had occurred in the rural economy of the County. Farmers responded to the decline of tobacco by shifting their emphasis to raising grain crops and livestock. At the same time, a small group of Virginians dedicated to “scientific agriculture” helped to usher in a new era of productive farming. In his series of essays entitled *Arator*, Caroline County's John Taylor demonstrated the benefits of four-field crop rotation, in which soils could be improved significantly by rotating corn, wheat, fertilizer, and clover. Similarly, in the early 1820s Edmund Ruffin publicized the effectiveness of marl in reducing soil acidity, a technique that could triple the productivity of Tidewater soils. Other agricultural improvements included contour plowing to reduce erosion, cast-iron plows, threshing machines, and corn shellers (Kaplan 1993: 87-88).

The conventional historical wisdom asserts that the decline of the tobacco economy, the introduction of new crops, and advances in farm management and fertilization had a significant effect on settlement patterns in 19th century Surry County, as throughout Tidewater. Lands formerly considered marginal could now be incorporated into agricultural production, a process accelerated by the increasing subdivision of family farms through inheritance. Extrapolating from Lukezic's model, the environmental characteristics of 19th century sites theoretically should exhibit a diminishing correlation between soil type and settlement. Where the source of information on the location of prehistoric and colonial period sites is based almost entirely on archaeological survey information, locational data on 19th century sites is available in both the archaeological and documentary record. The first detailed maps of this area were created during the

Civil War, and provide a relatively-accurate picture of settlement patterns across the landscape of Surry County. No structures are shown on any of the historic maps within the project area. Structures are shown surrounding the project area, and this could indicate that the lands were part of estates or farms with the main dwellings situated along the transportation corridors.

A review of the previously-identified historic archaeological sites and standing period architectural structures in the area indicated that most 19th century sites were situated on the same prime agricultural lands formerly used for growing tobacco. Naturally, Surry County farmers continued to use fields that had been planted in tobacco, replenishing the depleted soils through more sophisticated crop rotation and fertilizers. However, the 19th century site settlement pattern diverges from that of the colonial period in terms of the variety of soil types exploited, many of which had not been suited to growing tobacco. It should be noted that in a handful of cases the sites examined were not agricultural (e.g. mills and churches) and soil productivity was clearly not a major consideration in their location. Still, it is evident that significantly more soil types were used for settlement in the 19th century than during the colonial period.

Aside from determining that soil type remained an important factor, though somewhat diminished, in 19th century settlement patterns, a comparison of archaeological versus map-projected sites reveals that the two sources of site data yield remarkably similar results. In nearly every instance the proportion and rank of different soil types are similar, suggesting that this information, when integrated, should provide a relatively-accurate picture of this area's cultural landscape in the 19th century. From a practical standpoint, the site predictability model for 19th century resources should focus on map-projected sites. However, soils analysis will provide an additional means to identify possible site locations that, for whatever reason, do not appear on Civil War mapping.

Though it is clear that Surry County farmers were better able to bring formerly marginal soils into production, a review of the existing sites shows there was no significant change in topographical considerations in 19th century settlement. As with the colonial period, most the sites were located in areas of gentle (2% to 6%) slope, with some existing structures located on the edges of upland knolls with slopes of 6% to 10%.

As with colonial period sites, it does not appear that elevation or distance to water were not critically important factors in 19th century settlement patterns. A review of archaeological sites and existing architectural resources is virtually identical, emphasizing the complementary nature of these two sources. In the case of both elevation and distance to water, the broad range of values suggested that these factors were not primary considerations in site selection. For example, the distance to water evidenced by previously-identified 19th century archaeological sites ranged between 0 and 2,500 feet (average distance 1,200 feet), while elevations varied from 20 to 240 feet AMSL (average elevation 110 feet AMSL).

In conclusion, both the archaeological and cartographic data indicates that soil type and slope remained the most important locational factors in 19th century settlement patterns.

The somewhat broader variety of soils brought into production can be explained by advances in agricultural practices, though it is clear that areas of prime farmland and gentle slope were still most valued for farming and settlement. From a practical standpoint, the projected high-probability areas for 19th century resources at the project area will overlap to a large degree with those for colonial period sites, but will also include a somewhat broader variety of soil types.

Areas of Site Potential

The project tract originally contained areas of low, moderate, and high archaeological site probability (Plates 1 – 18). According to Circa~'s assessment, areas classified as low-potential are areas of moderate to steep slopes, wetlands and poor soil; moderate-potential areas are level landforms that contain somewhat well-drained soils; and high-potential areas are well-drained soils located proximal to existing water, historic resources and transportation corridors.

The project tract originally contained areas of low, moderate, and high archaeological site probability. According to Circa~'s assessment, areas classified as low potential are areas of moderate to steep slopes and wetlands and poor soil; moderate-potential areas are level landforms that contain somewhat well-drained soils; and high-potential areas are well-drained soils located proximal to streams, existing historic resources, and transportation corridors.

Areas of low-archaeological potential within the project area generally include the moderate to steep side slopes of the uplands, wetlands, and areas that are a great distance from transportation corridors and surface water sources. Judgmental shovel tests excavated in these areas revealed a disturbed, mixed profile with some debris from trees. Circa~ did not note any resources in these areas during the walkover assessment.

Moderate-potential areas are defined as those which, based on landform and location, are moderately likely to contain at least some type of archaeological remains, either Native American, historic, or both. Similar landscapes in the project area region have contained some landforms with level, moderately-drained, moderately-productive soils, a moderate proximity to surface water sources, and a moderate distance from historic resources and transportation corridors. However, within the project area, these areas have been severely compromised by the use of the level landforms for timber-staging areas and the repeated harvesting, grubbing, and replanting of trees. Judgmental shovel tests excavated in the areas also revealed a disturbed, mixed profile with tree debris.

High-potential areas are defined as those which, based on landform and location, are very likely to contain at least some type of archaeological remains, either Native American, historic, or both. As similar settings in the project parcel contain some landforms with level, well-drained, productive soils, close proximity to surface water sources, close proximity to transportation corridors, and proximity to historic resources they are additionally viewed as having high potential for historic settlement. However, the majority of the project tract has been clear-cut of timber at least three times, possibly

more. In addition, the stumps have either been removed or are in the process of being removed.

A predictive model is, above all, a map. It is a map that indicates the likelihood of finding archaeological resources within a specified spot, based on quantifiable factors. In this manner, the map is an indicator of archaeological sensitivity and, normally, three levels of sensitivity are used.

Using most of the factors described and discussed above, areas on the project area are therefore divided into three categories of varying potential for the locations of prehistoric Native American archaeological sites: low, moderate, and high.

- Areas of low potential are found in three settings where independent variables suggest that prehistoric sites are unlikely: 1) those where: slopes are greater than or equal to 15%; 2) areas where there is low relief but soils are hydric; or 3) areas where there is low relief and adequate drainage, but the distance from water is greater than 400 feet. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, stump removal, land clearing, and plowing activities.
- Areas of moderate potential are those that combine the following: relief is less than a 15% slope, soils are well-drained or moderately-well-drained; and distance to water is greater than 400 feet and no farther than 1,000 feet. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, stump removal, land clearing, and plowing activities.
- Areas of high potential are those that combine the following: relief is less than a 15% slope, soils are well-drained or moderately-well-drained, and the nearest distance to water is 400 feet or less. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, stump removal, land clearing, and plowing activities.

Using most of the factors described and discussed above, areas on the project area are therefore divided into three categories of varying potential for the locations of historic archaeological sites: low, moderate, and high.

- Areas of low potential are found in three settings where independent variables suggest that historic sites are unlikely: 1) those where: slopes are greater than or equal to 15 percent; 2) areas where there is low relief but soils are hydric; or 3) areas where there is low relief and adequate drainage, but the distance from water is greater than 1,200 feet. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, stump removal, land clearing, and plowing activities.
- Areas of moderate potential are those that combine the following: relief is less than a 15 percent slope, soils are well drained or moderately-well drained; and distance to

water is greater than 400 feet and no farther than 1,200 feet. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, stump removal, land clearing, and plowing activities.

- Areas of high potential are those that combine the following: relief is 2 to 6 percent slope, soils are well drained or moderately-well drained, and the nearest distance to water is 400 feet or less. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, stump removal, land clearing, and plowing activities.

However, the project area was historically used as a pine plantation throughout the 20th and 21st centuries. The recent timbering activity within the majority of the project area has severely impacted the potential for archaeological resources to remain intact within the project tract. Tree limbs mixed with subsoil is evident over much of this area. The majority of the project tract has been clear-cut of timber at least three times, possibly more. In addition, the debris from the timber harvesting was bulldozed into piles to be burned. It appears that the stumps either have been removed or are in the process of being removed. A large machine was then used to churn up the soil.

Circa~ revisited the site in April 2017 and additional field areas were noted and walked (Plates 19 and 20). Circa~ noted a quartz projectile point on the ground surface in this area. This point was identified as a Brewerton side-notch type that dates to 2,000 B.C. Three shovel tests placed in the vicinity of the find revealed a disturbed 1.10-foot thick dark grayish brown sandy loam plowed Stratum A with a reddish orange sandy clay subsoil with tree limb inclusions. All the shovel tests were negative. A review of Google Earth aerial photos shows that the trees within the project area were harvested at various times in the past. In addition, a powerline easement crosses the northern portion of the project area.

In sum, the timbering, grubbing of stumps, clearing the land, and reclaiming and replanting activities have had a severe impact on the condition of the soil within the project area. The trees were recently harvested in the eastern, southern, northern, and western portions of the project area. In addition, the ground was further disturbed by the mechanical removal of the stumps or the bulldozing of the treetops and limbs into burn piles. Several patches of trees still stand within of the project area; however, these areas appear to also have been disturbed by the timbering operations in these areas in the past with the soil mounded up in these areas. Circa~ recommends no further archaeological survey for the overall project area. Circa~ does recommend a Phase I architectural survey of the half-mile buffer around the boundaries of the project area.

Sources:

Edwards, Andrew C., and Marley R. Brown III

1993 “Seventeenth-Century Chesapeake Settlement Patterns: A Current Perspective from Tidewater Virginia,” in Theodore R. Reinhart and Dennis J. Pogue (eds.), *The Archaeology of 17th-Century Virginia*. Special Publication No. 30 of the Archaeological Society of Virginia, Dietz Press, Richmond, Virginia.

Kaplan, Barbara Beigun

1993 *Land and Heritage in the Virginia Tidewater: A History of King and Queen County*. Cadmus Fine Books, Richmond, Virginia.

Lukezic, Craig

1990 “Soils and Settlement Location in 18th Century Colonial Tidewater Virginia.” *Historical Archaeology* 24(1): 1-17.



Plate 1. View of project area, looking northeast.



Plate 2. View of project area, looking southeast.



Plate 3. View of project area with push piles, looking south.



Plate 4. View of project area, with push piles, looking south.



Plate 5. View of project area, with push piles, looking south.



Plate 6. View of project area, looking east.



Plate 7. View of project area and powerline easement, looking southeast.



Plate 8. View of project area, looking west.



Plate 9. View of project area, looking southeast.



Plate 10. View of project area, looking northwest.



Plate 11. View of project area, looking southeast.



Plate 12. View of project area and recently tilled area, looking south.



Plate 13. View of project area, and powerline easement, looking southeast.



Plate 14. View of project area and mounds, looking southwest.



Plate 15. View of project area, looking southeast.



Plate 16. Detail view of heavy equipment used to clear land.



Plate 17. View of recently-cleared land, looking east.



Plate 18. View of timber area where thinning has occurred, looking southeast.



Plate 19. View of additional timbered area, looking northeast.



Plate 20. View of recently plowed field in recently timbered area, looking east.

**APPENDIX A:
PHOTO LOCATION AND MAPS**



COMMONWEALTH of VIRGINIA

Matt Strickler
Secretary of Natural Resources

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

Julie V. Langan
Director

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

February 4, 2020

Ms. Dawn M. Muir
Circa~ Cultural Resource Management, LLC
453 McLaws Circle, Suite 3
Williamsburg, Virginia 23185

RE: *Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia*
DHR File No. 2019-0724

Dear Ms. Major:

We have received for review the report referenced above and associated documentation prepared by Circa~ Cultural Resource Management, LLC (Circa) for Urban Grid Solar Assets dba Spring Grove Solar II, LLC in support of an application to the Department of Environmental Quality for a Permit-by-Rule for a small renewable energy project in Surry County. Thank you for clarifying that you were the principal investigator and primary author of this work. We have reviewed the submitted materials and provide the following comments.

The architectural survey identified nine (9) previously recorded resources and six (6) newly identified resources within the 0.5-mile study area. Circa recommends the ca. 1880s New Design School (DHR ID #090-5142) ineligible for listing in the Virginia Landmarks Register (VLR) and National Register of Historic Places (NRHP). It is our opinion that insufficient information is available to agree with this recommendation. Additional historical research and consultation with the African American Heritage Society (the group who is identified on the sign outside the building as the party restoring the building) would be helpful in determining VLR/NRHP eligibility. We recommend that the resource be treated as eligible for the purposes of this project; however, based on the maps and information provided, it is our opinion that #090-5142 will not be adversely impacted by this project.

In addition, Circa recommends the ca. 1928 house (DHR ID #090-5145) potentially eligible for VLR/NRHP listing. Because this resource was inaccessible during the survey, DHR recommends that #090-5145 be treated as eligible for the purposes of review, but will not be adversely impacted. Please see the attached table for all DHR recommendations.

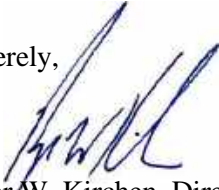
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We appreciate the opportunity to review these documents. If you have any questions regarding these comments or our recommendations, please do not hesitate to contact me roger.kirchen@dhr.virginia.gov.

Sincerely,



Roger W. Kirchen, Director
Review and Compliance Division

c. Ms. Mary Major, DEQ

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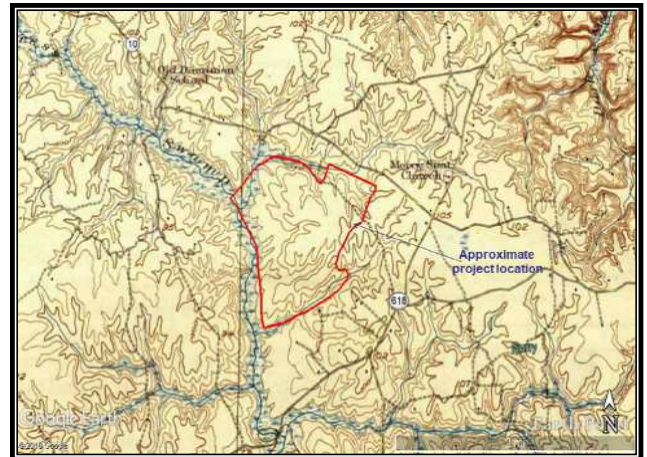
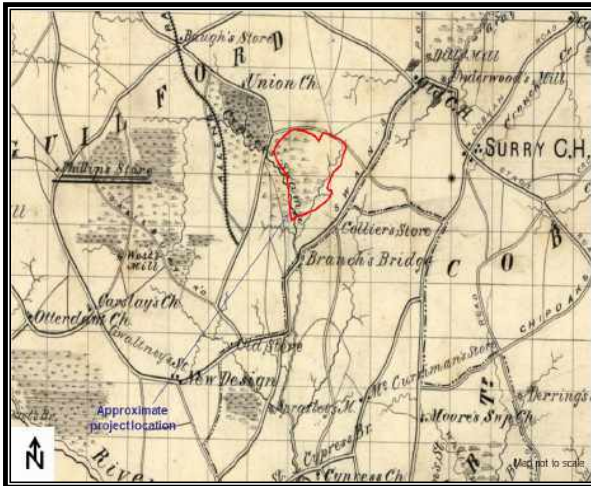
DHR ID #	Name/ Description of Resource	Circa Eligibility August 2019	DHR Eligibility February 2020	Circa Impact August 2019	DHR Impact February 2020
<i>Previously Recorded</i>					
090-0012	ca.1724 Old Glebe	VLR Listed (1975)/NRHP Listed (1976)	VLR Listed (1975)/NRHP Listed (1976)	No Adverse	No Adverse Impact
090-0036	ca. 1780 Warren Crossroads House	Potentially Eligible	Potentially Eligible	No Adverse	No Adverse Impact
090-0048	ca. 1840 Clerestory House	Not Eligible	Not Eligible; Demolished/Ruinous	No Further Work	N/A
090-5070	ca. 1950 Hunt Club	Not Eligible	Not Eligible (DHR 2017)	No Further Work	N/A
090-5071	ca. 1950 house	Not Eligible	Not Eligible (DHR 2017)	No Further Work	N/A
090-5072	1960s mobile home	Not Eligible	Not Eligible (DHR 2017)	No Further Work	N/A
090-5073	ca. 1972 house	Not Eligible	Not Eligible (DHR 2017)	No Further Work	N/A
090-5074	ca. 1914 house	Not Eligible	Not Eligible (DHR 2017)	No Further Work	N/A
090-5076	1960s mobile home	Not Eligible	Not Eligible (DHR 2017)	No Further Work	N/A
<i>Newly Identified</i>					
090-5140	ca. 1880s house	Not Eligible	Not Eligible	No Further Work	N/A
090-5141	ca. 1962 house	Not Eligible	Not Eligible	No Further Work	N/A
090-5142	ca. 1880s New Design School	Not Eligible	More Information Needed -Treat as Eligible for Purposes of Project	No Further Work	No Adverse Impact
090-5143	ca. 1966 house	Not Eligible	Not Eligible	No Further Work	N/A
090-5144	ca. 1930s house	Not Eligible	Not Eligible	No Further Work	N/A
090-5145	ca. 1928 house	Potentially Eligible	Inaccessible; Treat as Eligible for Purposes of Project	No Further Work	No Adverse Impact

TABLE KEY:	Warrants Mitigation	Needs Attention	DHR does not concur
------------	---------------------	-----------------	---------------------

PHASE I ARCHITECTURAL SURVEY OF THE SPRING GROVE II SOLAR SITE

SURRY COUNTY, VIRGINIA

VDHR #2019-0724



Circa~ Cultural Resource Management

AUGUST 2019

**PHASE I ARCHITECTURAL SURVEY OF THE SPRING GROVE II SOLAR
SITE
SURRY COUNTY, VIRGINIA
VDHR # 2019-0724**

**Prepared For:
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August 2019

ABSTRACT

In July of 2019, The Timmons Group (Timmons) contracted Circa~ Cultural Resource Management, LLC (Circa~) to conduct a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries. This survey resurveyed nine previously-recorded architectural resources and identified six new architectural resources.

ACKNOWLEDGEMENTS

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir, lead author, and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons), Rick Thomas, Julia Campus, and Laura Carson provided information and maps for the survey.

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INTRODUCTION

In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia (Figures 1 and 2). The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries. No archaeological survey was required for this project.

The purpose of this survey was to identify any previously-recorded architectural resources within a ½-mile radius of the project area and record all architectural resources over 45 years of age not previously recorded. This survey was carried out in compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) and conducted in accordance with the Secretary of the Interior's *Standards and Guidelines for Architectural Documentation* and the Commonwealth of Virginia guidelines, including the *Guidelines for Conducting Cultural Resources Survey in Virginia* (Virginia Department of Historic Resources [VDHR] 2017). In addition, the survey was conducted under the Permit by Rule (PBR) guidelines for the development of solar farms.

Spring Grove Solar II, LLC, owned by Urban Grid Solar Assets, seeks to install a photovoltaic solar electric energy generating facility to provide up to 150 megawatts of electrical energy generation (the “Project”). A portion of the Project is on the property located south of Colonial Trail West (Route 10) and west of Hollybush Road (Route 618). The property studied in this report consists of approximately 672.40 acres that are currently used for timber production. The remaining mature timber will be removed by the current owner prior to installation of the solar facility. The property is zoned A-R, Agricultural – Rural District, and the surrounding properties are zoned A-R. Within the A-R District, the project will be a Utility Service Major use requiring a Conditional Use Permit. The property studied in this report will be part of the Spring Grove Solar II Project with three interconnection positions AD1-025, AD2-007, and AD2-008.

The report describes fieldwork results and makes recommendations for further work. Any recommendations provided concerning the potential eligibility of architectural resources identified during this survey were further made in accordance with the Advisory Council on Historic Preservation (ACHP) *36 CFR Part 800: Protection of Historic Properties* (1981 as amended 2000) and National Register of Historic Places Bulletin 15: *How to Apply the National Register of Historic Places Criteria for Evaluation* (1991).

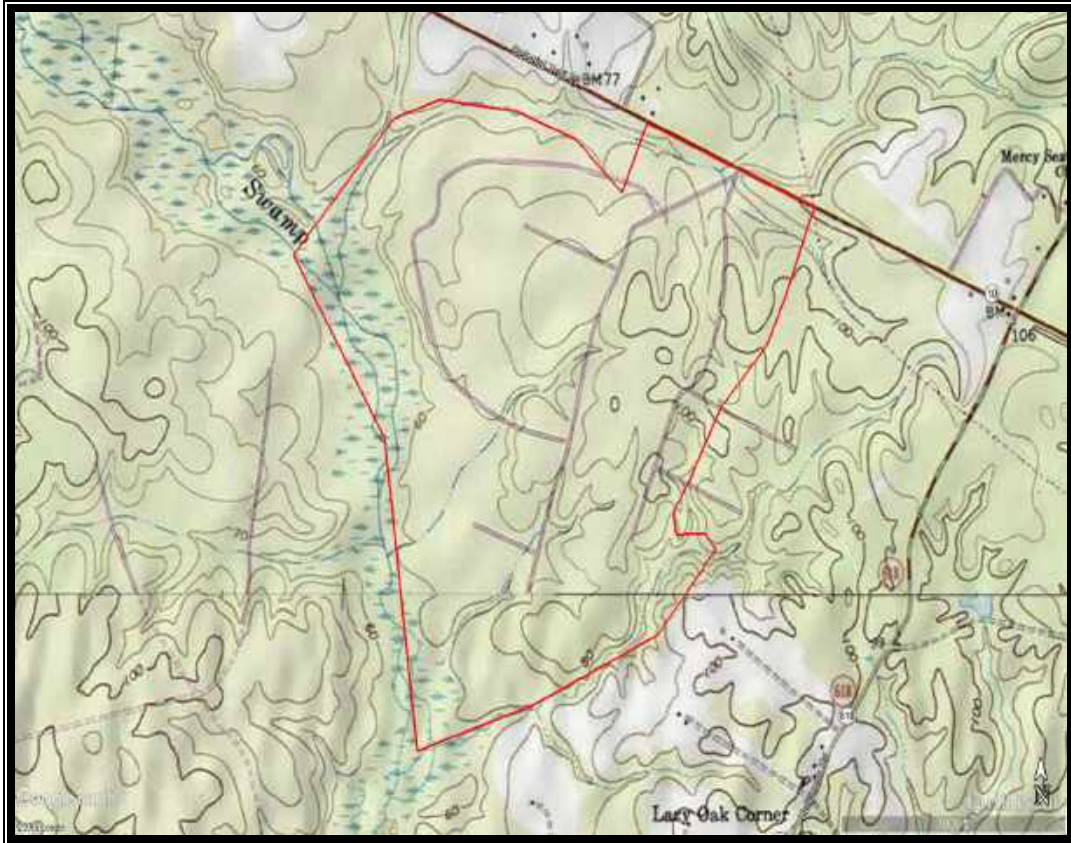


Figure 1. Approximate project location, Claremont and Dendron USGS quads.



Figure 2. Current (2018) aerial view of project area, from Google Earth.

This report contains a description of the project area's physical and environmental setting, an outline of meaningful historical contexts for the properties, a general research design that summarizes field methods, previous research in the area, and expected results, and, finally the survey results are described, the findings reviewed, and recommendations explained. Field notes and other project records are presently being curated in Circa~'s office in Williamsburg, Virginia. It is anticipated that these materials will eventually be transferred to VDHR in Richmond, Virginia following the conclusion of the project.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir, lead author, and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas, Julia Campus, and Laura Carson provided information and maps for the survey.

PROJECT DESCRIPTION

The Project Area is situated in the Coastal Plain physiographic province and is located in a planted pine plantation. The area has been timbered and replanted at least three times in the past, possibly more, based on information from the timber company and the current stand of timber. The trees are roughly 20 to 25 years old and the ground cover vegetation is open in the uplands and thick in the low, wet areas. The tract is fairly level and ranges in elevation from approximately 80 feet above mean sea level (AMSL) in the southeastern section of the tract to 100 feet AMSL in the middle and northern sections of the tract. No surface waters are located within the tract. The landform consists of a dissected upland between Cypress Swamp to the south, east, and southwest and Route 10 to the north. A possible small borrow pit was noted in the northern section of the tract. The site can be accessed via gravel and dirt roads off Route 10.

RESEARCH STRATEGY AND METHODOLOGY

Research Strategy

The survey was designed to identify all architectural sites present in the project area and to obtain sufficient information to make recommendations about the further research potential of each resource based on potential eligibility to the National Register of Historic Places. To accomplish this, both documentary research and architectural survey was performed 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 VDHR guidelines for Phase I architectural surveys. Moreover, the field survey was conducted in compliance with statutes regarding the impact of undertakings on historic properties as summarized by the ACHP (36 CFR 800 [1986]). To meet ACHP standards, a Phase I survey must be conducted in "a reasonable and good faith effort to identify historic properties that may be affected by the undertaking" (36 CFR 800.4). The Phase I survey was performed and documented at a level that meets or exceeds these standards.

A cultural resource is gauged to be significant if at least one of four National Register of Historic Places criteria can be applied to it:

- A. Associated with significant events in the broad patterns of national history;
- B. Associated with the lives of persons significant in our past;
- C. Representative of a type, period, or method of construction, or the work of a master; and
- D. Capable of yielding important information about the past.

Typically, Criterion D applies only to archaeological sites; while Criteria A, B, and C applies to architectural resources.

Methods

Archival Research

Archival research commenced with the examination of cartographic works that are on file online with the Library of Congress, VDHR, the Library of Virginia, the Rockefeller Library, and Surry County. Online resources were used whenever possible. Efforts were made to determine whether historic road rights-of-way passed close to the project area. Data accumulated during previous archival research on historic sites throughout the region also were examined.

Architectural Field Methods

Field survey of all historic structures was conducted according to VDHR's survey procedures. A VDHR site form was completed for each structure or complex 45 years of age or older, and at least one digital color photograph was taken, usually more (see Appendix A). All photos were taken from the public right-of-ways.

CULTURAL BACKGROUND

Historic Context

Settlement to Society (1607-1750)

In December 1606, the *Discovery*, the *Susan Constant* captained by Christopher Newport, and the *Godspeed*, captained by Bartholomew Gosnold, set sail from London bound for the New World under a charter from the Virginia Company. After 18 weeks at sea, on May 13, 1607, 100 settlers arrived in Virginia on a marsh-rimmed peninsula that at high tide resembled an island. Here the colonists built an outpost called James Cittie or Jamestown, the first permanent English settlement in North America (McCartney 1997).

Within days after arriving at Jamestown, Christopher Newport, John Smith, and a small exploratory party ventured out to the falls of the James River. Populated by the powerful and independent Chickahominy Indians, this region saw its first tentative English settlement by 1613, when Sir Thomas Dale established Bermuda Hundred on the James River to the north of the project area. More settlements would follow in subsequent years as the English spread out from Jamestown along the James River. By 1609, Smith's Fort was constructed on Gray's Creek in what would become Surry County and Hog Island

contained a second fort. Some of these settlements are noted on a 1606 map created by John Smith, although no settlements are noted within the project area at this time (Figure 3).

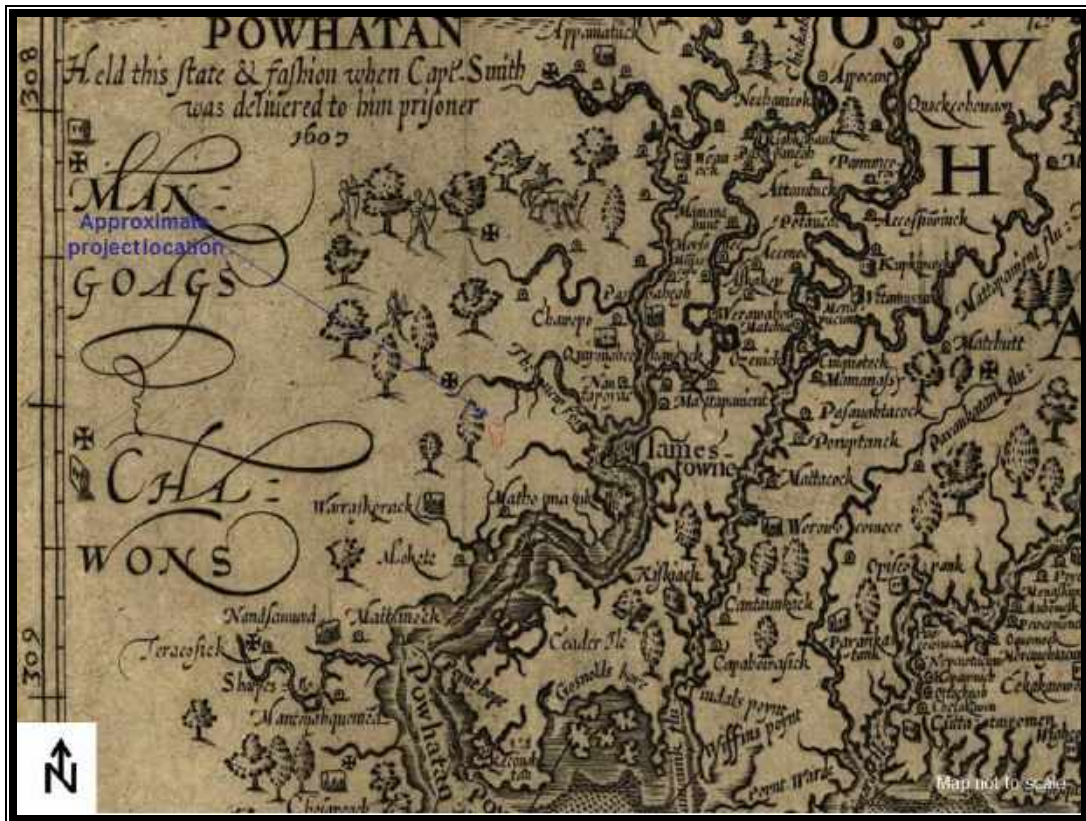


Figure 3. Detail of *Virginia discovered and described* by Captayn John Smith, 1606.

In 1618, the Virginia Company ratified its so-called Great Charter paving the way for many changes in the Colony including the establishment of representative government and a system similar to local English law (McCartney 1997). Company officials chose Virginia’s governors and council, but the Company did make provisions for the colonists to elect representatives to a general assembly. The Great Charter also created a land policy, known as the headright system, under which Virginia colonists could acquire real estate and work for personal gain. Prior to this system, investors of the Virginia Company and settlers who arrived in Virginia before 1616 were eligible for 100 acres as their first dividend. Under the headright system; however, anyone who came to the Colony at their own expense and lived in Virginia for a minimum of three years, was entitled to 50 acres for every person they paid for. This policy provided prospective immigrants with an incentive to leave an overcrowded England and seek fortune in a New World and allowed investors to pool their resources to supply servants and tenants to send to Virginia to establish a “particular plantation” (McCartney 1997). These groups would purchase shares of the Virginia Company stock entitling them to 100 acres per share. The bulk of Virginia land was distributed under the headright system.

As Virginia's newly-appointed governor, Sir George Yeardley arrived in Jamestown on April 17, 1619, and quickly subdivided the Colony into four corporations: James City; Charles City; Henrico City; and Kecoughton (or Elizabeth City). Within months after the division, members of the first legislative assembly including the Governor, six councilors, and representatives or burgesses from all but one settlement, gathered in the church at Jamestown on July 30, 1619 forming the New World's first representative assembly with a mission to petition for any changes that they felt necessary. By March 1620, approximately 928 people lived in the Virginia colony including 892 whites, 32 blacks, and four Indians (McCartney 1997).

Threatened by the expanding settlements, the Indians of the Powhatan chiefdom launched an attack on the sparsely inhabited plantations along the James River on March 22, 1622. At the end of the day, an estimated 347 men, women, and children were killed, almost a third of the Colony's population (McCartney 1997). Indians returned throughout the next few days to several outlying plantations driving off settlers and burning their properties. The Governor declared martial law and ordered the colonists to come closer to Jamestown for safety. As settlers moved toward Jamestown, food shortages occurred, and contagious diseases spread quickly. Although the colonists fought back, the Indians continued to attack. The Virginia Company sympathized with the colonists but blamed them for settling too far out and urged them to return, despite the dangers (McCartney 1997).

Two years after the Indian attack, the Virginia Company dissolved in 1624. Because people with title to land in Virginia did not outright own the property, but rather paid the Virginia Company to lease the land, landowners now paid the monarch, as Virginia had become a royal colony (Robinson 1957). The monarch would still lease patents for land in the Colony, however, there was a stipulation that the land had to be seated or planted within three years, otherwise, the land would be open to claims.

In 1634, Virginia divided into eight shires or counties. James City County included what would become Surry County, parts of Charles City County, and part of New Kent County. The County had 886 inhabitants making it the most populated jurisdiction in Virginia. James City County's seat of government was at Jamestown until around 1715 to 1721 when it moved to Williamsburg. By the early 1640s, with settlements firmly established along both sides of the James River, English settlers began moving up and down the County establishing modest farms and small plantations into the Chickahominy and York river drainages and eventually further into the interior of the Colony.

In August 1641, King Charles I appointed William Berkeley Governor of Virginia. As the Crown's principal agent in Virginia, Berkeley carried out the King's instructions and worked with English officials. However, Berkeley also relied on the advice of Virginia's planter elite when drafting public policy and thus fostered the development of a deferential social order (Billings et. al. 1986).

Although Virginia signed a new Indian treaty in April 1642, the steady growth in the Colony's population and encroachment on Native land led to conflict. The second major

Indian uprising occurred on April 18, 1644, claiming 400 to 500 settlers. Opechancanough was credited with leading the revolt and because of the attack, the Grand Assembly resolved to “abandon all formes of peace and familiarity” with the Natives (McCartney 1997). Captain Leonard Calvert took his ship into the Chickahominy River and helped the colonists attack the Chickahominies in their homeland. Realizing that it would be impossible to defeat the Indians completely, the burgesses sent out a search party to capture Opechancanough dead or alive. The party captured the Indian chief returning him to Jamestown. However, while Opechancanough remained in custody, a soldier killed him. After his death, in October 1646, Necotowance, the immediate successor of Opechancanough, concluded a formal peace treaty with the Virginia government.

As a well-established colony by 1650, Virginia boasted 5,000 residents. However, the Colony would soon experience more change. In the spring of 1652, Surry County formed from James City County territory on the lower side of the James River causing both political and economic ramifications. The shift reduced the number of James City County delegates in the General Assembly from six to four and decreased the tax base of the County. Surry County became known as the Territory of Tappahanna (Lewes 2013, Sanford, 2012). A map created by Augustine Herrmann in 1670 indicates plantations scattered along the Colony’s four major rivers and across the Chesapeake Bay, although no development is noted within the project area (Figure 4). Land records during this time also indicate that development continued to occur in the interior of the Colony.



Figure 4. Detail of *Virginia and Maryland as it is planted and inhabited this present year 1670*, Augustine Herrman, 1673

Indians continued to attack the Colony throughout the spring of 1676. After Indians attacked his plantation, a Colony resident Nathaniel Bacon led a group of vigilantes on a retaliatory march. Governor Berkeley sent word to Bacon to cease military operations and report to Jamestown. However, Bacon ignored the orders and demanded a commission to pursue Indians. Berkeley declared Bacon and his followers' rebels and sent soldiers after them. Bacon eluded the soldiers and then attacked the friendly Occaneechee Indians, starting Bacon's Rebellion, which spread throughout Tidewater Virginia. Bacon went on to burn Jamestown on September 19, 1676 destroying the church, statehouse, and other buildings. A month later, Bacon became ill and died, and his successor, Joseph Ingram, lacked the confidence and leadership to continue the cause. By January 1677, the rebels awaited a court martial at Middle Peninsula and Ingram officially surrendered on January 16, 1677. However, Jamestown never fully recovered from Bacon's Rebellion.

With the rebellion quelled, the perennially disruptive social and economic conditions characteristic of Virginia's early years began to stabilize, and by 1700, the planter "aristocracy" that would dominate colonial life through the 18th century had taken shape in Surry County (Whittenburg 1988). During this period, much of this area relied on the large-scale production of tobacco for export. As the 17th century ended, the supply of white-indentured servant labor that had formed the backbone of Virginia's workforce slowed to a trickle. As a result, planters increasingly turned to the importation of black slave labor for the maintenance of their plantation economy. In so doing, Virginia's planter elite established a social and economic system that would endure until the Civil War.

Colony to Nation (1750-1789)

During the early to mid-18th century, rural Surry County was sparsely populated, and large plantations were interspersed with small and middling farmsteads. Along the banks of the James and York rivers, many smaller-sized tracts were gradually absorbed into the plantations of Virginia's larger, more economically-successful landowners, who sought land with direct access to commercial shipping. During the 18th century, the development and improvement of inland transportation corridors led to a pattern of settlement that was more widely dispersed. Ferries plied the James and York rivers, bringing travelers from outlying areas into the peninsula (Henry 1770, Fry and Jefferson 1751, Jefferson 1787). By this time, black slaves were a prominent part of the County's population. White tenant farmers were also growing in number. This pattern of development is shown on a 1751 map of Virginia, although no development is noted within the project area at this time (Figure 5).

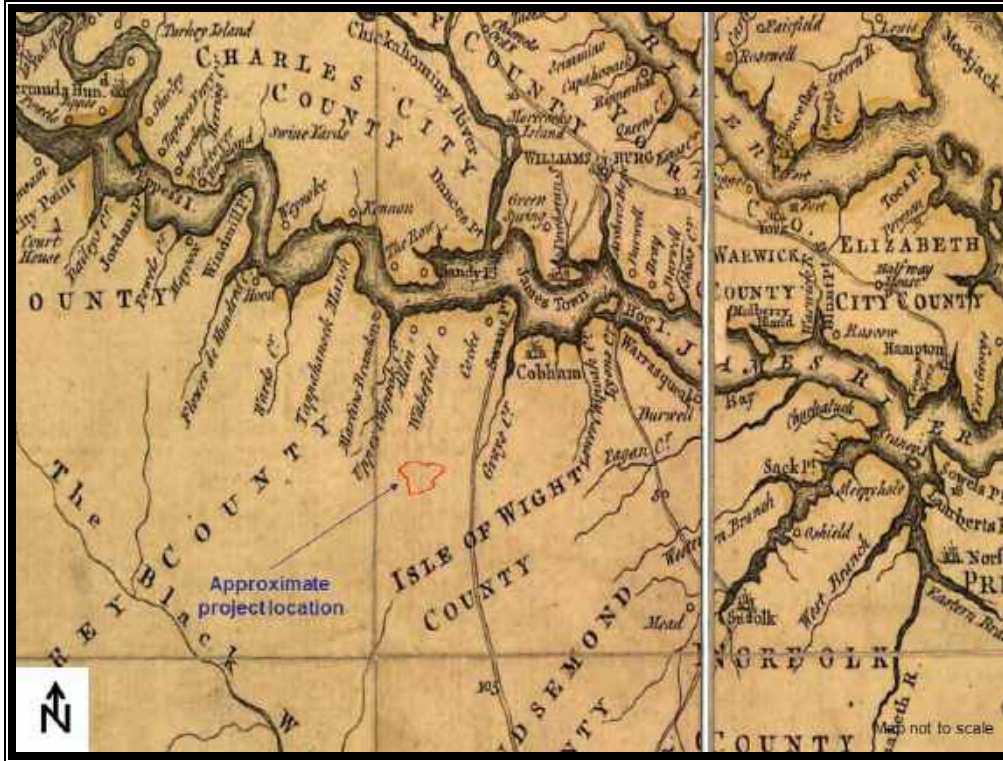


Figure 5. Detail of *A map of the most inhabited part of Virginia containing the whole province of Maryland with part of Pensilvania, New Jersey and North Carolina.* By Joshua Fry and Peter Jefferson, 1751

As in most other Virginia counties, Surry County residents were deeply divided during this period between loyalty to the Crown and support for the revolutionary cause. As a result, the Revolutionary War left its imprint on Surry County, as the British intruded into the area on several occasions, sometimes inflicting significant amounts of damage. In 1781, British General Charles Lord Cornwallis arrived in Petersburg, Virginia to the south of the project area with a plan to dislodge the Allied Army from Richmond. As the British pressed these plans, the Allies retreated down the James-York Peninsula. Throughout the war, troops from both armies moved through the area, ultimately traveling to and from Yorktown, where they fought the war's conclusive battle.

Early National Period (1789-1830)

After the close of the American Revolution, Surry County recovered slowly from the effects of the war. The armies that had moved into the region had availed themselves of its food stores and livestock to meet their own needs and many prominent Virginians, who had gone heavily into debt in support of the war effort, suffered from economic difficulties that were a consequence of their patriotism. The relocation of Virginia's capital from Williamsburg to Richmond accelerated the area's decline as emphasis shifted inland toward the Piedmont. Although Tidewater's political influence diminished along with its wealth, its local economy remained viable (Colonial Williamsburg Foundation 1985).

Adding to the area's decline, nearly two centuries of intensive tobacco monoculture exhausted farmland throughout the County. This in part forced the County's economy to shift from an early reliance on tobacco as the principal crop to a more diversified agricultural economy. Corn and wheat became stronger crops along with the emergence of sawmills and gristmills. Despite the shift toward mills and other sources of income, the County remained predominantly rural with a few rudimentary roads connecting dispersed farmsteads and small hamlets. An 1825 map of Virginia created by Herman Boye indicates a few roads through the County with no development within the project area (Figure 6).

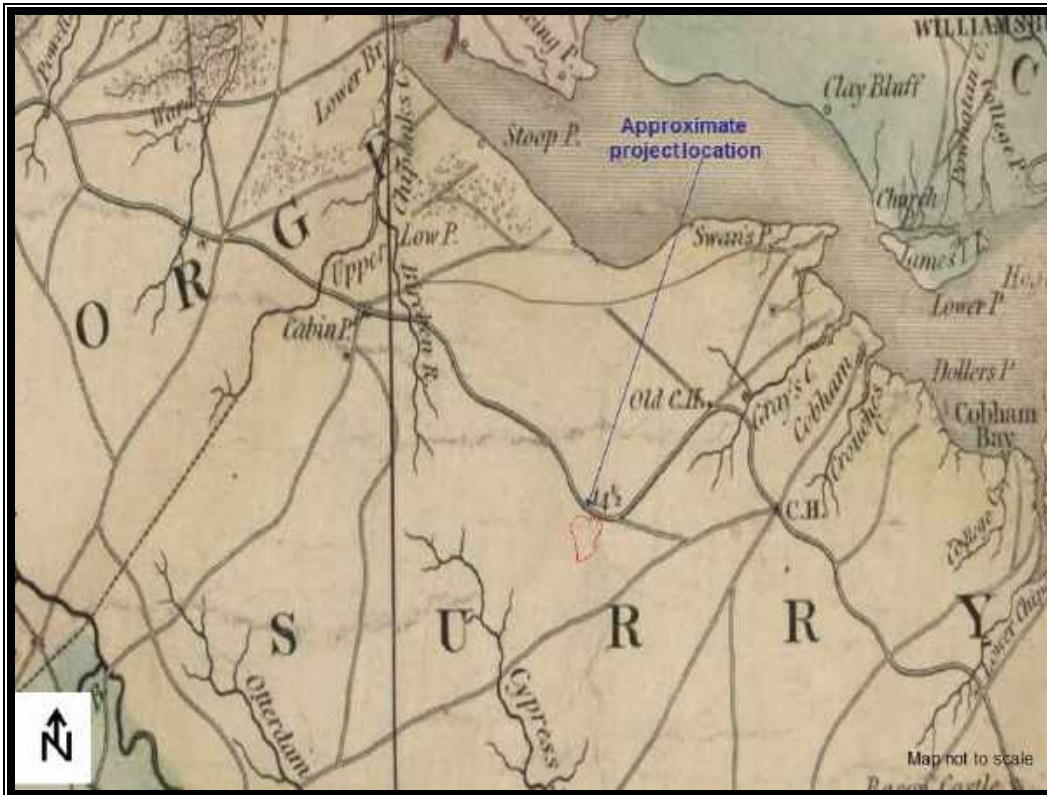


Figure 6. Detail of *A map of the state of Virginia, constructed in conformity to law from the late surveys authorized by the legislature and other original and authentic documents* by Herman Boye, 1825

Antebellum Period (1830-1860)

Because Virginians traditionally devoted relatively little attention to soil maintenance and improvement, by the second quarter of the 19th century Tidewater's farmlands were depleted of their nutrients and their productivity was lessened. Although farm size was reduced as families broke up large estates and redistributed them into smaller tracts, the lack of opportunity to acquire substantial tracts of good, arable acreage, coupled with fluctuations in agricultural prices, led to a general out-migration of the region's white population. In addition, members of the lower and middling classes sought better opportunities elsewhere. The opening of western lands, plus the construction of internal improvements such as canals, turnpikes, and railroads, encouraged an exodus of Tidewater's native-born population, while the relative scarcity of good agricultural lands

discouraged new immigrants from settling in the region. These trends were reflected in a general decline in eastern Virginia's population that occurred between 1790 and 1890 (Colonial Williamsburg Foundation 1985).

However, by the mid-19th century, improved agricultural techniques and crop diversification led to a revitalization of the region's agricultural economy. Whereas the cultivation of tobacco once had played a vital role, emphasis shifted to a production of grain crops. As the middle of the 19th century approached, Tidewater's agriculture had evolved into a mixed-crop system and beef production and other forms of animal husbandry gained importance. More sophisticated farming methods became common, such as the use of marl to restore soil acidified by long-term tobacco production and erosion (Colonial Williamsburg Foundation 1985). In the years leading up to the Civil War, Surry County remained largely rural with its few large plantations a reminder of an earlier era of prosperity and power (Coski 1988).

Civil War (1861-1865)

Surry County residents faced the coming of war with a mixture of trepidation and resolution and within a year, they would find two rival armies literally on their doorsteps. The first shots that signaled the beginning of the Civil War were fired at Fort Sumter, South Carolina, on April 12, 1861. Neither side appears to have then realized that the issues under dispute would culminate in a long and bloody war. Citizens within several Southern states, particularly those in the more mountainous regions, were divided on the issue of secession and they had little vested interest in slavery, a major subject of contention. Further complicating matters, neither the North nor South was militarily prepared to fight. Even so, when President Lincoln issued a call to arms, he received an enthusiastic response. Several states in the upper South reacted by quickly aligning themselves with the Confederacy. Virginia, Arkansas, Tennessee, and North Carolina seceded in April and May of 1861 (Catton 1960, Wiley 1964).

Delegates from six states in the lower South convened and elected Jefferson Davis of Mississippi to a six-year term as President of the Confederate States. In June 1861, the capital of the Confederacy shifted from Montgomery, Alabama to Richmond, Virginia approximately 50 miles north of the project area. From then on, the focus of the war was on Virginia, especially the region in and around Richmond and the territory separating it from Washington, D.C., the Federal capital. This resulted in war activities devastating much of Virginia's landscapes (Wiley 1964).

Immediately after Virginia joined the Confederacy, General Robert E. Lee was detailed as military advisor to President Davis and several armies were put into the field. In spring 1862, when a large Union Army under General George B. McClellan threatened Richmond, General Joseph Johnston united the Confederate armies under his command. Lee, meanwhile, continued to serve as advisor to President Davis until Johnston was wounded at Seven Pines, at which point Lee was made commander-in-chief. One of Lee's responsibilities was to see that Richmond, as the Confederate capital, was well defended. His application to that task proved important, for by the time the war ended,

seven campaigns had been launched against Richmond, two of which came within sight of the City (Miller 1911, National Park Service [NPS] 1990).

The strategic placement of small bodies of troops defended the approaches to Richmond initially, enabling the Army of Northern Virginia to pursue other objectives. During that period, the energies of the Confederate government were drawn in so many directions that the defense of the capital proceeded haltingly. Lee, who made his superiors aware of his concerns about Richmond's safety, fortified the James River below the mouth of the Appomattox River by having earthworks erected at old Fort Powhatan, Jamestown Island, and Hardins Bluff; he also had water batteries built at Mulberry Island and Day's Point (Miller 1911, NPS 1990). These military positions were intended to prevent Union naval vessels from moving up the James River toward Richmond, circumventing any defenses the Confederates might build on the peninsula.

Confederate cartographers made maps that are comprehensive, which depicted not only the lay of the land, but also specific sites at which buildings were located. Their maps shed a considerable amount of light on how rural Surry County developed during the mid-1860s (Figures 7 - 10). These maps show the project area as primarily open with little to no development around the area.

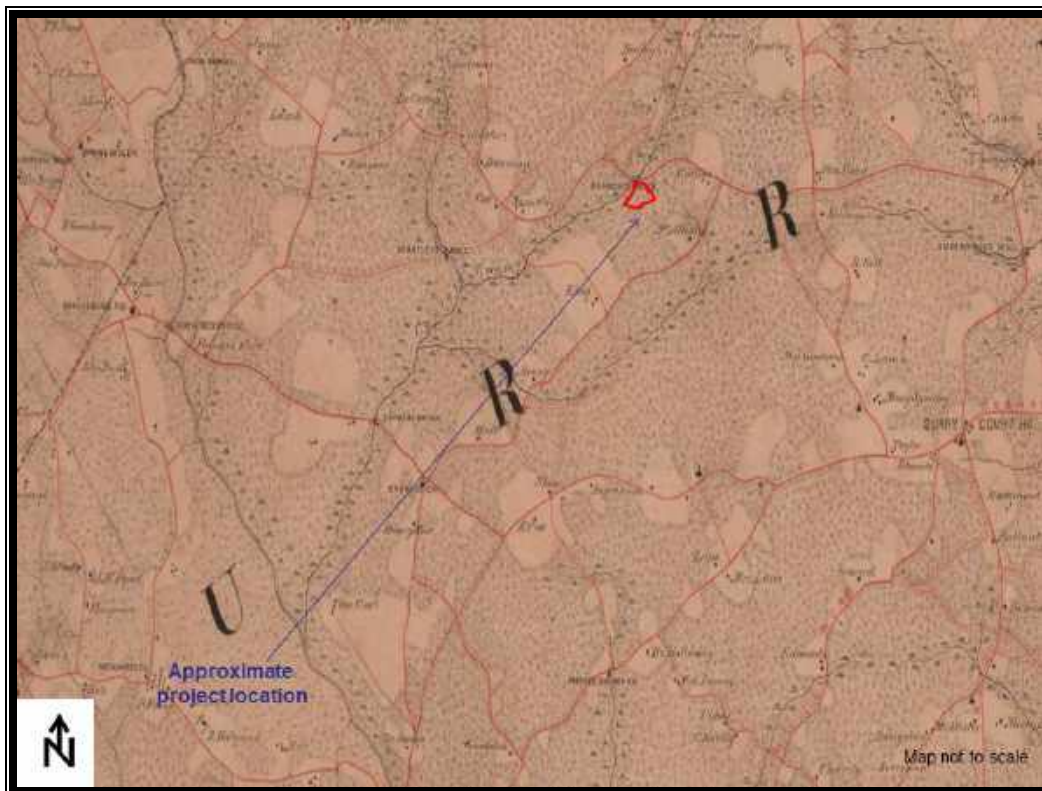


Figure 7. Detail of *Map of Surry, Sussex and Southampton counties, Virginia*. Albert H. Campbell and Charles E. Cassell, Confederate States of America, Army, Dept. of Northern Virginia, Chief Engineer's Office, 1863

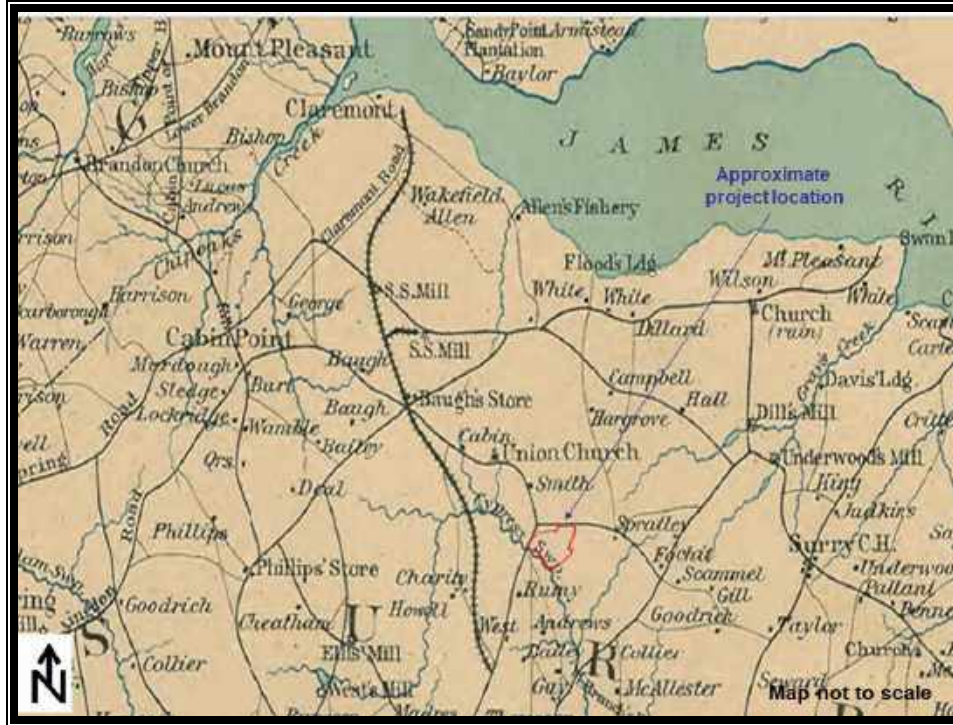


Figure 8. Detail of *Preliminary map of a part of the south side of James River*. Albert H. Campbell, Confederate States of America, Army, Dept. of Northern Virginia, Chief Engineer's Office, 1864

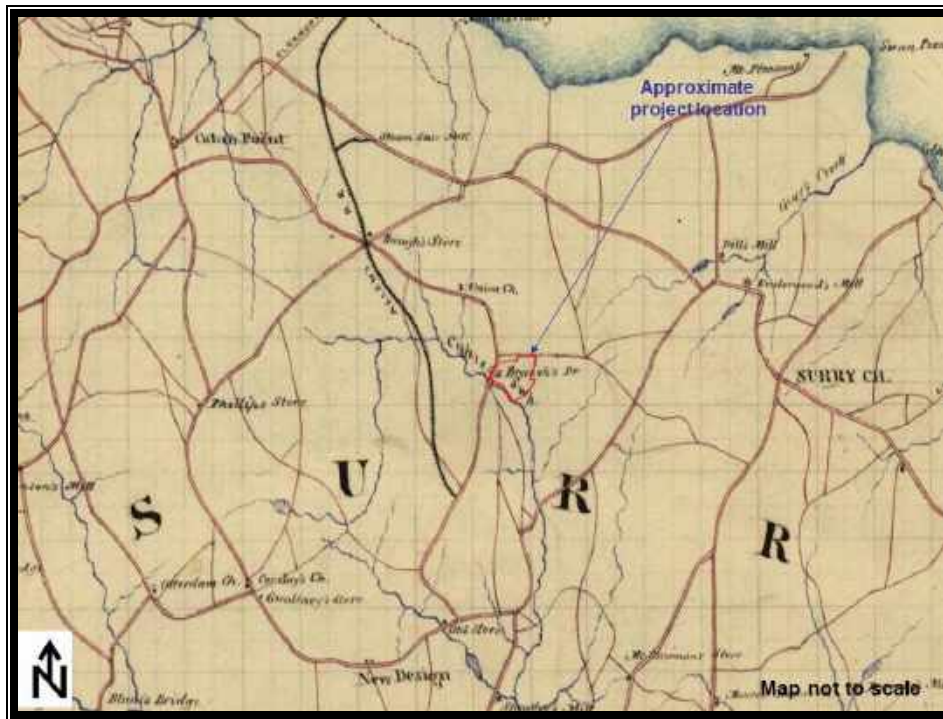


Figure 9. Detail of *Charles City, Pr. George and Surry counties, Virginia* by Jedediah Hotchkiss, 1867.

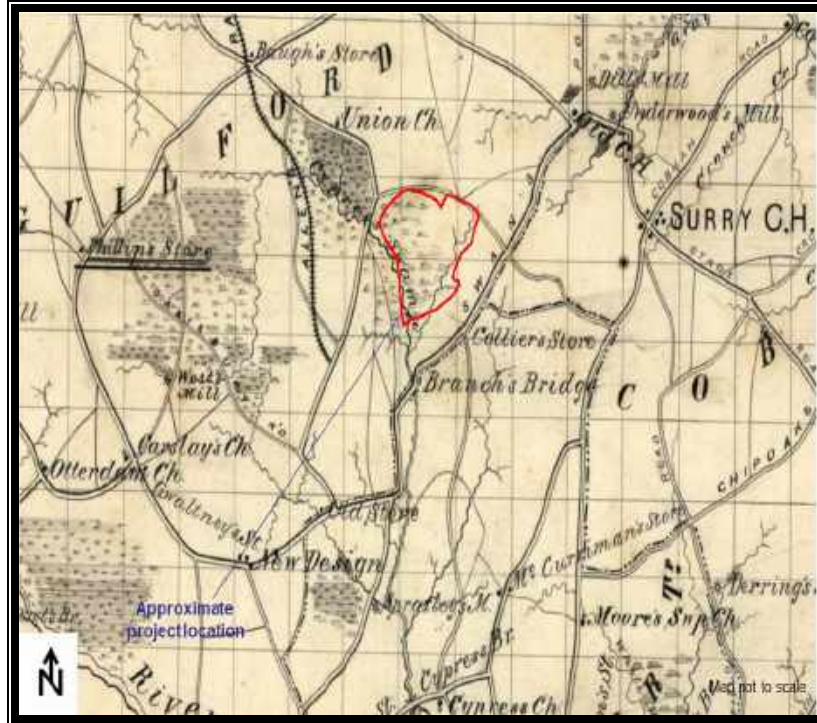


Figure 10. Detail of *Preliminary map of Surry County, Virginia* by Jedediah Hotchkiss, 1871.

Reconstruction and Growth (1865-1917)

Though it had seen only limited military action, Surry County suffered a terrible economic toll because of the Civil War. Plantations suffered the ravages of war, with destroyed fences, devastated fields, and virtually no remaining livestock or draft animals. Real property in the County valued at a million dollars before the war was worth only half that by the war's end. Perhaps the most damaging effect of the war on the County was the complete destruction of the antebellum system of slave labor. For much of the early part of the war, Surry County lay behind Union lines, and up to 90% of local slaves took this opportunity to flee their masters, many of them winding up as refugees in large Freedman's camps on the Lower Peninsula (Coski 1988).

World War I to World War II (1917-1945) and The New Dominion (1945 to present)

Though still overwhelmingly rural, Surry County entered the 20th century slowly, but steadily, taking advantage of the technological benefits of a modern, industrialized society. Transportation during this period still depended to some degree on the James River. Ferries linked the County with James City County and other areas and the steamship Pocahontas carried mail, freight, and passengers on the James River until 1918. Many local roads were hard-surfaced during the 1920s and were incorporated into the State Secondary Highway system by 1932. With new and better roads, automobiles and trucks began to supersede rail and river transportation through the County. It was now easier to reach Richmond, Williamsburg, and Newport News, and property values in Surry County increased as a result (Tyler 1984). Maps of the area drawn during this period show these new transportation lines as well as no development within the project area (Figures 11 and 12).



Figure 11. Detail of 1919 Surry quadrangle.



Figure 12. Detail of 1945 Surry quad.

Agriculture remained the mainstay of Surry County's economy until the mid-20th century, but after World War II other industries, including timber, brick making, sand and gravel, ethanol, and marine construction, became increasingly important. Today the County is marked with small farmsteads and crossroads towns. Quadrangle maps of the area drawn during the second half of the 20th century show no development (Figures 13 and 14).



Figure 13. Detail of 1966 Claremont and Dendron quad.



Figure 14. Detail of 1986 Claremont and Dendron quad.

Brief History of the Glebe at Southwark Parish

The Glebe at Southwark is associated with Reverend John Cargill, a prominent figure among the early Virginia clergy. In 1647, Southwark Parish was set apart from the James City County Parish and until 1738 it served as one of two parishes for Surry and Sussex counties, the other parish being Lawne's Creek. The Reverend John Cargill became minister of the Southwark Parish in 1708 and remained minister until the 1750s. In 1721, Captain Francis Clements, the Clerk of Surry County, left land for a glebe at Indian Springs Plantation. A glebe is a parcel of land owned by a colonial church and farmed to pay the minister's expenses. Typically, as is the case in Surry, a house is constructed on the glebe to serve as the parish rectory.

While serving in Surry County, Cargill sent a report to the Bishop of London in 1724 indicating that his current glebe house was in bad condition and that the parish would not make any repairs. Architectural evidence suggests that the parish did build Cargill a new glebe house, the one located on the northern side of Route 10 from the project area, soon after he sent his report to London. In 1738, the Surry County portion of both parishes combined under the name Southwark. The Sussex County portion of the parishes was set apart and became Albemarle Parish.

After Cargill, several ministers took over the Southwark Parish including Peter Davis, Benjamin Blagrove, John Henry Burgess, and Samuel Butler. However, Butler essentially caused the disbanding of the parish. Samuel Butler became more involved with other non-religious pursuits throughout the County, which led religious leaders to disband Southwark Parish at the beginning of the 19th century. Soon after, the County passed legislation in 1802 that the glebe house be sold, and the house has been in private ownership since then. From 1906 to 1966, the Bryant family owned the house and in 1971, Colonel and Mrs. Nelson Ritchie purchased the house.

PREVIOUSLY-RECORDED CULTURAL RESOURCES

Previous Research

Circa~ performed an archival search for the Spring Grove II project area using the Virginia Department of Historic Resources (VDHR) online V-CRIS system on May 8, 2019. This research was completed to determine if historic resources exist within the project area boundaries. The search identified one archaeological resource and 16 architectural resources within a one-mile radius of the project area boundaries. Table 1 lists all the resources within one mile of the project area boundaries. Figures 15 and 16 show the approximate project area boundaries (yellow-shaded area) and resources within proximity. Of the resources identified, no archaeological resources and no architectural resources were identified within the project area.

According to the VDHR V-CRIS search, one Phase I survey has been completed within one-mile of the project area (Figure 17). The Virginia Department of Transportation (VDOT) conducted a Phase I archaeological survey or proposed improvements to Virginia Route 31 and the James River Ferry Approaches in Charles City, James City, and Surry Counties in 1977. Although not shown on the V-CRIS mapping, in 2017

Circa~ completed a Phase I survey on 100 acres on the opposite side of Route 10 from the project area prior to the development of the site as a solar farm. In addition, Timothy A. Thompson, Lori Cousins, Martha McCartney, and Sam Margolin completed a *Phase I Report on Cultural Resources: Route 31 Study – James River Crossing* in 1988 for Virginia Commonwealth University (VCU). This survey was situated outside of the one-mile radius, however, Circa~ reviewed both of these survey areas in V-CRIS and noted 201 archaeological resources in Surry County within their survey borders. These sites include a mix of Native American and historic resources spread throughout their project areas to the north and east of the Circa~ project area, closer to the James River. According to the V-CRIS system, VDHR holds no easement within one mile of the project corridor.

Table 1. Resources Within a One-Mile Radius of Project Area Boundaries.

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
<i>Archaeological Sites</i>				
44SY0099 See also 090-0036	19 th century 20 th century	Dwelling, single	Phase I survey 1/76	None made
<i>Architectural Resources</i>				
090-0012	ca. 1724	Olde Glebe aka The Old Glebe aka Glebe House of Southwark Parish, 3700 Colonial Trail West, site includes one parsonage/glebe and one smokehouse	Historic American Building Survey (HABS) 10/58 Phase II survey 4/78	Listed on the Virginia Landmark Register 10/75 Listed on the National Register of Historic Places 5/76
090-0036	ca. 1780	Warren Crossroads House, 2546 Colonial Trail West, site includes two houses, one gazebo, three outbuildings, and one barn	Phase I survey 6/73 and 11/76	None made
090-0048	ca. 1840	Clerestory House, Route 618 and south of Route 10, site includes one house and one barn	Phase I survey 6/73	None made
090-5028	ca. 1932	Bridge #6018, Loafers Oak Road	Phase I survey 6/11	VDHR determined not eligible 7/11
090-5070	ca. 1950	Surry Hunt Club, 3526 Colonial Trail West, site includes one park shelter, one pole barn, and one animal shelter	Phase I survey 7/17	Recommended not eligible 7/17
090-5071	ca. 1950	House, 3800 Colonial Trail West, site includes one house, one garage, and one shed	Phase I survey 7/17	Recommended not eligible 7/17
090-5072	ca. 1960	Mobile Home, 3870 Colonial Trail West	Phase I survey 7/17	Recommended not eligible 7/17
090-5073	ca. 1972	House, 4038 Colonial Trail West	Phase I survey 7/17	Recommended not eligible 7/17

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
090-5074	ca. 1914	House, 4322 Colonial Trail West, site includes one house, one barn, three sheds, one well house, and one well	Phase I survey 7/17	Recommended not eligible 7/17
090-5075	ca. 1901	House, 5014 Colonial Trail West, site includes one house, two barns and one well	Phase I survey 7/17	Recommended not eligible 7/17
090-5076	ca. 1960	Mobile Home, 5777 Hollybush Road, site includes one mobile home, two pole barns, one shed, and seven silos	Phase I survey 7/17	Recommended not eligible 7/17
090-5077	ca. 1964	House, 5899 Hollybush Road, site includes one house, one barn, one well house, and one well	Phase I survey 7/17	Recommended not eligible 7/17
090-5078	ca. 1972	House, 6180 Hollybush Road, site includes, one house, one garage, and one shed	Phase I survey 7/17	Recommended not eligible 7/17
090-5079	ca. 1960	House, 6442 Hollybush Road, site includes one house, one shed and one well house	Phase I survey 7/17	Recommended not eligible 7/17
090-5084	ca. 1970	Mobile Home, 2188 Colonial Trial West, site includes one mobile home, one shed, and one well	Phase I survey 7/17	Recommended not eligible 7/17
090-5085	ca. 1970	Mobile Home, 2194 Colonial Trail West, site includes one mobile home and one shed	Phase I survey 7/17	Recommended not eligible 7/17

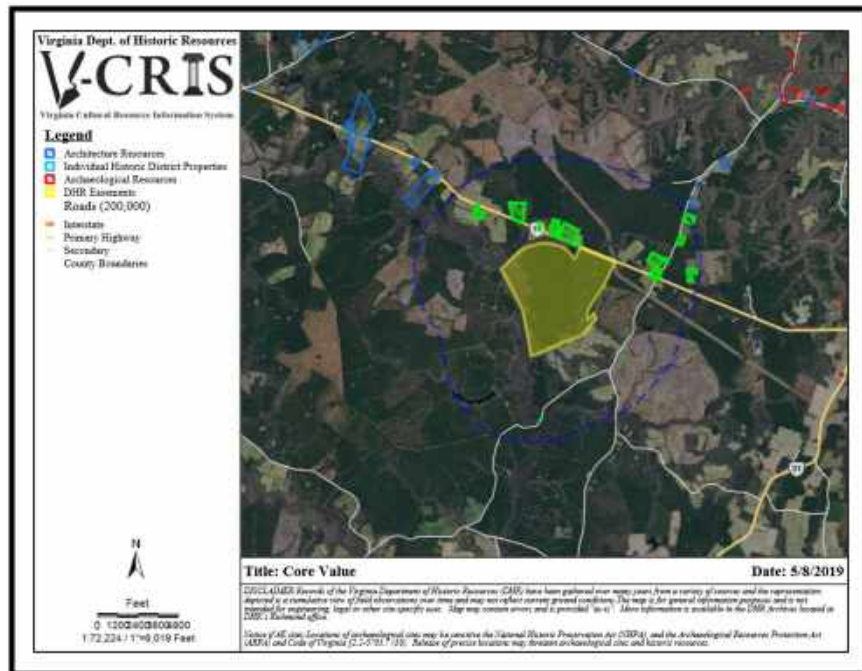


Figure 15. V-CRIS map showing previously-identified resources within a one-mile radius of project area boundaries.

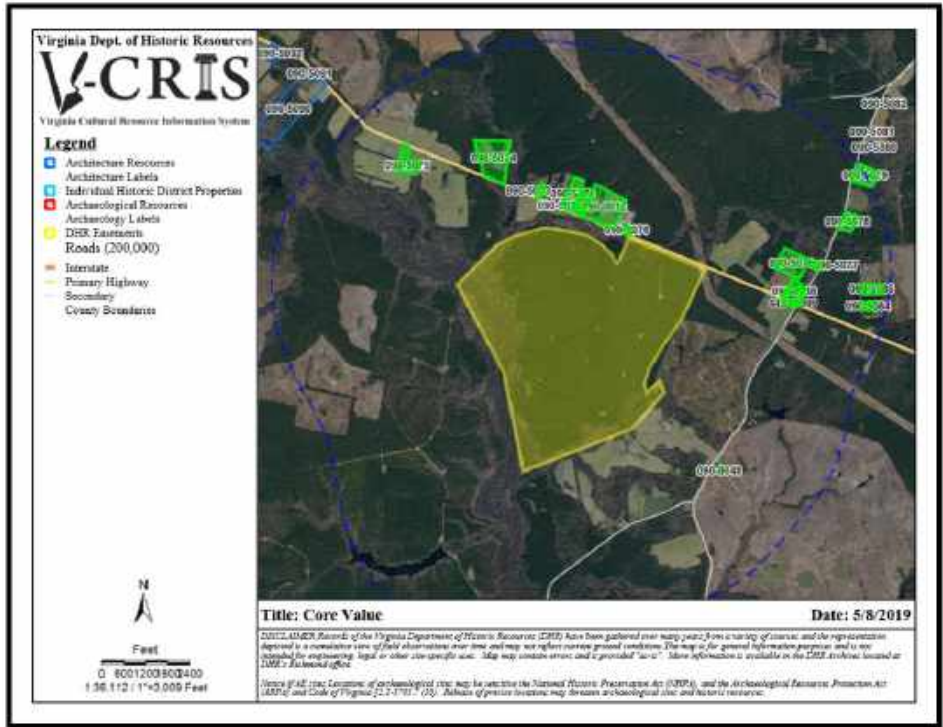


Figure 16. Detailed V-CRIS map showing previously-identified resources within proximity to the project area boundaries.

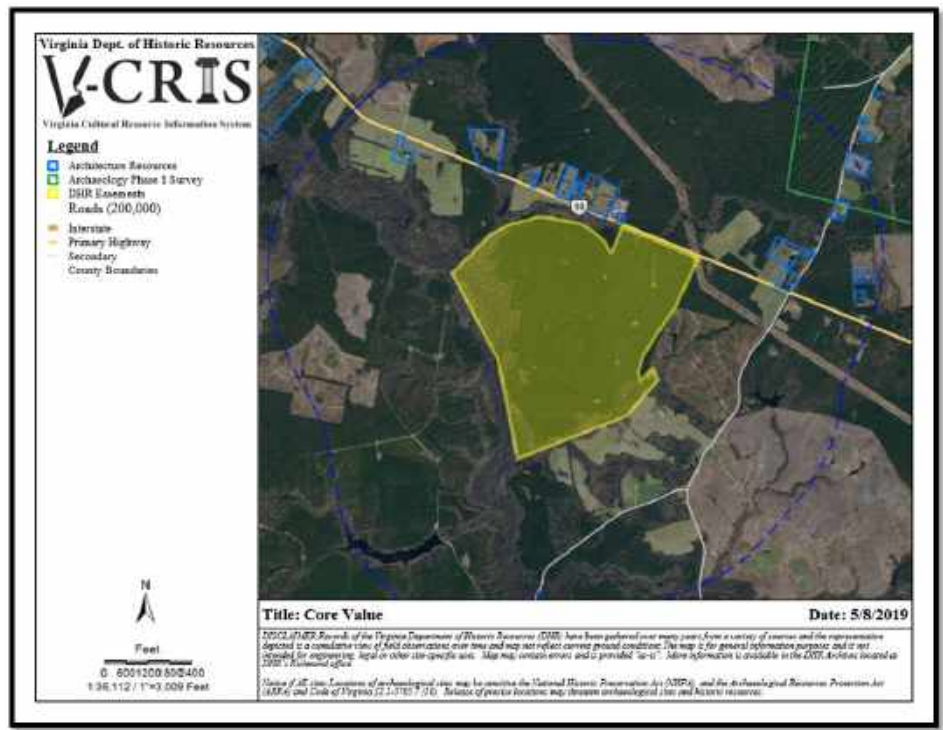


Figure 17. VDHR V-CRIS map showing project area in yellow and previous-survey areas outlined in green.

RESULTS

Circa~ conducted a site visit and field survey of the project area in July 2019. The purpose of the field survey is to provide specific information concerning the location, nature, and distribution of architectural resources within the project area and the APE. The survey began with a review of the project area during which Circa~ identified nine previously-identified architectural resources and six new architectural resources situated within the APE; none of the resources are situated directly within the project area boundaries (Figure 18). The resources were then mapped and recorded using the VDHR Reconnaissance Level Survey forms. Color digital photographs were taken of the exterior, where possible. Once the information had been collected, it was then entered into the VDHR V-CRIS system. See Appendix A for the completed V-CRIS forms. A brief description of each building is presented below.

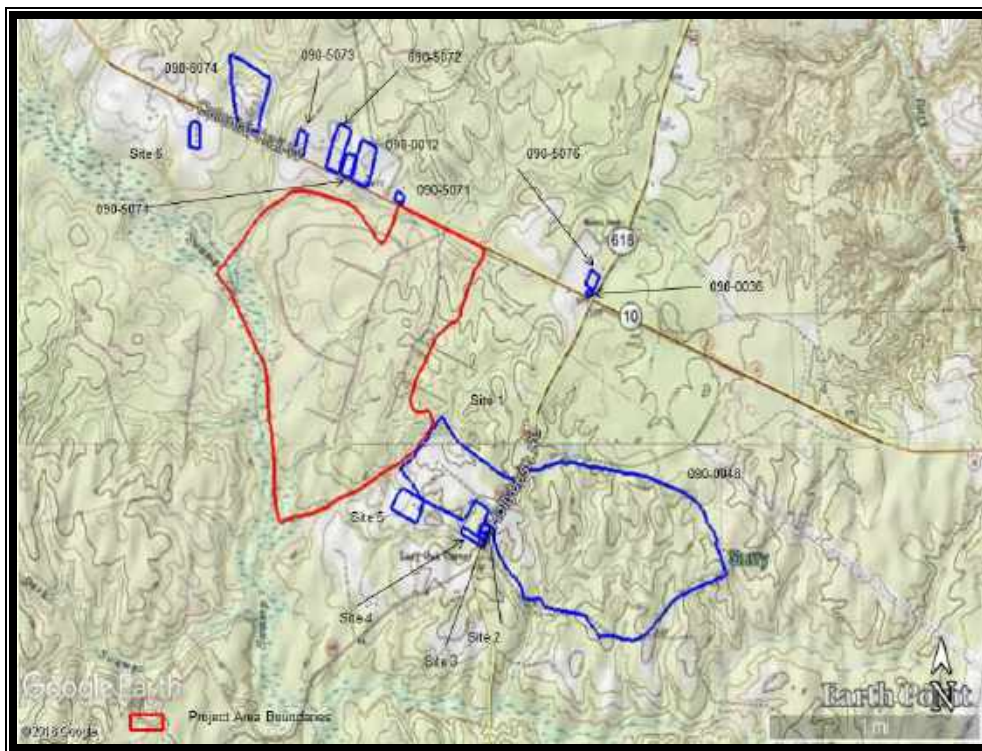


Figure 18. Map showing location of previously-identified and newly-identified architectural resources within the APE, project area outlined in red.

Previously-Identified Architectural Resources

Site 090-0012

Site 090-0012 is the circa 1724 Old Glebe identified by Robert Wiggins in 1958 when he completed a Historic American Building Survey (HABS) report. In 1975 the site was listed on the Virginia Landmarks Register (VLR) and in 1976, the site was listed on the National Register of Historic Places.

When the VDHR site form was completed in 1975, it noted that the site is located approximately 0.70 miles northeast of Cypress Swamp, on the northeast side of Colonial Trail West (Route 10) and northwest of the intersection of Route 10 and Route 618 (Hollybush Road) near Spring Grove. The site form described the parsonage and the smokehouse as the only buildings on the property. Circa~ re-surveyed the site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area and identified the original house and smokehouse, as well as a horse barn, secondary dwelling, one shed, and one equipment shed. These buildings are situated away from Colonial Trail West on an approximately 9.67-acre parcel surrounded by a well-maintained mowed lawn with mature trees and plantings. A single-lane gravel driveway leads from Colonial Trail West to the house. The property is surrounded by a four-rail wood fence with a metal gate at Colonial Trail West. The house faces the Virginia Department of Transportation (VDOT) county facility to the east.

No changes have been made to any of the resources since the previous survey (Plates 1 – 7).



Plate 1. View of Site 090-0012, Main house, façade, and secondary dwelling, looking west.



Plate 2. View of Site 090-0012, Main house, side elevation and additions, looking southwest.



Plate 3. View of site 090-0012, Smokehouse and Secondary dwelling, looking south.



Plate 4. View of Site 090-0012, Horse barn, south.



Plate 5. View of Site 090-0012, Secondary dwelling and Smokehouse, looking north.



Plate 6. View of Site 090-0012, Shed, looking west.



Plate 7. View of Site 090-0012, Equipment shed and Shed, looking northwest.

Site 090-0036

Site 090-0036 is the circa 1780 Warren Crossroads House identified by Dell Upton in 1976 when he completed a Phase I survey of the site. When he completed the VDHR site form, he noted that the site contained one house. The site form provided very little description of the house and virtually no description of the setting.

Circa~ re-surveyed the site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area and identified the original house as well as a gazebo, cottage, three outbuildings, and one barn. These buildings are situated close to Colonial Trail West, at the northwestern corner of the intersection of Colonial Trail West and Hollybush Road, on an approximately 3.59-acre parcel surrounded by a well-maintained mowed lawn with mature trees and plantings. Facing south, the building is set on a fairly-level grade. To the north of the house, there is an intricate brick courtyard surrounded by a painted-white wood fence. A short single-lane dirt driveway leads from Hollybush Road to a dirt parking area. A mature tree line runs between the house and Colonial Trail West partially obscuring the view to the house. A five-rail wood fence runs parallel to Hollybush Road. Well-maintained landscaped gardens are visible throughout the property, which is now used as a bed and breakfast.

No changes have been made to any of the resources since the previous survey (Plate 8 – 12).



Plate 8. View of Site 090-0036, House, façade and addition, looking northeast.



Plate 9. View of Site 090-0036, House, side elevation and addition, and Gazebo, looking east.



Plate 10. View of Site 090-0036, Cottage, façade and side elevation, looking north.



Plate 11. View of Site 090-0036, House, rear elevation; Cottage, façade, side elevation, and addition; and Outbuildings, looking south.



Plate 12. View of Site 090-0036, Barn, façade and additions, looking southwest.

Site 090-0048

Site 090-0048 is the circa 1840 Clerestory House identified by Bernard Herman in 1973. No specific project information was provided on the site form to determine his reason for surveying the site. When he completed the VDHR site form, he noted that the site contained one house and one barn and that the resource was threatened by demolition. The site form provided very little description of the house and virtually no description of the setting other than that the site was located on Route 618, south of Route 10. Herman did not make any recommendation as to the eligibility of the site for listing on the National Register of Historic Places. The VDHR V-CRIS form notes that the site has been destroyed but does not provide a date or who noted the destruction.

Circa~ re-surveyed the site and identified only the barn. Circa~ could not locate the original house suggesting that the note of demolition is accurate. The barn is situated away from Hollybush Road, on an approximately 697.03-acre parcel surrounded woodland. Facing north, the building is set on a fairly-level grade in a small clearing. The mature trees partially obscure the view to the barn. A review of the Surry County real estate records showed no recorded date for this property; however, given the wood siding, standing-seam metal, and anecdotal evidence of the original survey, it appears that 1840 construction date is accurate (Figure 19).

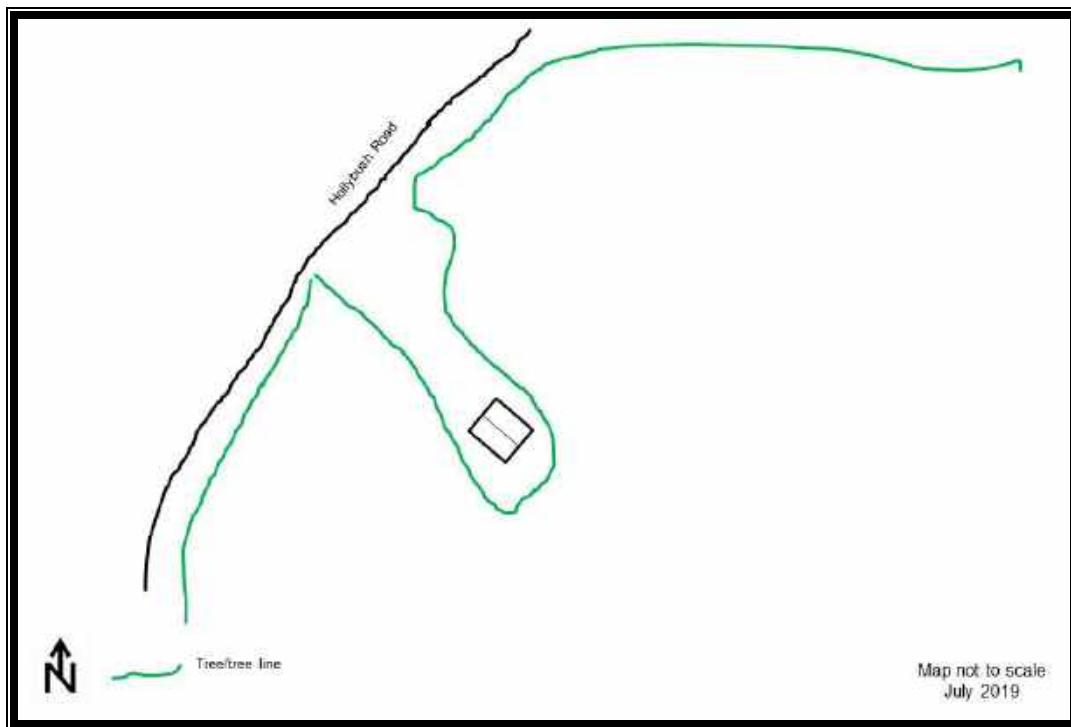


Figure 19. Site plan for Site 090-0048.

Barn

This circa 1840, one-story, multiple-bay, side-gable, wood-frame barn is clad in vertical wood siding (Plate 13). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal and is partially collapsed and pulling away from the structure exposing the wood framing. No windows are visible on the barn. The entrance on the façade is not visible.



Plate 13. View of Site 090-0048, Barn, looking east.

Site 090-5070, Surry Hunt Club, 3526 Colonial Trail West

Site 090-5070 is identified as the circa 1950 Surry Hunt Club. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 0.97-acre parcel close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to a gravel parking area in front of the clubhouse. The building is surrounded by a mowed lawn with a tree line to the east and scattered mature trees throughout the property. Facing south, the building is set on a fairly-level grade that slopes gently to the south. A wooden light pole with a mercury vapor light is situated to the east of the clubhouse and overhead utility lines run from Colonial Trail West to the east side of the building. A metal chain-link fence is situated on the western edge of the property.

No changes have been made to any of the resources since the previous survey (Plates 14 - 17).



Plate 14. View of Site 090-5070, Clubhouse, façade, and Pavilion, looking north.



Plate 15. View of Site 090-5070, Clubhouse, side elevation, and Pavilion, looking northwest.



Plate 16. View of Site 090-5070, Pole barn, façade, looking west.



Plate 17. View of Site 090-5070, Animal pen, looking southwest.

Site 090-5071, House, 3800 Colonial Trail West

Site 090-5071 is identified as a circa 1950 house. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 4.35-acre parcel close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the house. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south.

No changes have been made to any of the resources since the previous survey (Plates 18, 19, and 20).



Plate 18. View of Site 090-5071, House, façade, looking north.



Plate 19. View of Site 090-5071, Garage, façade, looking north.



Plate 20. View of Site 090-5071, Shed, looking north.

Site 090-5072, Mobile Home, 3870 Colonial Trail West

Site 090-5072 is identified as a circa 1960s mobile home. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 10.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the mobile home. A mowed lawn with scattered mature trees and plantings surrounds the mobile home. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Cornfields are planted to the east, north, and west of the mobile home and a tree line is visible to the north. A wooden utility pole is visible to the northeast of the house and overhead utility lines from south from the pole to Colonial Trail West.

No changes have been made to any of the resources since the previous survey (Plate 21).



Plate 21. View of Site 090-5072, Mobile home, façade, looking north.

Site 090-5073, House, 4038 Colonial Trail West

Site 090-5073 is identified as a circa 1972 house. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 4.00-acre parcel away from Colonial Trail West with a single-lane paved driveway leading from Colonial Trail West to the house and a parking area to the west. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Several trees have grown up in front of the house partially obscuring the building and making it difficult to discern specific construction materials.

No changes have been made to any of the resources since the previous survey (Plate 22).



Plate 22. View of Site 090-5073, House, façade, looking north.

Site 090-5074, House, 4322 Colonial Trail West

Site 090-5074 is identified as a circa 1914 house. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 69.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Many of the trees are planted in front of the house, partially obscuring the façade and making it difficult to discern specific construction materials.

No changes have been made to any of the resources since the previous survey (Plates 23 and 24).



Plate 23. View of Site 090-5074, House, Façade and elevations, looking northwest.



Plate 24. View of Site 090-5074, House and outbuildings, looking north.

Site 090-5076, Mobile Home, 5777 Hollybush Road

Site 090-5076 is identified as a circa 1960s mobile home. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 125.91-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the mobile home. There is a large open agricultural field to the south of the mobile home separating it from Colonial Trail West. A mowed lawn with mature trees and plantings surrounds the building. Facing south, the building is set on a fairly-level grade that slopes gently to the south. A mature tree line is visible to the west, north, and east and a wooden pole with a mercury vapor light is situated along the driveway to the south of the mobile home. There is also a wooden swing in the front yard. A wood post and wire fence surround a portion of the property.

No changes have been made to any of the resources since the previous survey (Plates 25 – 28).



Plate 25. View of Site 090-5076, Mobile home, looking north.



Plate 26. View of Site 090-5076, Pole Barns 1 and 2, looking northwest.



Plate 27. View of Site 090-5076, Equipment shed, façade, looking north.



Plate 28. View of Site 090-5076, Silo cluster, looking northwest.

Newly-Identified Architectural Resources

Site 090-5140, House, Hollybush Road

On the western side of Hollybush Road, there is a circa 1880s house, with one secondary dwelling, two pole barns, one silo, one outbuilding, five sheds, one ruin, and one well on an approximately 65.00-acre parcel well away from Hollybush Road surrounded by a mowed lawn (Figure 20). Facing east, the building is set on a fairly-level grade with a single-lane, dirt driveway that leads from Hollybush Road to the main house. The secondary dwelling and associated outbuildings are situated close to Hollybush Road to the southeast of the main house. There is a single-lane, gravel driveway that leads from Hollybush Road to the north of the secondary dwelling. Wooden utility poles are situated near the main house and along Hollybush Road and overhead utility lines run between the poles and parallel to Hollybush Road. A metal satellite dish attached to a wooden post and an aboveground storage tank resting on a metal stand are visible by the secondary dwelling. A tree line is visible along the southern side of the driveway to the main house and the north and west of the main house. Agricultural fields surround the main house. A review of the Surry County real estate records did not indicate a construction date for the house. However, given the vernacular style and use of wood siding and Flemish-bond brick patterns, the house was probably built in the 1880s.

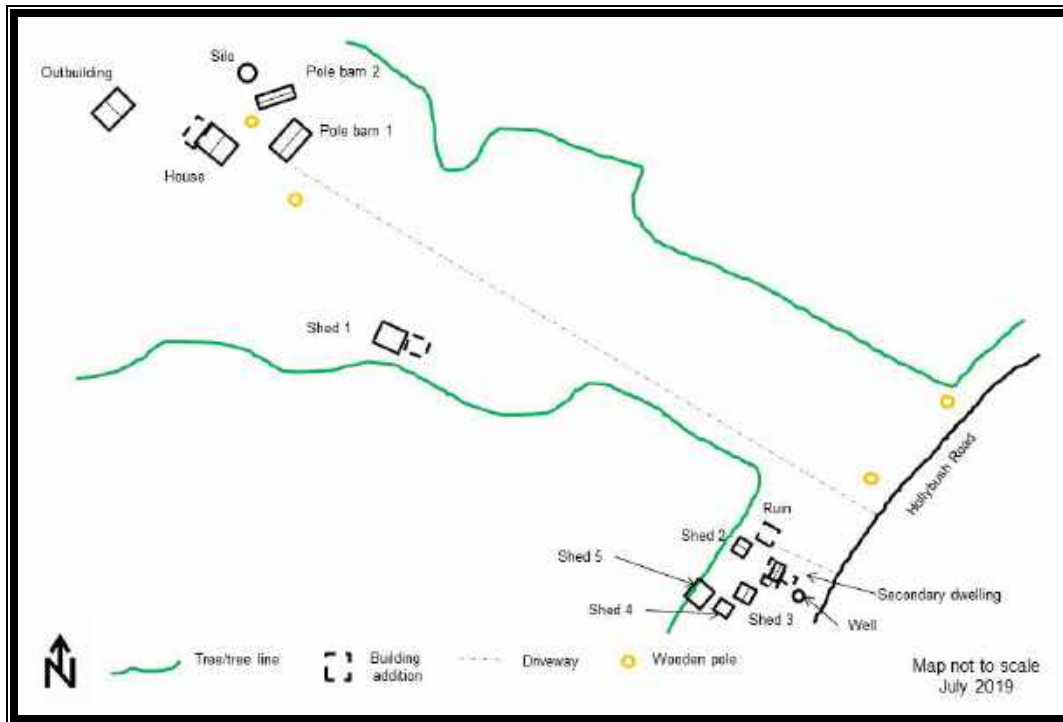


Figure 20. Site plan for Site 090-5140.

House

This circa 1880s, two-story, three-bay, side-gable, vernacular style, wood-frame house is clad in wood siding and rests on a Flemish-bond brick pier foundation with one interior-end Flemish-bond brick chimney that is deteriorating at the top and one exterior-end Flemish-bond brick chimney with a corbelled cap (Plates 29 and 30). The siding is deteriorating, and sections have pulled away from the wood framing. The roof is covered in standing-seam metal. The window openings have been covered in plywood; it is unable to determine if the original windows are still intact. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, three-bay, side-gable, wood-frame addition attached to the rear (west) elevation clad in wood weatherboard with one interior-end Flemish-bond brick chimney (Plate 31). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. Sash, double-hung, 1/1, wood-frame windows are typical on the addition. No entrance is visible on the addition.

Secondary Dwelling

To the southeast of the house, there is a circa 1938, two-story, two-bay, side-gable, Colonial Revival style, wood-frame house clad in painted-white composition siding and resting on a concrete-block foundation with one interior-end Flemish-bond brick chimney with a corbelled cap (Plates 32 and 33). The roof is covered in standing-seam metal. Sash, double-hung, 6/6, wood-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.



Plate 29. View of Site 090-5140, House, façade and side elevation, and Pole Barns 1 and 2, looking northwest.



Plate 30. View of Site 090-5140, House, façade, side elevation, and addition, Pole Barn 1, and Outbuilding, looking northwest.



Plate 31. View of Site 090-5140, House, façade, side elevation, and addition, Pole Barn 1, and Outbuilding, looking northwest.



Plate 32. View of Site 090-5140, Secondary dwelling, façade, side elevation and additions, Sheds 2, 3, and 4, and Ruin, looking northwest.



Plate 33. View of Site 090-5140, Secondary dwelling, façade, side elevation, and additions, and Sheds 2 and 3, looking northwest.

There is a one-story, six-bay, shed roof, wood-frame addition attached to the façade clad in painted-white composition siding and resting on a concrete-block foundation (see Plate 33). The roof is covered in standing-seam metal. Three-light, wood-frame awning windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door covered by a metal storm door.

There is a one-story, two-bay, side-gable, wood-frame addition attached to the rear (west) elevation clad in painted-white composition siding and resting on a concrete-block foundation with one interior-end Flemish-bond chimney with a corbelled cap (Plate 34). The roof is covered in standing-seam metal with overhanging eaves with a metal satellite dish attached to the eastern side. There is a one-bay, concrete-block stoop on the south elevation flanked by a wood railing. Two concrete-block steps flanked by wood railings lead from the stoop to the backyard. A wooden L-shaped ramp flanked by wood railings lead from the north elevation to the backyard. Three concrete-block wood steps flanked by wood railings lead from the ramp to the side yard. Single and paired, sash, double-hung, 6/6, wood-frame windows are typical on the addition. The entrance on the addition consists of two single-leaf, wood-panel doors with lights.



Plate 34. View of Site 090-5140, Secondary dwelling, façade, side elevation, and additions, and Shed 3, looking north.

There is a one-story, one-bay, side-gable, wood-frame addition attached to the side (south) elevation clad in painted-white composition siding and resting on a concrete-block foundation (see Plate 34). The roof is covered in standing-seam metal. Sash, double-hung, 6/6, wood-frame windows flanked by painted-black wood shutters are typical on the addition. No entrance is visible on the addition.

Pole Barn 1

To the east of the house, there is a circa 1900, one-story, six-bay, side-gable, wood-frame pole barn clad in painted-red vertical wood siding and resting on the ground (Plates 35 and 36). The roof is covered in corrugated metal. No windows are visible on the pole barn. The façade and rear (west) elevation is open.

Pole Barn 2

To the east of the house, there is a circa 1900, one-story, five-bay, side-gable, wood-frame pole barn clad in painted-red vertical wood siding and resting on the ground (see Plates 35 and 36). The roof is covered in corrugated metal. No windows are visible on the pole barn. The façade and rear (west) elevation is open.

Silo

To the northeast of the house, there is a circa 1900, one-story, round, pyramidal roof, wood-frame silo clad in metal siding (see Plates 35 and 36). The silo is partially obscured from view by the pole barns and the foundation is not visible. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the façade is not visible.



Plate 35. View of Site 090-5140, House, side elevation and addition, Pole Barns 1 and 2, and Silo, looking northwest.



Plate 36. View of Site 090-5140, House, addition, Pole Barns 1 and 2, and Silo, looking northwest.

Outbuilding

To the west of the house, there is a circa 1880s, one-story, one-bay, front-gable, wood-frame outbuilding clad in vertical wood siding (see Plate 31). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the outbuilding. The entrance on the façade is not visible.

Shed 1

To the east of the house, there is a circa 1880s, one-story, one-bay, shed roof, wood-frame shed clad in deteriorated wood siding (Plate 37). The shed is almost completely covered with overgrown vegetation and the foundation is not visible due to the overgrowth. The roof is covered in standing-seam metal. No windows are visible on the shed. The façade is open.



Plate 37. View of Site 090-5140, Shed 1, façade, side elevation, and addition, looking northwest.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (east) elevation clad in wood siding (see Plate 37). The addition is almost completely covered with overgrown vegetation and the foundation is not visible due to the overgrowth. The roof is covered in standing-seam metal. No windows are visible on the addition. No entrance is visible on the addition.

Shed 2

To the southeast of the house, there is a circa 1938, one-story, one-bay, front-gable, concrete-block shed resting on a concrete-block foundation (Plate 38). The roof is covered in corrugated metal. No windows are visible on the shed. The entrance on the façade is a single-leaf, vertical wood plank door.



Plate 38. View of Site 090-5140, Secondary dwelling, side elevation and addition, and Shed 2, looking northwest.

Shed 3

To the southwest of the house, there is a circa 1938, one-story, one-bay, front-gable, wood-frame shed clad in wood siding that was once painted white and resting on a concrete-block pier foundation (Plates 39 and 40). The roof is covered in standing-seam metal with exposed rafter tails. One small, fixed, one-light, wood-frame window is visible in the gable end and sash, double-hung, 6/6, wood-frame windows are typical on the elevations. Some of the windowpanes are missing. The entrance on the façade is a double-leaf, vertical wood plank door.



Plate 39. View of Site 090-5140, Secondary dwelling, addition, and Sheds 3 and 4, looking northwest.



Plate 40. View of Site 090-5140, Secondary dwelling, addition, and Sheds 3, 4, and 5, looking north.

Shed 4

To the southwest of the house, there is a circa 1938, one-story, two-bay, shed roof, wood-frame shed resting on a concrete-block foundation (see Plate 40). Originally clad in wood siding, the shed is now covered with canvas panels. The original wood siding is still visible on the side (east) elevation. The roof is covered in standing-seam metal with exposed rafter tails. Window openings are visible on the façade and elevations; the windows have been removed. The entrance on the façade is a single-leaf, vertical wood plank door.

Shed 5

To the southwest of the house, there is a circa 1938, one-story, one-bay, shed roof, wood-frame shed clad in wood siding and resting on a concrete-block foundation (see Plate 40). The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is a single-leaf, vertical wood plank door.

Ruin

To the southeast of the house, there is a circa 1938 ruin that consists of standing-seam metal roofing material resting on a poured-concrete slab-on-grade foundation (Plate 41). While the original function of the structure cannot be determined from the remains, given its location at the end of the driveway, it is possible that the building may have been a garage.



Plate 41. View of Site 090-5140, Ruin, looking northwest.

Well

To the south of the house, there is a circa 1938, round, poured-concrete well resting partially above grade (Plate 42). A poured-concrete cap covers the top of the well.



Plate 42. View of Site 090-5140, Secondary dwelling, façade, side elevation, and addition, Sheds 3, 4, and 5, and Well, looking northwest.

Site 090-5141, House, 4593 Hollybush Road

On the western side of Hollybush Road, there is a circa 1962 house, with two sheds, one well house, and one well on an approximately 1.00-acre parcel close to Hollybush Road surrounded by a mowed lawn with scattered mature trees and plantings (Figure 21). Facing east, the building is set on a fairly-level grade with a single-lane, gravel driveway that leads from Hollybush Road to the house. A ditch runs parallel to Hollybush Road. A wooden pole with a mercury vapor light attached to the top is situated in the backyard along with wooden utility poles to the north and west of the house. Overhead utility lines run between the poles above the house. A painted-black metal lamppost is situated in the front yard and a metal clothesline is visible in the backyard. A tree line is visible to the west. A review of the Surry County real estate records indicates that the house was built circa 1962. Given the ranch style and use of Flemish-bond brick patterns, composition siding, and asphalt shingles, this date is probably accurate.

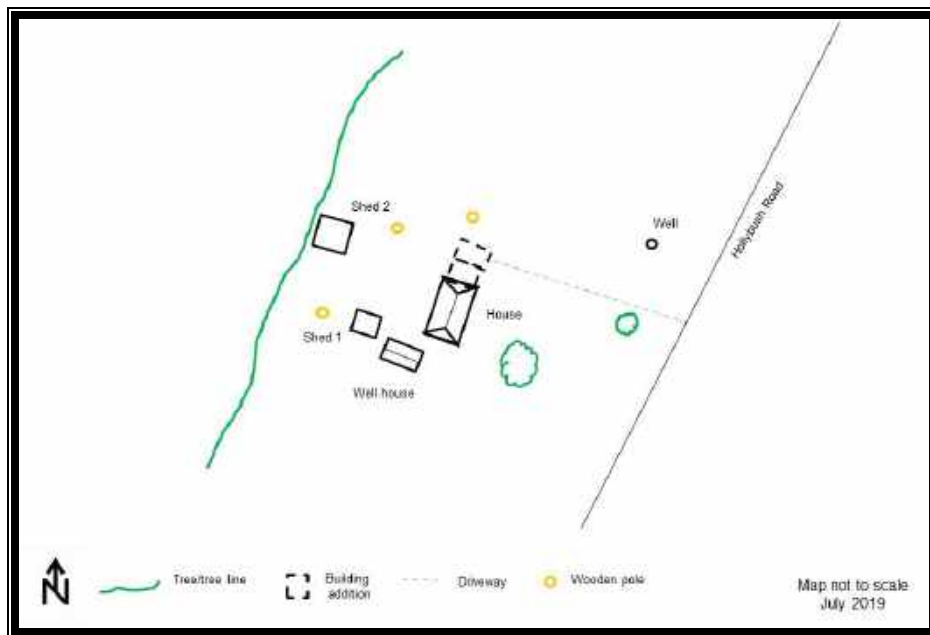


Figure 21. Site plan for Site 090-5141.

House

This circa 1962, one-story, four-bay, hipped roof, ranch style, wood-frame house is clad in painted-white composition siding with a Flemish-bond brick veneer on the lower half of the southernmost two bays of the façade and rests on a raised concrete-block foundation with a Flemish-bond brick veneer on the façade with one central-interior Flemish-bond brick chimney with a corbelled cap and metal vent cap (Plates 43 and 44). The roof is covered in asphalt shingles with a boxed cornice and overhanging eaves. There is a one-story, two-bay, Flemish-bond brick porch under a roof overhang supported by painted-black metal posts flanked by painted-black metal railings. Two Flemish-bond brick steps lead from the porch to the front yard. Fixed, two-light and three-light, wood-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door covered by a metal storm door.



Plate 43. View of Site 090-5141, House, façade and additions, looking west.



Plate 44. View of Site 090-5141, House, façade, side elevation, and addition, Shed 1, and Well house, looking north.

There is a one-story, one-bay, hipped roof, wood-frame addition attached to the side (north) elevation clad in painted-white composition siding and resting on a Flemish-bond brick foundation with one exterior-end Flemish-bond brick chimney with a corbelled cap (see Plate 43). The roof is covered in asphalt shingles with a boxed cornice and overhanging eaves. A metal satellite dish is attached to the northeastern corner. Triple, sash, double-hung, 2/2, wood-frame windows flanked by painted-black wood shutters are typical on the addition. The entrance on the addition consists of two single-leaf, wood-panel doors covered by metal storm doors,

There is a one-story, one-bay, hipped roof carport attached to the north elevation of the addition with a painted-white concrete-block retaining wall on the northern elevation resting on a poured-concrete slab-on-grade foundation (see Plate 43). The roof is covered in asphalt shingles with a boxed cornice supported by painted-white wood posts with painted-white wood latticework. The carport is open on three sides.

Shed 1

To the west of the house, there is a circa 1962, one-story, one-bay, gambrel roof, painted-white concrete-block shed resting on a concrete-block foundation (Plate 45). The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a double-leaf, wood-panel door.



Plate 45. View of Site 090-5141, Sheds 1 and 2, and Well house, looking north.

Shed 2

To the west of the house, there is a circa 1962, one-story, one-bay, shed roof, wood-frame shed clad in plywood siding (see Plate 45). The shed is almost completely overgrown, and the foundation is not visible due to the overgrowth. The roofing material is not visible due to the overgrowth. No windows are visible on the shed. The entrance on the façade is a single-leaf, plywood door.

Well house

To the southwest of the house, there is a circa 1962, one-story, one-bay, side-gable, painted-white concrete-block well house resting on a concrete-block foundation partially below grade (see Plate 45). The roof is covered in asphalt shingles with exposed rafter tails. No windows are visible on the well house. The entrance on the façade is not visible.

Well

To the north of the house, there is a circa 1962, round, poured-concrete well resting partially above grade (Plate 46). A poured-concrete cap covers the top of the well.



Plate 46. View of Site 090-5141, House, façade, side elevation, and additions, Shed 2, and Well, looking northwest.

Site 090-5142, New Design School, Hollybush Road

On the western side of Hollybush Road, there is a circa 1880s school on an approximately 7.84-acre parcel close to Hollybush Road surrounded by mowed lawn (Figure 22). Facing east, the building is set on a fairly-level grade with a ditch running parallel to Hollybush Road. A tree line is visible to the west. A large, painted-white wooden sign leans against the façade noting the building as the New Design School restoration by the African American Heritage Society. A review of the Surry County real estate records did not indicate a construction date for the house. However, given the vernacular style and use of wood siding and Flemish-bond brick patterns, the school was probably built in the 1880s.

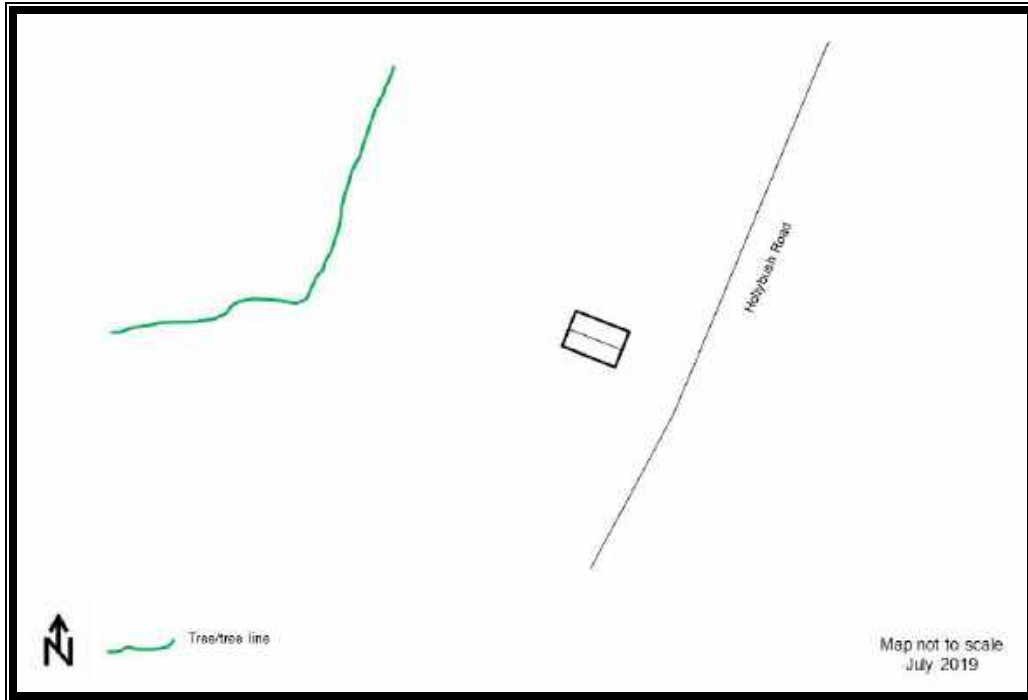


Figure 22. Site plan for Site 090-5142.

School

This circa 1880s, one-story, three-bay, front-gable, vernacular style, wood-frame school is clad in wood siding and rests on Flemish-bond brick piers (Plates 47, 48, and 49). The roof is covered in standing-seam metal with cornice returns and appears to be a replacement roof. Sash, double-hung, 2/2, wood-frame windows are typical on the façade with paired, sash, double-hung, 6/6, wood-frame windows typical on the elevations. Some of the windowpanes are missing and some of the wood mullions on the windows on the elevations are missing. The entrance on the façade is a single-leaf, vertical wood plank door.

Site 090-5143, House, 4543 Hollybush Road

On the western side of Hollybush Road, there is a circa 1966 house, with one shed, one well house, and one well, on an approximately 1.12-acre parcel away from Hollybush Road surrounded by a mowed lawn with scattered mature trees and plantings (Figure 23). Facing east, the building is set on a fairly-level grade with a single-lane, dirt driveway that leads from Hollybush Road to the north of the house. A ditch runs parallel to Hollybush Road. A three-rail wooden fence with a row of trees on the southern side runs along the northern edge of the parcel. A review of the Surry County real estate records indicated that the house was built circa 1966. Given the ranch style and use of Flemish-bond brick patterns and asphalt shingles, this date is probably accurate.



Plate 47. View of Site 090-5142, New Design School, façade and side elevation, looking northwest towards the project area.



Plate 48. View of Site 090-5142, New Design School, façade and side elevation, looking northwest towards the project area.



Plate 49. View of Site 090-5142, New Design, School, façade and side elevation, looking north.

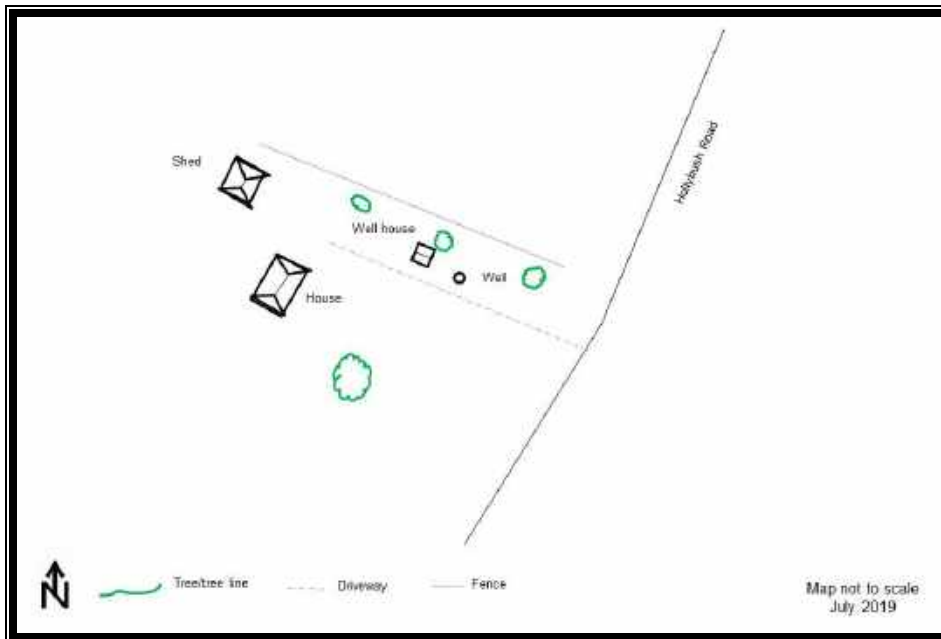


Figure 23. Site plan for Site 090-5143.

House

This circa 1966, one-story, six-bay, hipped roof, ranch style, Flemish-bond brick house rests on a Flemish-bond brick chimney with one central-exterior Flemish-bond brick chimney with a corbelled cap and one interior-end Flemish-bond brick chimney (Plate 50). The center three bays are recessed, and the center two bays are clad in a painted-white vertical wood siding veneer. The roof is covered in asphalt shingles with overhanging eaves. There is a one-bay, Flemish-bond brick stoop flanked by painted-white wood railings. Four Flemish-bond brick steps flanked by painted-white wood railings lead from the stoop to a small Flemish-bond brick patio. Single and triple, sash, double-hung, 2/2, metal-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. There is one bay window on the façade that consists of one fixed, one-light, wood-frame window flanked by sash, double-hung, 1/1, wood-frame windows flanked by painted-black wood shutters. The entrance on the façade is a single-leaf, wood-panel door.



Plate 50. View of Site 090-5143, House, façade, looking west.

Shed

To the west of the house, there is a circa 1966, one-story, two-bay, hipped roof, wood-frame shed clad in painted-white composition siding and resting on a concrete-block foundation (Plate 51). The shed is partially obscured by parked cars and the house. The roof is covered in asphalt shingles with overhanging eaves and exposed rafter tails. Fixed, two-light, wood-frame windows are typical on the façade and elevations. The entrance on the façade is not visible.



Plate 51. View of Site 090-5143, House, façade and side elevation, Shed, Well house, and Well, looking west.

Well House

To the northeast of the house, there is a circa 1966, one-story, one-bay, front-gable, wood-frame well house clad in painted-white vertical wood siding and resting on a raised concrete-block foundation partially below grade (Plate 52). The roof is covered in asphalt shingles with a boxed cornice. No windows are visible on the well house. The entrance on the façade is not visible.



Plate 52. View of Site 090-5143, House, façade, Shed, Well house, and Well, looking west.

Well

To the northeast of the house, there is a circa 1966, round, poured-concrete well resting partially above grade (see Plate 52). A poured-concrete cap covers the top of the well.

Site 090-5144, House, 4557 Colonial Trail West

Site 090-5144 is identified as a circa 1780 house. While Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area, At the time of that survey, the driveway leading to the house was restricted and no trespassing signs were placed throughout the entrance. Therefore, this house was inaccessible for survey and Circa~ did not formally survey the site but noted it as Site 10A in the report.

During the current Phase I survey, Circa~ was able to access the site and identified the original house as well as two sheds, one outbuilding, and one well. These buildings are situated well away from Colonial Trail West, on an approximately 2.02-acre parcel surrounded by a well-maintained mowed lawn with scattered mature trees and plantings (Figure 24). Some of the trees partially obscure the façade from view. Facing north, the building is set on a fairly-level grade. A long, single-lane, dirt driveway leads from Colonial Trail West to the house where it circles the house. Agricultural fields are visible to the east, west, and south. A wooden utility pole is situated to the west of the house and an aboveground storage tank is situated to the east of the house. A review of the Surry County real estate records indicated that the house was built circa 1780. However, given the vernacular style, concrete-block, asphalt shingles, and vinyl siding, it appears that this building was constructed in the 1930s.

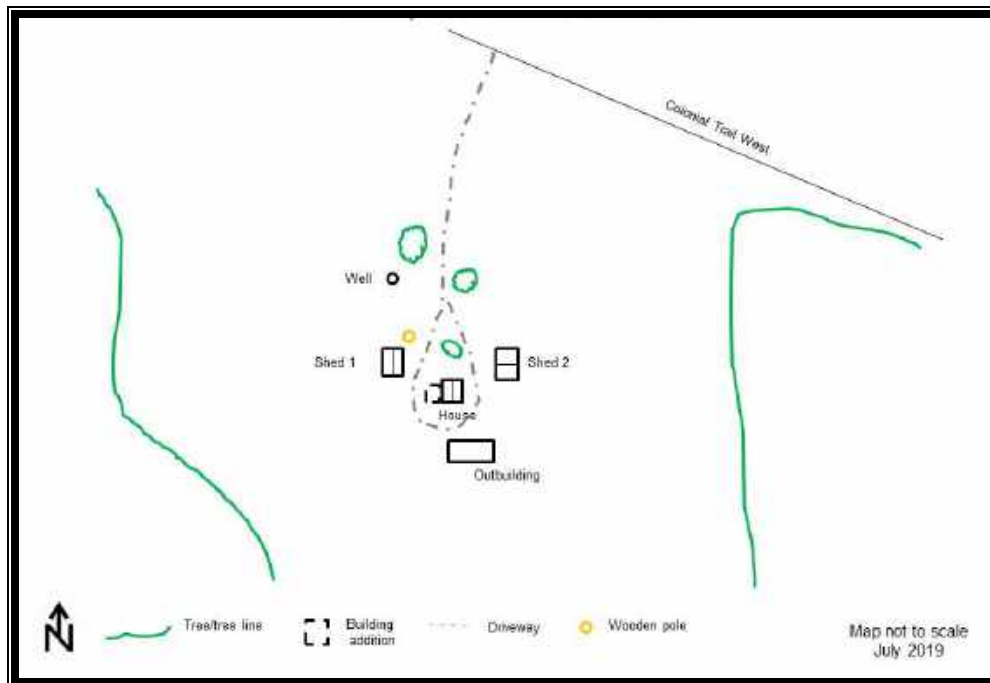


Figure 24. Site plan for Site 090-5144.

House

This circa 1930s, one-and-a-half-story, three-bay, steeply-pitched front-gable, vernacular style, wood-frame house is clad in painted-beige vinyl siding and rests on a raised, painted-burgundy, concrete-block foundation with one exterior-end Flemish-bond brick chimney (Plates 53 and 54). The roof is covered in asphalt shingle with overhanging eaves. There are two front-gable dormers on the side (east) slope and one full-length shed roof dormer on the side (west) slope. There is a one-story, two-bay, concrete-block porch under a front-gable roof supported by tapered, painted-white wood posts. Three poured-concrete steps flanked by wooden railings lead from the porch to the front yard. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-and-a-half-story, one-bay, side-gable, wood-frame addition attached to the side (west) elevation clad in painted-beige vinyl siding and resting on a raised, painted-burgundy, concrete-block foundation with one exterior-end Flemish-bond brick chimney (see Plate 53). The roof is covered in asphalt shingles with overhanging eaves. There is a shed roof dormer on the north slope with one fixed, one-light, wood-frame window and one paired, sash, double-hung, 1/1, wood-frame window. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. No entrance is visible on the addition.



Plate 53. View of Site 090-5144, House, façade and addition, looking south.



Plate 54. View of Site 090-5144, House, façade, Shed 2, and Outbuilding, looking south.

Shed 1

To the west of the house, there is a circa 1930s, one-story, two-bay, side-gable, wood-frame shed clad in painted-blue vertical wood siding and resting on a concrete-block pier foundation (Plate 55). The roof is covered in standing-seam metal. Sash, double-hung, 4/4, wood-frame windows flanked by painted-white wood shutters are typical on the façade and elevations. The entrance on the façade is a double-leaf, vertical wood plank door.



Plate 55. View of Site 090-5144, House, façade, and Shed 1, looking south.

Shed 2

To the east of the house, there is a circa 1930s, one-story, one-bay, front-gable, wood-frame shed clad in plywood siding (see Plate 54). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

Outbuilding

To the south of the house, there is a circa 1930s, one-story, multiple-bay, wood-frame outbuilding clad in vertical wood siding that is barely visible due to the mature trees and its placement behind the house (see Plate 54). The foundation is not visible due to the mature trees. The roofing material is not visible. Sash, double-hung, 8/8, wood-frame windows are typical on the façade. The entrance on the façade is not visible.

Well

To the northwest of the house, there is a circa 1930s, round, concrete-block well resting partially above grade (Plate 56). Plywood covers the top of the well.



Plate 56. View of Site 090-5144, House, façade, Sheds 1 and 2, Outbuilding, and Well, looking south.

Site 090-5145, House, Hollybush Road

A review of the Surry County real estate records indicates that a building on the western side of Hollybush Road was built circa 1928. However, at the time of the survey, the driveway leading to the house was restricted and no trespassing signs were placed throughout the entrance (Figure 25 and Plate 57). Therefore, this house was inaccessible for survey. As noted on the site map, Site 5 is located approximately 0.11 miles away from the extreme southeastern edge of the project area with and woods and agricultural

fields in between the resource and the extreme edge of the project area. The actual solar farm development will be situated further to the north and west of the edge of the project area and therefore well away from the resource. As such, the current project will not be visible from this resource.

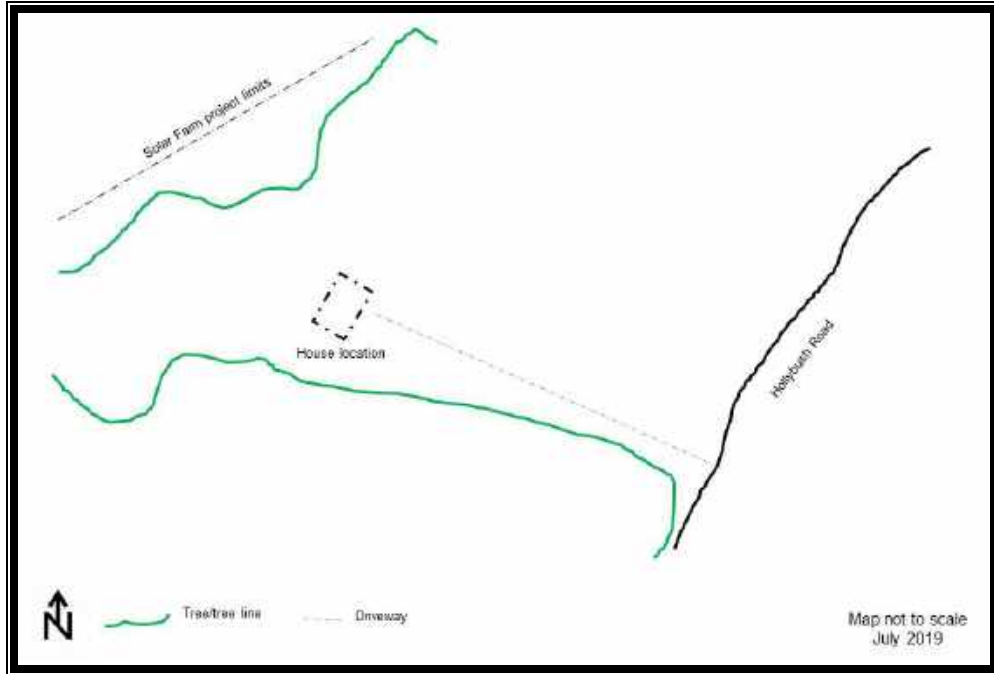


Figure 25. Site plan for Site 090-5145.



Plate 57. View of entrance to Site 090-5145, looking west.

CONCLUSIONS AND RECOMMENDATIONS

Previously-Identified Architectural Resources

Site 090-0012

Site 090-0012 is the circa 1724 Old Glebe identified by Robert Wiggins in 1958 when he completed a HABS report. In 1975 the site was listed on the Virginia Landmark Register and in 1976, the site was listed on the National Register of Historic Places. As noted on the map in Appendix B, Site 090-0012 is located to the north of and across Colonial Trail West (Route 10, a two-lane highway) and on the other side of Cypress Swamp from the project area (Figure 26 and Plates 58 - 61). There will be a 100-foot setback from the parcel boundary as required by the land-use permit from Surry County. In addition, the conditions of the land-use permit require that the solar energy system including its security fence shall be fully screened from rights-of-way and adjacent residential properties with existing or proposed vegetation. As such, the current project will not be visible from this resource and the project as proposed will not impact any of the character-defining features that contribute to its integrity. The circa 2017 secondary dwelling has been constructed adjacent to the original parsonage. Along with the circa 2017 equipment shed, these buildings have diminished the integrity of the setting and feeling of the resource. Taking all this into account, the project as proposed should not affect the buildings, landscape, or viewshed of Site 090-0012. Therefore, Circa~ recommends that the solar farm development will have a no adverse effect on Site 090-0012 and no further work for this resource related to the project is warranted.

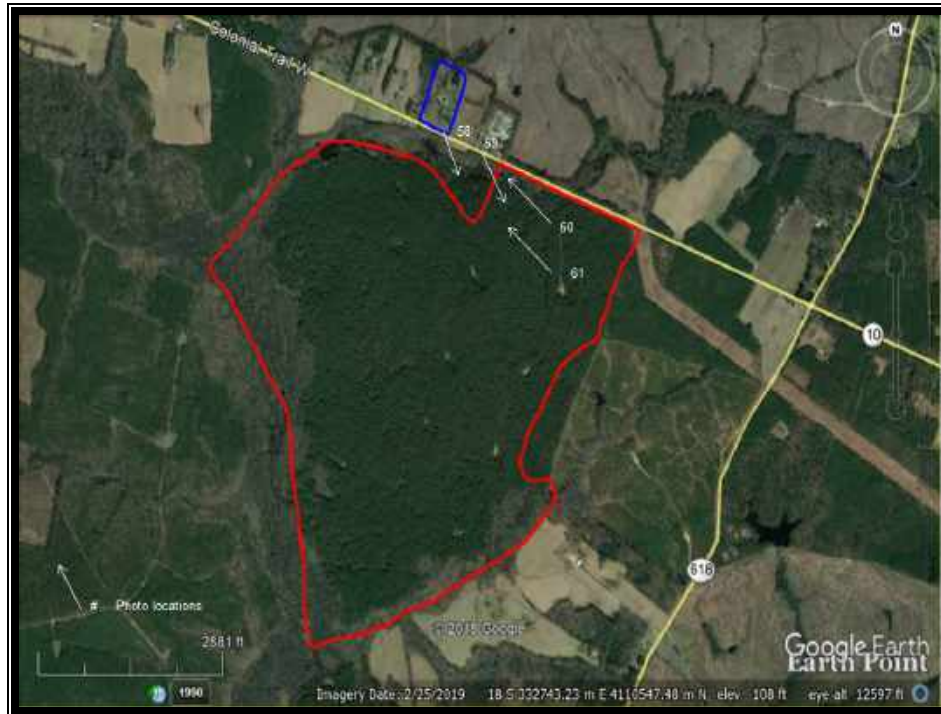


Figure 26. Current (2018) aerial view of Site 090-0012, outlined in blue, and the project area borders, outlined in red.



Plate 58. View looking towards project area from Site 090-0012, looking southeast.



Plate 59. View looking towards project area at the edge of Cypress Swamp from Site 090-0012, looking southeast.



Plate 60. View from approximately 50 feet inside the edge of the project area, looking northwest towards Site 090-0012.



Plate 61. View from approximately 100 feet inside the edge of the project area, looking northwest towards Site 090-0012.

Site 090-0036

Site 090-0036 is the circa 1780 Warren Crossroads House identified by Dell Upton in 1976 when he completed a Phase I survey of the site. When he completed the VDHR site form, he noted that the site contained one house. The site form provided very little description of the house and virtually no description of the setting. According to the site form, Upton did not make any recommendation as to the site’s eligibility for listing on the National Register of Historic Places. To date, this site has not been listed on the National Register of Historic Places.

As noted on the map in Appendix B, Site 090-0036 is located to the north of and across Colonial Trail West (Route 10, a two-lane highway) from the project area. The actual solar farm development will be situated well away from the resource (Figure 27 and Plates 62 and 63). As such, the current project will not be visible from this resource and the project as proposed will not impact any of the character-defining features that contribute to its integrity. The circa 2006 buildings added to the resource have diminished the integrity of the setting and feeling of the resource. Taking all this into account, the project as proposed should not affect the buildings, landscape, or viewshed of Site 090-0036. Therefore, Circa~ recommends that the solar farm development will have a no adverse effect on Site 090-0036 and no further work for this resource related to the project is warranted. However, it is recommended that future projects should evaluate the resource to determine the eligibility of the property if they could not avoid the resource.

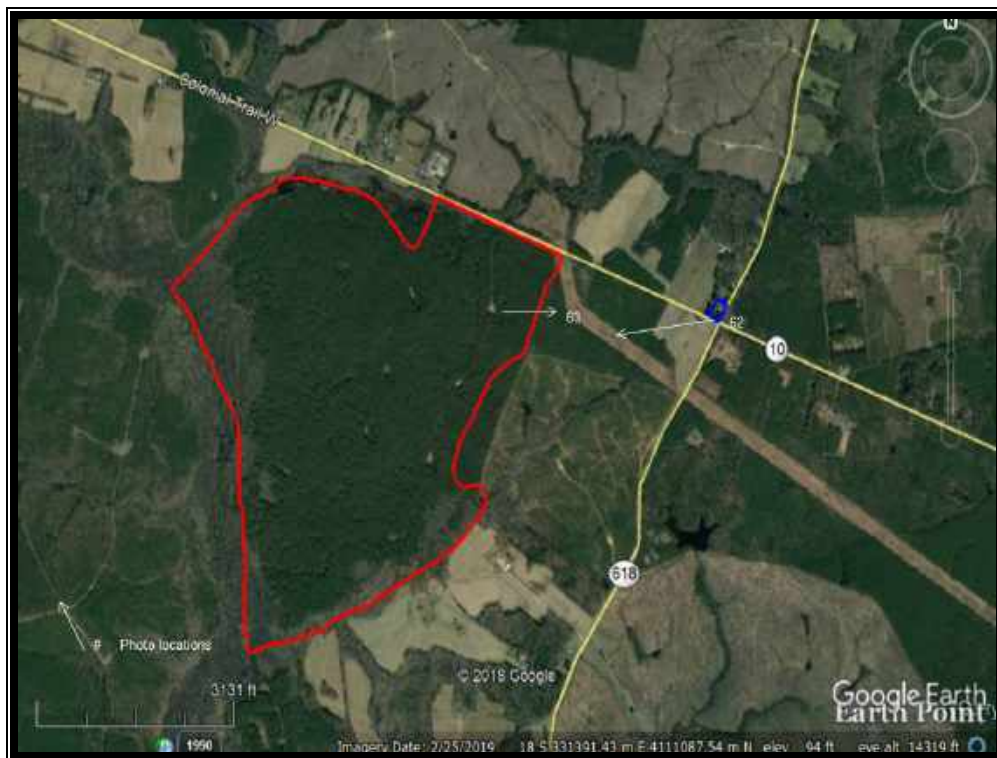


Figure 27. Current (2018) aerial view of Site 090-0036, outlined in blue, and the project area borders, outlined in red.



Plate 62. View looking towards project area from Site 090-0036, looking southwest.



Plate 63. View from approximately 30 feet inside the edge of the project area, looking east towards the site.

Site 090-0048

Site 090-0048 is the circa 1840 Clerestory House identified by Bernard Herman in 1973. No specific project information was provided on the site form to determine his reason for surveying the site. When he completed the VDHR site form, he noted that the site contained one house and one barn and that the resource was threatened by demolition. The site form provided very little description of the house and virtually no description of the setting other than that the site was located on Route 618 south of Route 10. Herman did not make any recommendation as to the eligibility of the site for listing on the National Register of Historic Places. The VDHR V-CRIS form notes that the site has been destroyed but does not provide a date or who noted the destruction. Circa~ re-surveyed the site and identified only the barn. Circa~ could not locate the original house suggesting that the note of demolition is accurate. Given that the primary resource associated with this site has been demolished, the site does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Site 090-5070

Site 090-5070, the circa 1950 Surry Hunt Club, appears to be used on a regular basis and in good condition. In 2017, Circa~ recommended that the hunt club does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Site 090-5071

Site 090-5071, the circa 1950 house, appears to be occupied and in good condition. In 2017, Circa~ recommended that the house does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Site 090-5072

Site 090-5072, the circa 1960s mobile home, appears to be occupied and in good condition. In 2017, Circa~ recommended that the mobile home does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Site 090-5073

Site 090-5073, the circa 1972 house, appears to be occupied and in good condition. In 2017, Circa~ recommended that the house does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the

previous survey and Circa~ recommends no further architectural survey work on this resource.

Site 090-5074

Site 090-5074, the circa 1914 house, appears to be occupied and in fair condition. In 2017, Circa~ recommended that the house does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Site 090-5076

Site 090-5076, the circa 1960s mobile home, appears to be occupied and in good condition. In 2017, Circa~ recommended that the mobile home does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Newly-Identified Architectural Resources

Site 090-5140

Site 090-5140, the circa 1880s house, appears to be vacant and in fair to poor condition. The building does not possess any unique characteristics that would separate it from late 19th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Site 090-5141

Site 090-5141, the circa 1962 house, appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from mid- to late-20th century rural housing examples in Surry County. Ranch style buildings are common throughout Surry County and Virginia and several ranch style houses are located within the APE. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Site 090-5142

Site 090-5142, the circa 1880s New Design School, appears to be vacant and in various stages of restoration. The building does not possess any unique characteristics that would separate it from late 19th century school building housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). Further, the building is undergoing restoration with a new roof and the school is surrounded by mid- to late-20th century residential buildings, which alters its original landscape. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Site 090-5143

Site 090-5143, the circa 1966 house, appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from mid- to late-20th century rural housing examples in Surry County. Ranch style buildings are common throughout Surry County and Virginia and several ranch style houses are located within the APE. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Site 090-5144

Site 090-5144, the circa 1930s house, appears to be occupied and in fair to good condition. This site was not accessible at the time of the 2017 survey Circa~ conducted and at the time, because a review of the Surry County real estate records indicated that this building was built circa 1780, Circa~ treated the site as potentially eligible for listing on the National Register of Historic Places. However, during the course of the present survey, Circa~ was able to access the house and determined that the house actually dates to the 1930s and is a Colonial Revival style house, which is a typical example in Surry County and throughout Virginia and there are many other examples of this style throughout the County, including several within and adjacent to the APE. The building does not possess any unique characteristics that would separate it from early to mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Site 090-5145

Site 090-5145, the circa 1928 house, was not accessible at the time of this survey. A review of the Surry County real estate records indicates that this building was built circa 1928. However, at the time of the survey, the driveway leading to the house was restricted with no trespassing signs. Therefore, this house was inaccessible for survey. As noted on the site map, Site 090-5145 is located approximately 0.11 miles away from the extreme southeastern edge of the project area with woods, agricultural fields, and an unnamed branch of Cypress Swamp in between the resource and the extreme edge of the project area (Figure 28 and Plates 64 and 65). The actual solar farm development will be situated further into the interior of the project area and therefore well away from the resource. As such, the current project will not be visible from this resource. Thus, the project would have a no adverse effect on this property and Circa~ recommends no further architectural survey work on this resource. However, future projects should survey this site if possible, to determine if the site is potentially eligible for listing on the National Register of Historic Places.

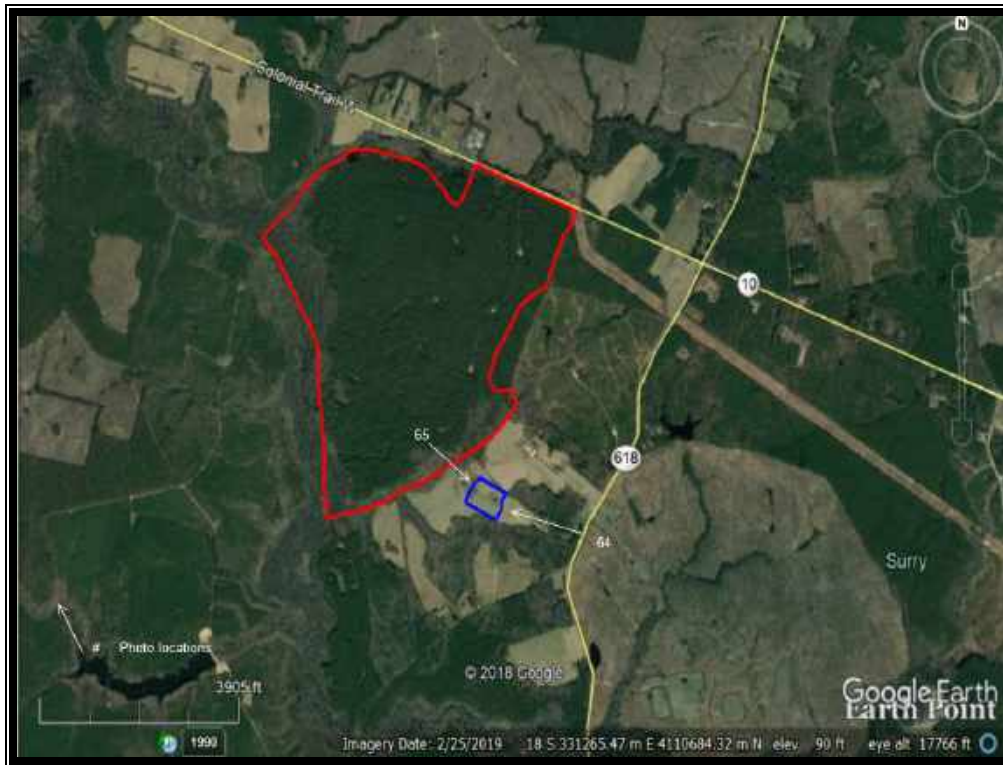


Figure 28. Current (2018) aerial view of Site 090-5145, outlined in blue, and the project area borders, outlined in red.



Plate 64. View of entrance to Site 090-5145 looking toward the project area, looking west.



Plate 65. View from approximately 30 feet inside the edge of the project area, looking southeast towards Site 090-5145.

Table 2. Summary of identified resources and recommendations

Site	Type	National Register Eligibility	Recommendation
090-0012	ca. 1724 Old Glebe	Yes, Virginia Historic Landmark	No adverse effect
090-0036	ca. 1780 Warren Crossroads House	Potentially	No adverse effect
090-0048	ca. 1840 Clerestory House	No	No further work
090-5070	ca. 1950 Hunt Club	VDHR determined not eligible	No further work
090-5071	ca. 1950 house	VDHR determined not eligible	No further work
090-5072	ca. 1960s mobile home	VDHR determined not eligible	No further work
090-5073	ca. 1972 house	VDHR determined not eligible	No further work
090-5074	ca. 1914 house	VDHR determined not eligible	No further work
090-5076	ca. 1960s mobile home	VDHR determined not eligible	No further work
090-5140	ca. 1880s house	No	No further work
090-5141	ca. 1962 house	No	No further work
090-5142	ca. 1880s New Design school	No	No further work
090-5143	ca. 1966 house	No	No further work
090-5144	ca. 1930s house	No	No further work
090-5145	ca. 1928 house	Potentially	No further work

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APPENDIX A
VDHR V-CRIS FORMS

Property Information

Property Names

Name Explanation	Name
Alternate Spelling	Olde Glebe
Historic	The Old Glebe
NRHP Listing	Glebe House of Southwark Parish

Property Evaluation Status

NRHP Listing
VLR Listing

Property Addresses

Current - 3700 Colonial Trail West Route 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	9.67

Site Description:

Aug 1975 NRHP nomination: Located 0.7 mile northeast of Cypress Swamp; northeast side of Route 10; 1.2 miles northwest of the intersection of Routes 10 and 618 in the vicinity of Spring Grove in Surry County.

Of the early outbuildings only a gable-roofed frame smokehouse remains which, according to an old photograph, formerly stood northeast of the house but is now placed northwest of it. [22 acres]

July 2017: When the VDHR site form was completed in 1975, it noted that the site is located approximately 0.70 miles northeast of Cypress Swamp, on the northeast side of Colonial Trail West (Route 10) and northwest of the intersection of Route 10 and Route 618 (Hollybush Road) near Spring Grove. The site form described the parsonage and the smokehouse as the only buildings on the property. Circa~ re-surveyed the site and identified the original house and smokehouse, as well as a horse barn, secondary dwelling, one shed, and one equipment shed. These buildings are situated away from Colonial Trail West on an approximately 9.67-acre parcel surrounded by a well-maintained mowed lawn with mature trees and plantings. A single-lane gravel driveway leads from Colonial Trail West to the house. The property is surrounded by a four-rail wood fence with a metal gate at Colonial Trail West.

August 2019: When the VDHR site form was completed in 1975, it noted that the site is located approximately 0.70 miles northeast of Cypress Swamp, on the northeast side of Colonial Trail West (Route 10) and northwest of the intersection of Route 10 and Route 618 (Hollybush Road) near Spring Grove. The site form described the parsonage and the smokehouse as the only buildings on the property. Circa~ re-surveyed the site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area and identified the original house and smokehouse, as well as a horse barn, secondary dwelling, one shed, and one equipment shed. These buildings are situated away from Colonial Trail West on an approximately 9.67-acre parcel surrounded by a well-maintained mowed lawn with mature trees and plantings. A single-lane gravel driveway leads from Colonial Trail West to the house. The property is surrounded by a four-rail wood fence with a metal gate at Colonial Trail West. The house faces the Virginia Department of Transportation (VDOT) county facility to the east.

Surveyor Assessment:

Aug 1975 NRHP nomination Statement of Significance: The Glebe House of Southwark Parish in Surry County is one of a small group of colonial glebe houses in Virginia. Associated with the Reverend John Cargill, a prominent figure among the Virginia clergy of the early eighteenth century, the house retains many original features despite a series of alterations.

Southwark Parish was set off from James City Parish in 1647, and until 1738 was one of two parishes--the other was Lawne's Creek--which served the present Surry-Sussex County area. In 1738, the Surry County portions of Southwark and Lawne's Creek parishes were combined into a single parish called Southwark. The southern portions of the two older parishes were set off as Albermarle Parish.

In 1721, land for a glebe at Indian Springs Plantation was left to the parish by Capt. Francis Clements, who had served as Clerk of Surry County, 1697-1708. Three years later, the Rev. John Cargill, minister of Southwark Parish since 1708, wrote in a report to the Bishop of London that "My glebe house is in a very bad condition and the parish will not repair it, so I must look out for a house elsewhere." Architectural evidence suggests that Cargill's parish built him the present house on the glebe soon after he registered his complaint.

Cargill played a prominent part in the affairs of the Virginia clergy. He was a member of a convention which met at the College of William and Mary in 1719 to consider Commissary James Blair's request that the clergy side with him in a political dispute with Governor Alexander Spotswood. The majority of the convention, however, took Spotswood's side and took pains as well to question Blair's own credentials as an Anglican cleric. Cargill was one of a small group of dissenters from the convention's report who supported Blair's position.

Cargill's successors included Peter Davis (listed as rector in 1758), Benjamin Blagrove (1774, 1776), John Henry Burgess (1785) and

Samuel Butler (1790, 1792). The latter was counties. Under his pastorate, the parish was disbanded.

The glebe house was sold, as required by the legislature in 1802, and like most of the standing Virginia glebe houses, it underwent extensive remodeling at that time. It has been held by a succession of private owners since the Disestablishment. From 1906 to 1966 it was the home of the Bryant family and in 1971 was purchased by Col. and Mrs. Nelson Ritchie.

July 2017: Site 090-0012 is the circa 1724 Old Glebe identified by Robert Wiggins in 1958 when he completed a Historic American Building Survey (HABS) report. In 1975 the site was listed on the Virginia Landmark Register (VLR) and in 1976, the site was listed on the National Register of Historic Places.

Site 090-0012 is located adjacent to the southern edge of the current project area with a mature forested area at the edge of the project area. The actual solar farm development will be situated further to the north of the edge of the project area and therefore well away from the resource. As such, the current project will not be visible from this resource and the project as proposed will not impact any of the character-defining features that contribute to its integrity. In addition, the original survey of the site identified the parsonage and the smokehouse as the only buildings on the property. Circa~ re-surveyed the site and identified the original house and smokehouse, as well as a 19th century horse barn, circa 2017 secondary dwelling, circa 19th century shed, and circa 2017 equipment shed. Because these buildings do not date to the period of significance for the site, Circa~ recommends that these buildings are non-contributing elements of Site 090-0012. The circa 2017 secondary dwelling has been constructed adjacent to the original parsonage. Along with the circa 2017 equipment shed, these buildings have diminished the integrity of the setting and feeling of the resource. Taking all this into account, the project as proposed should not affect the buildings, landscape, or viewshed of Site 090-0012. Therefore, Circa~ recommends that the solar farm development will have a no adverse effect on Site 090-0012 and no further work for this resource related to the project is warranted.

August 2019: Site 090-0012 is the circa 1724 Old Glebe identified by Robert Wiggins in 1958 when he completed a HABS report. In 1975 the site was listed on the Virginia Landmark Register and in 1976, the site was listed on the National Register of Historic Places. Site 090-0012 is located to the north of and across Colonial Trail West (Route 10, a two-lane highway) and on the other side of Cypress Swamp from the project area. There will be a 100-foot setback from the parcel boundary as required by the land-use permit from Surry County. In addition, the conditions of the land-use permit require that the solar energy system including its security fence shall be fully screened from rights-of-way and adjacent residential properties with existing or proposed vegetation. As such, the current project will not be visible from this resource and the project as proposed will not impact any of the character-defining features that contribute to its integrity. The circa 2017 secondary dwelling has been constructed adjacent to the original parsonage. Along with the circa 2017 equipment shed, these buildings have diminished the integrity of the setting and feeling of the resource. Taking all this into account, the project as proposed should not affect the buildings, landscape, or viewshed of Site 090-0012. Therefore, Circa~ recommends that the solar farm development will have a no adverse effect on Site 090-0012 and no further work for this resource related to the project is warranted.

Surveyor Recommendation: Recommended Eligible

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Religion
Resource Type:	Parsonage/Glebe
NR Resource Type:	Building
Date of Construction:	pre 1724
Date Source:	Written Data
Historic Time Period:	Contact Period (1607 - 1750)
Historic Context(s):	Architecture/Community Planning, Domestic, Religion
Other ID Number:	No Data
Architectural Style:	Colonial
Form:	No Data
Number of Stories:	1.5
Condition:	Good
Interior Plan:	Center Hall
Threats to Resource:	None Known

Architectural Description:

1967: Brick, 1.5 stories, gambrel roof with shed dormers. Early 18th century; later additions.

Aug 1975 NRHP nomination: Situated near State Route 10 west of Surry Court House, the Glebe House of Southwark Parish is a three-bay, story -and-a-half gambrel-roofed structure set on a low basement. It is built of brick laid in Flemish bond above and below the beveled water table. (The basement was stuccoed in 1924.) The present appearance has been achieved through a series of alterations. Originally, it was a single-story, gable-roofed building with interior end chimneys, raking courses of glazed headers paralleling the eaves, and corbeled cornice stops. Early in the nineteenth century, the roof was altered to its present gambrel form and the chimneys were rebuilt as exterior end chimneys. To cover the differences in the brickwork, it was painted red with white joints, but the raking courses of headers and the corbeled cornice stops (under a later box cornice) remain as clues to the original form of the building.

The present front windows were enlarged in the nineteenth century, and large nine-over-nine sash inserted. The window openings on the gable ends were apparently made at the time of the enlargement of the front windows, and jack arches, narrow nine-over-nine sash, and wooden sills appear to be the original size.

The recent removal of the nineteenth-century porches from the front, rear, and ends of the house revealed on the east facade the shadow of an original porch which apparently was a simple hood. Further evidence of earlier states of the house was provided by a round-butted wooden shingle and some roofing slates found in the attic during the most recent renovation.

The house has a single-pile, central-passage plan. In the passage is an early triple-run stair with square newels, a closed stringer, and a heavily molded handrail on the lower runs. The stair has no balusters except on the landing. The balusters are square wooden ones set diagonally and are topped by a plain, round-topped handrail which extends onto the upper run. These balusters and handrails are apparently later alterations. Also noteworthy in the central passage is the two-panel, raised-panel door to the cellar stairs, which is hung on foliated H-hinges.

The early nineteenth-century remodeling also resulted in changes to the interior. Besides these modifications to the upper portions of the stair already discussed, the most striking addition was the mantel in the (north) dining room, which has an architrave surround, molded shelf, and two horizontal raised panels in the frieze. Possibly dating from this period as well was the handsome graining, formerly found throughout the house but now surviving only on one door. Further remodeling, carried out in the mid-nineteenth century, resulted in a plain Greek Revival mantel in the-south room (parlor) and a few Greek Revival doors scattered throughout the house.

There are two rooms in the cellar . The southern of the two was paved with cement during renovations in 1924, but the northern one retains its brick tile floor.

July 2017: No changes have been made to the main block of the house. However, it appears that several additions have been made to the house since the 1975 survey. This circa 1724, one-and-a-half-story, three-bay, gambrel roof, Colonial style, Flemish-bond brick house rests on a Flemish-bond brick foundation with an English basement and two exterior end Flemish-bond brick chimneys with corbelled caps and metal vent caps. There is a beveled water table at the basement level. The roof is covered in wood shakes with three shed roof dormers on the façade slope. Each dormer contains one sash, double-hung, 6/6, wood-frame window. There is a one-bay raised wood stoop with a painted-white wood balustrade. Four wood steps flanked by a painted-white wood railing lead from the stoop to a brick walkway. Sash, double-hung, 9/9, wood-frame windows with wood pilasters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door covered by a metal storm door.

There is a circa late 19th century, one-story, one-bay, shed roof, wood-frame addition attached to the rear (west) elevation clad in painted-white wood weatherboard and resting on a raised, painted-red concrete-block foundation. The roof is covered in standing-seam metal with exposed rafter tails. There is a one-bay, wood stoop with five wood steps flanked by a wood handrail attached to the adjacent addition leading from the addition to the side yard. No windows are visible on the addition. The entrance on the addition is a single-leaf, wood-panel door with lights.

There is a one-story, two-bay, side-gable, wood-frame addition attached to the west elevation of the addition clad in painted-white wood weatherboard and resting on a raised, painted-red concrete-block foundation. The roof is covered in asphalt shingles. Sash, double-hung, 6/6, metal-frame windows are typical on the addition. No entrance is visible on the addition.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Windows	Double-hung	Wood	No Data
Chimneys	Exterior End	Brick	Corbeled
Roof	Gambrel	Shake	No Data
Structural System and Exterior Treatment	Masonry	Brick	Flemish Bond
Foundation	English/Raised	Brick	Flemish Bond
Porch	Stoop/Deck	Wood	Square
Dormer	Shed	Wood	No Data

Secondary Resource Information

Secondary Resource #1

Resource Category:	Agriculture/Subsistence
Resource Type:	Smoke/Meat House
NR Resource Type:	Building
Date of Construction:	ca 1730
Date Source:	Site Visit
Historic Time Period:	Contact Period (1607 - 1750)
Historic Context(s):	Subsistence/Agriculture
Other ID Number:	No Data
Architectural Style:	No discernible style
Form:	Square
Number of Stories:	1.0
Condition:	Moved

Interior Plan: Undivided Space

Threats to Resource: None Known

Architectural Description:

Aug 1975: Gable-roofed square frame smokehouse. Beaded weatherboards remain on the north side under a 19th century lean-to wing.

July 2017: To the northwest of the house, there is a circa 1730, one-story, two-bay, steeply-pitched front-gable, wood-frame smokehouse clad in painted-white beaded weatherboard resting on a concrete-block foundation. According to the 1975 survey, this building has been moved from its original location. The roof is covered in standing-seam metal. No windows are visible on the smokehouse. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, one-bay, shed roof, wood-frame lean-to attached to the side (north) elevation clad in painted-white beaded weatherboard and resting on a concrete-block foundation. The roof is covered in standing-seam metal. No windows are visible on the lean-to. The entrance on the lean-to is a single-leaf, wood-panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Foundation	Solid/Continuous	Concrete	Block
Roof	Front Gable	Metal	No Data

Secondary Resource #2

Resource Category: Agriculture/Subsistence

Resource Type: Barn

NR Resource Type: Building

Date of Construction: ca 1850

Date Source: Site Visit

Historic Time Period: Antebellum Period (1830 - 1860)

Historic Context(s): Domestic, Subsistence/Agriculture

Other ID Number: No Data

Architectural Style: No discernible style

Form: No Data

Number of Stories: 1.5

Condition: Good

Threats to Resource: None Known

Architectural Description:

July 2017: To the northwest of the house, there is a circa 19th century, one-and-a-half-story, one-bay, gambrel roof, wood-frame horse barn clad in painted-white wood siding and resting on a brick-pier foundation. The roof is covered in standing-seam metal. Sash, double-hung, 6/9, wood-frame windows are typical on the façade gable end and fixed, six-light, wood-frame windows are typical on the elevations. The entrance on the façade is a double-leaf, sliding, wood door. There is a single-leaf, sliding wood door in the gable end above the main entrance. Stable doors are visible on the side (north and south) elevations.

There is a one-story, one-bay, shed roof, wood-frame lean-to attached to the side (north) elevation resting on the ground. The lean-to is open on three sides. The roof is covered in standing-seam metal.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Brick	Flemish Bond
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Windows	Double-hung	Wood	No Data
Windows	Fixed	Wood	No Data
Roof	Gambrel	Metal	No Data

Secondary Resource #3

Resource Category: Domestic

Resource Type: Secondary Dwelling

NR Resource Type: Building

Date of Construction: ca 2017

Date Source: Site Visit

Historic Time Period: Post Cold War (1992 - Present)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.5
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: Adjacent to the house to the north, there is a circa 2017, one-and-a-half-story, multiple-bay, front-gable, wood-frame house clad in painted-white composition siding and resting on a raised concrete-block foundation. The roof is covered in standing-seam metal. There are two front-gable dormers on the façade slope. Each dormer has one sash, double-hung, 9/9, vinyl-frame windows. There is a one-story, full-width, concrete-block porch under a gable roof supported by round tapered, painted-white wood columns. Sash, double-hung, 6/6, vinyl-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Full-Width	Wood	Columns/Posts on Piers
Windows	Double-hung	Vinyl	<i>No Data</i>
Roof	Front Gable	Metal	<i>No Data</i>
Dormer	Gable	Wood	<i>No Data</i>

Secondary Resource #4

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1850
Date Source: Site Visit
Historic Time Period: Antebellum Period (1830 - 1860)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 19th century, one-story, one-bay, front-gable, wood-frame shed clad in painted-red vertical wood siding and resting on a wood-pier foundation. The roof is covered in standing-seam metal with overhanging eaves. No windows are visible on the shed. The entrance on the façade is a single-leaf, wood-panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Wood	Uncoursed
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	<i>No Data</i>

Secondary Resource #5

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 2017
Date Source: Site Visit

Historic Time Period: Post Cold War (1992 - Present)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 2017, one-story, three-bay, side-gable, wood-frame equipment shed clad in painted-white vertical wood siding and resting on a raised concrete-block foundation (noted as equipment shed on the site plan). The roof is covered in standing-seam metal with metal gutters and downspouts. No windows are visible on the equipment shed. The entrance on the façade consists of three double-leaf, wood-panel doors.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Side Gable	Metal	<i>No Data</i>

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

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Period Of Significance:

1724

Level of Significance:

Local

Surveyor's NR Criteria Recommendations:

C - Distinctive Characteristics of Architecture/Construction

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a 1/2-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

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Surveyor's NR Criteria Recommendations:

C - Distinctive Characteristics of Architecture/Construction

Event Type: Survey:Phase II/Intensive

Project Review File Number: *No Data*
Investigator: Dell T. Upton
Organization/Company: VA Dept. of Historic Resources
Photographic Media: Film
Survey Date: 4/5/1978
Dhr Library Report Number: *No Data*

Project Staff/Notes:

Additional DHR/VHLC Staff site visits:
Sept 1967 - Junius R. Fishburne, Jr.
July 1968 - Edward "Ned" Heite
May 2, 1975 - Dell T. Upton
May 1982 - Calder Loth
November 1984 - Calder Loth
April 1997 - Calder Loth
November 1997 - Calder Loth

Surveyor's NR Criteria Recommendations:

C - Distinctive Characteristics of Architecture/Construction

Event Type: NRHP Listing

DHR ID: 090-0012
Staff Name: NPS
Event Date: 5/17/1976
Staff Comment
No Data

Event Type: VLR Listing

DHR ID: 090-0012
Staff Name: VHLC
Event Date: 10/21/1975
Staff Comment

No Data

Event Type: NRHP Nomination

DHR ID: 090-0012
Staff Name: Dell T. Upton
Event Date: 8/1/1975
Staff Comment
VHLC staff architectural historian

Event Type: Survey:HABS Inventory

Project Review File Number: *No Data*
Investigator: Robert Wiggins
Organization/Company: National Park Service
Photographic Media: Film
Survey Date: 10/1/1958
Dhr Library Report Number: *No Data*
Project Staff/Notes:
No Data
Surveyor's NR Criteria Recommendations:
C - Distinctive Characteristics of Architecture/Construction

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 2546 Colonial Trail West
Historic	Warren Crossroads House

Property Evaluation Status

Property Addresses

Current - 2546 Colonial Trail West Route 10

County/Independent City(s): Surry (County)

Incorporated Town(s): *No Data*

Zip Code(s): 23881

Magisterial District(s): *No Data*

Tax Parcel(s): 26-9B

USGS Quad(s): CLAREMONT

Additional Property Information

Architecture Setting: Rural

Acreage: 3.59

Site Description:

July 2017: Site 090-0036 is the circa 1780 Warren Crossroads House identified by Dell Upton in 1976 when he completed a Phase I survey of the site. When he completed the VDHR site form, he noted that the site contained one house. The site form provided very little description of the house and virtually no description of the setting.

Circa~ re-surveyed the site and identified the original house as well as a gazebo, cottage, three outbuildings, and one barn. These buildings are situated close to Colonial Trail West, at the northwestern corner of the intersection of Colonial Trail West and Hollybush Road, on an approximately 3.59-acre parcel surrounded by a well-maintained mowed lawn with mature trees and plantings. Facing south, the building is set on a fairly-level grade. To the north of the house, there is an intricate brick courtyard surrounded by a painted-white wood fence. A short single-lane dirt driveway leads from Hollybush Road to a dirt parking area. A mature tree line runs between the house and Colonial Trail West partially obscuring the view to the house. A five-rail wood fence runs parallel to Hollybush Road. Well-maintained landscaped gardens are visible throughout the property, which is now used as a bed and breakfast.

August 2019: Circa~ re-surveyed the site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area and identified the original house as well as a gazebo, cottage, three outbuildings, and one barn. These buildings are situated close to Colonial Trail West, at the northwestern corner of the intersection of Colonial Trail West and Hollybush Road, on an approximately 3.59-acre parcel surrounded by a well-maintained mowed lawn with mature trees and plantings. Facing south, the building is set on a fairly-level grade. To the north of the house, there is an intricate brick courtyard surrounded by a painted-white wood fence. A short single-lane dirt driveway leads from Hollybush Road to a dirt parking area. A mature tree line runs between the house and Colonial Trail West partially obscuring the view to the house. A five-rail wood fence runs parallel to Hollybush Road. Well-maintained landscaped gardens are visible throughout the property, which is now used as a bed and breakfast.

Surveyor Assessment:

July 2017: Site 090-0036 is the circa 1780 Warren Crossroads House identified by Dell Upton in 1976 when he completed a Phase I survey of the site. When he completed the VDHR site form, he noted that the site contained one house. The site form provided very little description of the house and virtually no description of the setting. According to the site form, Upton did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places.

Site 090-0036 is located approximately 0.38 miles southeast of the southern edge of the current project area with a large wooded area and agricultural field between the resource and the edge of the project area. The actual solar farm development will be situated further to the northwest of the edge of the project area and therefore well away from the resource. As such, the current project will not be visible from this resource and the project as proposed will not impact any of the character-defining features that contribute to its integrity. In addition, Circa~ re-surveyed the site and identified the original house as well as a modern gazebo adjacent to the house, a circa 2006 cottage, three modern outbuildings, and one circa 19th century barn. Because these buildings do not date to the original construction period for the site, Circa~ recommends that these buildings are non-contributing elements of Site 090-0036. These buildings have diminished the integrity of the setting and feeling of the resource. Taking all this into account, the project as proposed should not affect the buildings, landscape, or viewshed of Site 090-0036. Therefore, Circa~ recommends that the solar farm development will have a no adverse effect on Site 090-0036 and no further work for this resource related to the project is warranted. However, it is recommended that future projects should evaluate the resource to determine the eligibility of the property if they could not avoid the resource.

August 2019: Site 090-0036 is the circa 1780 Warren Crossroads House identified by Dell Upton in 1976 when he completed a Phase I survey of the site. When he completed the VDHR site form, he noted that the site contained one house. The site form provided very little description of the house and virtually no description of the setting. According to the site form, Upton did not make any recommendation as to the site's eligibility for listing on the National Register of Historic Places. To date, this site has not been listed on the National Register of Historic Places.

Site 090-0036 is located to the north of and across Colonial Trail West (Route 10, a two-lane highway) from the project area. The actual solar farm development will be situated well away from the resource. As such, the current project will not be visible from this

resource and the project as proposed will not impact any of the character-defining features that contribute to its integrity. The circa 2006 buildings added to the resource have diminished the integrity of the setting and feeling of the resource. Taking all this into account, the project as proposed should not affect the buildings, landscape, or viewshed of Site 090-0036. Therefore, Circa~ recommends that the solar farm development will have a no adverse effect on Site 090-0036 and no further work for this resource related to the project is warranted. However, it is recommended that future projects should evaluate the resource to determine the eligibility of the property if they could not avoid the resource.

Surveyor Recommendation: Recommended for Further Survey

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category: Domestic
Resource Type: Single Dwelling
NR Resource Type: Building
Date of Construction: ca 1780
Date Source: Site Visit
Historic Time Period: Colony to Nation (1751 - 1789)
Historic Context(s): Architecture/Community Planning, Domestic
Other ID Number: No Data
Architectural Style: Colonial
Form: No Data
Number of Stories: 1.5
Condition: Fair
Interior Plan: Side Passage, Single Pile
Threats to Resource: Neglect, None Known

Architectural Description:

July 2017: This circa 1780, one-and-a-half-story, three-bay, side-gable, Colonial style, wood-frame house is clad in painted-white weatherboard and rests on a raised brick foundation with three exterior end three-course American-bond brick chimneys with corbelled caps. The roof is covered in wood shakes with two front-gable dormers on the façade slope. Each dormer has one sash, double-hung, 4/4, wood-frame window. There is also a shed roof dormer on the rear (north) slope with three fixed, four-light, wood-frame windows. There is a one-bay, wood stoop. Four wood steps lead from the stoop to the front yard. Sash, double-hung, 9/6, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Chimneys	Exterior End	Brick	American/Common Bond
Foundation	English/Raised	Brick	No Data
Structural System and Exterior Treatment	Frame	Wood	Weatherboard
Porch	Stoop/Deck	Wood	Square
Windows	Double-hung	Wood	No Data
Roof	Side Gable	Shake	No Data
Dormer	Gable	Wood	No Data
Dormer	Shed	Wood	No Data

Secondary Resource Information

Secondary Resource #1

Resource Category: Landscape
Resource Type: Gazebo
NR Resource Type: Structure
Date of Construction: ca 2006
Date Source: Site Visit

Historic Time Period: Post Cold War (1992 - Present)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the northwest of the house, there is a circa 2006, one-story, one-bay, pyramidal roof, wood-frame gazebo resting on a poured-concrete slab-on-grade foundation. The roof is covered in wood shakes. The gazebo is open on all sides with a wood balustrade.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #2

Resource Category: Domestic
Resource Type: Secondary/Tenant
NR Resource Type: Building
Date of Construction: ca 2006
Date Source: Site Visit
Historic Time Period: Post Cold War (1992 - Present)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: Colonial
Form: *No Data*
Number of Stories: 1.5
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 2006, one-and-a-half-story, two-bay, side-gable, Colonial style, wood-frame cottage clad in painted-white wood weatherboard and resting on a raised brick foundation with one interior end Flemish-bond brick chimney with a corbelled cap. The cottage was constructed to resemble the original house on the property. The roof is covered in wood shakes with two front-gable dormers on the façade slope. Each dormer has one sash, double-hung, 4/4, wood-frame window. There is a one-bay, wood and brick stoop. Three wood steps flanked by a painted-black metal railing lead from the cottage to the yard. Sash, double-hung, 9/6, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (north) elevation clad in painted-white wood weatherboard and resting on a raised brick foundation. The roof is covered in wood shakes. No windows are visible on the addition. The entrance on the addition is a single-leaf, wood-panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	English/Raised	Brick	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Porch	Stoop/Deck	Brick	Square
Windows	Double-hung	Wood	<i>No Data</i>
Roof	Side Gable	Shake	<i>No Data</i>
Chimneys	Interior End	Brick	Flemish Bond
Dormer	Gable	Wood	<i>No Data</i>

Secondary Resource #3

Resource Category: Domestic
Resource Type: Outbuilding,Domestic
NR Resource Type: Building
Date of Construction: ca 2006
Date Source: Site Visit
Historic Time Period: Post Cold War (1992 - Present)
Historic Context(s): Domestic

Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 2006, one-story, one-bay, side-gable, wood-frame outbuilding clad in painted-white wood weatherboard and resting on a brick foundation (noted as Outbuilding 1 on the site plan). The roof is covered in wood shakes. No windows are visible on the outbuilding. The entrance on the façade is a single-leaf, wood-panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Brick	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Roof	Side Gable	Shake	<i>No Data</i>

Secondary Resource #4

Resource Category: Domestic
Resource Type: Outbuilding,Domestic
NR Resource Type: Building
Date of Construction: ca 2006
Date Source: Site Visit
Historic Time Period: Post Cold War (1992 - Present)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 2006, one-story, one-bay, side-gable, wood-frame outbuilding clad in painted-white wood weatherboard and resting on a brick foundation (noted as Outbuilding 2 on the site plan). The roof is covered in wood shakes. No windows are visible on the outbuilding. The entrance on the façade is a single-leaf, wood-panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Brick	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Roof	Side Gable	Shake	<i>No Data</i>

Secondary Resource #5

Resource Category: Domestic
Resource Type: Outbuilding,Domestic
NR Resource Type: Building
Date of Construction: ca 2006
Date Source: Site Visit
Historic Time Period: Post Cold War (1992 - Present)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*

Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 2006, one-story, one-bay, side-gable, wood-frame outbuilding clad in painted-white wood weatherboard and resting on a brick foundation (noted as Outbuilding 3 on the site plan). The roof is covered in wood shakes. No windows are visible on the outbuilding. The entrance on the façade is a single-leaf, wood-panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Brick	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Weatherboard
Roof	Side Gable	Shake	No Data

Secondary Resource #6

Resource Category: Agriculture/Subsistence
Resource Type: Barn
NR Resource Type: Building
Date of Construction: ca 1780
Date Source: Site Visit
Historic Time Period: Colony to Nation (1751 - 1789)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: No Data
Architectural Style: No discernible style
Form: No Data
Number of Stories: 2.0
Condition: Fair
Threats to Resource: Neglect

Architectural Description:

July 2017: To the northwest of the house, there is a circa 1780, two-story, one-bay, front-gable, wood-frame barn clad in vertical wood siding and resting on the ground. The siding is starting to deteriorate. The roof is covered in standing-seam metal. No windows are visible on the barn. The entrance on the façade is a double-leaf, vertical wood plank door that is falling off the hinges. There is a second double-leaf, vertical wood plank door in the gable end above the main entrance.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (north) elevation clad in vertical wood siding and resting on a Flemish-bond brick pier foundation. The roof is covered in standing-seam metal with overhanging eaves. No windows are visible on the addition. The entrance on the addition is a single-leaf, vertical wood plank door.

There is a one-story, two-bay, shed roof, wood-frame addition attached to the side (south) elevation clad in vertical wood siding and resting on the ground. The roof is covered in standing-seam metal with overhanging eaves. No windows are visible on the addition. The south elevation of the addition is open.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	No Data

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.T

he contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

Project Bibliographic Information:

Circa~
2019 Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia.

Advisory Council on Historic Preservation
1986 "36 CFR Part 800 – Protection of Historic Properties (incorporating amendments effective August 5, 2004)" Regulations of the Advisory Council on Historic Preservation Governing the Section 106 Review Process. Available online at <http://www.achp.gov>

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1997 James City County Keystone of the Commonwealth. Donning Company Publishers, Virginia Beach, Virginia.

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2012 "Investigating the Slave Building at Walnut Valley Plantation (44SY0262) Surry County, Virginia." Quarterly Bulletin of Archaeological Society of Virginia 67, No. 1.

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1606 Virginia / discovered and described. Available online at <http://www.loc.gov/maps/collections>

Surry County

No date Deed, wills, inventories, surveyors records, plat books, tax assessors books, land tax records, personal property tax records. Available at the Surry County courthouse, Surry, Virginia.

Thompson, Timothy A., Lori Cousins, Martha McCartney, and Sam Margolin

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1984 A Brief History of Charles City County, Virginia. Charles City County 350th Anniversary Committee.

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1986 Claremont quadrangle sheet. Available online at <http://historicalmaps.arcgis.com/usgs/>

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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number:	2017-3995
Investigator:	Dawn Muir-Frost
Organization/Company:	Circa~ Cultural Resource Management, LLC
Photographic Media:	Digital
Survey Date:	7/7/2017

Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a ½-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Project Bibliographic Information:

Circa~
2019 Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia.

Advisory Council on Historic Preservation
1986 "36 CFR Part 800 – Protection of Historic Properties (incorporating amendments effective August 5, 2004)" Regulations of the Advisory Council on Historic Preservation Governing the Section 106 Review Process. Available online at <http://www.achp.gov>

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Boye, Herman
1825 A map of the state of Virginia, constructed in conformity to law from the late surveys authorized by the legislature and other original and authentic documents. Available online at <http://www.loc.gov/maps/collections>

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Campbell, Albert and Charles Cassell
1863 Map of Surry, Sussex and Southampton counties, Virginia. Available online at <http://www.loc.gov/maps/collections>

Catton, Bruce
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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Upton, Dell
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 11/24/1976
Dhr Library Report Number: *No Data*
Project Staff/Notes:
No Data

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*

Investigator: VHLC
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 6/5/1973
Dhr Library Report Number: *No Data*
Project Staff/Notes:
No Data

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	Clerestory House, Hollybush Road

Property Evaluation Status

Property Addresses

Current - Route 618, South Of Route 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23839
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	DENDRON, RUNNYMEDE

Additional Property Information

Architecture Setting:	Rural
Acreage:	697.03

Site Description:

June 1973: Secondary resource is an outbuilding.

August 2019: Circa~ re-surveyed the site and identified only the barn. Circa~ could not locate the original house suggesting that the note of demolition is accurate. The barn is situated away from Hollybush Road, on an approximately 697.03-acre parcel surrounded woodland. Facing north, the building is set on a fairly-level grade in a small clearing. The mature trees partially obscure the view to the barn.

Property Event Type:

The primary resource has been destroyed.

Surveyor Assessment:

August 2019: Site 090-0048 is the circa 1840 Clerestory House identified by Bernard Herman in 1973. No specific project information was provided on the site form to determine his reason for surveying the site. When he completed the VDHR site form, he noted that the site contained one house and one barn and that the resource was threatened by demolition. The site form provided very little description of the house and virtually no description of the setting other than that the site was located on Route 618 south of Route 10. Herman did not make any recommendation as to the eligibility of the site for listing on the National Register of Historic Places. The VDHR V-CRIS form notes that the site has been destroyed but does not provide a date or who noted the destruction. Circa~ re-surveyed the site and identified only the barn. Circa~ could not locate the original house suggesting that the note of demolition is accurate. Given that the primary resource associated with this site has been demolished, the site does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation:	Recommended Not Eligible
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Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
NR Resource Type:	Building
Date of Construction:	ca 1840
Date Source:	Site Visit
Historic Time Period:	Antebellum Period (1830 - 1860)
Historic Context(s):	Architecture/Community Planning
Other ID Number:	No Data
Architectural Style:	No Data
Form:	No Data

Number of Stories: 1.5
Condition: Poor
Interior Plan: One-room
Threats to Resource: Demolition

Architectural Description:

June 1973: No information provided.

August 2019: Circa~ could not locate this structure during the current survey. It appears that the previous notation of demolition is accurate.

Exterior Components

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Frame	Wood	Vertical Board
Foundation	Piers	Brick	Not Visible
Roof	Gable	Unknown	Other
Windows	Other	No Data	No Data

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Barn
NR Resource Type: Building
Date of Construction: ca 1840
Date Source: Site Visit
Historic Time Period: Antebellum Period (1830 - 1860)
Historic Context(s): Architecture/Community Planning, Domestic, Subsistence/Agriculture
Other ID Number: No Data
Architectural Style: No discernible style
Form: No Data
Number of Stories: 0.0
Condition: Deteriorated
Threats to Resource: Neglect, None Known

Architectural Description:

Architecture Summary, June 1973: No photo.

August 2019: This circa 1840, one-story, multiple-bay, side-gable, wood-frame barn is clad in vertical wood siding. The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal and is partially collapsed and pulling away from the structure exposing the wood framing. No windows are visible on the barn. The entrance on the façade is not visible.

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: No Data
Investigator: Dawn Muir

Organization/Company: Circa~ Cultural Resource Management, LLC

Photographic Media: Digital

Survey Date: 7/18/2019

Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Herman, Bernard
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 6/20/1973
Dhr Library Report Number: *No Data*
Project Staff/Notes:
No Data

Event Type: Destroyed

Project Review File Number: *No Data*
Investigator: *No Data*
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: *No Data*
Dhr Library Report Number: *No Data*
Project Staff/Notes:
No Data

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Current Name	Surry Hunt Club
Function/Location	Hunt Club, 3526 Colonial Trail West

Property Evaluation Status

Property Addresses

Current - 3526 Colonial Trail West Route 10

County/Independent City(s): Surry (County)

Incorporated Town(s): *No Data*

Zip Code(s): 23881

Magisterial District(s): *No Data*

Tax Parcel(s): *No Data*

USGS Quad(s): CLAREMONT

Additional Property Information

Architecture Setting: Rural

Acreage: .97

Site Description:

July 2017: On the north side of Colonial Trail West, there is the circa 1950 Surry Hunt Club with one clubhouse, one pavilion, one pole barn, and one animal pen. This building is situated on an approximately 0.97-acre parcel close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to a gravel parking area in front of the clubhouse. The building is surrounded by a mowed lawn with a tree line to the east and scattered mature trees throughout the property. Facing south, the building is set on a fairly-level grade that slopes gently to the south. A wooden light pole with a mercury vapor light is situated to the east of clubhouse and overhead utility lines run from Colonial Trail West to the east side of the building. A metal chain-link fence is situated on the western edge of the property.

August 2019: Site 090-5070 is identified as the circa 1950 Surry Hunt Club. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 0.97-acre parcel close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to a gravel parking area in front of the clubhouse. The building is surrounded by a mowed lawn with a tree line to the east and scattered mature trees throughout the property. Facing south, the building is set on a fairly-level grade that slopes gently to the south. A wooden light pole with a mercury vapor light is situated to the east of clubhouse and overhead utility lines run from Colonial Trail West to the east side of the building. A metal chain-link fence is situated on the western edge of the property.

Surveyor Assessment:

July 2017: The circa 1950 Surry Hunt Club appears to be used on a regular basis and in good condition. The building does not possess any unique characteristics that would separate it from mid-20th century recreational hunt club examples in Surry County. A cursory review of Surry County records indicates several hunt clubs throughout the County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the hunt club does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

August 2019: Site 090-5070, the circa 1950 Surry Hunt Club, appears to be used on a regular basis and in good condition. In 2017, Circa~ recommended that the hunt club does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category: Social/Recreational

Resource Type: Clubhouse

NR Resource Type: Building

Date of Construction: ca 1950

Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Recreation/Arts, Social
Other ID Number: *No Data*
Architectural Style: Ranch
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: This circa 1950s, one-story, five-bay, side-gable, Ranch-style, painted-white concrete-block clubhouse rests on a concrete-block foundation with one central interior Flemish-bond chimney with a corbelled cap. The roof is covered in asphalt shingles with overhanging eaves and exposed rafter tails. Sash, double-hung, 2/1, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with a center light covered by a metal screen door. There is a painted-white wooden sign above the entrance with the words "Surry Hunt Club" in painted-black letters. There is a second entrance on the side (east) elevation that consists of a single-leaf, wood-panel door with lights.

There is a one-story, two-bay, shed roof, painted-white concrete-block addition attached to the rear (north) elevation resting on a concrete-block foundation. The roof is covered in asphalt shingles with overhanging eaves and exposed rafter tails. Fixed, two-light, wood-frame windows are typical on the addition. No entrance is visible on the addition.

There is a one-story, one-bay, shed roof, wood-frame lean-to attached to the north elevation of the addition resting on the ground. The roof is covered in asphalt shingles with exposed rafter tails. The lean-to is open on three sides.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Windows	Double-hung	Wood	<i>No Data</i>
Roof	Side Gable	Asphalt	<i>No Data</i>
Chimneys	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Social/Recreational
Resource Type: Park/Camp Shelter
NR Resource Type: Building
Date of Construction: ca 1950
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Social
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the clubhouse, there is a circa 1950s, one-story, one-bay, side-gable, wood-frame pavilion resting on a poured-concrete slab-on-grade foundation. The roof is covered in standing-seam metal. The pavilion is open on all sides.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Slab	Concrete	Uncoursed
Structural System and	Wood Frame	Wood	Other

Exterior Treatment Roof	Side Gable	Metal	<i>No Data</i>
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Secondary Resource #2

Resource Category: Agriculture/Subsistence
Resource Type: Pole Barn
NR Resource Type: Structure
Date of Construction: ca 1950
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Social, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the northwest of the clubhouse, there is a circa 1950s, one-story, three-bay, shed roof, wood-frame pole barn clad in vertical wood siding and resting on the ground. The roof is covered in standing-seam metal with exposed rafter tails. No windows are visible on the pole barn. The façade is open. There is a painted-yellow wooden sign on the northernmost bay of the façade with the words "Surry Hunt Club" in painted-black letters.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (south) elevation of the pole barn clad in vertical wood siding and resting on the ground. The roof is covered in standing-seam metal with exposed rafter tails. No windows are visible on the addition. The entrance on the addition is a double-leaf, vertical wood panel door.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #3

Resource Category: Agriculture/Subsistence
Resource Type: Animal Shelter/Kennel
NR Resource Type: Building
Date of Construction: ca 1950
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Recreation/Arts, Social
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the west of the clubhouse, there is a circa 1950s, one-story, two-bay, side-gable, wood-frame animal pen resting on a poured-concrete slab-on-grade foundation. The roof is covered in standing-seam metal. The animal pen is open on all sides and surrounded by a metal chain-link fence.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Slab	Concrete	Uncoursed
Structural System and Exterior Treatment	Wood Frame	Wood	Other
Roof	Side Gable	Metal	<i>No Data</i>

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a ½-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Project Bibliographic Information:

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Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 3800 Colonial Trail West

Property Evaluation Status

Property Addresses

Current - 3800 Colonial Trail West Route 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	4.35

Site Description:

July 2017: On the north side of Colonial Trail West, there is a circa 1950 house with one garage and one shed. This building is situated on an approximately 4.35-acre parcel close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the house. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south.

August 2019: Site 090-5071 is identified as a circa 1950 house. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 4.35-acre parcel close to Colonial Trail West with a single-lane gravel driveway leading from Colonial Trail West to the house. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south.

Surveyor Assessment:

July 2017: The circa 1950 house appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. Several minimal traditional style houses are located within Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

August 2019: Site 090-5071, the circa 1950 house, appears to be occupied and in good condition. In 2017, Circa~ recommended that the house does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation:	Recommended Not Eligible
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Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
NR Resource Type:	Building
Date of Construction:	ca 1950
Date Source:	Site Visit
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Other ID Number:	No Data

Architectural Style: Minimal Traditional
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: This circa 1950, one-story, three-bay, steeply-pitched side-gable, minimal traditional style, wood-frame house is clad in painted-white composition siding and rests on a concrete-block foundation with one central interior Flemish-bond brick chimney with a corbelled cap. The roof is covered in asphalt shingles with metal gutters and downspouts. There is a one-bay, poured-concrete stoop under a metal awning. Two poured-concrete steps lead from the stoop to the front yard. Sash, double-hung, 8/8, metal-frame windows flanked by painted-white wood shutters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door covered by a metal screen door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	Stoop/Deck	Concrete	Square
Windows	Double-hung	Metal	<i>No Data</i>
Roof	Side Gable	Asphalt	<i>No Data</i>
Chimneys	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Garage
NR Resource Type: Building
Date of Construction: ca 1950
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the northwest of the house, there is a circa 1950, one-story, one-bay, front-gable, wood-frame garage clad in corrugated metal siding resting on the ground. The roof is covered in standing-seam metal. No windows are visible on the garage. The façade is open.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Wood Frame	Metal	Siding
Roof	Front Gable	Metal	<i>No Data</i>

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1950
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)

Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the northeast of the house, there is a circa 1950, one-story, one-bay, front-gable, wood-frame shed clad in painted-white vertical wood siding. The vegetation is overgrown in the area partially obscuring the shed and making it difficult to discern specific construction materials. The roof is covered in standing-seam metal with overhanging eaves. No windows are visible on the shed. The entrance on the façade is not visible.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	<i>No Data</i>

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

Project Bibliographic Information:

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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
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Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

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No date Deed, wills, inventories, surveyors records, plat books, tax assessors books, land tax records, personal property tax records. Available at the Surry County courthouse, Surry, Virginia.

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Wiley, Bell I.

1964 *Embattled Confederates, An Illustrated History of Southerners at War*. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	Mobile Home, 3870 Colonial Trail West

Property Evaluation Status

Property Addresses

Current - 3870 Colonial Trail West Route 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	10

Site Description:

July 2017: On the north side of Colonial Trail West, there is a circa 1960s mobile home. This building is situated on an approximately 10.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. A mowed lawn with scattered mature trees and plantings surrounds the mobile home. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Cornfields are planted to the east, north, and west of the mobile home and a tree line is visible to the north. A wooden utility pole is visible to the northeast of the house and overhead utility lines from south from the pole to Colonial Trail West.

August 2019: Site 090-5072 is identified as a circa 1960s mobile home. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 10.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the mobile home. A mowed lawn with scattered mature trees and plantings surrounds the mobile home. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Cornfields are planted to the east, north, and west of the mobile home and a tree line is visible to the north. A wooden utility pole is visible to the northeast of the house and overhead utility lines from south from the pole to Colonial Trail West.

Surveyor Assessment:

July 2017: The circa 1960s mobile home appears to be occupied and in good condition. The mobile home is prefabricated and there are many other examples of mid- to late-20th century mobile homes throughout the County, including several within the Area of Potential Effect (APE). The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

August 2019: Site 090-5072, the circa 1960s mobile home, appears to be occupied and in good condition. In 2017, Circa~ recommended that the mobile home does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Mobile Home/Trailer
NR Resource Type:	Building
Date of Construction:	ca 1960

Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: This circa 1960s, one-story, five-bay, shallow-pitched side-gable, metal-frame prefabricated mobile home is clad in corrugated metal. The foundation is not visible behind a corrugated metal skirt. The roof is covered in corrugated metal. Single and paired, sash, double-hung, 2/2, metal-frame windows are typical on the façade and elevations with one sash, double-hung, 1/1, metal-frame window and two fixed, one-light, metal-frame windows on the façade. The entrance on the façade is a single-leaf, wood door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Steel Frame	Metal	Panels
Windows	Double-hung	Metal	<i>No Data</i>
Roof	Side Gable	Metal	<i>No Data</i>

Secondary Resource Information

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a 1/2-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

Project Bibliographic Information:

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Wiley, Bell I.
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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a 1/2-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Project Bibliographic Information:

Circa~
2019 Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia.

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Wiley, Bell I.
1964 *Embattled Confederates, An Illustrated History of Southerners at War*. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation **Name**
 Function/Location House, 4038 Colonial Trail West

Property Evaluation Status

Property Addresses

Current - 4038 Colonial Trail West Route 10

County/Independent City(s): Surry (County)
Incorporated Town(s): *No Data*
Zip Code(s): 23881
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): CLAREMONT

Additional Property Information

Architecture Setting: Rural
Acreage: 4

Site Description:

July 2017: On the north side of Colonial Trail West, there is a circa 1972 house. This building is situated on an approximately 4.00-acre parcel away from Colonial Trail West with a single-lane paved driveway leading from Colonial Trail West to the house and a parking area to the west. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Several trees have grown up in front of the house partially obscuring the building and making it difficult to discern specific construction materials.

August 2019: Site 090-5073 is identified as a circa 1972 house. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 4.00-acre parcel away from Colonial Trail West with a single-lane paved driveway leading from Colonial Trail West to the house and a parking area to the west. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Several trees have grown up in front of the house partially obscuring the building and making it difficult to discern specific construction materials.

Surveyor Assessment:

July 2017: The circa 1972 house appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. Ranch style buildings are common throughout Surry County and Virginia and several ranch style houses are located within the Area of Potential Effect (APE). The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

August 2019: Site 090-5073, the circa 1972 house, appears to be occupied and in good condition. In 2017, Circa~ recommended that the house does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category **Ownership Entity**
 Private *No Data*

Primary Resource Information

Resource Category: Domestic
Resource Type: Single Dwelling
NR Resource Type: Building
Date of Construction: ca 1972
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)

Historic Context(s): Domestic
Other ID Number: No Data
Architectural Style: Ranch
Form: No Data
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: This circa 1972, one-story, four-bay, side-gable, ranch style, Flemish-bond brick house rests on a Flemish-bond brick foundation with one central interior Flemish-bond brick chimney with a corbelled cap. The roof is covered in asphalt shingles with metal gutters downspouts and a square wooden cupola on the western end of the roof peak. There is a one-story, one-bay, brick porch with painted-white metal posts. Three brick steps flanked by painted-white metal railings lead from the porch to the front yard. There is one picture window visible on the façade that consists of one fixed, one-light, metal-frame window flanked by fixed, one-light, metal-frame windows flanked by painted-blue wood shutters under a metal awning. The entrance on the façade is a single-leaf, wood-panel door. There is a second entrance on the façade that consists of one roll-up metal garage door with lights.

August 2019: No changes have been made to the resource since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Brick	Flemish Bond
Structural System and Exterior Treatment	Masonry	Brick	Flemish Bond
Porch	1-Story Partial Width	Brick	Posts
Windows	Fixed	Metal	No Data
Chimneys	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: No Data
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: No Data

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.T

he contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

Project Bibliographic Information:

Circa~

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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a 1/2-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Project Bibliographic Information:

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Wiley, Bell I.
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Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 4322 Colonial Trail West

Property Evaluation Status

Property Addresses

Current - 4322 Colonial Trail West Route 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting: Rural

Acres: 69

Site Description:

July 2017: On the north side of Colonial Trail West, there is a circa 1914 house with one barn, three sheds, one well house, and one well. This building is situated on an approximately 69.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Many of the trees are planted in front of the house, partially obscuring the façade and making it difficult to discern specific construction materials.

January 2018: No changes have been made to this resource since the previous survey.

August 2019: Site 090-5074 is identified as a circa 1914 house. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 69.00-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. A mowed lawn with mature trees and plantings surrounds the house. Facing south, the building is set on a fairly-level grade that slopes gently to the south. Many of the trees are planted in front of the house, partially obscuring the façade and making it difficult to discern specific construction materials.

Surveyor Assessment:

July 2017: The circa 1914 house with outbuildings appears to be occupied and in fair condition. The building does not possess any unique characteristics that would separate it from early-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). Several additions have been added to the main block of the house, reducing the integrity of the original design. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

January 2018: No changes have been made to this resource since the previous survey. Circa~ maintains that this building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

August 2019: Site 090-5074, the circa 1914 house, appears to be occupied and in fair condition. In 2017, Circa~ recommended that the house does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling

NR Resource Type: Building
Date of Construction: ca 1914
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: Vernacular
Form: *No Data*
Number of Stories: 1.5
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: This circa 1914, one-and-a-half-story, one-bay, side-gable, vernacular style, wood-frame house is clad in painted-white composition siding and rests on a concrete-block foundation with one central-interior Flemish-bond brick chimney. The roof is covered in standing-seam metal. There is a one-story, one-bay, shed roof, wood-frame screened-in porch. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations; some of the windows have been covered with plastic. The entrance on the façade is a single-leaf, wood-panel door with lights.

There is a one-story, one-bay, front-gable, wood-frame addition attached to the façade clad in painted-white composition siding and resting on a concrete-block foundation. The roof is covered in standing-seam metal with metal gutters and downspouts. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. No entrance is visible on the addition.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the north elevation of the addition clad in painted-white composition siding and resting on a concrete-block foundation. The roof is covered in standing-seam metal. No windows are visible on the addition. The entrance on the addition is a single-leaf, wood-panel door.

January 2018: No changes have been made to this resource since the previous survey.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Porch	1-Story Partial Width	Wood	Screened/Enclosed
Windows	Double-hung	Wood	<i>No Data</i>
Roof	Side Gable	Metal	<i>No Data</i>
Chimneys	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Barn
NR Resource Type: Building
Date of Construction: ca 1914
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Fair
Threats to Resource: None Known

Architectural Description:

July 2017: To the northeast of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame barn clad in painted-red vertical wood siding. The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal with overhanging eaves and exposed rafter tails. No windows are visible on the barn. The entrance on the façade is not visible.

January 2018: No changes have been made to this resource since the previous survey.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	No Data

Secondary Resource #2

Resource Category:	Domestic
Resource Type:	Shed
NR Resource Type:	Building
Date of Construction:	ca 1914
Date Source:	Site Visit
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	No discernible style
Form:	No Data
Number of Stories:	1.0
Condition:	Fair
Threats to Resource:	None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame shed clad in painted-red vertical wood siding (noted as Shed 1 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is a single-leaf, plywood door.

January 2018: No changes have been made to this resource since the previous survey.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	No Data

Secondary Resource #3

Resource Category:	Domestic
Resource Type:	Shed
NR Resource Type:	Building
Date of Construction:	ca 1914
Date Source:	Site Visit
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	No discernible style
Form:	No Data
Number of Stories:	1.0
Condition:	Fair
Threats to Resource:	None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, one-story, one-bay, front-gable, wood-frame shed clad in painted-red vertical wood siding (noted as Shed 2 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is a double-leaf, plywood door.

January 2018: No changes have been made to this resource since the previous survey.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Metal	No Data

Secondary Resource #4

Resource Category:	Domestic
Resource Type:	Shed
NR Resource Type:	Building
Date of Construction:	ca 1914
Date Source:	Site Visit
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	No discernible style
Form:	No Data
Number of Stories:	1.0
Condition:	Fair
Threats to Resource:	None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, one-story, multiple-bay, side-gable, wood-frame shed clad in wood siding (noted as Shed 3 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

January 2018: No changes have been made to this resource since the previous survey.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Roof	Side Gable	Metal	No Data

Secondary Resource #5

Resource Category:	Domestic
Resource Type:	Well House
NR Resource Type:	Building
Date of Construction:	ca 1914
Date Source:	Site Visit
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	No discernible style
Form:	No Data
Number of Stories:	1.0
Condition:	Fair
Threats to Resource:	None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, one-story, one-bay, shed roof, concrete-block well house resting partially below grade on a concrete-block foundation. The roof is covered in asphalt shingles. No windows are visible on the well house. The entrance on the façade is not visible.

January 2018: No changes have been made to this resource since the previous survey.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Shed	Asphalt	No Data

Secondary Resource #6

Resource Category:	Domestic
Resource Type:	Well
NR Resource Type:	Structure
Date of Construction:	ca 1914
Date Source:	Site Visit
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	No discernible style
Form:	No Data
Number of Stories:	No Data
Condition:	Fair
Threats to Resource:	None Known

Architectural Description:

July 2017: To the north of the house, there is a circa 1914, round, poured-concrete well resting slightly above grade. The top is covered with a poured-concrete well cap.

January 2018: No changes have been made to this resource since the previous survey.

August 2019: No changes have been made to any of the resources since the previous survey.

Historic District Information

Historic District Name:	No Data
Local Historic District Name:	No Data
Historic District Significance:	No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number:	No Data
Investigator:	Dawn Muir
Organization/Company:	Circa~ Cultural Resource Management, LLC
Photographic Media:	Digital
Survey Date:	7/18/2019
Dhr Library Report Number:	No Data

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a 1/2-mile radius from the project area boundaries.T

he contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the

survey.

Project Bibliographic Information:

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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2018-3123
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 12/15/2017
Dhr Library Report Number: SY-066

Project Staff/Notes:

Circa~ Carol D. Tyrer, Dawn M. Muir
Jan 2018 Phase I Architectural Survey of the Spring Grove Solar Site, Surry County, Virginia.
SY-066

January 2018: In December of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the 2,676-acre Spring Grove Solar Site in Surry County, Virginia. The project area is bordered by Beaverdam Road to the north, Swanns Point Road to the west, Colonial Trial West to the south and by rural forested land to the south, east, and west. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a half-mile radius from the project area boundaries. The archaeological resources are discussed in a separate assessment report for archaeology and are not included in this survey.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey and entered the information into the V-CRIS system. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Majors provided information and maps for the survey.

Project Bibliographic Information:

Circa~
2019 Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia.

Advisory Council on Historic Preservation
1986 “36 CFR Part 800 – Protection of Historic Properties (incorporating amendments effective August 5, 2004)” Regulations of the Advisory Council on Historic Preservation Governing the Section 106 Review Process. Available online at <http://www.achp.gov>

Billings, Warren M., John E. Selby, and Thad W. Tate
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Colonial Williamsburg Foundation.
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McCartney, Martha.
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McCord, Howard and William T. Buchanan
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Surry County

No date Deed, wills, inventories, surveyors records, plat books, tax assessors books, land tax records, personal property tax records. Available at the Surry County courthouse, Surry, Virginia.

Thompson, Timothy A., Lori Cousins, Martha McCartney, and Sam Margolin
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1988 "Past and Present in Charles City County," in James P. Whittenburg and John M. Coski (eds.), *Four Centuries of the Southern Experience: Charles City County, Virginia, from the Age of Discovery to the Modern Civil Rights Struggle*, pp. 1-14. Unpublished manuscript in the archives of the Virginia Department of Historic Resources, Richmond, Virginia.

Wiley, Bell I.
1964 *Embattled Confederates, An Illustrated History of Southerners at War*. Harper and Row publishers, New York, New York.

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a ½-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Project Bibliographic Information:

Circa~
2019 Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia.

Advisory Council on Historic Preservation
1986 "36 CFR Part 800 – Protection of Historic Properties (incorporating amendments effective August 5, 2004)" Regulations of the Advisory Council on Historic Preservation Governing the Section 106 Review Process. Available online at <http://www.achp.gov>

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Robinson, W. Stitt.

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Sanford, Douglas

2012 "Investigating the Slave Building at Walnut Valley Plantation (44SY0262) Surry County, Virginia." *Quarterly Bulletin of Archaeological Society of Virginia* 67, No. 1.

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1606 Virginia / discovered and described. Available online at <http://www.loc.gov/maps/collections>

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Tyler, D. Gardiner
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Wiley, Bell I.
1964 *Embattled Confederates, An Illustrated History of Southerners at War*. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	Mobile Home, 5777 Hollybush Road

Property Evaluation Status

Property Addresses

Current - 5777 Hollybush Road Route 618

County/Independent City(s): Surry (County)

Incorporated Town(s): *No Data*

Zip Code(s): 23881

Magisterial District(s): *No Data*

Tax Parcel(s): *No Data*

USGS Quad(s): CLAREMONT

Additional Property Information

Architecture Setting: Rural

Acreage: 125.91

Site Description:

July 2017: On the north side of Colonial Trail West, there is a circa 1960s mobile home with two pole barns, one equipment shed, and seven silos. This building is situated on an approximately 125.91-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the house. There is a large open agricultural field to the south of the mobile home separating it from Colonial Trail West. A mowed lawn with mature trees and plantings surrounds the building. Facing south, the building is set on a fairly-level grade that slopes gently to the south. A mature tree line is visible to the west, north, and east and a wooden pole with a mercury vapor light is situated along the driveway to the south of the mobile home. There is also a wooden swing in the front yard. A wood post and wire fence surrounds a portion of the property.

August 2019: Site 090-5076 is identified as a circa 1960s mobile home. Circa~ first identified this site in 2017 during a Phase I survey for the Colonial Trail West solar site just to the north of the current project area. This building is situated on an approximately 125.91-acre parcel away from Colonial Trail West with a single-lane dirt driveway leading from Colonial Trail West to the mobile home. There is a large open agricultural field to the south of the mobile home separating it from Colonial Trail West. A mowed lawn with mature trees and plantings surrounds the building. Facing south, the building is set on a fairly-level grade that slopes gently to the south. A mature tree line is visible to the west, north, and east and a wooden pole with a mercury vapor light is situated along the driveway to the south of the mobile home. There is also a wooden swing in the front yard. A wood post and wire fence surround a portion of the property.

Surveyor Assessment:

July 2017: The circa 1960s mobile home appears to be occupied and in good condition. The mobile home is prefabricated and there are many other examples of mid- to late-20th century mobile homes throughout the County, including several within the Area of Potential Effect (APE). The building does not possess any unique characteristics that would separate it from mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criteria C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criteria A) or persons (Criteria B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

August 2019: Site 090-5076, the circa 1960s mobile home, appears to be occupied and in good condition. In 2017, Circa~ recommended that the mobile home does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C and VDHR concurred with this recommendation. No changes have been made to the resource since the previous survey and Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category: Domestic

Resource Type: Mobile Home/Trailer

NR Resource Type: Building

Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: This circa 1960s, one-story, six-bay, flat roof, metal-frame prefabricated mobile home is clad in corrugated metal. The foundation is not visible under a metal skirt. The roof is covered in corrugated metal. Single and triple, fixed, three-light, metal-frame windows under corrugated metal awnings are typical on the façade and elevations. The entrance on the faced is a single-leaf, wood-panel door covered by a metal screen door.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Steel Frame	Metal	Panels
Windows	Fixed	Metal	<i>No Data</i>
Roof	Flat	Metal	<i>No Data</i>

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Pole Barn
NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the west of the mobile home, there is a circa 1960s, one-story, five-bay, shed roof, wood-frame pole barn clad in vertical wood siding and resting on the ground (noted as Pole Barn 1 on the site plan). The roof is covered in standing-seam metal with exposed rafter tails. No windows are visible on the pole barn. The façade is open.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #2

Resource Category: Agriculture/Subsistence
Resource Type: Pole Barn
NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)

Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the west of the mobile home, there is a circa 1960s, one-story, one-bay, shed roof, wood-frame pole barn clad in vertical wood siding and resting on the ground (noted as Pole Barn 2 on the site plan). The roof is covered in standing-seam metal with exposed rafter tails. No windows are visible on the pole barn. The façade is open.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #3

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the mobile home, there is a circa 1960s, one-story, one-bay, steeply-pitched side-gable, wood-frame equipment shed clad in vertical wood siding and resting on the ground. The roof is covered in standing-seam metal with exposed rafter tails. No windows are visible on the equipment shed. The façade is open.

August 2019: No changes have been made to any of the resources since the previous survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Side Gable	Metal	<i>No Data</i>

Secondary Resource #4

Resource Category: Agriculture/Subsistence
Resource Type: Silo
NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the mobile home, there is a circa 1960s, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated

metal (noted as Silo 1 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf wood door that slides up.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #5

Resource Category: Agriculture/Subsistence
Resource Type: Silo
NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the mobile home, there is a circa 1960s, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated metal (noted as Silo 2 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf wood door that slides up.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #6

Resource Category: Agriculture/Subsistence
Resource Type: Silo
NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the mobile home, there is a circa 1960s, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated metal (noted as Silo 3 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf wood door that slides up.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #7

Resource Category: Agriculture/Subsistence
Resource Type: Silo
NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*

Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the mobile home, there is a circa 1960s, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated metal (noted as Silo 4 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf wood door that slides up.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #8

Resource Category: Agriculture/Subsistence
Resource Type: Silo
NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the mobile home, there is a circa 1960s, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated metal (noted as Silo 5 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf wood door that slides up.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #9

Resource Category: Agriculture/Subsistence
Resource Type: Silo
NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the mobile home, there is a circa 1960s, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated metal (noted as Silo 6 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf wood door that slides up.

August 2019: No changes have been made to any of the resources since the previous survey.

Secondary Resource #10

Resource Category: Agriculture/Subsistence
Resource Type: Silo

NR Resource Type: Structure
Date of Construction: ca 1960
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

July 2017: To the east of the mobile home, there is a circa 1960s, one-story, one-bay, round, pyramidal roof, metal-frame silo clad in corrugated metal (noted as Silo 7 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf wood door that slides up.

August 2019: No changes have been made to any of the resources since the previous survey.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

Project Bibliographic Information:

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Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2017-3995
Investigator: Dawn Muir-Frost
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/7/2017
Dhr Library Report Number: SY-065

Project Staff/Notes:

July 2017: In the summer of 2017, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Colonial Trail West Solar Site in Surry County, Virginia. The project area, which encompasses approximately 1,229 acres, is bordered by rural residential land to the north and west, Hollybush Road to the east, and Route 10 and rural residential land to the south. The Area of Potential Effect (APE) for architectural resources is a 1/2-mile radius from the project area borders. The archaeological resources identified within the project area boundaries were discussed in a separate report for archaeology and are not included in this survey.

At Circa~, Carol D. Tyrer served as Project Manager for the project. Dawn M. Muir-Frost, Architectural Historian, completed the historic context and architectural survey. Dawn M. Muir-Frost and Carol D. Tyrer prepared the report. Carol D. Tyrer photographed the resources and Dawn M. Muir-Frost entered the information into the V-CRIS system. The Timmons Group (Timmons) provided information and maps for the survey.

Phase I Architectural Survey of Colonial Trail West Solar Site, Surry County, Virginia
July 2017
SY-065

Project Bibliographic Information:

Circa~
2019 Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia.

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1964 *Embattled Confederates, An Illustrated History of Southerners at War*. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	House, Hollybush Road

Property Evaluation Status

Property Addresses

Current - Hollybush Road 618

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23839, 23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT, DENDRON

Additional Property Information

Architecture Setting:	Rural
Acreage:	65

Site Description:

August 2019: On the western side of Hollybush Road, there is a circa 1880s house, with one secondary dwelling, two pole barns, one silo, one outbuilding, five sheds, one ruin, and one well on an approximately 65.00-acre parcel well away from Hollybush Road surrounded by a mowed lawn. Facing east, the building is set on a fairly-level grade with a single-lane, dirt driveway that leads from Hollybush Road to the main house. The secondary dwelling and associated outbuildings are situated close to Hollybush Road to the southeast of the main house. There is a single-lane, gravel driveway that leads from Hollybush Road to the north of the secondary dwelling. Wooden utility poles are situated near the main house and along Hollybush Road and overhead utility lines run between the poles and parallel to Hollybush Road. A metal satellite dish attached to a wooden post and an above-ground storage tank resting on a metal stand are visible by the secondary dwelling. A tree line is visible along the southern side of the driveway to the main house and the north and west of the main house. Agricultural fields surround the main house.

Surveyor Assessment:

August 2019: Site 090-5140, the circa 1880s house, appears to be vacant and in fair to poor condition. The building does not possess any unique characteristics that would separate it from late 19th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa- recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
NR Resource Type:	Building
Date of Construction:	ca 1880
Date Source:	Site Visit
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	Vernacular
Form:	No Data
Number of Stories:	2.0
Condition:	Fair

Threats to Resource: None Known

Architectural Description:

August 2019: This circa 1880s, two-story, three-bay, side-gable, vernacular style, wood-frame house is clad in wood siding and rests on a Flemish-bond brick pier foundation with one interior-end Flemish-bond brick chimney that is deteriorating at the top and one exterior-end Flemish-bond brick chimney with a corbelled cap. The siding is deteriorating, and sections have pulled away from the wood framing. The roof is covered in standing-seam metal. The window openings have been covered in plywood; it is unable to determine if the original windows are still intact. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, three-bay, side-gable, wood-frame addition attached to the rear (west) elevation clad in wood weatherboard with one interior-end Flemish-bond brick chimney. The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. Sash, double-hung, 1/1, wood-frame windows are typical on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Brick	Flemish Bond
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Windows	Double-hung	Wood	<i>No Data</i>
Roof	Side Gable	Metal	<i>No Data</i>
Chimneys	Interior End	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Secondary Dwelling
NR Resource Type: Building
Date of Construction: ca 1938
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: Colonial Revival
Form: *No Data*
Number of Stories: 2.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the southeast of the house, there is a circa 1938, two-story, two-bay, side-gable, Colonial Revival style, wood-frame house clad in painted-white composition siding and resting on a concrete-block foundation with one interior-end Flemish-bond brick chimney with a corbelled cap. The roof is covered in standing-seam metal. Sash, double-hung, 6/6, wood-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-story, six-bay, shed roof, wood-frame addition attached to the façade clad in painted-white composition siding and resting on a concrete-block foundation. The roof is covered in standing-seam metal. Three-light, wood-frame awning windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door covered by a metal storm door.

There is a one-story, two-bay, side-gable, wood-frame addition attached to the rear (west) elevation clad in painted-white composition siding and resting on a concrete-block foundation with one interior-end Flemish-bond chimney with a corbelled cap. The roof is covered in standing-seam metal with overhanging eaves with a metal satellite dish attached to the eastern side. There is a one-bay, concrete-block stoop on the south elevation flanked by a wood railing. Two concrete-block steps flanked by wood railings lead from the stoop to the backyard. A wooden L-shaped ramp flanked by wood railings lead from the north elevation to the backyard. Three concrete-block wood steps flanked by wood railings lead from the ramp to the side yard. Single and paired, sash, double-hung, 6/6, wood-frame windows are typical on the addition. The entrance on the addition consists of two single-leaf, wood-panel doors with lights.

There is a one-story, one-bay, side-gable, wood-frame addition attached to the side (south) elevation clad in painted-white composition siding and resting on a concrete-block foundation. The roof is covered in standing-seam metal. Sash, double-hung, 6/6, wood-frame windows flanked by painted-black wood shutters are typical on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and	Wood Frame	Composite	Siding

Exterior Treatment			
Porch	Stoop/Deck	Concrete	Square
Windows	Double-hung	Wood	<i>No Data</i>
Windows	Hopper/Awning	Metal	<i>No Data</i>
Roof	Side Gable	Metal	<i>No Data</i>
Roof	Shed	Metal	<i>No Data</i>
Chimneys	Interior End	Brick	Flemish Bond

Secondary Resource #2

Resource Category: Agriculture/Subsistence
Resource Type: Pole Barn
NR Resource Type: Structure
Date of Construction: ca 1900
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the east of the house, there is a circa 1900, one-story, six-bay, side-gable, wood-frame pole barn clad in painted-red vertical wood siding and resting on the ground. The roof is covered in corrugated metal. No windows are visible on the pole barn. The façade and rear (west) elevation is open (noted as Pole Barn 1 on the site plan).

Secondary Resource #3

Resource Category: Agriculture/Subsistence
Resource Type: Pole Barn
NR Resource Type: Structure
Date of Construction: ca 1900
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the east of the house, there is a circa 1900, one-story, five-bay, side-gable, wood-frame pole barn clad in painted-red vertical wood siding and resting on the ground. The roof is covered in corrugated metal. No windows are visible on the pole barn. The façade and rear (west) elevation is open (noted as Pole Barn 2 on the site plan).

Secondary Resource #4

Resource Category: Agriculture/Subsistence
Resource Type: Silo
NR Resource Type: Structure
Date of Construction: ca 1900
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Domestic, Subsistence/Agriculture
Other ID Number: *No Data*
Architectural Style: No discernible style

Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the northeast of the house, there is a circa 1900, one-story, round, pyramidal roof, wood-frame silo clad in metal siding. The silo is partially obscured from view by the pole barns and the foundation is not visible. The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the façade is not visible.

Secondary Resource #5

Resource Category: Domestic
Resource Type: Outbuilding, Domestic
NR Resource Type: Building
Date of Construction: ca 1880
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Fair
Threats to Resource: None Known

Architectural Description:

August 2019: To the west of the house, there is a circa 1880s, one-story, one-bay, front-gable, wood-frame outbuilding clad in vertical wood siding. The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the outbuilding. The entrance on the façade is not visible.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Roof	Front Gable	Metal	<i>No Data</i>

Secondary Resource #6

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1880
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Fair
Threats to Resource: None Known

Architectural Description:

August 2019: To the east of the house, there is a circa 1880s, one-story, one-bay, shed roof, wood-frame shed clad in deteriorated wood siding (noted as Shed 1 on the site plan). The shed is almost completely covered with overgrown vegetation and the foundation is not visible due to the overgrowth. The roof is covered in standing-seam metal. No windows are visible on the shed. The façade is open.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (east) elevation clad in wood siding. The addition is almost completely covered with overgrown vegetation and the foundation is not visible due to the overgrowth. The roof is covered in standing-seam metal. No windows are visible on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Roof	Shed	Metal	<i>No Data</i>

Secondary Resource #7

Resource Category:	Domestic
Resource Type:	Shed
NR Resource Type:	Building
Date of Construction:	ca 1938
Date Source:	Site Visit
Historic Time Period:	World War I to World War II (1917 - 1945)
Historic Context(s):	Domestic
Other ID Number:	<i>No Data</i>
Architectural Style:	No discernible style
Form:	<i>No Data</i>
Number of Stories:	1.0
Condition:	Fair
Threats to Resource:	None Known

Architectural Description:

August 2019: To the southeast of the house, there is a circa 1938, one-story, one-bay, front-gable, concrete-block shed resting on a concrete-block foundation (noted as Shed 2 on the site plan). The roof is covered in corrugated metal. No windows are visible on the shed. The entrance on the façade is a single-leaf, vertical wood plank door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Front Gable	Metal	<i>No Data</i>

Secondary Resource #8

Resource Category:	Domestic
Resource Type:	Shed
NR Resource Type:	Building
Date of Construction:	ca 1938
Date Source:	Site Visit
Historic Time Period:	World War I to World War II (1917 - 1945)
Historic Context(s):	Domestic
Other ID Number:	<i>No Data</i>
Architectural Style:	No discernible style
Form:	<i>No Data</i>
Number of Stories:	1.0
Condition:	Fair
Threats to Resource:	None Known

Architectural Description:

August 2019: To the southwest of the house, there is a circa 1938, one-story, one-bay, front-gable, wood-frame shed clad in wood siding that was once painted white and resting on a concrete-block pier foundation (noted as Shed 3 on the site plan). The roof is covered in standing-seam metal with exposed rafter tails. One small, fixed, one-light, wood-frame window is visible in the gable end and sash, double-hung, 6/6, wood-frame windows are typical on the elevations. Some of the windowpanes are missing. The entrance on the façade is a double-leaf, vertical wood plank door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Windows	Fixed	Wood	<i>No Data</i>

Windows	Double-hung	Wood	<i>No Data</i>
Roof	Front Gable	Metal	<i>No Data</i>

Secondary Resource #9

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1938
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Fair
Threats to Resource: None Known

Architectural Description:

August 2019: To the southwest of the house, there is a circa 1938, one-story, two-bay, shed roof, wood-frame shed resting on a concrete-block foundation (noted as Shed 4 on the site plan). Originally clad in wood siding, the shed is now covered with canvas panels. The original wood siding is still visible on the side (east) elevation. The roof is covered in standing-seam metal with exposed rafter tails. Window openings are visible on the façade and elevations; the windows have been removed. The entrance on the façade is a single-leaf, vertical wood plank door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Cloth/Canvas	Panels
Roof	Shed	Metal	<i>No Data</i>

Secondary Resource #10

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1938
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Fair
Threats to Resource: None Known

Architectural Description:

August 2019: To the southwest of the house, there is a circa 1938, one-story, one-bay, shed roof, wood-frame shed clad in wood siding and resting on a concrete-block foundation (noted as Shed 5 on the site plan). The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is a single-leaf, vertical wood plank door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Roof	Shed	Metal	<i>No Data</i>

Secondary Resource #11

Resource Category: Unknown
Resource Type: Foundation
NR Resource Type: Site
Date of Construction: ca 1938
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Deteriorated
Threats to Resource: Neglect

Architectural Description:

August 2019: To the southeast of the house, there is a circa 1938 ruin that consists of standing-seam metal roofing material resting on a poured-concrete slab-on-grade foundation. While the original function of the structure cannot be determined from the remains, given its location at the end of the driveway, it is possible that the building may have been a garage.

Secondary Resource #12

Resource Category: Domestic
Resource Type: Well
NR Resource Type: Structure
Date of Construction: ca 1938
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Fair
Threats to Resource: None Known

Architectural Description:

August 2019: To the south of the house, there is a circa 1938, round, poured-concrete well resting partially above grade. A poured-concrete cap covers the top of the well.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa- Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

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1984 A Brief History of Charles City County, Virginia. Charles City County 350th Anniversary Committee.

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Wiley, Bell I.
1964 Embattled Confederates, An Illustrated History of Southerners at War. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 4593 Hollybush Road

Property Evaluation Status

Property Addresses

Current - 4593 Hollybush Road 618

County/Independent City(s):	Surry (County)
Incorporated Town(s):	<i>No Data</i>
Zip Code(s):	23839, 23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	DENDRON

Additional Property Information

Architecture Setting:	Rural
Acreage:	1

Site Description:

August 2019: On the western side of Hollybush Road, there is a circa 1962 house, with two sheds, one well house, and one well on an approximately 1.00-acre parcel close to Hollybush Road surrounded by a mowed lawn with scattered mature trees and plantings. Facing east, the building is set on a fairly-level grade with a single-lane, gravel driveway that leads from Hollybush Road to the house. A ditch runs parallel to Hollybush Road. A wooden pole with a mercury vapor light attached to the top is situated in the backyard along with wooden utility poles to the north and west of the house. Overhead utility lines run between the poles above the house. A painted-black metal lamppost is situated in the front yard and a metal clothesline is visible in the backyard. A tree line is visible to the west.

Surveyor Assessment:

August 2019: Site 090-5141, the circa 1962 house, appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from mid- to late-20th century rural housing examples in Surry County. Ranch style buildings are common throughout Surry County and Virginia and several ranch style houses are located within the APE. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
NR Resource Type:	Building
Date of Construction:	ca 1962
Date Source:	Site Visit
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Other ID Number:	<i>No Data</i>
Architectural Style:	Ranch
Form:	<i>No Data</i>
Number of Stories:	1.0
Condition:	Good

Threats to Resource: None Known

Architectural Description:

August 2019: This circa 1962, one-story, four-bay, hipped roof, ranch style, wood-frame house is clad in painted-white composition siding with a Flemish-bond brick veneer on the lower half of the southernmost two bays of the façade and rests on a raised concrete-block foundation with a Flemish-bond brick veneer on the façade with one central-interior Flemish-bond brick chimney with a corbelled cap and metal vent cap. The roof is covered in asphalt shingles with a boxed cornice and overhanging eaves. There is a one-story, two-bay, Flemish-bond brick porch under a roof overhang supported by painted-black metal posts flanked by painted-black metal railings. Two Flemish-bond brick steps lead from the porch to the front yard. Fixed, two-light and three-light, wood-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door covered by a metal storm door.

There is a one-story, one-bay, hipped roof, wood-frame addition attached to the side (north) elevation clad in painted-white composition siding and resting on a Flemish-bond brick foundation with one exterior-end Flemish-bond brick chimney with a corbelled cap. The roof is covered in asphalt shingles with a boxed cornice and overhanging eaves. A metal satellite dish is attached to the northeastern corner. Triple, sash, double-hung, 2/2, wood-frame windows flanked by painted-black wood shutters are typical on the addition. The entrance on the addition consists of two single-leaf, wood-panel doors covered by metal storm doors,

There is a one-story, one-bay, hipped roof carport attached to the north elevation of the addition with a painted-white concrete-block retaining wall on the northern elevation resting on a poured-concrete slab-on-grade foundation. The roof is covered in asphalt shingles with a boxed cornice supported by painted-white wood posts with painted-white wood latticework. The carport is open on three sides.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Brick	Flemish Bond
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Structural System and Exterior Treatment	Wood Frame	Brick	Veneer
Porch	1-Story Partial Width	Brick	Cast Metal Supports
Windows	Fixed	Wood	No Data
Windows	Double-hung	Wood	No Data
Roof	Hipped	Asphalt	No Data
Chimneys	Interior Central	Brick	Flemish Bond
Chimneys	Exterior End	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1962
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: No Data
Architectural Style: No discernible style
Form: No Data
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the west of the house, there is a circa 1962, one-story, one-bay, gambrel roof, painted-white concrete-block shed resting on a concrete-block foundation (noted as Shed 1 on the site plan). The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a double-leaf, wood-panel door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Gambrel	Asphalt	No Data

Secondary Resource #2

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1962
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Fair
Threats to Resource: None Known

Architectural Description:

August 2019: To the west of the house, there is a circa 1962, one-story, one-bay, shed roof, wood-frame shed clad in plywood siding (noted as Shed 2 on the site plan). The shed is almost completely overgrown, and the foundation is not visible due to the overgrowth. The roofing material is not visible due to the overgrowth. No windows are visible on the shed. The entrance on the façade is a single-leaf, plywood door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Plywood/Particle Board	Panels
Roof	Shed	Unknown	<i>No Data</i>

Secondary Resource #3

Resource Category: Domestic
Resource Type: Well House
NR Resource Type: Building
Date of Construction: ca 1962
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Fair
Threats to Resource: None Known

Architectural Description:

August 2019: To the southwest of the house, there is a circa 1962, one-story, one-bay, side-gable, painted-white concrete-block well house resting on a concrete-block foundation partially below grade. The roof is covered in asphalt shingles with exposed rafter tails. No windows are visible on the well house. The entrance on the façade is not visible.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Masonry	Concrete	Block
Roof	Side Gable	Asphalt	<i>No Data</i>

Secondary Resource #4

Resource Category: Domestic
Resource Type: Well
NR Resource Type: Structure
Date of Construction: ca 1962
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)

Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the north of the house, there is a circa 1962, round, poured-concrete well resting partially above grade. A poured-concrete cap covers the top of the well.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.T

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Wiley, Bell I.

1964 *Embattled Confederates, An Illustrated History of Southerners at War*. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Current Name	New Design School
Function/Location	School, Hollybush Road

Property Evaluation Status

Property Addresses

Current - Hollybush Road 618

County/Independent City(s):	Surry (County)
Incorporated Town(s):	<i>No Data</i>
Zip Code(s):	23839, 23881
Magisterial District(s):	<i>No Data</i>
Tax Parcel(s):	<i>No Data</i>
USGS Quad(s):	DENDRON

Additional Property Information

Architecture Setting:	Rural
Acreage:	7.84

Site Description:

August 2019: On the western side of Hollybush Road, there is a circa 1880s school on an approximately 7.84-acre parcel close to Hollybush Road surrounded by mowed lawn. Facing east, the building is set on a fairly-level grade with a ditch running parallel to Hollybush Road. A tree line is visible to the west. A large, painted-white wooden sign leans against the façade noting the building as the New Design School restoration by the African American Heritage Society.

Surveyor Assessment:

August 2019: Site 090-5142, the circa 1880s New Design School, appears to be vacant and in various stages of restoration. The building does not possess any unique characteristics that would separate it from late 19th century school building housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). Further, the building is undergoing restoration with a new roof and the school is surrounded by mid- to late-20th century residential buildings, which alters its original landscape. A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	<i>No Data</i>

Primary Resource Information

Resource Category:	Education
Resource Type:	School
NR Resource Type:	Building
Date of Construction:	ca 1880
Date Source:	Site Visit
Historic Time Period:	Reconstruction and Growth (1866 - 1916)
Historic Context(s):	Education
Other ID Number:	<i>No Data</i>
Architectural Style:	Vernacular
Form:	<i>No Data</i>
Number of Stories:	1.0
Condition:	Good
Threats to Resource:	None Known
Architectural Description:	

August 2019: This circa 1880s, one-story, three-bay, front-gable, vernacular style, wood-frame school is clad in wood siding and rests on Flemish-bond brick piers. The roof is covered in standing-seam metal with cornice returns and appears to be a replacement roof. Sash, double-hung, 2/2, wood-frame windows are typical on the façade with paired, sash, double-hung, 6/6, wood-frame windows typical on the elevations. Some of the windowpanes are missing and some of the wood mullions on the windows on the elevations are missing. The entrance on the façade is a single-leaf, vertical wood plank door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Brick	Flemish Bond
Structural System and Exterior Treatment	Wood Frame	Wood	Siding
Windows	Double-hung	Wood	No Data
Roof	Front Gable	Metal	No Data

Secondary Resource Information

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: No Data
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: No Data

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.T

he contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

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Wiley, Bell I.

1964 *Embattled Confederates, An Illustrated History of Southerners at War*. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 4543 Hollybush Road

Property Evaluation Status

Property Addresses

Current - 4543 Hollybush Road 618

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23839, 23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	DENDRON

Additional Property Information

Architecture Setting:	Rural
Acreage:	1.12

Site Description:

August 2019: On the western side of Hollybush Road, there is a circa 1966 house, with one shed, one well house, and one well, on an approximately 1.12-acre parcel away from Hollybush Road surrounded by a mowed lawn with scattered mature trees and plantings. Facing east, the building is set on a fairly-level grade with a single-lane, dirt driveway that leads from Hollybush Road to the north of the house. A ditch runs parallel to Hollybush Road. A three-rail wooden fence with a row of trees on the southern side runs along the northern edge of the parcel.

Surveyor Assessment:

August 2019: Site 090-5143, the circa 1966 house, appears to be occupied and in good condition. The building does not possess any unique characteristics that would separate it from mid- to late-20th century rural housing examples in Surry County. Ranch style buildings are common throughout Surry County and Virginia and several ranch style houses are located within the APE. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa- recommends no further architectural survey work on this resource.

Surveyor Recommendation:	Recommended Not Eligible
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Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
NR Resource Type:	Building
Date of Construction:	ca 1966
Date Source:	Site Visit
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	Ranch
Form:	No Data
Number of Stories:	1.0
Condition:	Good
Threats to Resource:	None Known
Architectural Description:	

August 2019: This circa 1966, one-story, six-bay, hipped roof, ranch style, Flemish-bond brick house rests on a Flemish-bond brick foundation with one central-exterior Flemish-bond brick chimney with a corbelled cap and one interior-end Flemish-bond brick chimney. The center three bays are recessed, and the center two bays are clad in a painted-white vertical wood siding veneer. The roof is covered in asphalt shingles with overhanging eaves. There is a one-bay, Flemish-bond brick stoop flanked by painted-white wood railings. Four Flemish-bond brick steps flanked by painted-white wood railings lead from the stoop to a small Flemish-bond brick patio. Single and triple, sash, double-hung, 2/2, metal-frame windows flanked by painted-black wood shutters are typical on the façade and elevations. There is one bay window on the façade that consists of one fixed, one-light, wood-frame window flanked by sash, double-hung, 1/1, wood-frame windows flanked by painted-black wood shutters. The entrance on the façade is a single-leaf, wood-panel door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Brick	Flemish Bond
Structural System and Exterior Treatment	Masonry	Brick	Flemish Bond
Structural System and Exterior Treatment	Masonry	Wood	Veneer
Porch	Stoop/Deck	Brick	Square
Porch	1-Story Partial Width	Brick	Square
Windows	Double-hung	Wood	No Data
Windows	Fixed	Wood	No Data
Roof	Hipped	Asphalt	No Data
Chimneys	Exterior End	Brick	Flemish Bond
Chimneys	Interior Central	Brick	Flemish Bond

Secondary Resource Information

Secondary Resource #1

Resource Category:	Domestic
Resource Type:	Shed
NR Resource Type:	Building
Date of Construction:	ca 1966
Date Source:	Site Visit
Historic Time Period:	The New Dominion (1946 - 1991)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	No discernible style
Form:	No Data
Number of Stories:	1.0
Condition:	Good
Threats to Resource:	None Known

Architectural Description:

August 2019: To the west of the house, there is a circa 1966, one-story, two-bay, hipped roof, wood-frame shed clad in painted-white composition siding and resting on a concrete-block foundation. The shed is partially obscured by parked cars and the house. The roof is covered in asphalt shingles with overhanging eaves and exposed rafter tails. Fixed, two-light, wood-frame windows are typical on the façade and elevations. The entrance on the façade is not visible.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Composite	Siding
Windows	Fixed	Wood	No Data
Roof	Hipped	Asphalt	No Data

Secondary Resource #2

Resource Category:	Domestic
Resource Type:	Well House
NR Resource Type:	Building
Date of Construction:	ca 1966
Date Source:	Site Visit
Historic Time Period:	The New Dominion (1946 - 1991)

Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the northeast of the house, there is a circa 1966, one-story, one-bay, front-gable, wood-frame well house clad in painted-white vertical wood siding and resting on a raised concrete-block foundation partially below grade. The roof is covered in asphalt shingles with a boxed cornice. No windows are visible on the well house. The entrance on the façade is not visible.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Roof	Front Gable	Asphalt	<i>No Data</i>

Secondary Resource #3

Resource Category: Domestic
Resource Type: Well
NR Resource Type: Structure
Date of Construction: ca 1966
Date Source: Site Visit
Historic Time Period: The New Dominion (1946 - 1991)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the northeast of the house, there is a circa 1966, round, poured-concrete well resting partially above grade. A poured-concrete cap covers the top of the well.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*
Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

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1964 Embattled Confederates, An Illustrated History of Southerners at War. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 4557 Colonial Trail West

Property Evaluation Status

Property Addresses

Current - 4557 Colonial Trail West 10

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	CLAREMONT

Additional Property Information

Architecture Setting:	Rural
Acreage:	2.02

Site Description:

August 2019: During the current Phase I survey, Circa~ was able to access the site and identified the original house as well as two sheds, one outbuilding, and one well. These buildings are situated well away from Colonial Trail West, on an approximately 2.02-acre parcel surrounded by a well-maintained mowed lawn with scattered mature trees and plantings. Some of the trees partially obscure the façade from view. Facing north, the building is set on a fairly-level grade. A long, single-lane, dirt driveway leads from Colonial Trail West to the house where it circles the house. Agricultural fields are visible to the east, west, and south. A wooden utility pole is situated to the west of the house and an aboveground storage tank is situated to the east of the house.

Surveyor Assessment:

August 2019: Site 090-5144, the circa 1930s house, appears to be occupied and in fair to good condition. This site was not accessible at the time of the 2017 survey Circa~ conducted and at the time, because a review of the Surry County real estate records indicated that this building was built circa 1780. Circa~ treated the site as potentially eligible for listing on the National Register of Historic Places. However, during the course of the present survey, Circa~ was able to access the house and determined that the house actually dates to the 1930s and is a Colonial Revival style house, which is a typical example in Surry County and throughout Virginia and there are many other examples of this style throughout the County, including several within and adjacent to the APE. The building does not possess any unique characteristics that would separate it from early to mid-20th century rural housing examples in Surry County. The design and workmanship of the building is undistinguished, and the construction materials are common (Criterion C). A preliminary review of historic records including various maps and historical contexts for Surry County does not indicate significant contributions with events (Criterion A) or persons (Criterion B) associated with the property. Considering this, the building does not appear to be potentially eligible for the National Register of Historic Places under Criteria A, B, or C. Thus, Circa~ recommends no further architectural survey work on this resource.

Surveyor Recommendation: Recommended Not Eligible

Ownership

Ownership Category	Ownership Entity
Private	No Data

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
NR Resource Type:	Building
Date of Construction:	ca 1930
Date Source:	Site Visit
Historic Time Period:	World War I to World War II (1917 - 1945)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	Vernacular
Form:	No Data

Number of Stories: 1.5
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: This circa 1930s, one-and-a-half-story, three-bay, steeply-pitched front-gable, vernacular style, wood-frame house is clad in painted-beige vinyl siding and rests on a raised, painted-burgundy, concrete-block foundation with one exterior-end Flemish-bond brick chimney. The roof is covered in asphalt shingle with overhanging eaves. There are two front-gable dormers on the side (east) slope and one full-length shed roof dormer on the side (west) slope. There is a one-story, two-bay, concrete-block porch under a front-gable roof supported by tapered, painted-white wood posts. Three poured-concrete steps flanked by wooden railings lead from the porch to the front yard. Sash, double-hung, 6/6, wood-frame windows are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door.

There is a one-and-a-half-story, one-bay, side-gable, wood-frame addition attached to the side (west) elevation clad in painted-beige vinyl siding and resting on a raised, painted-burgundy, concrete-block foundation with one exterior-end Flemish-bond brick chimney. The roof is covered in asphalt shingles with overhanging eaves. There is a shed roof dormer on the north slope with one fixed, one-light, wood-frame window and one paired, sash, double-hung, 1/1, wood-frame window. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. No entrance is visible on the addition.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Solid/Continuous	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Vinyl	Siding
Porch	1-Story Partial Width	Wood	Posts
Windows	Double-hung	Wood	No Data
Roof	Front Gable	Asphalt	No Data
Roof	Side Gable	Asphalt	No Data
Chimneys	Exterior End	Brick	Flemish Bond
Dormer	Gable	Composite	No Data
Dormer	Shed	Composite	No Data

Secondary Resource Information

Secondary Resource #1

Resource Category: Domestic
Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1930
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: No Data
Architectural Style: No discernible style
Form: No Data
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the west of the house, there is a circa 1930s, one-story, two-bay, side-gable, wood-frame shed clad in painted-blue vertical wood siding and resting on a concrete-block pier foundation (noted as Shed 1 on the site plan). The roof is covered in standing-seam metal. Sash, double-hung, 4/4, wood-frame windows flanked by painted-white wood shutters are typical on the façade and elevations. The entrance on the façade is a double-leaf, vertical wood plank door.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Piers	Concrete	Block
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Windows	Double-hung	Wood	No Data
Roof	Side Gable	Asphalt	No Data

Secondary Resource #2

Resource Category: Domestic

Resource Type: Shed
NR Resource Type: Building
Date of Construction: ca 1930
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the east of the house, there is a circa 1930s, one-story, one-bay, front-gable, wood-frame shed clad in plywood siding (noted as Shed 2 on the site plan). The foundation is not visible due to overgrown vegetation. The roof is covered in standing-seam metal. No windows are visible on the shed. The entrance on the façade is not visible.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Plywood/Particle Board	Siding
Roof	Front Gable	Metal	<i>No Data</i>

Secondary Resource #3

Resource Category: Domestic
Resource Type: Outbuilding, Domestic
NR Resource Type: Building
Date of Construction: ca 1930
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: 1.0
Condition: Deteriorated
Threats to Resource: None Known

Architectural Description:

August 2019: To the south of the house, there is a circa 1930s, one-story, multiple-bay, wood-frame outbuilding clad in vertical wood siding that is barely visible due to the mature trees and its placement behind the house. The foundation is not visible due to the mature trees. The roofing material is not visible. Sash, double-hung, 8/8, wood-frame windows are typical on the façade. The entrance on the façade is not visible.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	<i>No Data</i>	<i>No Data</i>
Structural System and Exterior Treatment	Wood Frame	Wood	Vertical Board
Windows	Double-hung	Wood	<i>No Data</i>
Roof	Not Visible	Other	<i>No Data</i>

Secondary Resource #4

Resource Category: Domestic
Resource Type: Well
NR Resource Type: Structure
Date of Construction: ca 1930

Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Domestic
Other ID Number: *No Data*
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

August 2019: To the northwest of the house, there is a circa 1930s, round, concrete-block well resting partially above grade. Plywood covers the top of the well.

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
Dhr Library Report Number: *No Data*

Project Staff/Notes:

August 2019: In July of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I architectural survey of the Spring Grove II Solar Site in Surry County, Virginia. The project area, which encompasses approximately 672.40 acres, is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The Area of Potential Effect (APE) for architectural resources is the project area footprint and a ½-mile radius from the project area boundaries.

The contribution of many individuals made the successful completion of the Phase I survey for the project possible. At Circa~, Carol D. Tyrer served as Project Manager for the project and photographed the resources. Dawn M. Muir, Architectural Historian, completed the historic context and architectural survey and entered the information into the VDHR V-CRIS system along with Skye Hughes. Dawn M. Muir and Carol D. Tyrer prepared the report. At The Timmons Group (Timmons) Rick Thomas and Laura Carson provided information and maps for the survey.

Project Bibliographic Information:

Circa~
2019 Phase I Architectural Survey of the Spring Grove II Solar Site, Surry County, Virginia.

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Wiley, Bell I.

1964 *Embattled Confederates, An Illustrated History of Southerners at War*. Harper and Row publishers, New York, New York.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation Function/Location	Name House, Hollybush Road
--	--------------------------------------

Property Evaluation Status

Property Addresses

Current - Hollybush Road 618

County/Independent City(s):	Surry (County)
Incorporated Town(s):	No Data
Zip Code(s):	23881
Magisterial District(s):	No Data
Tax Parcel(s):	No Data
USGS Quad(s):	DENDRON

Additional Property Information

Architecture Setting: Rural

Acreage: No Data

Site Description:

August 2019: A review of the Surry County real estate records indicates that a building on the western side of Hollybush Road was built circa 1928. However, at the time of the survey, the driveway leading to the house was restricted and no trespassing signs were placed throughout the entrance. Therefore, this house was inaccessible for survey. The actual solar farm development will be situated further to the north and west of the edge of the project area and therefore well away from the resource. As such, the current project will not be visible from this resource.

Surveyor Assessment:

August 2019: Site 090-5145, the circa 1928 house, was not accessible at the time of this survey. A review of the Surry County real estate records indicates that this building was built circa 1928. However, at the time of the survey, the driveway leading to the house was restricted with no trespassing signs. Therefore, this house was inaccessible for survey. As noted on the site map, Site 090-5145 is located approximately 0.11 miles away from the extreme southeastern edge of the project area with woods, agricultural fields, and an unnamed branch of Cypress Swamp in between the resource and the extreme edge of the project area. The actual solar farm development will be situated further into the interior of the project area and therefore well away from the resource. As such, the current project will not be visible from this resource. Thus, the project would have a no adverse effect on this property and Circa~ recommends no further architectural survey work on this resource. However, future projects should survey this site if possible, to determine if the site is potentially eligible for listing on the National Register of Historic Places.

Surveyor Recommendation: Recommended for Further Survey

Ownership

Ownership Category Private	Ownership Entity No Data
--------------------------------------	------------------------------------

Primary Resource Information

Resource Category:	Domestic
Resource Type:	Single Dwelling
NR Resource Type:	Building
Date of Construction:	ca 1928
Date Source:	Local Records
Historic Time Period:	World War I to World War II (1917 - 1945)
Historic Context(s):	Domestic
Other ID Number:	No Data
Architectural Style:	Other
Form:	No Data
Number of Stories:	0.0
Condition:	Fair
Threats to Resource:	None Known

Architectural Description:

August 2019: A review of the Surry County real estate records indicates that a building on the western side of Hollybush Road was built circa 1928. However, at the time of the survey, the driveway leading to the house was restricted and no trespassing signs were placed throughout the entrance. Therefore, this house was inaccessible for survey.

Exterior Components

Component	Component Type	Material	Material Treatment
Foundation	Not Visible	No Data	No Data

Secondary Resource Information

Historic District Information

Historic District Name: No Data
Local Historic District Name: No Data
Historic District Significance: No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: No Data
Investigator: Dawn Muir
Organization/Company: Circa~ Cultural Resource Management, LLC
Photographic Media: Digital
Survey Date: 7/18/2019
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Project Staff/Notes:

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Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

APPENDIX B
PROJECT AREA MAP



PROJECT NAME & LOCATION
SPRING GROVE II
 SURRY COUNTY,
 VIRGINIA

DATE: 08/12/2019
 PROJECT NUMBER: 43849
 PROJECT NAME: SPRING GROVE II
 DESIGNED BY / DRAWN BY: A. MEHFOUD

NOTES:
 Project Limits are approximate.
 Architectural resources from VCRIS.
 Aerial imagery from VGIN.

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REVISIONS	
#	DESCRIPTION

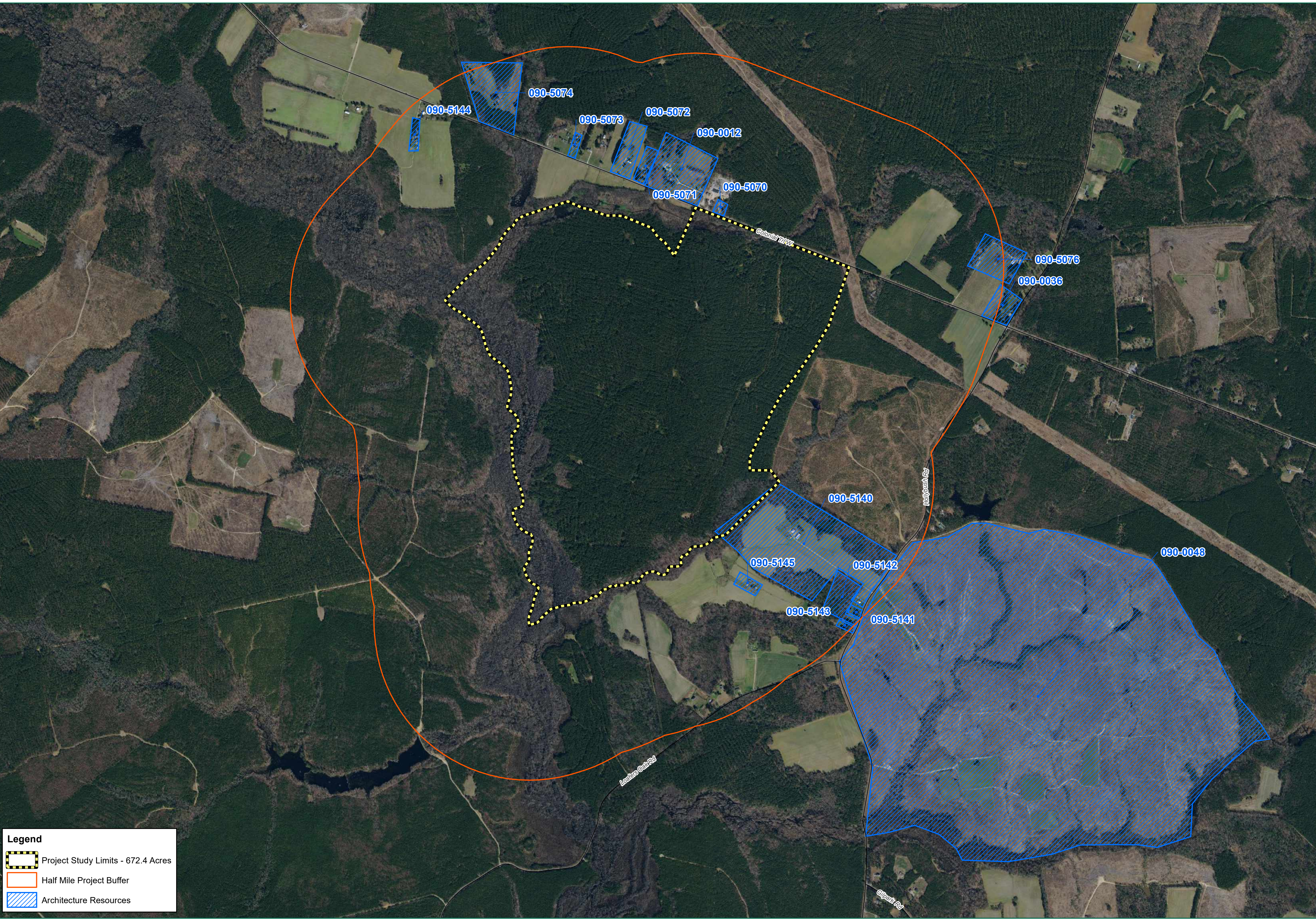
DRAWING DESCRIPTION
ARCHITECTURAL SURVEY MAP

SCALE (FEET)

 0 750 1,500
 PLANS PRINTED AS 11X17 ARE HALF SCALE
 SCALE SHEET NUMBER
 H:1" = 750' 1

Legend

- Project Study Limits - 672.4 Acres
- Half Mile Project Buffer
- Architecture Resources



Circa~ Cultural Resource Management, L.L.C.
453 McLaws Circle, Suite 3
Williamsburg, Virginia 23185
(757) 220-5023

Management Summary and Archaeological Probability Analysis
Spring Grove II Solar Site
Surry County, Virginia
May 2019

Introduction

On May 12 and May 29, 2019, Circa~ Cultural Resource Management, L.L.C. (Circa~) conducted a walkover of the approximately 672.40-acre Spring Grove II Solar Site located in Surry County, Virginia (Figure 1). The project area is bordered by Cypress Swamp to the south and west, rural residential land to the east, and Route 10 and rural residential land to the north. The walkover was completed by Carol D. Tyrer, Principal Investigator. Historic research and graphics were completed by Dawn M. Muir, Architectural Historian and Historian. The project map was completed by Laura Carson with the Timmons Group.

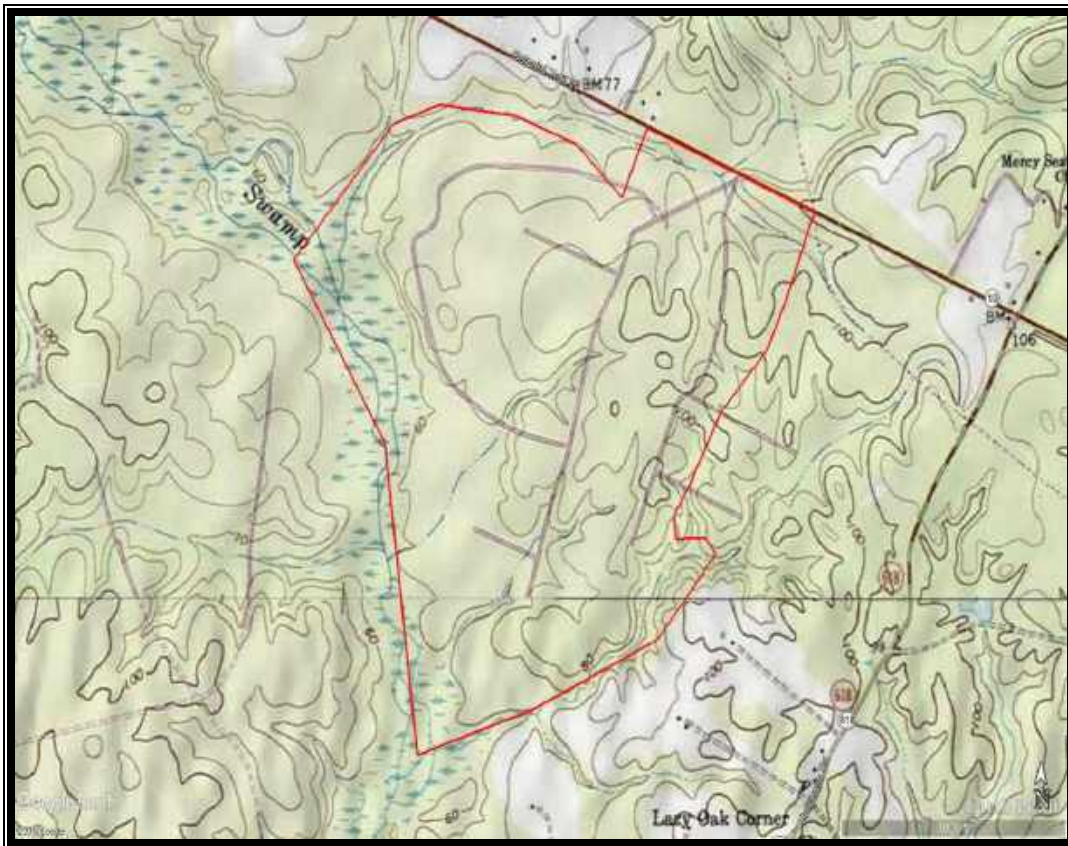


Figure 1. Approximate project location, Claremont and Dendron USGS quads.

Environmental Background

The primary reasons for incorporating environmental studies into archaeological projects are: to learn of possible environmental constraints or lack of constraints; to determine the presence or absence of critical resources that might have influenced site distribution, etc; and to discover environmental factors -- erosion, deposition, subsidence, and historic land use patterns -- that might influence the integrity of archaeological sites once they have formed. Keeping these objectives in mind, a brief environmental summary of the project area is provided below.

The tract is situated in the Coastal Plain physiographic province and is located in a planted pine plantation. The area has been timbered and replanted at least three times in the past, possibly more, based on information from the timber company and the current stand of timber. The trees are roughly 20 to 25 years old and the ground cover vegetation is open. The tract is fairly level and ranges in elevation from approximately 80 feet above mean sea level (AMSL) in the southeastern section of the tract to 100 feet AMSL in the middle and northern sections of the tract. No surface waters are located within the tract. The landform consists of a dissected upland between Cypress Swamp to the south, east, and southwest and Route 10 to the north. A possible small borrow pit was noted in the northern section of the tract. The site can be accessed via gravel and dirt roads off Route 10.

Aerial photos from 1994 to the present show the timbering activities within the project area during the last 25 years. No other development has occurred within the project area during this period (Figures 2 - 7).



Figure 2. 1994 aerial view of project area, from Google Earth.



Figure 3. 2003 aerial view of project area, from Google Earth.



Figure 4. 2007 aerial view of project area, from Google Earth.



Figure 5. 2011 aerial view of project area, from Google Earth.



Figure 6. 2015 aerial view of project area, from Google Earth.



Figure 7. Current (2018) aerial view of project area, from Google Earth.

Soils

At least 13 different soil types and soil type variants exist within the project area (Natural Resources Conservation Service [NRCS] 2019). These soil and soil types include Nevarc-Remlik complex, 6% to 10% slopes; Slagle fine sandy loam, 2% to 6% slopes; Nawney and Mattan soils, 0% to 1% slopes, frequently flooded; Craven fine sandy loam, 2% to 6% slopes; Bibb fine sandy loam, 0% to 2% slopes, frequently flooded; Craven-Slagle complex, 2% to 6% slopes; Burrowsville loamy sand, 2% to 6% slopes; Kinston loam, 0% to 2% slopes, frequently flooded; Emporia fine sandy loam, 2% to 6% slopes; Uchee loamy fine sand, 2% to 6% slopes; Jedburg loam, 0% to 2% slopes, Rains fine sandy loam, 0% to 2% slopes; and Caroline silt loam, 2% to 6% slopes (Figure 8 and Table 1). Each of these types and variants are described below including references to drainage, hunting and gathering potential, and horticultural and agricultural productivity potential. Further, conclusions regarding the suitability of each for historic and Native American occupation and archaeological site probability are also explained.

Soils maps and associated data provide an analysis of soil types within a geographic area. Despite comprehensive and detailed coverage of most areas by soils surveyors, researchers often miss microenvironments due to their small footprints. Unfortunately, resource rich microenvironments were often common sites of cultural activity. As such, this analysis of archaeological potential is a “best-guess” using the best available data.

Well-drained, agriculturally- and horticulturally-productive soils proximal to transportation corridors were the best choices for historic period occupation. Secondary areas, such as those containing wet soils and acid soils, after improvement such as drainage and liming also may have also been suitable choices for historic occupation. No

navigable waterways exist within the project area; thus, water travel is not a factor in the site probability analysis of this tract.

Areas of wet soils may have been attractive to Native American cultures. In these areas, edible herbaceous plant species may have been gathered and faunal species browsing these areas may have been hunted with success. Well-drained soils proximal to these resource-rich areas may have made adequate hunting and gathering campsites where the hunted and gathered resources were processed. These sites would have left an observable archaeological footprint. Little archaeological evidence would be located within the wet areas, the immediate locale of resource procurement.

Areas containing gravelly soils may have been especially attractive to stone tool-manufacturing Native American cultures, but the level of attraction may have depended on the type and quality of the gravels available in these locations. Well-drained soils proximal to quarry-able, gravel-rich areas would have made adequate lithic material procurement campsites but in this case, archaeological materials may be located at both the campsites and the quarry sites.

Table 1. Soils Identified Within the Project Area Boundaries.

Soil Symbol	Soil Name	Acres Within the Project Area	Location Within the Project Area	Percentage Within the Project Area
28C	Nevarc-Remlik complex, 6% to 10% slopes	199.1	Northern Southern Central Western Eastern	28.7%
33B	Slagle fine sandy loam, 2% to 6% slopes	114.8	Northern Southern	16.5%
27A	Nawney and Mattan soils, 0% to 1% slopes, frequently flooded	104.2	Western	15.0%
10B	Craven fine sandy loam, 2% to 6% slopes	99.4	Central	14.3%
2A	Bibb fine sandy loam, 0% to 2% slopes, frequently flooded	53.8	Northern Southern Western	7.7%
12B	Craven-Slagle complex, 2% to 6% slopes	45.9	Western Southern	6.6%
5B	Burrowsville loamy sand, 2% to 6% slopes	36.1	Western Central	5.2%
20A	Kinston loam, 0% to 2% slopes, frequently flooded	16.2	Central	2.3%
14B	Emporia fine sandy loam, 2% to 6% slopes	7.1	Southern	1.0%
35B	Uchee loamy fine sand, 2% to 6% slopes	5.7	Central	0.8%
17A	Jedburg loam, 0% to 2% slopes	4.9	Southern Central	0.7%
31A	Rains fine sandy loam, 0% to 2% slopes	4.0	Southern	0.6%
6B	Caroline silt loam, 2% to 6% slopes	3.9	Eastern	0.6%

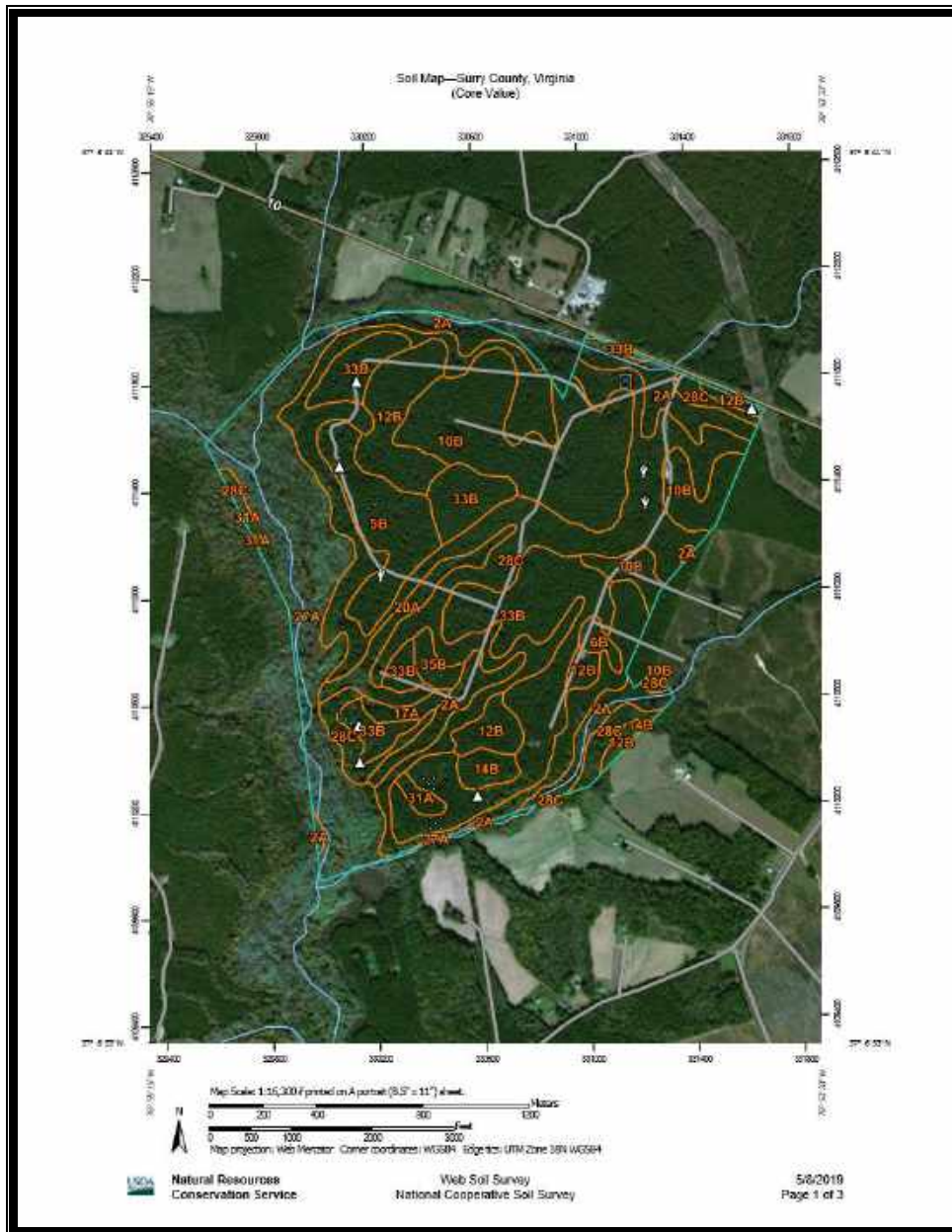


Figure 8. Project area soil map, from NRCS website.

Soils Identified Within the Project Area

Nevarc Soils (28C)

Nevarc soil a very-deep, moderately-well-drained, slowly-permeable soil that formed in marine sediments found on marine terraces of the Coastal Plain (NRCS 2019). Depth to bedrock is over 72 inches and quartz gravel ranges from 0% to 15% throughout the solum with 0% to 35% in the substratum in this extremely acid to moderately acid soil. This soil features a high to very high surface runoff. Most areas of this soil are in pine and mixed hardwood forest.

Remlik Soils (28C)

Remlik soil is a very-deep, well-drained, moderately- to moderately-rapidly permeable soil that formed in loamy and sandy textured fluvial and marine sediments found on side slopes of the Coastal Plain (NRCS 2019). Solum thickness ranges from 30 inches to over 60 inches in this extremely acid to moderately acid soil. Gravel ranges from 0% to 35% throughout the solum. This soil also features a medium to very rapid surface runoff. Most of this soil is in pine and mixed hardwood forest with a small acreage on sloping areas farmed or in pasture.

Nawney Soils (27A)

Nawney soil is a very-deep, poorly-drained, moderately-permeable soil formed in the loamy marine and fluvial sediments found on coastal plain and floodplains (NRCS 2019). Loamy horizons extend to a depth of 40 inches to over 60 inches. Soil acidity ranges from extremely acid through slightly acid to about 40 inches. This soil features a slow surface runoff. Most areas are in woodland. Where wooded, this soil can support water-tolerant trees such as cypress, water tupelo, sweet gum, red maple, water oak, and black gum.

Mattan Soils (27A)

Mattan soil is a very-deep, very-poorly-drained, moderately-permeable soil formed in herbaceous and woody plant remains and fluvial sediments located in the marshes and low-lying areas along river and creeks of the coastal plain (NRCS 2019). Depth to bedrock is over 72 inches with a seasonally high-water table from January to December. The soil acidity ranges from extremely acid through moderately acid. This soil features a negligible surface runoff. This soil is mainly found in wetland wildlife habitats. The dominant vegetation supported is water tupelo, ash, red maple, bald cypress, and sweet gum with an understory of arrow-aryum, arrowhead, American waterlily, southern bayberry, alder, and greenbrier.

Craven Soil (10B)

Craven soil is a very-deep, moderately-well-drained, slowly-permeable soil found on the uplands of the Atlantic Coastal Plain that formed in marine sediments (NRCS 2019). Bedrock is located over 60 inches below the ground surface in this extremely acid to strongly acid soil. This soil can support both crops and woodland. Cultivated areas can support corn, soybeans, tobacco, cotton, small grains, peanuts, and pasture. Woodland areas can support loblolly pine, red maple, sweet gum, water oak, southern red oak, yellow poplar, black gum, white oak, post oak, American holly, and other overstory species. Understory species include bitter gall berry, sourwood, flowering dogwood, wax myrtle, blueberry, Carolina Jessamine, large gall berry, honeysuckle, and summer sweet clethera.

Bibb Soil (2A)

Bibb soil a very-deep, poorly-drained, moderately-permeable soil with a very slow surface runoff that formed in stratified loamy and sandy alluvium found on floodplains of streams in the Coastal Plain (NRCS 2019). This soil is extremely acid to strongly acid and is commonly flooded. This soil is dominantly native woodland consisting of sweet gum, loblolly pine, water oak, red maple, willow oak, green ash, bald cypress, swamp

tupelo, and black willow. A few areas have been cleared, drained, and are used for pasture.

Burrowsville Soil (5B)

Burrowsville soil is a very-deep, moderately-well-drained, slowly-permeable soil formed in the stratified marine and fluvial sediments located on the Coastal Plain (NRCS 2019). Solum thickness ranges from 40 inches to over 70 inches. Depth to the fragipan ranges from 18 inches to 36 inches. Soil acidity ranges from extremely acid through strongly acid unless limed. This soil features a slow to rapid surface runoff. This soil is used for general farm crops such as corn, soybeans, small grain, and peanuts. Where wooded, this soil supports loblolly pine and mixed hardwoods.

Kinston Soil (20A)

Kinston soil is a very-deep, poorly-drained, moderately-permeable soil formed in marine sediments found on floodplains of the Coastal Plain (NRCS 2019). Solum thickness ranges from 40 inches to 72 inches and depth to bedrock is over 72 inches in this strongly acid to very strongly acid soil. Content of rock fragments is 0% to 3% throughout the solum. This soil features a negligible surface runoff. Most of this soil is in forest with limited pasture and crop growth. Where cleared, this soil can support growing pasture, corn, soybeans, and general farm crops. Where wooded, this soil can support water-tolerant hardwoods such as sweet gum, black gum, water oak, poplar, hickory, beech, elm, and ironwood. Loblolly pines are also found in some drained areas.

Emporia Soil (15F)

Emporia soil is very-deep, well-drained, moderately-slowly- to slowly-permeable soil found on the uplands of the Atlantic Coastal Plain (NRCS 2019). Bedrock is over 72 inches below the ground surface in this very strongly acid to moderately acid soil. This soil supports both crops and woodland. Cultivated areas can support peanuts, soybeans, corn, tobacco, and cotton. Woodland areas can support loblolly pine, Virginia pine, red maple, sweet gum, oak, and hickory.

Uchee Soil (11C)

Uchee soil is a very-deep, well-drained, slowly-permeable soil that formed in sandy and loamy marine sediments and on smooth ridge tops and dissected side slopes of the Atlantic Coastal Plain (NRCS 2019). Solum thickness ranges from 40 inches to 60 inches in this very strongly acid to strongly acid soil. Much of this soil is cleared and used for cultivated crops including cotton, corn, and pasture. Wooded areas can support loblolly pine, longleaf pine, shortleaf pine, southern red oak, blue jack oak, and hickory.

Slagle Soil (29B)

Slagle soil is a very-deep, moderately-well-drained, moderately-slowly- to slowly-permeable soil found within marine terraces and uplands of the Atlantic Coastal Plain (NRCS 2019). Bedrock is located over 75 inches below the ground surface in this extremely acid to strongly acid soil. This soil is mainly used for crops and forestry. Where cultivated, this soil can support corn, soybeans, peanuts, and tobacco. Where

wooded, the soil can support loblolly pine, Virginia pine, sweet gum, red maple, southern red oak, water oak, yellow poplar, and hickory.

Jedburg Soil (17A)

Jedburg soil is a nearly-level, somewhat-poorly-drained, moderately-slowly-permeable soil formed in loamy and silty marine or fluvial sediments found on broad flats or slightly depressed areas on terraces on the Coastal Plain (NRCS 2019). This soil is very strongly acid to moderately acid and features a slow surface runoff. Most of this soil is planted in pines with understory species of myrtle, blackberry, gall berry, and broom sedge common. Some areas are cleared for row crops or pasture or have been cleared and replanted in pines.

Rains Soil (31A)

Rains soil is a very-deep, poorly-drained, moderately-permeable soil that formed in marine and fluviomarine sediments on flats, depressions, and Carolina Bays of the Southern Coastal Plain (NRCS 2019). Depth to bedrock is over 80 inches in this extremely acid to strongly acid soil. This soil also features a negligible surface runoff. Most of this soil is in forest or cropland. Where cleared, this soil can support corn, soybeans, and small grains. Where wooded, this soil can support pond pine, loblolly pine, and hardwoods.

Caroline Soil (6B)

Carolina soil is a very-deep, well-drained, moderately-slowly- to slowly permeable soil formed in clayey and marine sediments on the upper and middle part of the Atlantic Coastal Plain (NRCS 2019). Solum thickness ranges from 45 inches to over 84 inches and rock fragments of ironstone or quartz gravel make up 0% to 10% of the solum. Depth to stratified layers of sandy, clayey, or gravelly soil material is over 60 inches in this extremely acid to strongly acid soil. This soil features a medium to very rapid surface runoff. Cleared areas of this soil are used for corn, small grains, clover, soybeans, truck crops, and pasture. Large areas of the soil are planted in Virginia pine. Natural vegetation includes white oak, red oak, black oak, dogwood, hickory, sweet gum, black gum, holly, red maple, black cherry, sassafras, Virginia pine, shortleaf pine, and loblolly pine.

Previous Research

Circa~ performed an archival search for the Spring Grove II project area using the Virginia Department of Historic Resources (VDHR) online V-CRIS system on May 8, 2019. This research was completed to determine if historic resources exist within the project area boundaries. The search identified one archaeological resource and 16 architectural resources within a one-mile radius of the project area boundaries. Table 2 lists all of the resources within one mile of the project area boundaries. Figures 9 and 10 show the approximate project area boundaries (yellow-shaded area) and resources within close proximity. Of the resources identified, no archaeological resources and no architectural resource were identified within the project area.

According to the VDHR V-CRIS search, one Phase I survey has been completed within one-mile of the project area (Figure 11). The Virginia Department of Transportation (VDOT) conducted a Phase I archaeological survey or proposed improvements to Virginia Route 31 and the James River Ferry Approaches in Charles City, James City, and Surry Counties in 1977. In addition, Timothy A. Thompson, Lori Cousins, Martha McCartney, and Sam Margolin completed a *Phase I Report on Cultural Resources: Route 31 Study – James River Crossing* in 1988 for Virginia Commonwealth University (VCU). This survey was situated outside of the one-mile radius, however, Circa~ reviewed both of these survey areas in V-CRIS and noted 201 archaeological resources in Surry County within their survey borders. These sites include a mix of Native American and historic resources spread throughout their project areas to the north and east of the Circa~ project area, closer to the James River. According to the V-CRIS system, VDHR holds no easement within one mile of the project corridor.

Table 2. Resources Within a One-Mile Radius of Project Area Boundaries.

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
<i>Archaeological Sites</i>				
44SY0099 See also 090-0036	19 th century 20 th century	Dwelling, single	Phase I survey 1/76	None made
<i>Architectural Resources</i>				
090-0012	ca. 1724	Olde Glebe aka The Old Glebe aka Glebe House of Southwark Parish, 3700 Colonial Trail West, site includes one parsonage/glebe and one smokehouse	Historic American Building Survey (HABS) 10/58 Phase II survey 4/78	Listed on the Virginia Landmark Register 10/75 Listed on the National Register of Historic Places 5/76
090-0036	ca. 1780	Warren Crossroads House, 2546 Colonial Trail West, site includes two houses, one gazebo, three outbuildings, and one barn	Phase I survey 6/73 and 11/76	None made
090-0048	ca. 1840	Clerestory House, Route 618 and south of Route 10, site includes one house and one barn	Phase I survey 6/73	None made
090-5028	ca. 1932	Bridge #6018, Loafers Oak Road	Phase I survey 6/11	VDHR determined not eligible 7/11
090-5070	ca. 1950	Surry Hunt Club, 3526 Colonial Trail West, site includes one park shelter, one pole barn, and one animal shelter	Phase I survey 7/17	Recommended not eligible 7/17
090-5071	ca. 1950	House, 3800 Colonial Trail West, site includes one house, one garage, and one shed	Phase I survey 7/17	Recommended not eligible 7/17
090-5072	ca. 1960	Mobile Home, 3870 Colonial Trail West	Phase I survey 7/17	Recommended not eligible 7/17
090-5073	ca. 1972	House, 4038 Colonial Trail West	Phase I survey 7/17	Recommended not eligible 7/17

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
090-5074	ca. 1914	House, 4322 Colonial Trail West, site includes one house, one barn, three sheds, one well house, and one well	Phase I survey 7/17	Recommended not eligible 7/17
090-5075	ca. 1901	House, 5014 Colonial Trail West, site includes one house, two barns and one well	Phase I survey 7/17	Recommended not eligible 7/17
090-5076	ca. 1960	Mobile Home, 5777 Hollybush Road, site includes one mobile home, two pole barns, one shed, and seven silos	Phase I survey 7/17	Recommended not eligible 7/17
090-5077	ca. 1964	House, 5899 Hollybush Road, site includes one house, one barn, one well house, and one well	Phase I survey 7/17	Recommended not eligible 7/17
090-5078	ca. 1972	House, 6180 Hollybush Road, site includes, one house, one garage, and one shed	Phase I survey 7/17	Recommended not eligible 7/17
090-5079	ca. 1960	House, 6442 Hollybush Road, site includes one house, one shed and one well house	Phase I survey 7/17	Recommended not eligible 7/17
090-5084	ca. 1970	Mobile Home, 2188 Colonial Trial West, site includes one mobile home, one shed, and one well	Phase I survey 7/17	Recommended not eligible 7/17
090-5085	ca. 1970	Mobile Home, 2194 Colonial Trail West, site includes one mobile home and one shed	Phase I survey 7/17	Recommended not eligible 7/17

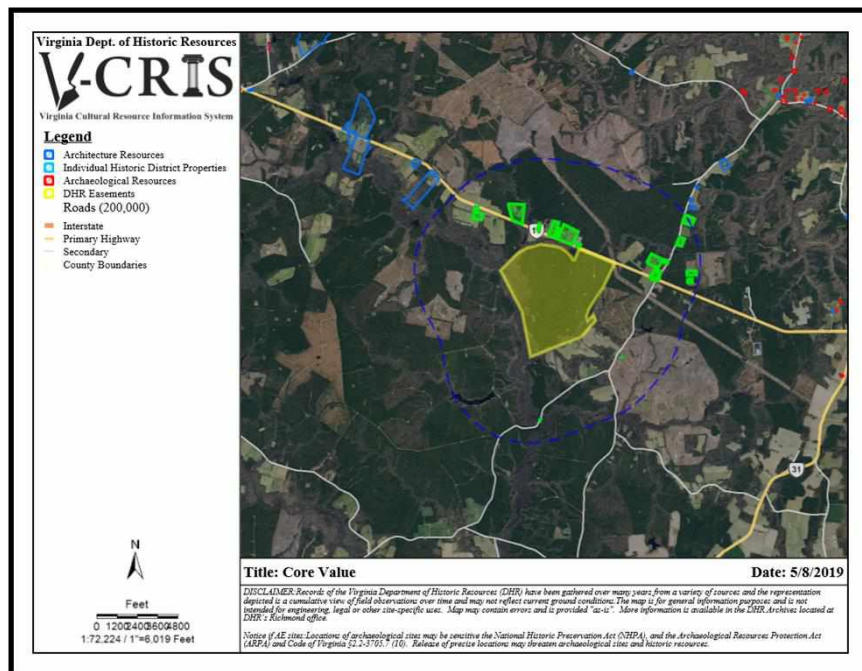


Figure 9. V-CRIS map showing previously-identified resources within a one-mile radius of project area boundaries.

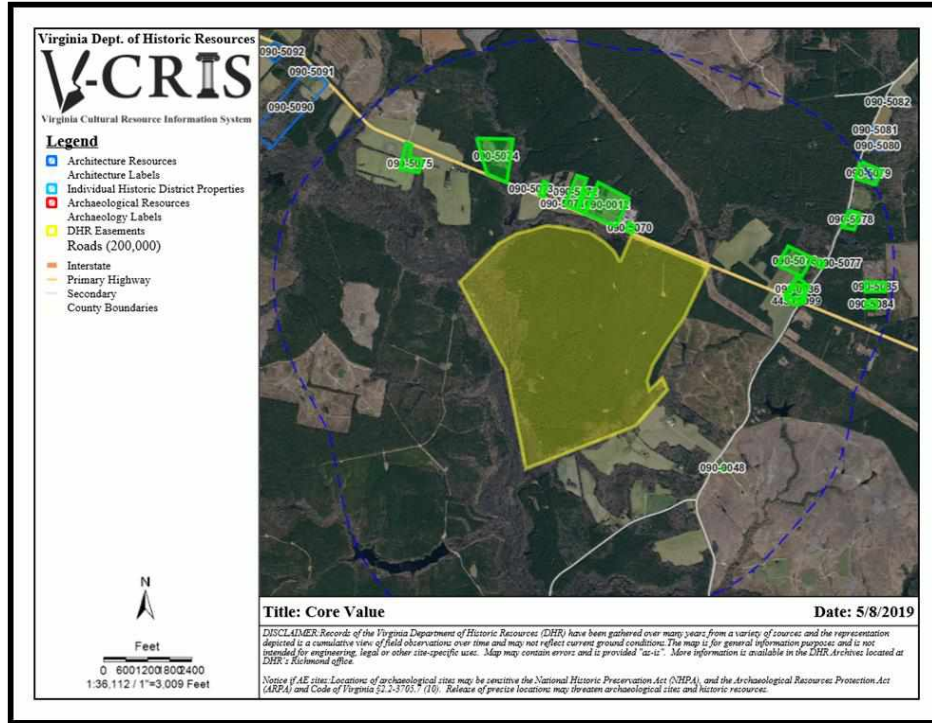


Figure 10. Detailed V-CRIS map showing previously-identified resources within proximity to the project area boundaries.

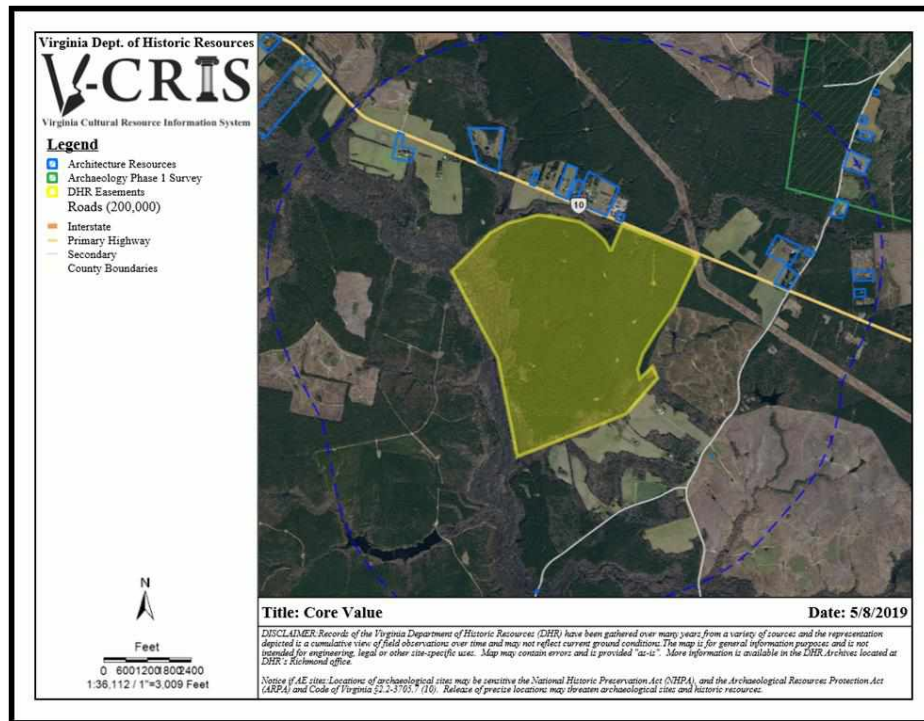


Figure 11. VDHR V-CRIS map showing project area in yellow and previous-survey areas outlined in green.

Maps of the area drawn during the mid- to late-19th century and 20th century show the property as open land with no development throughout this period, although several names are associated with the area surrounding the project area during the late 19th century (Figures 12 – 18).

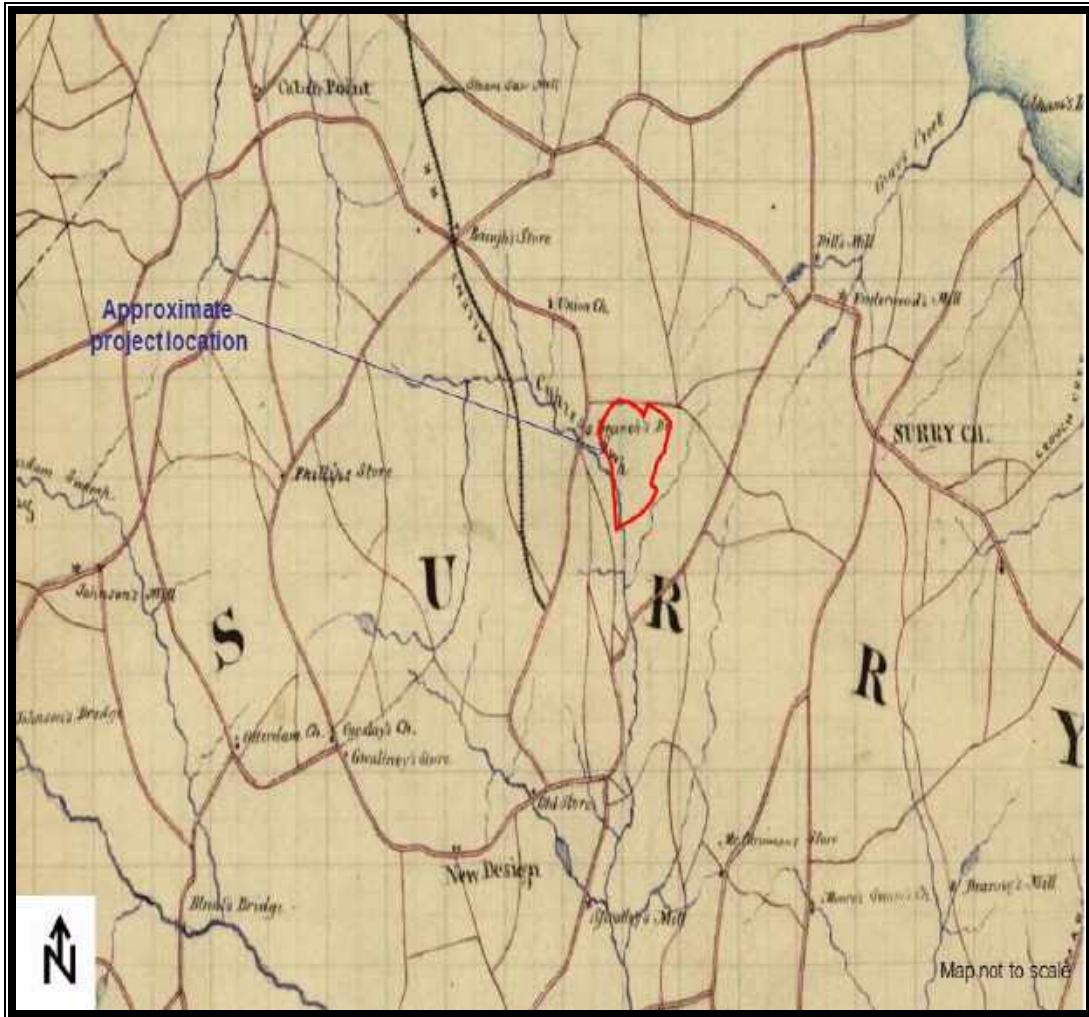


Figure 12. Detail of *Charles City, Pr. George and Surry counties, Virginia* by Jedediah Hotchkiss, 1867.

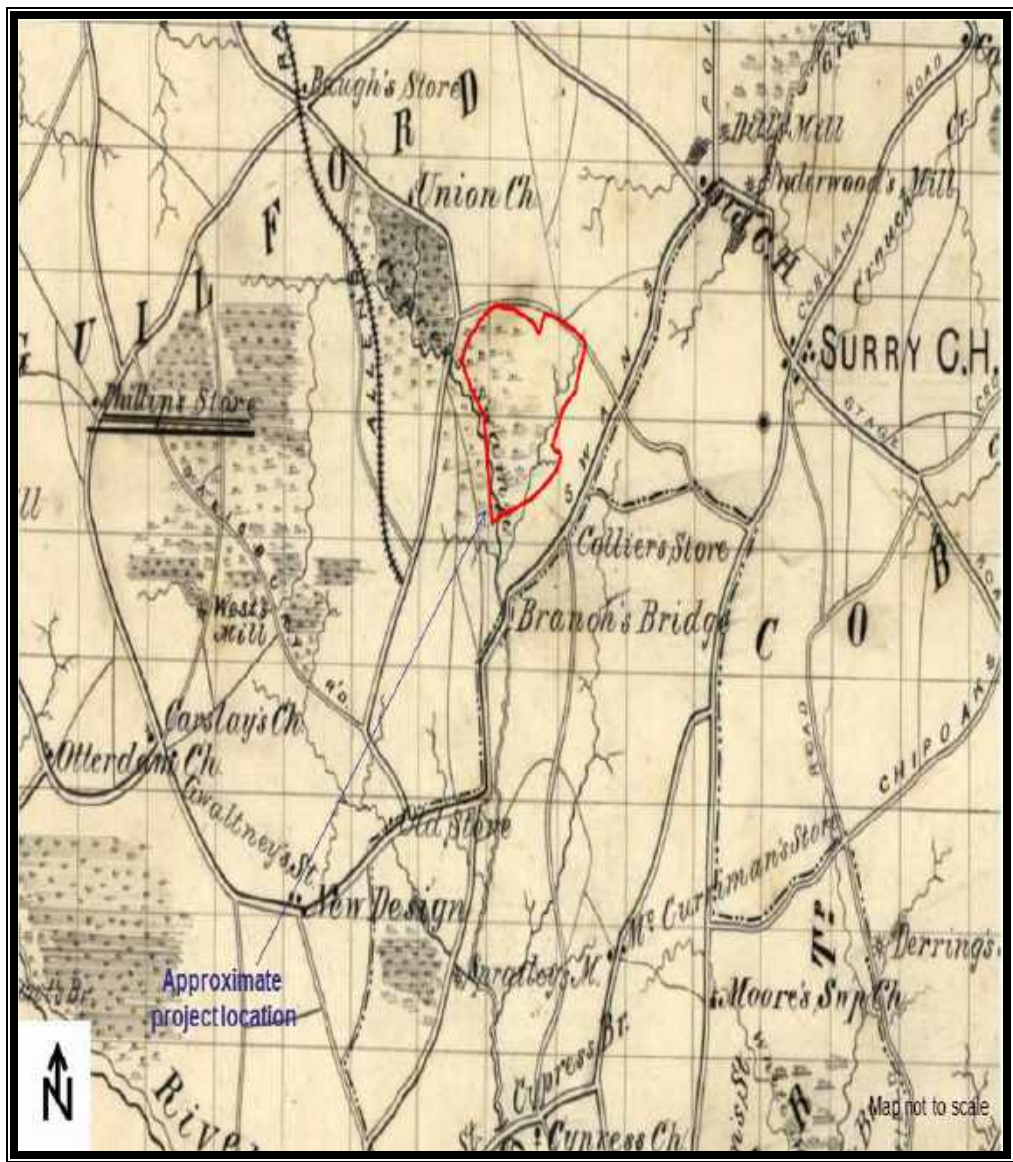


Figure 13. Detail of Preliminary map of Surry County, Virginia by Jedediah Hotchkiss, 1871.

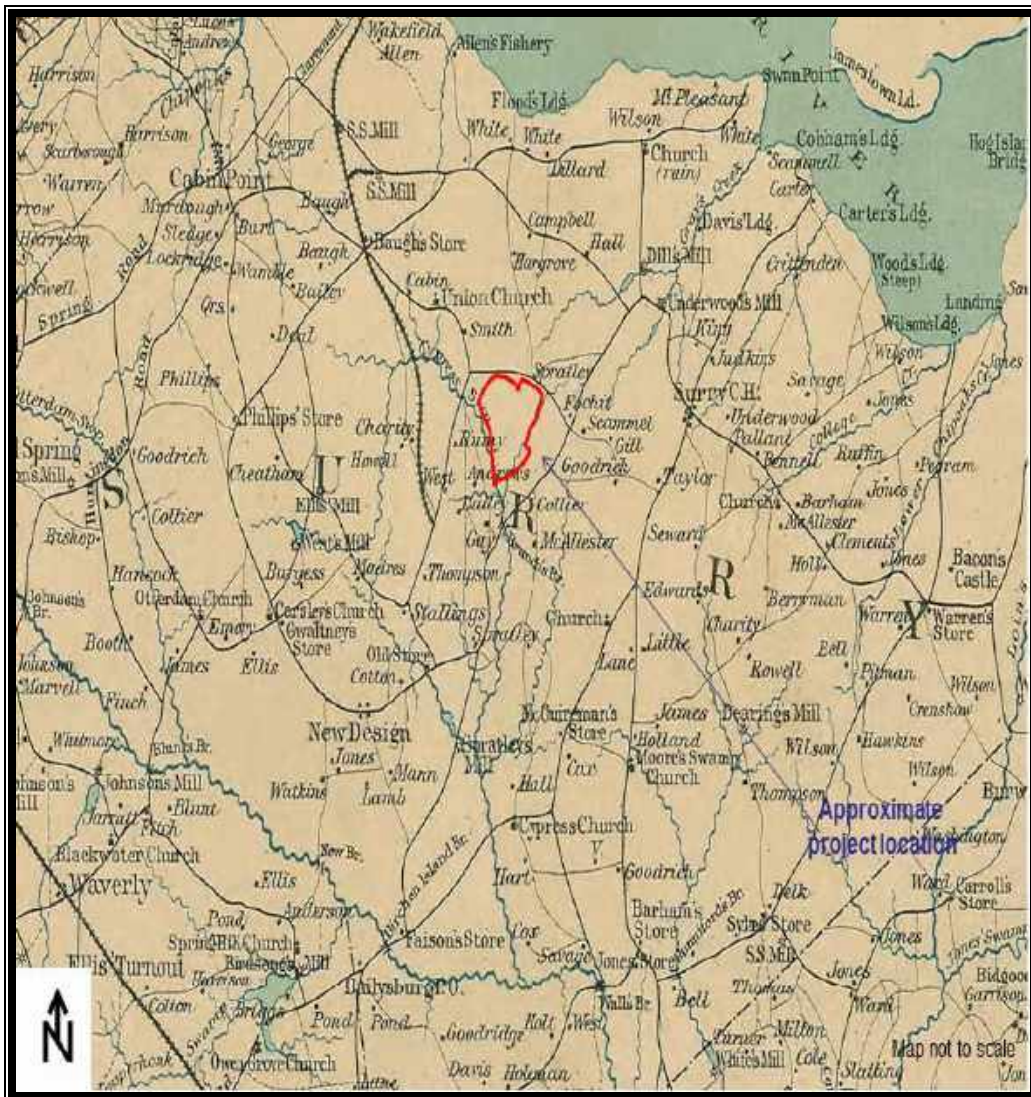


Figure 14. Detail of Preliminary map of a part of the south side of James River, Va.: from surveys and reconnaissances, Confederate States of America. Army of Northern Virginia. Engineer Office., 1891.

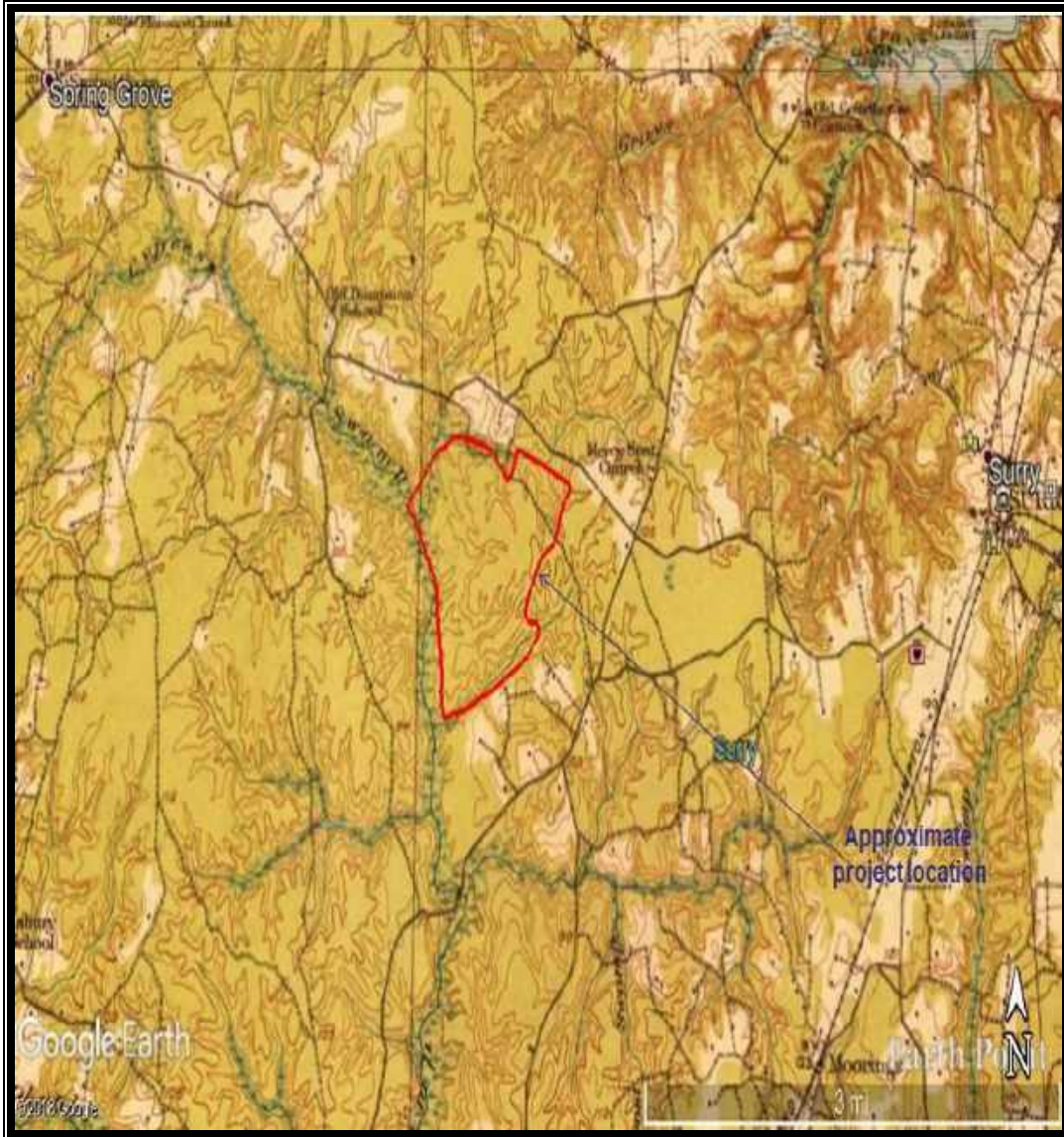


Figure 15. Detail of 1919 Surry quad.

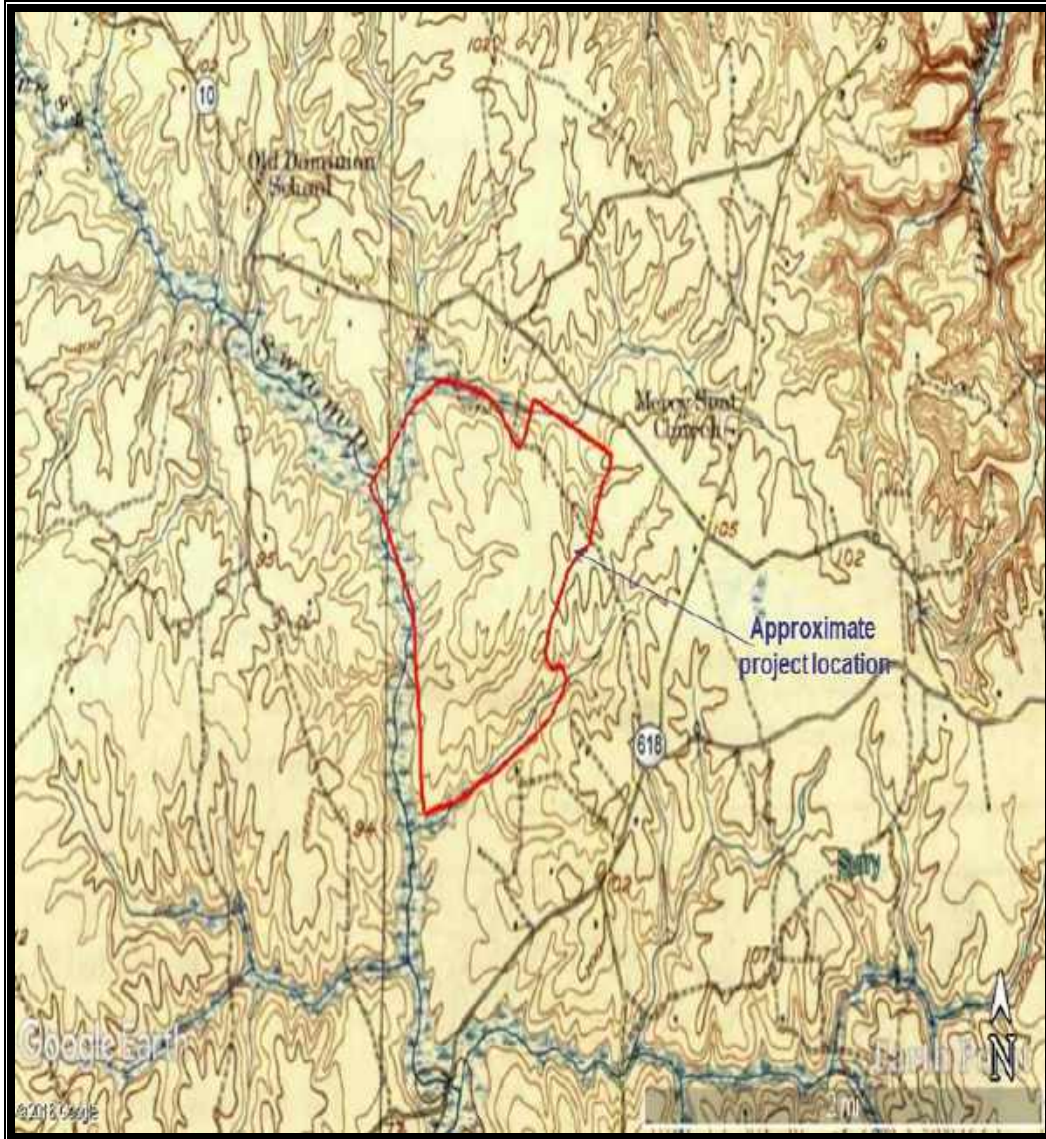


Figure 16. Detail of 1945 Surry quad.

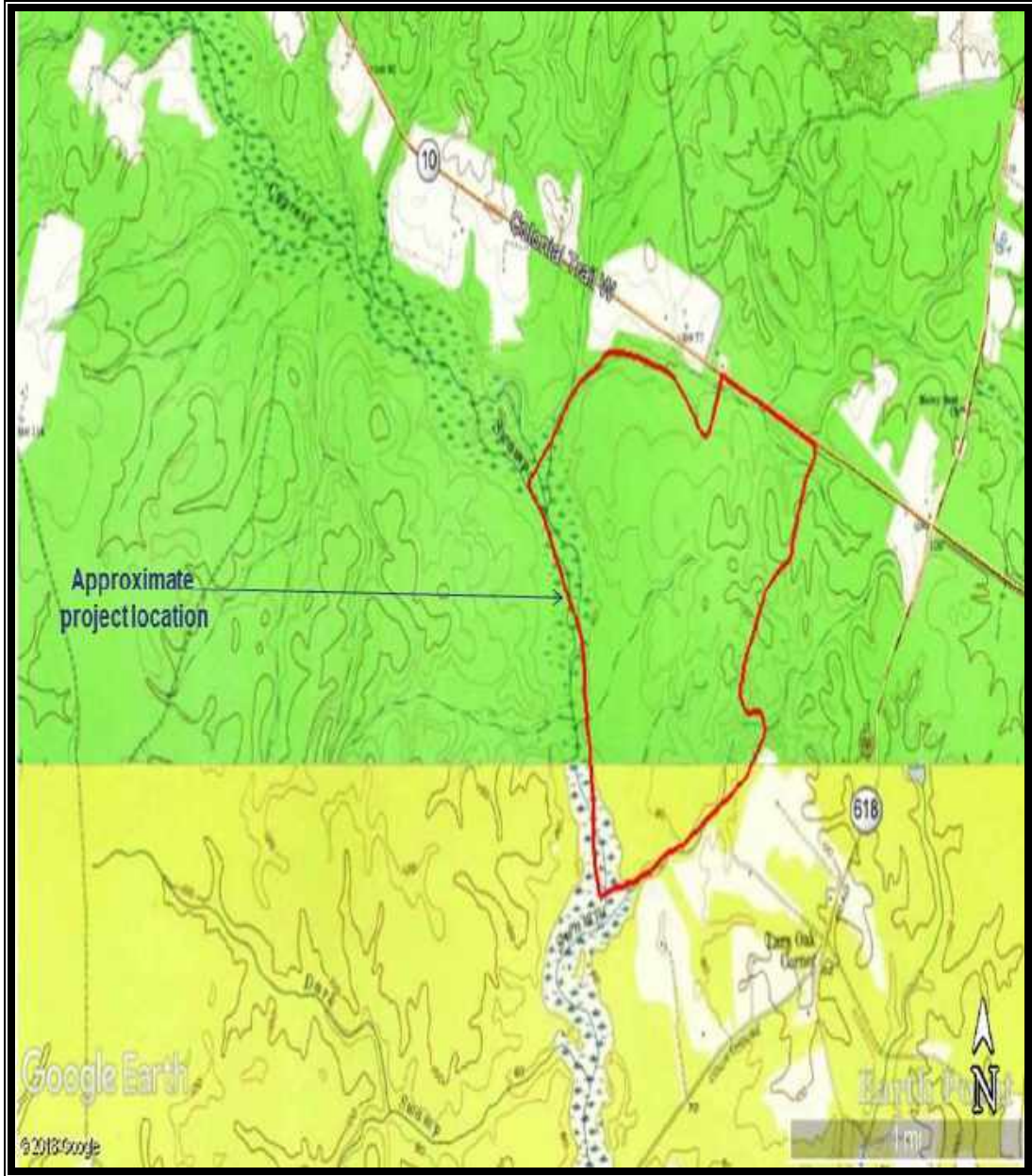


Figure 17. Detail of 1966 Claremont and Dendron quad.



Figure 18. Detail of 1986 Claremont and Dendron quad.

Results and Summary

This study was conducted to provide information on the current condition of the property, as well as to assess the potential for the presence of archaeological or architectural resources within the project area and a review of structures located adjacent to the project area. Fieldwork was included a pedestrian walkover of the tract to identify any obvious archaeological or architectural resources and the site potential of various landforms. All open, exposed areas were inspected for the presence of artifacts and signs of cultural features. In addition, 28 judgmental shovel tests were excavated to sample the stratigraphy of the landforms. Plates 1 through 40 show the current condition of the project tract.

Not including natural processes such as flooding, erosion, forest fires, global warming, and so on, four chief human processes have had the greatest effect on the condition of the property: clearing of wooded areas; plowing; the development and improvement of transportation corridors; and the development of parcels within the tract. The clearing of floral material and the harvesting of timber have impacted the project tract. Depending on the process of clearing or timber harvesting, it can have a detrimental effect on archaeological resources ranging from mild to severe. Probably the most potentially destructive stage of the logging process occurs when cut trees are dragged to a staging area. The tires on the vehicles that perform this task can gouge and tear up the ground. This is especially the case when the ground is wet or saturated as is common in portions of the project area. Because this kind of damage to the landscape is also an erosion hazard, most logging companies now abide by a set of conditions known as “best management practices,” which require the use of special tires, and restrict harvesting during rainy conditions. In addition, the removal of stumps, either by grubbing or by excavation, also has a detrimental effect on archaeological resources; within the project area Circa~ noted that the stumps were removed. Circa~ did note some stumps from smaller sized trees within the rows of larger trees. These stumps are from the thinning activities that occur within the pine plantation. In most cases, archaeological resources situated directly in the path of a logging or farm road have been destroyed, or at the very least, severely compromised.

The majority of the project tract has been clear-cut of timber at least three times, possibly more; and the shovel tests excavated in the project area showed a mixed soil profile with some tree limb inclusions in the shovel test under a thin recent humic layer.

Predictive Factors of Prehistoric Site Distribution

High-probability areas for the locations of prehistoric Native American sites must consider multiple factors and will always include low relief, adequately-drained soils, and proximity to water. It is assumed that, prior to the disruption of the economy through European encroachment and disruption of traditional land use, settlement choice was based mainly on environmental factors and that this was especially so prior to the emergence of a paramount chiefdom among the Algonkians of the Coastal Plain of the James, York, and Rappahannock drainages, and the shifting of political and social boundaries that occurred during that time and, more so, from the 17th century on.

For this exercise, variables looked at included relief, soils, distance to water, and elevation. Each one is outlined briefly below.

Low Relief

Generally, areas of high relief are eliminated from consideration of areas of potential archaeological sensitivity, as they are not considered habitable and, in prehistoric times, were not used as dwelling and camping spots. Accordingly, low relief is a base factor for prehistoric Native American site prediction.

Based on a fine-contoured topographic map (five-foot intervals), all areas of low relief (e.g., less than 15% slope) are viewed as potentially-habitable terrain, if soil factors

indicate that drainage is sufficient. It should be noted here that, for outlining areas of high-site potential, the contour map was relied on, as was the slope ranges indicated from soils mapping data.

Although slope is included in formal soil series definitions, the mapping areas can often include pockets of differential relief that were considered too small to be practical to map. Consequently, areas of high relief indicated by the series definition can sometimes make for faulty predictions by eliminating isolated areas of high potential for site locations. Within the one-mile buffer of the project area, only one 19th to 20th century archaeological site and three 18th century houses were previously identified. However, several archaeological surveys were completed to the north and northeast of the project area in 1998 by VCU and in 2011 by William and Mary Center for Archaeological Research (WMCAR). These surveys located prehistoric Native American sites on well-drained soils near water sources. When locations of these sites were looked at individually, however, it was found that prehistoric sites were located on small elevated landforms along the stream channels at the base of more sloping areas that had been subsumed under a broad category that did not accurately reflect the true relief of the site location. Within the project area, similar landforms as noted in the previous studies, fall within the buffer and will be avoided by development. In addition, the previous surveys indicated Native American sites were located on the edges of uplands within 300 feet of a water source.

Soils and Drainage

The soils category, broken down at the soil series level (or soil series complexes), is used as a general indicator of drainage. Looking at the soils on the project area, the minority are classified as well-drained or moderately-well-drained. By themselves, these adequately-drained soils are not looked at as indicators of site potential; rather, they operate as such when combined with low relief and distance to water. However, poorly-drained soils are factors that, by themselves, can be indicators of low-site potential, depending on the severity of the drainage impediment.

Within the project area, the poorly-drained soils are located along the edges of the stream channels and in low flats. The least well drained of these types of soils, and the ones that factor most importantly in defining areas of low potential, are classified as “hydric” types (i.e., soils that are saturated or, in some cases, inundated, for extended periods, and that support wetlands vegetation).

A look at soils correlated with the data at hand on site locations noted to the northeast and east of the project area indicates that the Craven fine sandy loam, Craven-Slagle complex, and Emporia fine sandy loam contains the largest numbers of sites, both prehistoric and historic. It should also be noted the soil types are mapped with 2% to 6% slopes and are mostly located on the uplands and along the streams and marshes. Within the project area, Craven soils consist of 99.40 acres located in the central portion, Slagle soils consist of 114.80 acres located in the southern and northern portions, and Emporia soils consist of 7.10 acres within the southern portion.

Given this situation, all soils that have adequate drainage are therefore looked at as having equal potential for prehistoric site locations if factors such as water and low relief are considered. As discussed above, poorly-drained soils may work by themselves as a factor that eliminates high-site potential, while other factors should be taken into consideration when looking at locations where better soils for human occupation are present.

Distance to Water

The distance of a site from water is normally assumed to indicate, above all else, the accessibility of a potential location of potable water; however, depending on the type of water, its proximity to a site may also signal resource potential (aquatic food resource, wetland plants, etc.) and, in the case of larger streams and rivers, convenient access to transportation routes.

For the present study, the distance to water is the nearest mapped source, based on modern cartographic data. Unless an otherwise unknown source such as an unmapped spring is known and located, this method is the only way to look at this factor. The caveat that other sources now extinct may have been closer to the sites should be considered. In many cases, sites may have had water sources such as springs that have dried up and since become reduced to silted concavities and intermittently dry drainway swales. This scenario is undoubtedly true in many cases but, unfortunately, cannot be predicted from mapping data or, in many cases, cannot be positively demonstrated on the ground.

A common-sense approach would indicate that most sites would be located as close to water as possible and, for the most part, this conventional wisdom proved true. However, the distance range proved rather large. For example, broken down by 100-foot intervals (assuming 0 as adjacent) from a present-day water source, roughly 65% of the previously-identified sites were located in the 0 to 100-foot range of water. At the same time, simply looking at where most of the sites were located indicated that some sites were located in a broad range of 100 to 400 feet from water. Only two sites, minor components on later-period historic sites, were located farther away from water within the 1,000 to 1,200-foot range.

Elevation

Elevational placement of a site may relate to multiple factors but, in general, lower elevations that are not located in low-lying floodplains, depressions, and wetlands are assumed to indicate proximity to a water source or, in some cases, proximity to aquatic or wetland resources. However, at higher elevations, other factors such as locations of greatest mast cover may be at work.

A review of the previously-identified sites to the northeast and east indicated that most the sites are located in the 0 to 25-foot AMSL range, typical in this area as Surry County is fairly level with relief mostly restricted to the stream channels. It must be kept in mind however, that sampling error in which certain parts of the County have been surveyed and some have not been surveyed probably also plays a part.

Predicative Factors of Historic Site Distribution

The most influential historical studies of settlement patterns in the coastal plain have emphasized the importance of economic and ecological factors in the process by which Euro-Americans distributed themselves across the landscape. From the standpoint of cultural resource management, this “descriptive,” or “functional,” approach is most useful in creating a testable model of historic settlement patterns, considering variables such as soil type, the availability of fresh water, proximity to neighbors, and access to transportation routes (Edwards and Brown 1993).

Over time, the relative importance of locational variables has shifted in response to economic, technological, and social developments. Accordingly, this site predictability model examines historic site settlement patterns during two broadly-defined periods: the “colonial” era (circa 1650 - 1800) during which tobacco was the mainstay of the region’s economy, and the 19th century (circa 1800 - 1920), when grain crops replaced tobacco as the mainstay of the agricultural system. Analyzing the available evidence from previously-identified sites and map-projected resources, it is possible to define key environmental factors to consider in projecting patterns in historic settlement at the site over time, and then use these patterns to create a testable model.

Colonial Period Settlement

European settlement in the area began in the early 17th century, when large tracts of prime river land were granted to the Virginia’s elite tobacco planters. Since the James River served as the primary artery of transportation and communication during the colonial period, planters and tenants alike settled initially in the fertile river valley. In his quantitative study of settlement patterns in colonial James City and York counties, Craig Lukezic discovered that soil type, more than any other consideration, determined where Chesapeake tobacco planters chose to live. Tobacco dominated the Virginia economy from the beginnings of English settlement in Tidewater through the American Revolution, and correspondingly dictated the nature of social and race relations. Since tobacco was overwhelmingly important as a staple crop, Lukezic hypothesized, it should follow that planters would choose to settle on lands most conducive to growing this crop. When he examined statistically the relative importance of a variety of environmental factors in site selection, including soils, access to drinking water, proximity of navigable waterways, and distance from the nearest neighbor, Lukezic discovered that soil type, above all, was the most significant locational factor affecting colonial settlement (Campbell 1954; Lukezic 1990).

Tobacco plants grow best in gently-sloped (2% to 6%), well-drained, loosely-structured soils such as light sand or sandy loam. The taste of the tobacco is also strongly influenced by soils, the best flavor imparted by those with siliceous parentage. Using data supplied by the Soil Conservation Service, United States Department of Agriculture, Lukezic (1990) ranked soils according to their suitability for tobacco cultivation. Using this information, it is possible to test Lukezic’s model, with the assumption that colonial era settlement would have been concentrated within those areas characterized by soils that yielded the best tobacco crops.

Though soil type is critical to the success of tobacco cultivation, topography is also an important consideration. Since tobacco plants will not mature properly if the roots are deprived of oxygen (e.g. by flooding), gently-sloping soils in the range of 2% to 6% provide the ideal drainage for healthy plants. Once again, a review of the colonial sites identified near the project area were examined, indicated that most the sites were situated on slopes of 2% to 6%, with a few sites characterized by slopes of 10% or less.

The distance of identified colonial sites to water and site elevation were also considered, though the variability of these factors between sites suggested, as Lukezic had noted for James City and York counties, that these considerations were not as important as soil and slope in influencing settlement patterns. Among these sites, the distance from water ranged widely between 0 and 1,600 feet, with a mean distance of 800 feet. Similarly, elevations varied between 30 and 185 feet AMSL, with an average elevation of 78 feet AMSL.

In conclusion, it appears that Lukezic's model for predicting Tidewater settlement patterns in the colonial period holds equally true for this section of Surry County based on the locations of previously-identified sites. The primary considerations in defining areas of high probability for colonial sites therefore should be soil type and slope, with an emphasis on soils of the Kempsville-Emporia complex with slopes of 10% or less. The probability of locating colonial period resources diminishes accordingly on soil types and slopes less conducive to growing tobacco. In addition, in the colonial period, structures were generally placed near the edges of fields to maximize the field size and crop output.

19th Century Settlement

By the latter years of the 18th century, all Tidewater planters, great or small, were beginning to feel the pinch of a sputtering, century-old tobacco economy. After a few decades of prosperity, tobacco prices once again were on the decline by the 1760s and 1770s. Severe economic problems in England precipitated by the costly Seven Years' War reverberated throughout the colonies. Faced with economic ruin, English merchants began calling in their debts, undermining the very foundation of the Tidewater economic system. For some time, Virginians of all ranks had relied on British credit to maintain, and gradually increase, their consumption of imported goods, thereby raising their standard of living. This constriction of credit threatened to topple even the most prominent planters. Meanwhile, decades of intensive tobacco farming had simply exhausted all the best tobacco land, making it difficult—if not impossible—to boost production to counteract dwindling prices (Kaplan 1993).

By the beginning of the 19th century, a fundamental shift had occurred in the rural economy of the County. Farmers responded to the decline of tobacco by shifting their emphasis to raising grain crops and livestock. At the same time, a small group of Virginians dedicated to “scientific agriculture” helped to usher in a new era of productive farming. In his series of essays entitled *Arator*, Caroline County's John Taylor demonstrated the benefits of four-field crop rotation, in which soils could be improved significantly by rotating corn, wheat, fertilizer, and clover. Similarly, in the early 1820s

Edmund Ruffin publicized the effectiveness of marl in reducing soil acidity, a technique that could triple the productivity of Tidewater soils. Other agricultural improvements included contour plowing to reduce erosion, cast-iron plows, threshing machines, and corn shellers (Kaplan 1993).

The conventional historical wisdom asserts that the decline of the tobacco economy, the introduction of new crops, and advances in farm management and fertilization had a significant effect on settlement patterns in 19th century Surry County, as throughout Tidewater. Lands formerly considered marginal could now be incorporated into agricultural production, a process accelerated by the increasing subdivision of family farms through inheritance. Extrapolating from Lukezic's model, the environmental characteristics of 19th century sites theoretically should exhibit a diminishing correlation between soil type and settlement. Where the source of information on the location of prehistoric and colonial period sites is based almost entirely on archaeological survey information, locational data on 19th century sites is available in both the archaeological and documentary record. The first detailed maps of this area were created during the Civil War and provide a relatively-accurate picture of settlement patterns across the landscape of Surry County. No structures are shown on any of the historic maps within the project area. Structures are shown surrounding the project area, and this could indicate that the lands were part of estates or farms with the main dwellings situated along the transportation corridors.

A review of the previously-identified historic archaeological sites and standing period architectural structures in the area indicated that most 19th century sites were situated on the same prime agricultural lands formerly used for growing tobacco. Naturally, Surry County farmers continued to use fields that had been planted in tobacco, replenishing the depleted soils through more sophisticated crop rotation and fertilizers. However, the 19th century site settlement pattern diverges from that of the colonial period in terms of the variety of soil types exploited, many of which had not been suited to growing tobacco. It should be noted that in a handful of cases the sites examined were not agricultural (e.g. mills and churches) and soil productivity was clearly not a major consideration in their location. Still, it is evident that significantly more soil types were used for settlement in the 19th century than during the colonial period.

Aside from determining that soil type remained an important factor, though somewhat diminished, in 19th century settlement patterns, a comparison of archaeological versus map-projected sites reveals that the two sources of site data yield remarkably similar results. In nearly every instance the proportion and rank of different soil types are similar, suggesting that this information, when integrated, should provide a relatively-accurate picture of this area's cultural landscape in the 19th century. From a practical standpoint, the site predictability model for 19th century resources should focus on map-projected sites. However, soils analysis will provide an additional means to identify possible site locations that, for whatever reason, do not appear on Civil War mapping.

Though it is clear that Surry County farmers were better able to bring formerly marginal soils into production, a review of the existing sites shows there was no significant change

in topographical considerations in 19th century settlement. As with the colonial period, most the sites were located in areas of gentle (2% to 6%) slope, with some existing structures located on the edges of upland knolls with slopes of 6% to 10%.

As with colonial period sites, it does not appear that elevation or distance to water were not critically important factors in 19th century settlement patterns. A review of archaeological sites and existing architectural resources is virtually identical, emphasizing the complementary nature of these two sources. In the case of both elevation and distance to water, the broad range of values suggested that these factors were not primary considerations in site selection. For example, the distance to water evidenced by previously-identified 19th century archaeological sites ranged between 0 and 2,500 feet (average distance 1,200 feet), while elevations varied from 20 to 240 feet AMSL (average elevation 110 feet AMSL).

In conclusion, both the archaeological and cartographic data indicates that soil type and slope remained the most important locational factors in 19th century settlement patterns. The somewhat broader variety of soils brought into production can be explained by advances in agricultural practices, though it is clear that areas of prime farmland and gentle slope were still most valued for farming and settlement. From a practical standpoint, the projected high-probability areas for 19th century resources at the project area will overlap to a large degree with those for colonial period sites but will also include a somewhat broader variety of soil types.

Areas of Site Potential

The project tract originally contained areas of low, moderate, and high archaeological site probability. According to Circa~'s assessment, areas classified as low-potential are areas of moderate to steep slopes, wetlands and poor soil; moderate-potential areas are level landforms that contain somewhat well-drained soils; and high-potential areas are well-drained soils located proximal to existing water, historic resources, and transportation corridors.

Areas of low-archaeological potential within the project area generally include the moderate to steep side slopes of the uplands, wetlands, and areas that are a great distance from transportation corridors and surface water sources. Judgmental shovel tests excavated in these areas revealed a disturbed, mixed profile with some debris from trees. Circa~ did not note any resources in these areas during the walkover assessment.

Moderate-potential areas are defined as those which, based on landform and location, are moderately likely to contain at least some type of archaeological remains, either Native American, historic, or both. Similar landscapes in the project area region have contained some landforms with level, moderately-drained, moderately-productive soils, a moderate proximity to surface water sources, and a moderate distance from historic resources and transportation corridors. However, within the project area, these areas have been severely compromised by the use of the level landforms for timber-staging areas and the repeated harvesting, grubbing, and replanting of trees. Judgmental shovel tests excavated in the areas also revealed a disturbed, mixed profile with tree debris.

High-potential areas are defined as those which, based on landform and location, are very likely to contain at least some type of archaeological remains, either Native American, historic, or both. As similar settings in the project parcel contain some landforms with level, well-drained, productive soils, proximity to surface water sources, proximity to transportation corridors, and proximity to historic resources they are additionally viewed as having high potential for historic settlement. However, most of the project tract has been clear-cut of timber at least three times, possibly more.

Using most of the factors described and discussed above, areas on the project area are therefore divided into three categories of varying potential for the locations of prehistoric Native American archaeological sites: low, moderate, and high.

- Areas of low potential are found in three settings where independent variables suggest that prehistoric sites are unlikely: 1) those where: slopes are greater than or equal to 15%; 2) areas where there is low relief, but soils are hydric; or 3) areas where there is low relief and adequate drainage, but the distance from water is greater than 400 feet. However, within the project area, these potential areas appear to be disturbed from the timber harvest activities during this century, i.e. removal of tree debris and land clearing.
- Areas of moderate potential are those that combine the following: relief is less than a 15% slope, soils are well-drained or moderately-well-drained; and distance to water is greater than 400 feet and no farther than 1,000 feet. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, removal of tree debris, and land clearing.
- Areas of high potential are those that combine the following: relief is less than a 15% slope, soils are well-drained or moderately-well-drained, and the nearest distance to water is 400 feet or less. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, removal of tree debris, and clearing activities.

Using most of the factors described and discussed above, areas on the project area are therefore divided into three categories of varying potential for the locations of historic archaeological sites: low, moderate, and high.

- Areas of low potential are found in three settings where independent variables suggest that historic sites are unlikely: 1) those where: slopes are greater than or equal to 15 percent; 2) areas where there is low relief, but soils are hydric; or 3) areas where there is low relief and adequate drainage, but the distance from water is greater than 1,200 feet. However, within the project area, these potential areas appear to be disturbed from the timber harvest activities during this century, i.e. removal of tree debris and land clearing.

- Areas of moderate potential are those that combine the following: relief is less than a 15 percent slope, soils are well drained or moderately-well drained; and distance to water is greater than 400 feet and no farther than 1,200 feet. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, stump removal, land clearing, and plowing activities.
- Areas of high potential are those that combine the following: relief is 2 to 6 percent slope, soils are well drained or moderately-well drained, and the nearest distance to water is 400 feet or less. However, within the project area, these potential areas appear to be disturbed from their use as timber-staging areas, stump removal, land clearing, and plowing activities.

The project area was historically used as a pine plantation throughout the 20th and 21st centuries. This timbering activity within much of the project area has severely impacted the potential for archaeological resources to remain intact within the project tract. Tree limbs mixed with subsoil is evident over much of this area. Most of the project tract has been clear-cut of timber at least three times, possibly more. In addition, the debris from the timber harvesting was bulldozed into piles to be burned. A review of Google Earth aerial photos shows that the trees within the project area were harvested at various times in the past.

In the summer of 2017, Circa~ completed a Phase I survey on a 1,129-acre tract to the north of the project area prior to the construction of a solar farm. The assessment identified areas of low, moderate, and high probability on a tract of land that was not as disturbed by timbering (stumps were left in place), no plowed areas, and the tree limbs were burned. That excavation of 1,777 shovel tests resulted in only one find near the power line easement.

In sum, the timbering, grubbing of stumps, clearing the land, and reclaiming and replanting activities have had a severe impact on the condition of the soil within the project area. The trees within the tract have been harvested throughout the 20th century. In addition, the ground was further disturbed by the bulldozing of the treetops and limbs into burn piles. The walkover identified ground disturbance throughout the tract by the timbering operations with the soil mounded up. In addition, a small possible borrow pit was noted in the northern section of the project area. Circa~ recommends no further archaeological survey for the overall project area. Circa~ does recommend a Phase I architectural survey of the half-mile buffer around the boundaries of the project area. Site 090-0012, the Glebe, is located to the north of the project area and Circa~ identified an historic school site under renovation to the east of the project area (Plates 41 and 42).

Sources:

Edwards, Andrew C., and Marley R. Brown III

1993 "Seventeenth-Century Chesapeake Settlement Patterns: A Current Perspective from Tidewater Virginia," in Theodore R. Reinhart and Dennis J. Pogue (eds.), *The Archaeology of 17th-Century Virginia*. Special Publication No. 30 of the Archaeological Society of Virginia, Dietz Press, Richmond, Virginia.

Kaplan, Barbara Beigun

1993 *Land and Heritage in the Virginia Tidewater: A History of King and Queen County*. Cadmus Fine Books, Richmond, Virginia.

Lukezic, Craig

1990 "Soils and Settlement Location in 18th Century Colonial Tidewater Virginia." *Historical Archaeology* 24(1): 1-17.



Plate 1. View of project area, looking south.



Plate 2. View of project area, looking northwest.



Plate 3. View of project area, looking southwest.



Plate 4. View of project area, looking west.



Plate 5. View of project area, looking southeast.



Plate 6. View of project area, looking south.



Plate 7. View of project area, looking east.



Plate 8. View of project area, looking southeast.



Plate 9. View of project area, looking south.



Plate 10. View of project area, looking southeast.



Plate 11. View of project area, looking west.



Plate 12. View of project area, looking southeast.



Plate 13. View of project area, looking south.



Plate 14. View of project area, looking north.



Plate 15. View of project area, showing the thinning of trees between rows, looking south.



Plate 16. View of project area, looking southeast.



Plate 17. View of project area, looking west.



Plate 18. View of project area, looking east.



Plate 19. View of project area, looking south.



Plate 20. View of project area, looking west.



Plate 21. View of project area, looking northwest.



Plate 22. View of project area, looking south.



Plate 23. View of project area, looking south.



Plate 24. View of project area, looking southeast.



Plate 25. View of project area, looking west.



Plate 26. View of project area, looking west.



Plate 27. View of project area, looking east.



Plate 28. View of project area, looking north.



Plate 29. View of project area, looking southeast.



Plate 30. View of project area, looking south.



Plate 31. View of project area, looking east.



Plate 32. View of project area, looking north.



Plate 33. View of project area, looking northwest.



Plate 34. View of project area, looking northeast.



Plate 35. View of project area, looking north.



Plate 36. View of project area, looking west.



Plate 37. View of timber staging area, looking south.



Plate 38. View of timber staging area, looking south.



Plate 39. View of timber staging area, looking southwest.



Plate 40. View of timber staging area, looking west.



Plate 41. View of New Design School on the eastern side of the project area along Hollybush Road, looking northwest towards the project area.



Plate 42. View of New Design School on the eastern side of the project area along Hollybush Road, looking northwest towards the project area.

Julia Campus

From: Carol Tyrer <Carol@circacrm.com>
Sent: Tuesday, August 20, 2019 12:13 PM
To: Rick Thomas; Julia Campus
Subject: Fwd: DEQ Review of Spring Grove II Archaeological Assessment

Good to go for the archaeology
Sent from my iPhone

Begin forwarded message:

From: "Egghart, Christopher" <christopher.egghart@deq.virginia.gov>
Date: August 20, 2019 at 11:40:28 AM EDT
To: Roger Kirchen <roger.kirchen@dhr.virginia.gov>
Cc: Mary Major <mary.major@deq.virginia.gov>, Carol Tyrer <Carol@circacrm.com>
Subject: DEQ Review of Spring Grove II Archaeological Assessment

Roger,

I have reviewed the document *Management Summary and Archaeological Probability Analysis Spring Grove II Solar Site Surry County, Virginia* prepared by Circa, Cultural Resource Management LLC, dated May 2019.

Based on the desktop analysis provided by Circa, the project area is generally Low Probability for historic archaeological resources. The project area is also deemed Low Probability for prehistoric archaeological sites based on environmental conditions the general site-poor nature of the greater project setting. The terraces edges along Cypress Swamp on the western site of the project likely have some elevated probability for prehistoric sites. However, these areas as well as the entirety of the project tract have been heavily disturbed by repeated (rotational) timber harvesting.

Due to low site probability and comprehensive timber related ground disturbance, the DEQ concurs with Circa's recommendation that full Phase I archaeological survey is not warranted.

Thanks,

Chris Egghart

Cultural Resources Specialist
Department of Environmental Quality
1111 E Main Street, Suite 1400, Richmond, VA 23219
christopher.egghart@deq.virginia.gov
804-698-4377

Attachment H – Preliminary Jurisdictional Determination



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

25 October 2017

PRELIMINARY JURISDICTIONAL DETERMINATION

Virginia Special Projects Regulatory Section
NAO-2017-01277 (Cypress Swamp & Grays Creek)

Spring Grove Land Association
c/o Mr. Kirk Sweeney
GeoEnvironmental Services, Inc.
P.O. Box 1555
Mechanicsville, VA 23116

Dear Mr. Sweeney:

This letter is in regard to your request for a preliminary jurisdictional determination (PJD) for waters of the U.S. (including wetlands) on property known as Spring Grove Solar Site, an approximately 2,448-acre undeveloped property located east of Spring Grove, fronting on the south side of portions of Swanns Point Road (SR 610) and Beaverdam Road (SR 626), situated west of Hollybush Road (SR 618), and fronting on portions of the north side of Colonial Trail West (Route 10), in Surry County, Virginia (Parcel IDs 12-28, 12-29, 12-64, 12-67, 12-68, 12-69, 12-70, 12-71, 12-73, 25-11, 25-15, 26-17, & 26-18 cover the majority of the acreage).

The revised maps entitled *Spring Grove, LLC, Surry County, Virginia* (Sheets 1-10), by GeoEnvironmental Services dated 06 July 2017 (revised 12 October 2017) and Corps date-stamped as received 12 October 2017 (copies attached) generally provide the locations of waters and wetlands on the property listed above. The basis for this delineation includes application of the Corps of Engineers Wetlands Delineation Manual (1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0 (2010), and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation; and the presence of an ordinary high water mark. This letter does not confirm the Cowardin classifications of these aquatic resources. This PJD confirmation is only applicable to the area outlined in yellow on the project drawings cited above.

Discharges of dredged or fill material, including those associated with mechanized land-clearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination. This preliminary jurisdictional determination and associated wetland delineation map may be submitted with a permit application.

Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return one copy to me within 30 days of receipt and keep one for your records. This delineation of waters and wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date.

If you have any questions, please contact me, either via telephone at (757) 201-7488 or via email at david.a.knepper@usace.army.mil.

Sincerely,



David A. Knepper
Environmental Scientist
Virginia Special Projects Regulatory Section

Enclosures:
Appeals Form
Delineation Map
Preliminary Jurisdictional Determination Form

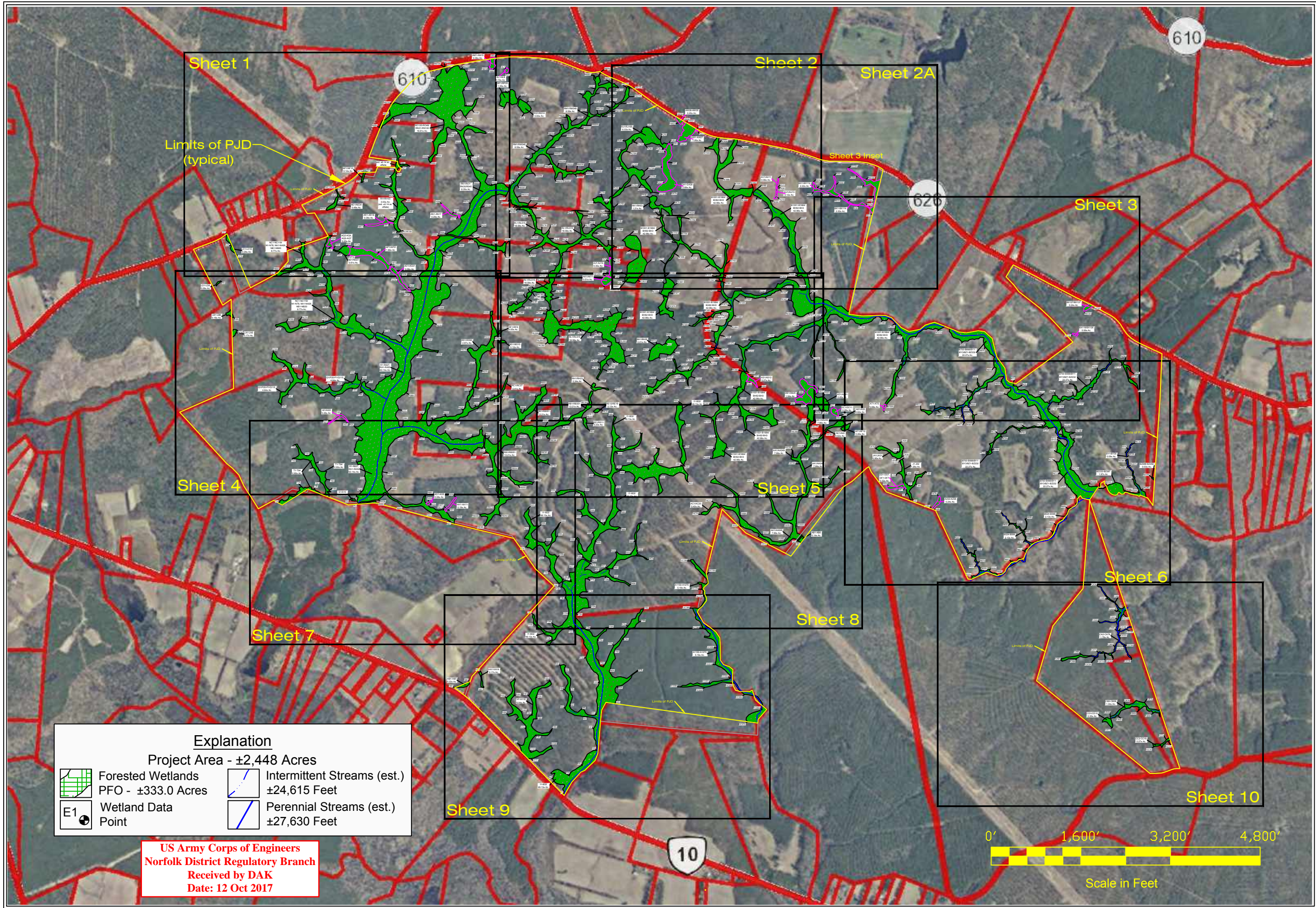
GEOENVIRONMENTAL SERVICES
P.O. BOX 1555
MECHANICSVILLE, VIRGINIA 23116
804.730.8220
FAX 804.730.0167

DATE: 07-06-17
REVISED: 10-12-17

GIS PROPERTY BOUNDARY AND GESI GNSS OVERLAY BY THE TIMMONS GROUP

SPRING GROVE SOLAR, LLC
SURRY COUNTY, VIRGINIA

OVERALL SITE PLAN
1" = 1,600'



Sheet 1

Sheet 2

Sheet 2A

Sheet 3

Sheet 3 inset

Sheet 4

Sheet 5

Sheet 6

Sheet 7

Sheet 8

Sheet 10

Sheet 9

Limits of PJD (typical)

Limits of PJD

Limits of PJD



Explanation	
Project Area - ±2,448 Acres	
	Forested Wetlands
	Intermittent Streams (est.) ±24,615 Feet
	Perennial Streams (est.) ±27,630 Feet
	Wetland Data Point
	PFO - ±333.0 Acres

US Army Corps of Engineers
Norfolk District Regulatory Branch
Received by DAK
Date: 12 Oct 2017

SHEET 1

0' 400' 800' 1,200'



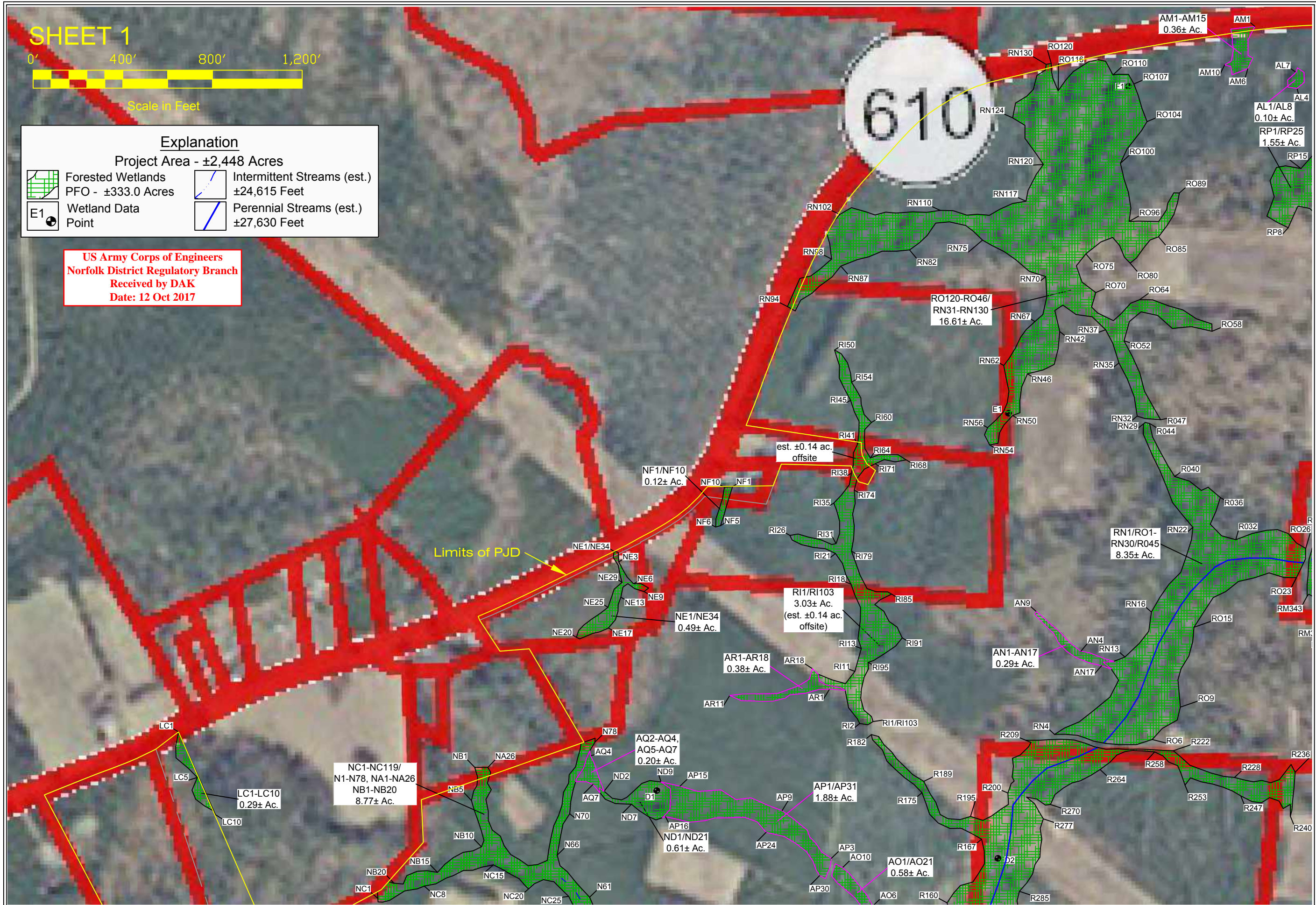
Scale in Feet

Explanation

Project Area - ±2,448 Acres

- Forested Wetlands
- PFO - ±333.0 Acres
- Wetland Data Point
- Intermittent Streams (est.) ±24,615 Feet
- Perennial Streams (est.) ±27,630 Feet

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GIS PROPERTY BOUNDARY AND GESI GNSS OVERLAY BY THE TIMMONS GROUP

SPRING GROVE SOLAR, LLC
 SURRY COUNTY, VIRGINIA

SHEET 1
 1" = 400'



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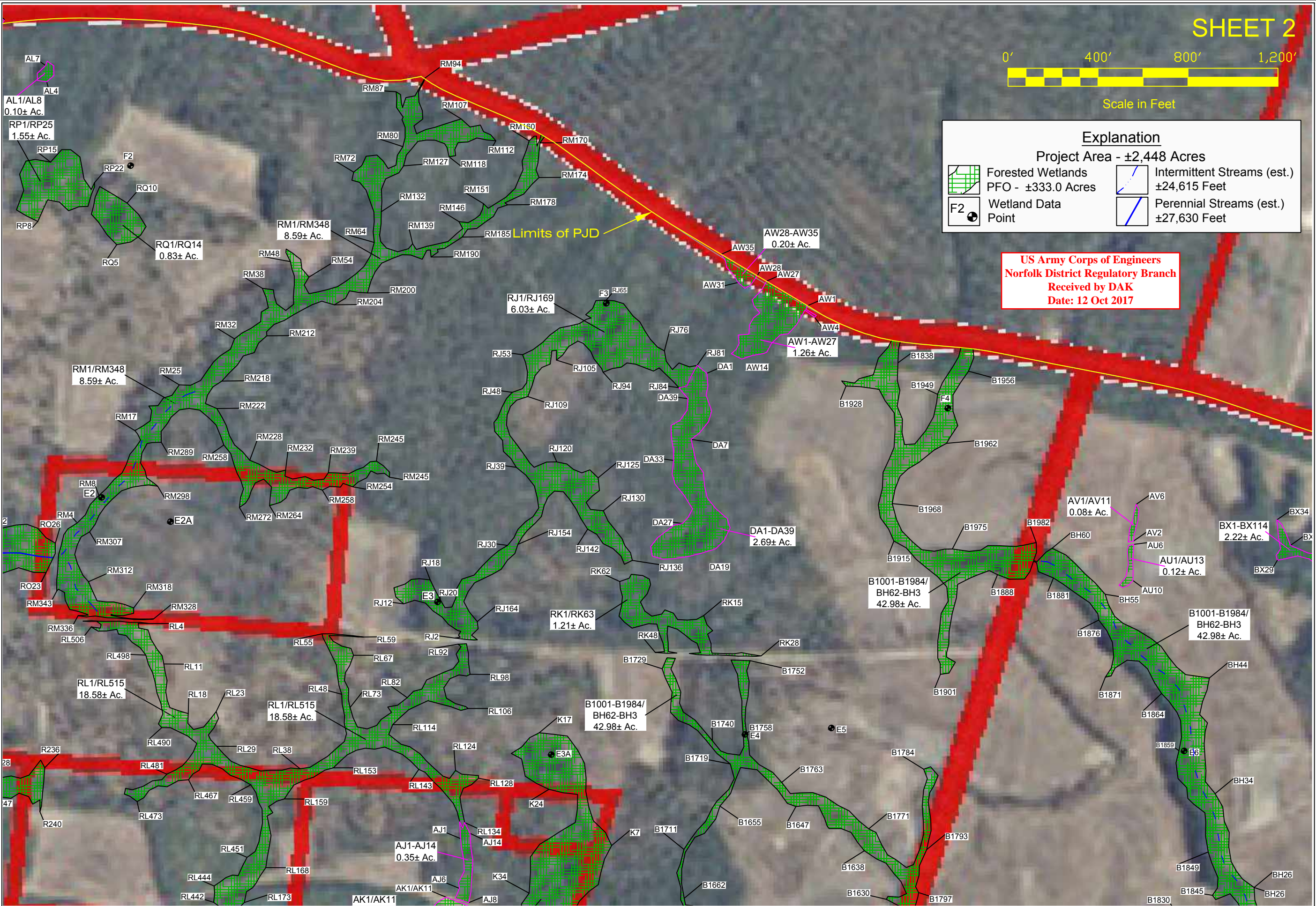
GIS PROPERTY BOUNDARY AND GESI GNSS OVERLAY BY THE TIMMONS GROUP

Explanation

Project Area - ±2,448 Acres

Forested Wetlands	Intermittent Streams (est.) ±24,615 Feet
PFO - ±333.0 Acres	Perennial Streams (est.) ±27,630 Feet
Wetland Data Point	

**US Army Corps of Engineers
Norfolk District Regulatory Branch
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SPRING GROVE SOLAR, LLC
SURRY COUNTY, VIRGINIA

SHEET 2A

0' 400' 800' 1,200'



Scale in Feet

Explanation

Project Area - ±2,448 Acres

- | | |
|--------------------|--|
| Forested Wetlands | Intermittent Streams (est.) ±24,615 Feet |
| PFO - ±333.0 Acres | Perennial Streams (est.) ±27,630 Feet |
| Wetland Data Point | |

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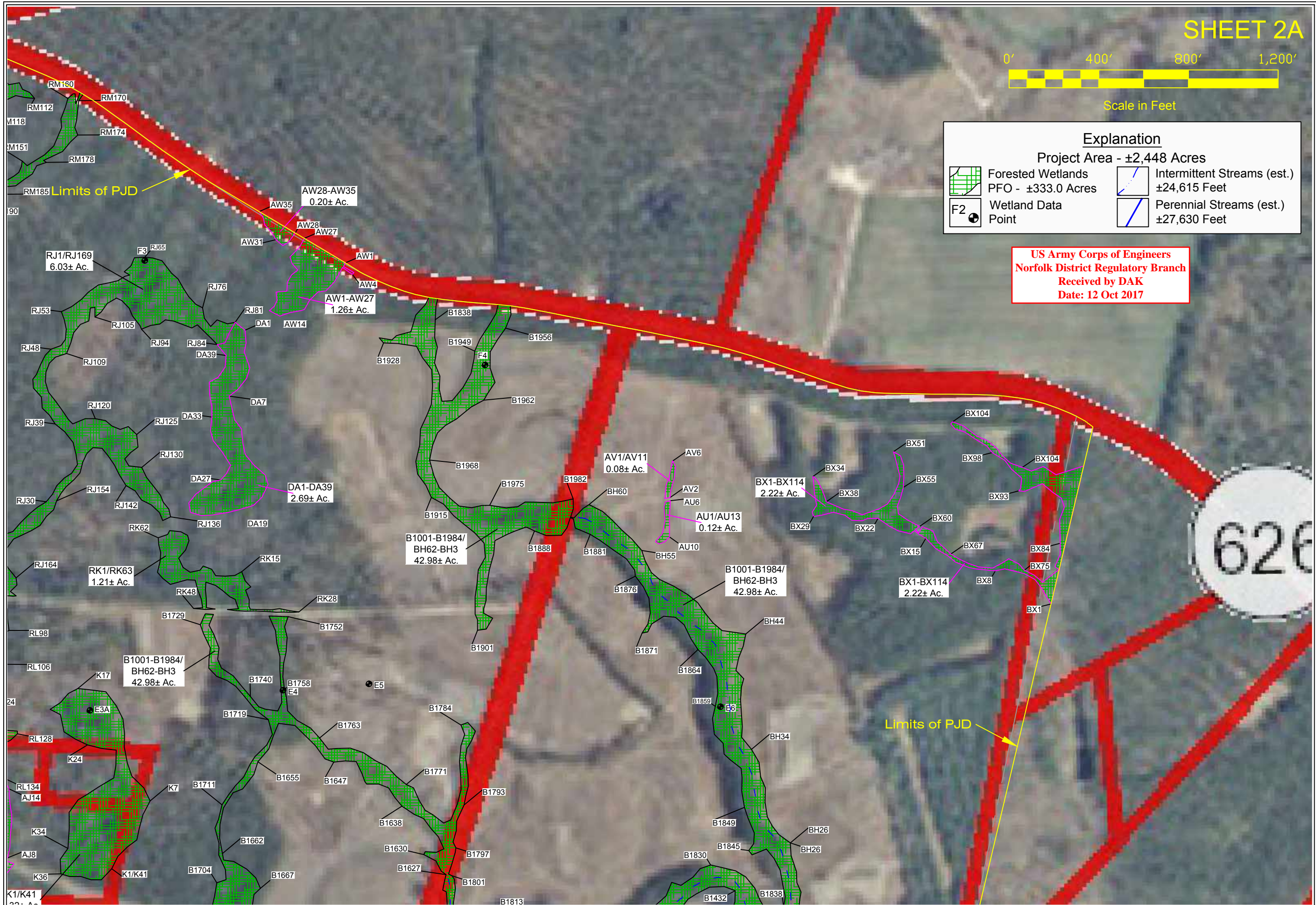
DATE: 07-06-17
REVISED: 10-12-17

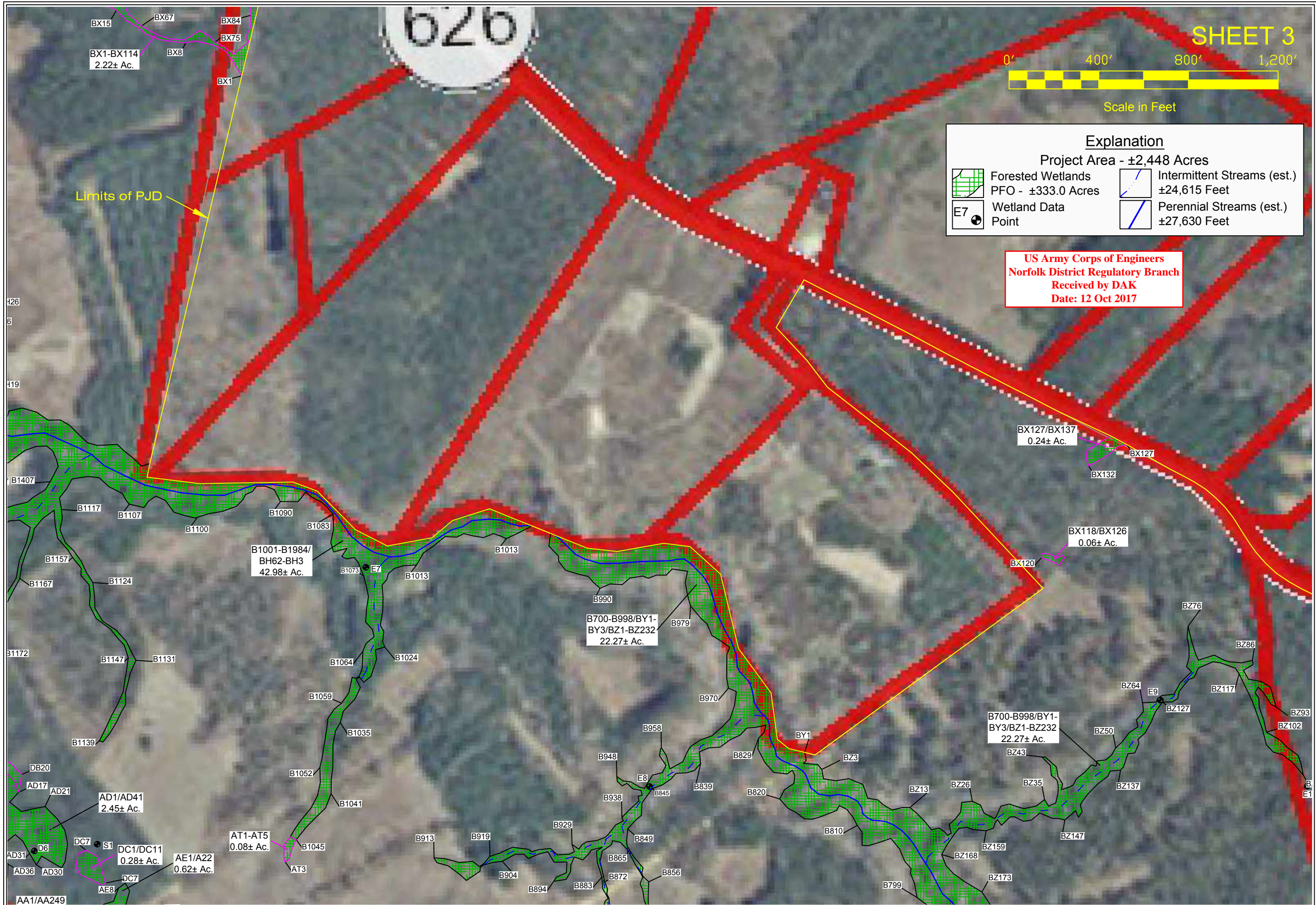
GIS PROPERTY BOUNDARY
AND GESI GNSS OVERLAY
BY THE TIMMONS GROUP

SPRING GROVE SOLAR, LLC
SURRY COUNTY, VIRGINIA

SHEET 2A

1" = 400'





SHEET 3



Explanation

Project Area - ±2,448 Acres

	Forested Wetlands		Intermittent Streams (est.)
	PFO - ±333.0 Acres		Perennial Streams (est.)
	Wetland Data		
	Point		

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AND GESI GNSS OVERLAY
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SURRY COUNTY, VIRGINIA

SHEET 3

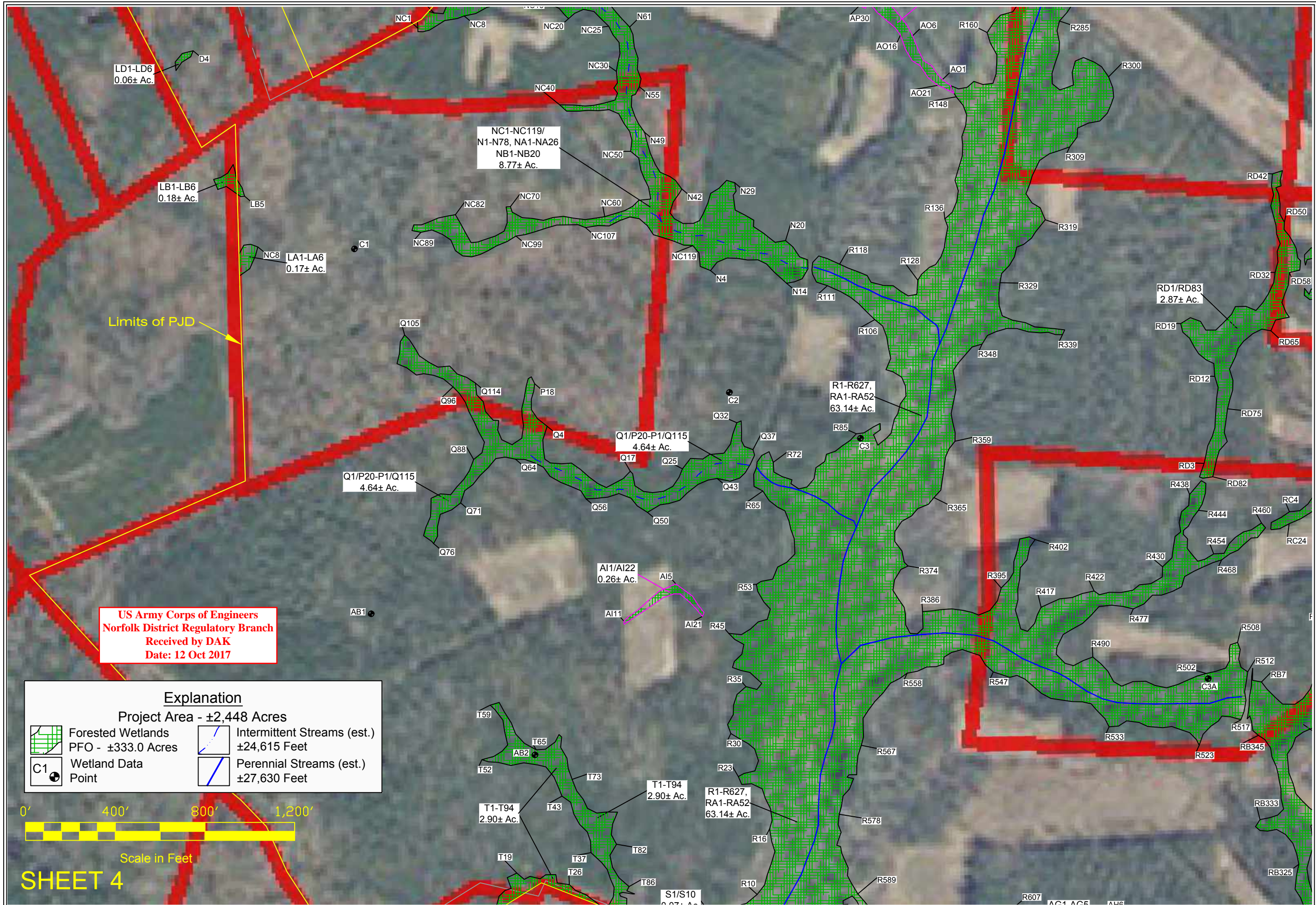
1" = 400'

DATE: 07-06-17
 REVISED: 10-12-17

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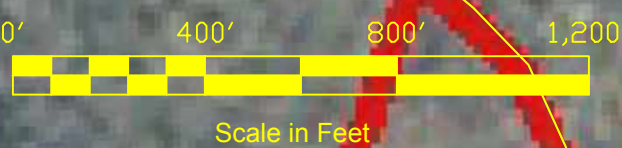
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 SURRY COUNTY, VIRGINIA

SHEET 4
 1" = 400'



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 Date: 12 Oct 2017

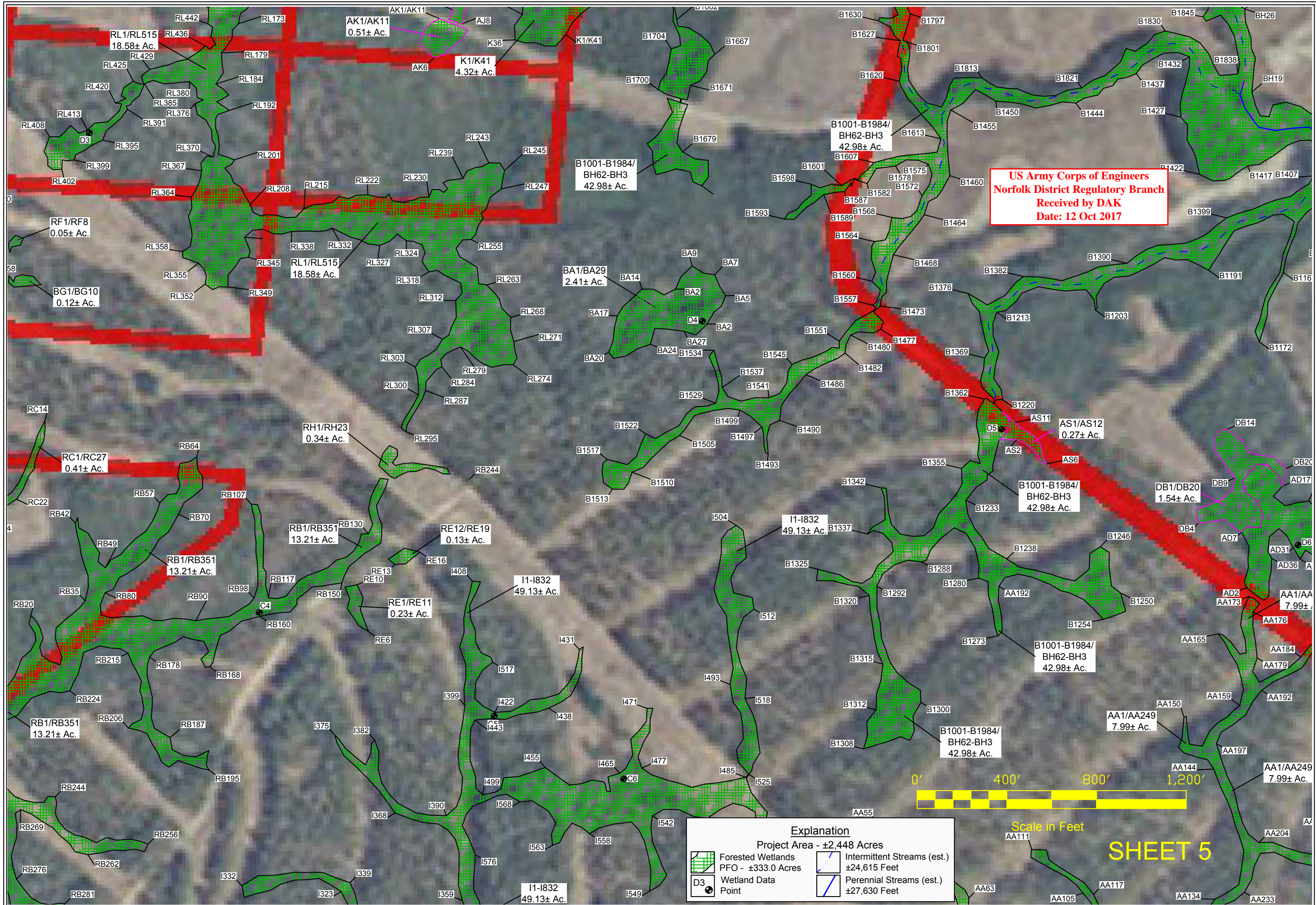
Explanation	
Forested Wetlands	Intermittent Streams (est.)
PFO - ±333.0 Acres	±24,615 Feet
Wetland Data Point	Perennial Streams (est.)
	±27,630 Feet



SHEET 4

DATE: 07-06-17
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**US Army Corps of Engineers
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Explanation	
	Forested Wetlands
	PFO - ±333.0 Acres
	Wetland Data Point
	Intermittent Streams (est.) ±24,615 Feet
	Perennial Streams (est.) ±27,630 Feet

SHEET 5

SHEET 5
 1" = 400'

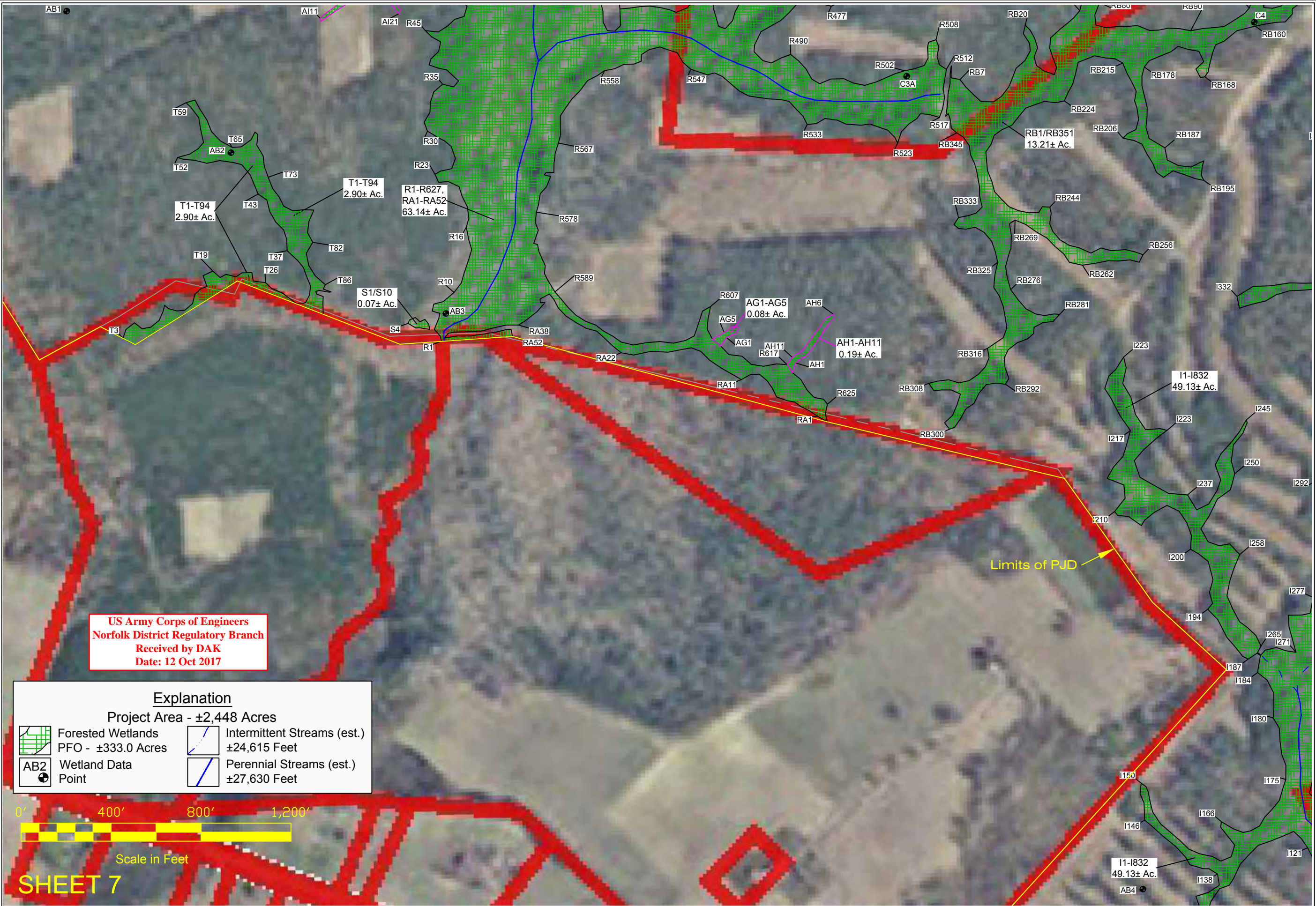
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DATE: 07-06-17
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GIS PROPERTY BOUNDARY AND GESI GNSS OVERLAY BY THE TIMMONS GROUP

SPRING GROVE SOLAR, LLC
 SURRY COUNTY, VIRGINIA

SHEET 7
 1" = 400'



US Army Corps of Engineers
Norfolk District Regulatory Branch
 Received by DAK
 Date: 12 Oct 2017

Explanation	
Forested Wetlands	Intermittent Streams (est.)
PFO - ±333.0 Acres	±24,615 Feet
Wetland Data Point	Perennial Streams (est.)
	±27,630 Feet



SHEET 7



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 REVISED: 10-12-17

GIS PROPERTY BOUNDARY AND GESI GNSS OVERLAY BY THE TIMMONS GROUP

SPRING GROVE SOLAR, LLC
 SURRY COUNTY, VIRGINIA

US Army Corps of Engineers
 Norfolk District Regulatory Branch
 Received by DAK
 Date: 12 Oct 2017

Explanation	
Forested Wetlands	Intermittent Streams (est.) ±24,615 Feet
PFO - ±333.0 Acres	Perennial Streams (est.) ±27,630 Feet
Wetland Data Point	



Scale in Feet

SHEET 8

SHEET 8

1" = 400'

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FAX 804.730.0167

DATE: 07-06-17
REVISED: 10-12-17

GIS PROPERTY BOUNDARY AND GESI GNSS OVERLAY BY THE TIMMONS GROUP

SPRING GROVE SOLAR, LLC
SURRY COUNTY, VIRGINIA

Limits of PJD



US Army Corps of Engineers
Norfolk District Regulatory Branch
Received by DAK
Date: 12 Oct 2017

Explanation	
Forested Wetlands	Intermittent Streams (est.)
PFO - ±333.0 Acres	±24,615 Feet
Wetland Data Point	Perennial Streams (est.)
	±27,630 Feet



SHEET 10

SHEET 10

1" = 400'

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND
REQUEST FOR APPEAL**

Applicant: Spring Grove Land Association (c/o Mr. Kirk Sweeney, GeoEnvironmental Services, Inc.)		File Number: NAO-2017-01277	Date: 25 Oct 2017
Attached is:			See Section below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A	
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B	
<input type="checkbox"/>	PERMIT DENIAL	C	
<input type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D	
<input checked="" type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E	

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the Norfolk District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations (JD) associated with the permit.
- OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the Norfolk District Engineer. Your objections must be received by the Norfolk District Engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the Norfolk District Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the Norfolk District Engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the Norfolk District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Norfolk District Engineer.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Norfolk District Engineer.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Norfolk District Engineer.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:
U.S. Army Corps of Engineers, Norfolk District
c/o Mr. David Knepper
803 Front Street
Norfolk, VA 23510-1096
Telephone: (757) 201-7488
Email: david.a.knepper@uasace.army.mil

If you only have questions regarding the appeal process you may also contact:
Mr. James W. Haggerty
Regulatory Program Manager
U.S. Army Corps of Engineers
CENAD-PD-OR
Fort Hamilton Military Community
301 General Lee Avenue
Brooklyn, NY 11252-6700
347-370-4650

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number:

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "may be" waters of the U.S. and/or that there "may be" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: revised JD figure cited in PJD letter _____
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 Office concurs with data sheets/delineation report.
 Office does not concur with data sheets/delineation report. Rationale: as modified by field check
- Data sheets prepared by the Corps: _____
- Corps navigable waters' study: _____
- U.S. Geological Survey Hydrologic Atlas: _____
- USGS NHD data.
 USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Claremont USGS quad
- Natural Resources Conservation Service Soil Survey. Citation: SUURGO GIS data
- National wetlands inventory map(s). Cite name: Claremont USGS quad
- State/local wetland inventory map(s): _____
- FEMA/FIRM maps: _____
- 100-year Floodplain Elevation is: _____. (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): various GIS, Google Earth, Digital-Globe, Bing aerials
or Other (Name & Date): varies
- Previous determination(s). File no. and date of response letter: _____
- Other information (please specify): 2010 LiDAR data, AGCP Regional Supplement, local precip data

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

KNEPPER.DAVI
D.A.1229503576

Digitally signed by
KNEPPER.DAVID.A.1229503576
DN: c=US, o=U.S. Government, ou=DoD,
ou=PKI, ou=USA,
cn=KNEPPER.DAVID.A.1229503576
Date: 2018.04.23 08:58:05 -0400

Signature and date of
Regulatory staff member
completing PJD

Robert T. Fleet

Digitally signed by Robert T. Fleet
DN: cn=Robert T. Fleet, o=GeoEnvironmental
Services, Inc., ou,
email=rfleet@geoenvironmental.net, c=US
Date: 2017.10.27 08:36:03 -0400

Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)¹

¹ Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.



REPLY TO
ATTENTION OF

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

25 OCTOBER 2017

Supplemental Preapplication Information

Project Number: NAO-2017-01277 (Cypress Swamp & Grays Creek)

Applicant: Spring Grove Land Association (c/o Mr. Kirk Sweeney, GeoEnvironmental Services, Inc.)

Project Location: An 2,448-acre undeveloped property located east of Spring Grove, fronting on the south side of portions of Swanns Point Road (SR 610) and Beaverdam Road (SR 626), situated west of Hollybush Road (SR 618), and fronting on portions of the north side of Colonial Trail West (Route 10), in Surry County, Virginia (Parcel IDs 12-28, 12-29, 12-64, 12-67, 12-68, 12-69, 12-70, 12-71, 12-73, 25-11, 25-15, 26-17, & 26-18 cover the majority of the acreage).

1. A search of the Virginia Department of Historic Resources data revealed the following:

The following architectural resource is known within proximity to the project area: 090-5086.

NOTE:

- 1) The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).
- 2) Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

The project site lies within the range and white-nose syndrome buffer zone of the Northern Long-Eared Bat (*Myotis septentrionalis*), a federally-listed Threatened species.

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.



**NORFOLK DISTRICT REGULATORY OFFICE
PRE-APPLICATION AND/OR JURISDICTIONAL WATERS
DETERMINATION REQUEST FORM**

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or e-mailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. **THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.**

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District
Regulatory Office
803 Front Street
Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: CENAO.REG_ROD@usace.army.mil

Additional information on the Regulatory Program is available on our website at:
<http://www.nao.usace.army.mil/>

Please contact us at 757-201-7652 if you need any assistance with filling out this form.

Location and Information about Property to be subject to a Jurisdictional Determination:

1. Date of Request:
2. Project Name:
3. City or County where property located:
4. Address of property and directions (attach a map of the property location and a copy of the property plat):
5. Coordinates of property (if known):
6. Size of property in acres:
7. Tax Parcel Number / GPIN (if available):
8. Name of Nearest Waterway:

7. Brief Description of Proposed Activity, Reason for Preapplication Request, and/or Reason for Jurisdictional Waters Determination Request:

8. Has a wetland delineation/determination been completed by a consultant or the Corps on the property previously? YES NO UNKNOWN

If yes, please provide the name of the consultant and/or Corps staff and Corps permit number, if available:

Property Owner Contact Information:

Property Owner Name:

Mailing Address:

City: State: Zip:

Daytime Telephone:

E-mail Address:

If the person requesting the Jurisdictional Determination is **NOT** the Property Owner, please also supply the Requestor's contact information here:

Requestor Name:

Mailing Address:

City: State: Zip:

Daytime Telephone:

E-mail Address:

Additionally, if you have any of the following information, please include it with your request: wetland delineation map, other relevant maps, drain tile survey, topographic survey, and/or site photographs.

CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:



Property Owner's Signature

Date



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

April 30, 2020

PRELIMINARY JURISDICTIONAL DETERMINATION

Eastern Virginia Regulatory Section
NAO-2020-0275 (Cypress Swamp)

Spring Grove Solar III, LLC
Attn: James Crawford
337 Log Canoe Circle
Stevensville, MD 21666

Dear Mr. Crawford:

This letter is in regard to your request for a preliminary jurisdictional determination for waters of the U.S. (including wetlands) on property known as Spring Grove Solar, located on a 668 acre parcel in Surry, Virginia (tax map parcel / GPIN # 26-4C).

The map entitled "SPRING GROVE SOLAR #2", Overall Site Plan and Sheets 1 - 5 by GEOENVIRONMENTAL SERVICES dated revise 1-21-20 (*copy enclosed*) provides the location(s) of waters and/or wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*, positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation and the presence of an ordinary high water mark. This letter is not confirming the Cowardin classifications of these aquatic resources.

The Norfolk District has relied on the information and data provided by the applicant or agent. If such information and data subsequently prove to be materially false or materially incomplete, this verification may be suspended or revoked, in whole or in part, and/or the Government may institute appropriate legal *proceedings*.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in

question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination. This preliminary jurisdictional determination and associated wetland delineation map may be submitted with a permit application.

Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return one copy to me either via email (brian.c.denson@usace.army.mil) or via standard mail to US Army Corps of Engineers, Regulatory Office, and ATTN: Mr. Brian Denson, 803 Front Street Norfolk, Virginia 23510 within 30 days of receipt and keep one for your records. This delineation of waters and/or wetlands can be relied upon for no more than five years from the date of this letter. New information may warrant revision.

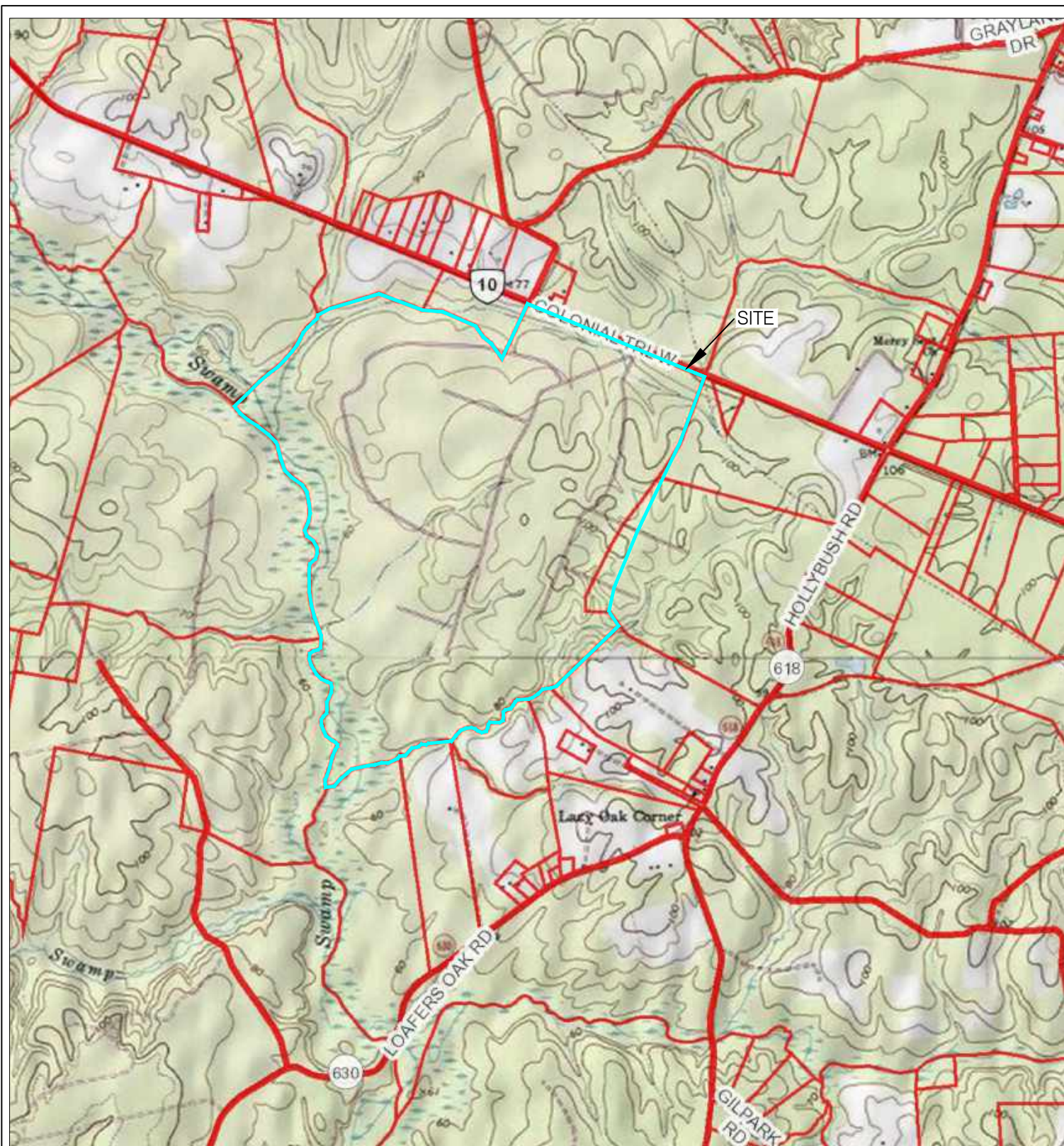
If you have any questions, please contact me either via telephone at (757) 201-7792 or via email at the address above. Please include your NAO project number within the subject line.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brian Denson", is written over a light blue rectangular background.

Brian Denson
Project Manager Eastern Virginia
Regulatory Section

Enclosure(s): Referenced Delineation Map(s), Preliminary JD Form, Supplemental Information



7.5 MINUTE USGS TOPO QUAD:
CLAREMONT, VA

COORDINATES:
37° 07' 54" N
76° 54' 22" W



GEOENVIRONMENTAL SERVICES, INC.
P.O. BOX 1555
MECHANICSVILLE, VA 23116
PH: (804) 730-8220

SITE VICINITY MAP
Spring Grove Solar #2
Parcel ID 26-4C
Surry County, Virginia

January 21, 2020
SCALE 1"=2,000 FT.
FIGURE 2

DATE: 1-21-20
REVISED:

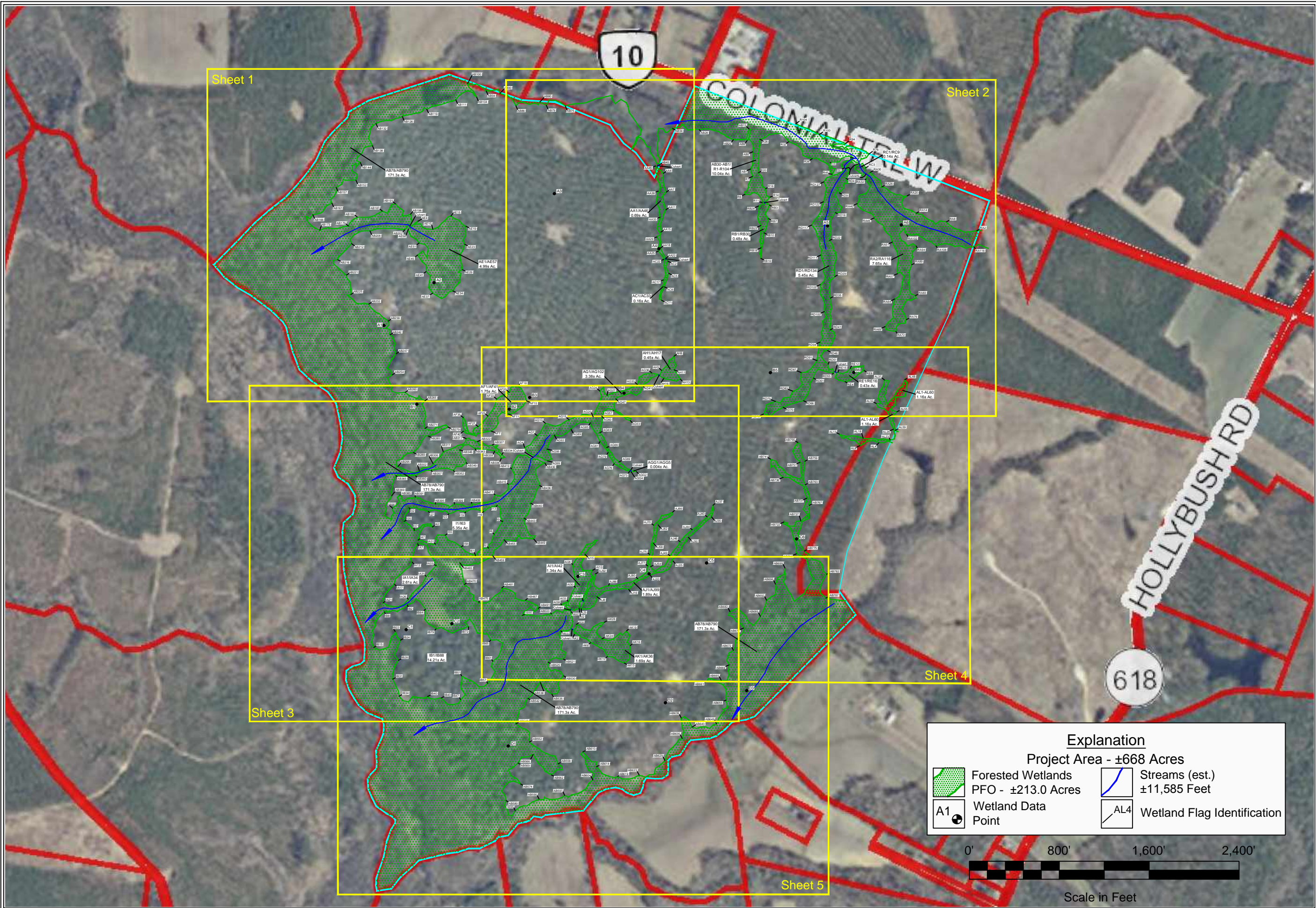
Wetland Delineation and
GNSS Location by
GeoEnvironmental
Services, Inc.

SPRING GROVE SOLAR #2

SURRY COUNTY, VIRGINIA






OVERALL SITE PLAN

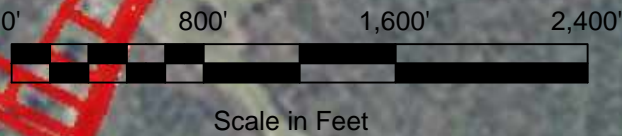
1" = 800'



Explanation

Project Area - ±668 Acres

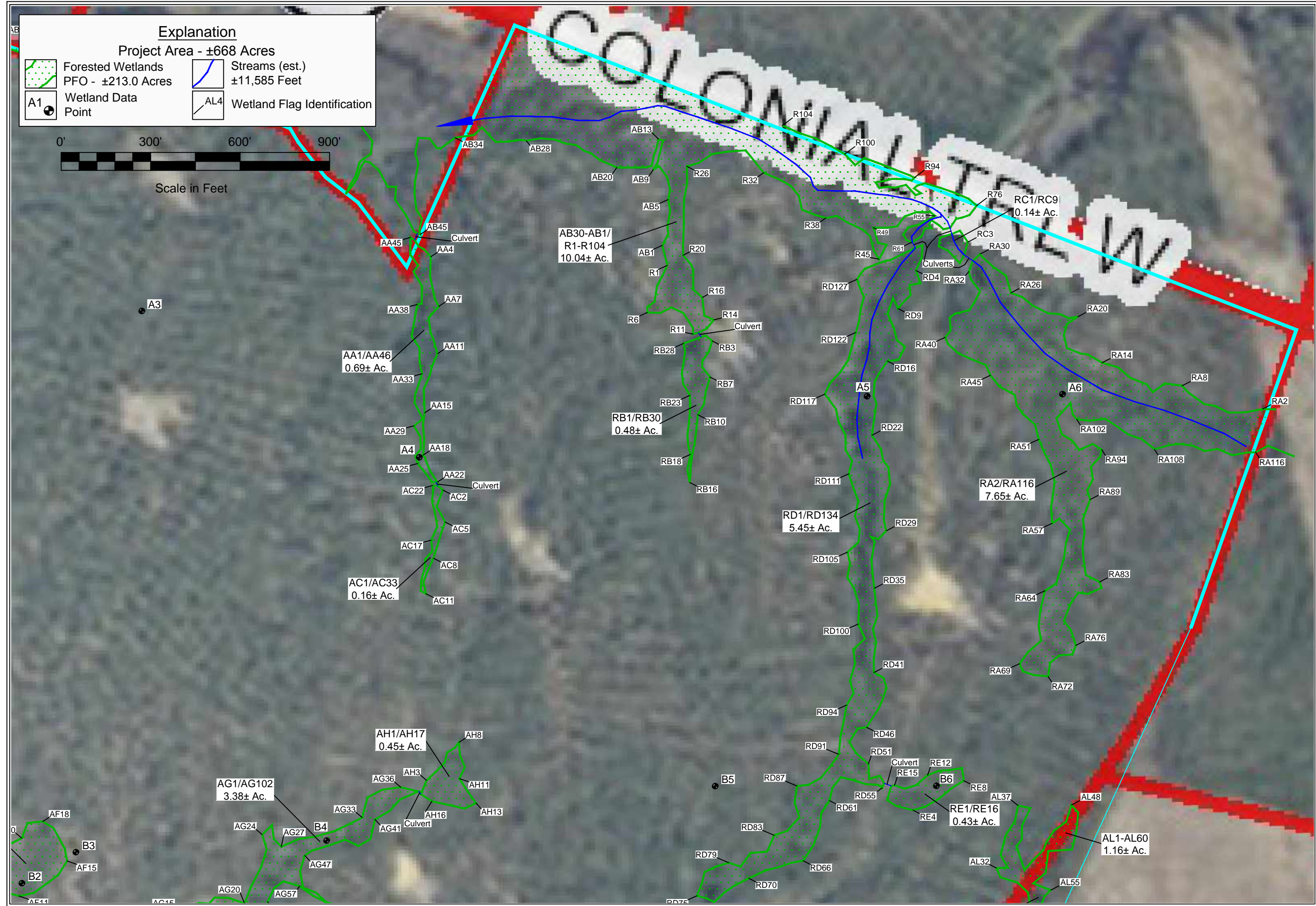
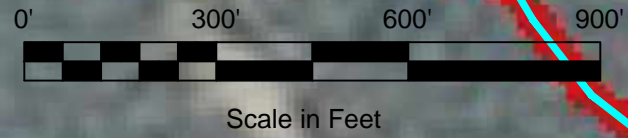
 Forested Wetlands	 Streams (est.)
 PFO - ±213.0 Acres	±11,585 Feet
 Wetland Data Point	 Wetland Flag Identification



Explanation

Project Area - ±668 Acres

- Forested Wetlands
- PFO - ±213.0 Acres
- Wetland Data Point
- Streams (est.) ±11,585 Feet
- Wetland Flag Identification



GEOENVIRONMENTAL SERVICES
P.O. BOX 1555
MECHANICSVILLE, VIRGINIA 23116
804.730.8220
FAX 804.730.0167

DATE: 1-21-20
REVISED:

Wetland Delineation and
GNSS Location by
GeoEnvironmental
Services, Inc.

SPRING GROVE SOLAR #2

SURRY COUNTY, VIRGINIA

SHEET 2

1" = 300'

DATE: 1-21-20
REVISED:






Wetland Delineation and
GNSS Location by
GeoEnvironmental
Services, Inc.

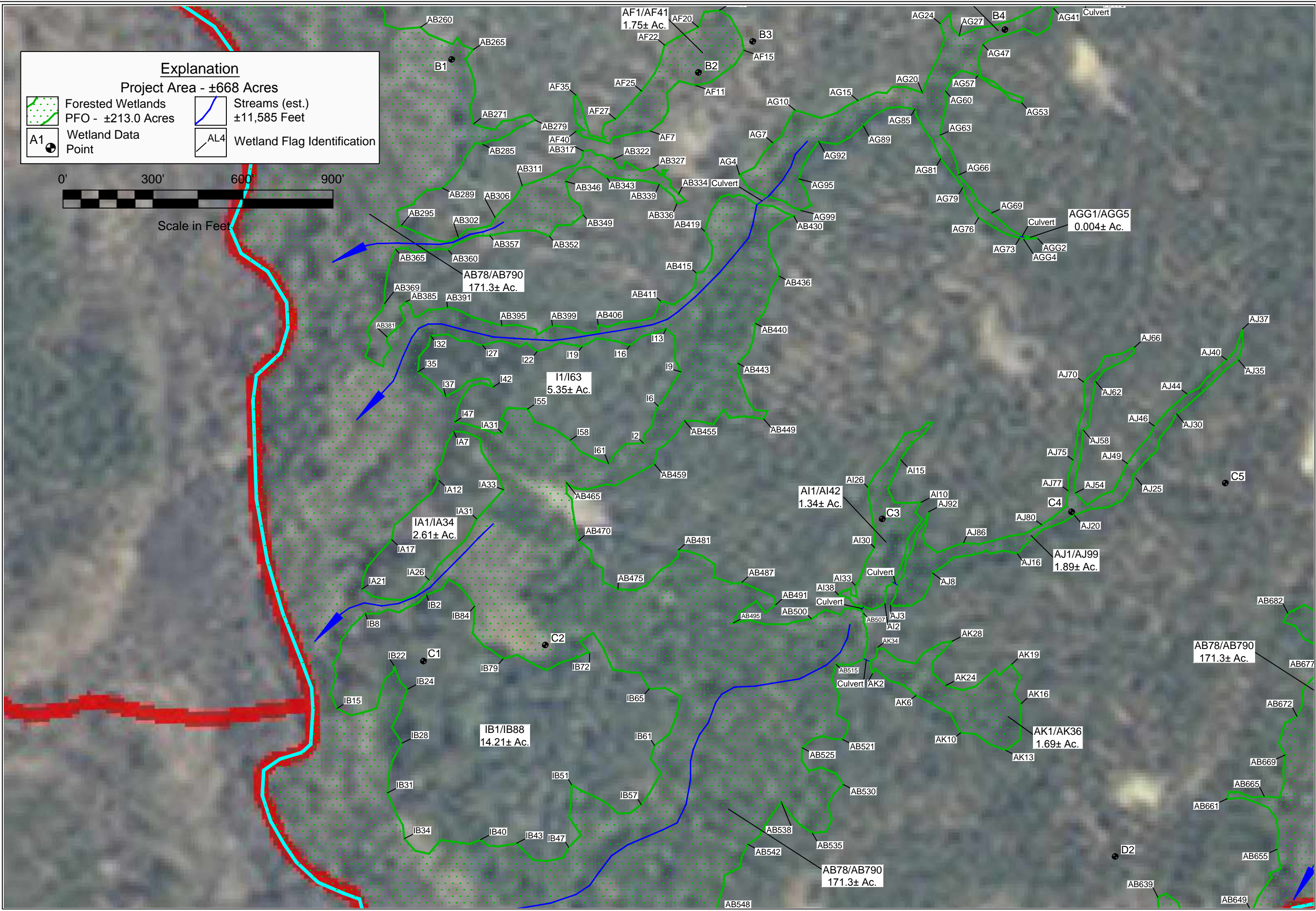
SPRING GROVE SOLAR #2
SURRY COUNTY, VIRGINIA

SHEET 3
1" = 300'

Explanation

Project Area - ±668 Acres

 Forested Wetlands	 Streams (est.) ±11,585 Feet
 PFO - ±213.0 Acres	 Wetland Flag Identification
 Wetland Data Point	

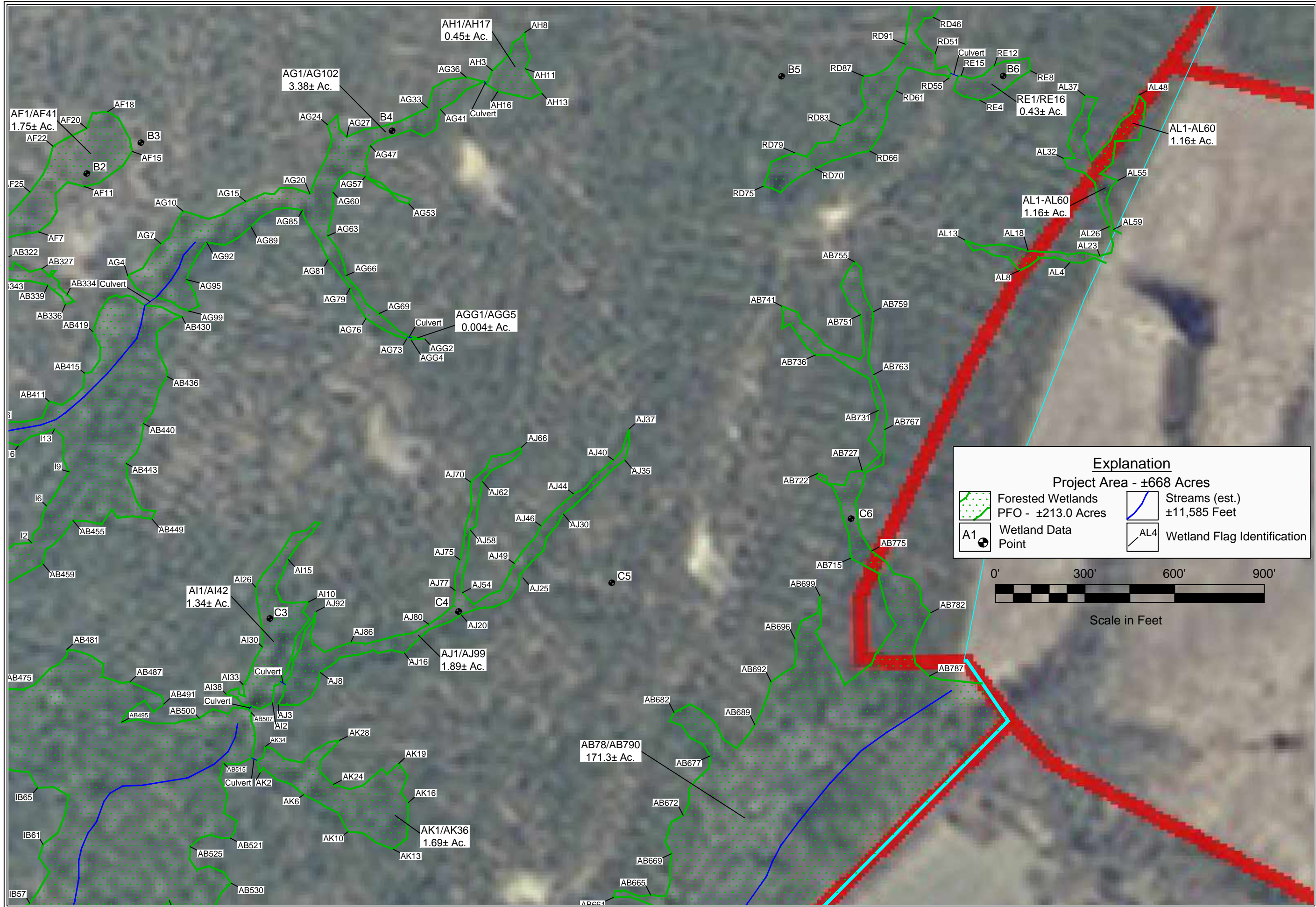


DATE: 1-21-20
REVISD:

Wetland Delineation and
GNSS Location by
GeoEnvironmental
Services, Inc.

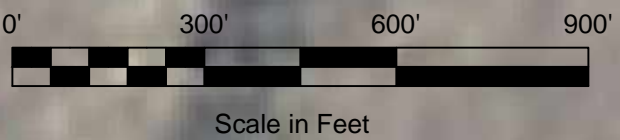
SPRING GROVE SOLAR #2

SURRY COUNTY, VIRGINIA



Explanation
Project Area - ±668 Acres

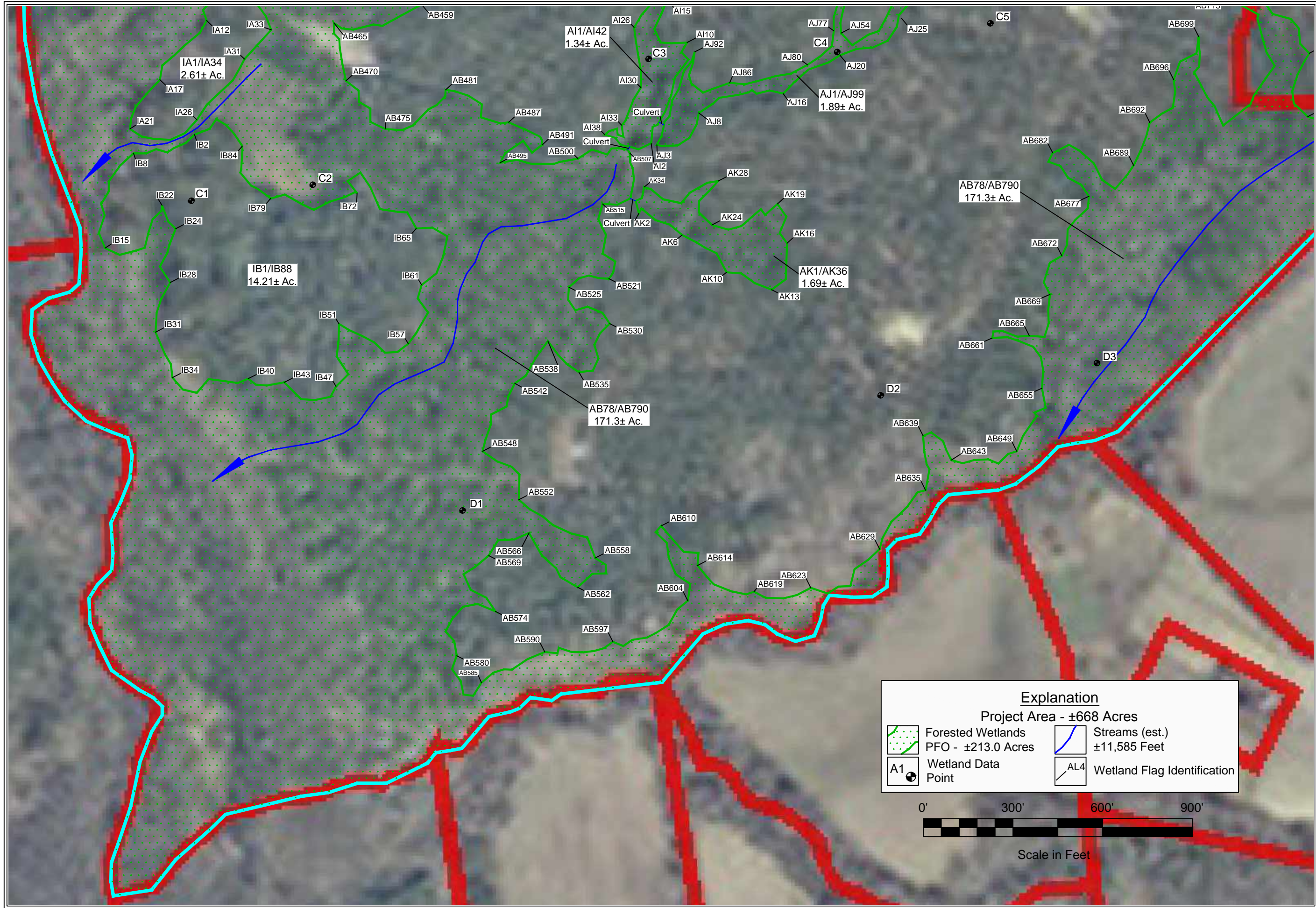
Forested Wetlands	Streams (est.)
PFO - ±213.0 Acres	±11,585 Feet
Wetland Data Point	Wetland Flag Identification



DATE: 1-21-20
 REVISED:

Wetland Delineation and
 GNSS Location by
 GeoEnvironmental
 Services, Inc.

SPRING GROVE SOLAR #2
 SURRY COUNTY, VIRGINIA



Explanation
 Project Area - ±668 Acres

Forested Wetlands	Streams (est.)
PFO - ±213.0 Acres	±11,585 Feet
Wetland Data Point	Wetland Flag Identification



- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
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SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: SPRING GROVE SOLAR #2, Site plan Sheet, and Sheets 1 - 5.
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report. Rationale: _____.
- Data sheets prepared by the Corps: _____.
- Corps navigable waters' study: _____.
- U.S. Geological Survey Hydrologic Atlas: _____.
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: _____.
- Natural Resources Conservation Service Soil Survey. Citation: _____.
- National wetlands inventory map(s). Cite name: _____.
- State/local wetland inventory map(s): _____.
- FEMA/FIRM maps: _____.
- 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): Google Earth, VGIN, Various years.
or Other (Name & Date): Lidar.
- Previous determination(s). File no. and date of response letter: _____.
- Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

DENSON.BRIAN.C.116879 9671 Digitally signed by DENSON.BRIAN.C.1168799671 Date: 2020.04.30 09:02:34 -04'00'

Signature and date of
Regulatory staff member
completing PJD

Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)¹

¹ Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

Spring Grove Solar #2 - ~668 Acre Site

Wetland Series	Est. Steams (feet)	Comments	Acres
AA1/AA46			0.69
AC1/AC33			0.16
RB1/RB30			0.48
AB30-AB1/R1-R104	1,835		10.04
RD1/RD134	755		5.45
RC1/RC9	90		0.14
RA2-RA116	1,145		7.65
AL1-AL60			1.16
RE1/RE16			0.43
AH1/AH17			0.45
AGG1/AGG5			0.004
AG1/AG102	230		3.38
AF1/AF41			1.75
AE1/AE57	250		4.99
AI1/AI42			1.34
AJ1/AJ99			1.89
AK1/AK36			1.69
AB78-AB790	7,280		193.44
I1/I63		Upland Island	(5.35)
IA1/IA34		Upland Island	(2.61)
IB1/IB88		Upland Island	(14.21)
Totals	11,585		212.96



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

April 30, 2020

Supplemental Preapplication Information

Project Number: NAO-2020-0275

Applicant: Spring Grove Solar III, LLC, Attn: James Crawford

Project Location: Surry County, VA (tax map parcel / GPIN # 26-4C)

A search of the Virginia Department of Historic Resources data revealed the following:

- No known historic properties are located on the property.
- Tribal consultation may be required.
- American Battlefield Protection Program (ABPP) consultation may be required.
- The following known architectural resources are located on the property:

VDHR Architectural Resources						
Dhr Id	Property Name	Address	Historic Name	Nr Eligibility	Survey Updated	Restricted
090-5072	Mobile Home, 3870 Colonial Trail West (Function/Location)	3870 Colonial Trail West - Alt Route 10	-	-	09-AUG-19 11.04.15.00000 0 AM	-
090-5071	House, 3800 Colonial Trail West (Function/Location)	3800 Colonial Trail West - Alt Route 10	-	-	09-AUG-19 11.03.14.00000 0 AM	-
090-0012	Glebe House of Southwark Parish (NRHP Listing), Olde Glebe (Alternate Spelling), The Old Glebe (Historic)	3700 Colonial Trail West - Alt Route 10	-	NRHP Listing, VLR Listing	09-AUG-19 10.54.10.00000 0 AM	Unrestricted

090-5070	Hunt Club, 3526 Colonial Trail West (Function/Location), Surry Hunt Club (Current Name)	3526 Colonial Trail West - Alt Route 10	-	-	09-AUG-19 11.00.53.00000 0 AM	-
090-5140	House, Hollybush Road (Function/Location)	Hollybus h Road - Alt 618	-	-	09-AUG-19 11.09.14.00000 0 AM	-

1 - 5

- The following known archaeological resources are located on the property:
- The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

NOTE:

- 1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
- 2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

1. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

- No known populations of threatened or endangered species are located on or within the vicinity of the subject property.
- The following federally-listed species may occur within the vicinity of the subject property: Northern Long Eared Bat
- The following state-listed (or other) species may occur within the vicinity of the subject property: Barking Tree Frog

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.

Attachment I – Mitigation Plan

Proposed Barking Treefrog Mitigation

Site Name: Spring Grove III

Developer: Spring Grove III, LLC

Location: Surry County (-76.906927, 37.130582)



Site and Project Description: Spring Grove III is a proposed solar development on an approximately 665-acre site that is currently used for timber production and will be logged prior to development of the solar facility. If the solar development is not constructed, the site will remain in timber production. The site is criss-crossed with several logging roads. The vegetation composition is typical of a previously clear-cut site. Habitat within the site is not pristine and has been heavily impacted by logging activities.

The majority of the site is bordered by an extensive wetland/stream complex with many fingers of wetland entering the site. Cypress Swamp forms the western border of the site, which eventually drains into the Blackwater River. [Representative site photos]

Survey and Results: The site was surveyed on the night of June 11, 2019. Auditory call surveys were conducted at 12 locations within the site and one to the north of the site. Barking treefrogs (5-8+ individuals) were heard at one location (Site 10) near the northern property boundary. The site was revisited to locate the suspected breeding location. Between the auditory survey location and the property boundary are a number of ruts, scars, etc. created during logging operations that are potentially being used as breeding sites by Barking Treefrog. No Barking Treefrogs were seen during the auditory survey or the return visit. See Exhibit 2: Barking Tree Frog Field Survey.

Proposed Mitigation: Surry County development regulations require a 75 ft (23 m) setback along non-road facing property lines. We are proposing to increase that setback to 98 ft (30 m) along the northern boundary adjacent to Site 12 where the Barking Treefrogs were heard calling (Exhibit 3: Barking Treefrog Proposed Mitigation). This increase in the setback would create an upland corridor between the

wetlands within the site and those located to the north of the site. Additionally, there are three isolated upland pockets totaling approximately 22.2 acres in the southwest of site near Site 6 that will not be developed providing further upland refugia for the Barking Treefrog on the site.

Generally, mitigation proposed to protect the breeding habitat of pond-breeding amphibians like the Barking Treefrog is focused on the breeding habitat and includes buffers around the breeding habitat. Due to the highly impacted nature of this site and the poor quality of the potential breeding habitat, increasing the connectivity of the wetland and upland habitat through protected habitat corridors may provide better long-term protection to the species in comparison to the one isolated area created by buffers. The additional upland pockets that will be protected in the south of the site could provide further upland refugia for the species.

Exhibit 1: Representative Site Photos

Exhibit 2: Amphibian Species Survey Report, June 2019

Exhibit 3: Barking Treefrog Proposed Mitigation

Exhibit 1

Representative Site Photos



Typical view of the wooded land on the Site.



Typical view of wooded land on the Site.



Typical view of young pines on the Site.



Typical view of dirt roads that run throughout the Site.



Potential breeding location in logging scar/rut.



Potential breeding location in logging scar/rut.



Potential breeding location in logging scar/rut.

Amphibian Species Survey Report

Proposed Spring Grove II Solar Site

Surry County, Virginia

Prepared For:



Timmons Groups
Richmond, Virginia

Contact Person:

Rick Thomas

Timmons Group
1001 Boulder Parkway, Suite 300
Richmond, VA 23225
Rick.thomas@timmons.com
Office 804-200-6446

June 2019

Prepared by:



324 Blackwell Street, Suite 1200
Durham, NC 27701

Contact Person:

Kate Sevick

Kate.sevick@threeoaksengineering.com
919-732-1300

Table of Contents

1.0	Introduction.....	1
2.0	Methodology.....	1
3.0	Results.....	1
4.0	Discussion.....	3
5.0	Literature Cited.....	3

Appendix A. Figures

Appendix B. Threatened/Endangered Species Collection Permit

1.0 INTRODUCTION

Spring Grove II is a proposed approximately 665 acre solar development in Surry County, Virginia (Appendix A: Figure 1); referred to as the Project Study Area (PSA). Barking Treefrog (*Hyla gratiosa*), a Virginia Department of Game and Inland Fisheries (VDGIF) state threatened species, is known from or likely to occur within a two mile radius of the PSA.

Barking Treefrogs are Virginia's largest native treefrog. They breed from March to August most often utilizing fish free ephemeral ponds but have occasionally been found in areas where fish are present. Barking treefrogs are most active at night, typically sheltering in relatively low trees and shrubs during the day. They may also be found burrowed in damp soil, under logs near wetlands, or even hidden under loose tree bark. Barking Treefrogs usually call while floating in the breeding pool unlike other species which generally do not call while floating Dorcas and Gibbons (2008).

No habitat evaluations had been conducted on the site prior to the field survey. Three Oaks Engineering (Three Oaks) was retained by Timmons to conduct Barking Treefrog surveys within the PSA. Three Oaks obtained the necessary Collection Permits from VDGIF for conducting these surveys (Appendix C).

2.0 METHODOLOGY

The PSA was visited on June 11, 2019, by Kate Sevick (Permit #065019) and Tess Moody. It had rained during the evening of June 10, 2019. Temperatures were in the low 80°Fs and dropped into the low 60°Fs during the evening. An initial site visit was conducted during the early afternoon of June 11 to investigate access to the site and determine prime areas to conduct the evening Auditory Calling surveys. Based on the size of the site and the network of logging roads that were available, it was decided to conduct the Auditory Calling surveys from various locations along the logging roads (Figure 2). Investigators returned to the site around 7:00 PM to conduct the Auditory Calling Surveys.

Auditory call surveys were conducted at 12 locations within the PSA between 7:00 pm to 1:30am on the night of June 11, 2019. Surveys involved listening for the distinctive calls of the male Barking Treefrog. In addition to listening for the calls, audio recordings of Barking Treefrogs were played on a smartphone to elicit responses from individuals that may have been in the area. Any amphibian calls that were heard were identified to species and noted. Recordings of calls were made to assist in the identification.

3.0 RESULTS

One faunal group, amphibians, specifically frogs, were targeted during the survey efforts. The results are presented below. Nomenclature follows Dorcas and Gibbons (2008).

A total of five frog species, including the targeted Barking Treefrog, were heard or observed within the PSA (Table 1). Species diversity was relatively low. There was a robust population of Cricket Frogs, with lower numbers heard of the other four species (Table 2). Figure 2 displays locations within the PSA where surveys were conducted and where Barking Treefrogs were heard.

Table 1. Frog Species Identified: Complete PSA (Sites 1-12)

Scientific Name	Common Name
<i>Hyla gratiosa</i>	Barking Treefrog
<i>Anaxyrus fowleri</i>	Fowlers Toad
<i>Lithobates clamitans</i>	Green Frog
<i>Hyla femoralis</i>	Pine Woods Treefrog
<i>Acris gryllus</i>	Southern Cricket Frog

Table 2. Frog species abundance estimates for each survey site

Site	Species				
	Barking Treefrog	Fowlers Toad	Green Frog	Pine Woods Treefrog	Southern Cricket Frog
1	-	-	-	-	-
2	-	-	-	-	-
3	-	-	1+	-	Distant calls
4	-	-	-	-	-
5	-	-	-	-	Abundant
6	-	-	-	-	-
7	-	-	5-8+	-	-
8	-	-	-	-	Distant calls
9	-	Distant calls	Distant calls	-	-
10	5-8+	-	Distant calls	Distant calls	-
11	-	-	-	Distant calls	Abundant
12	-	-	-	5-10+	Abundant

An additional site (Site 13) was also surveyed. Site 13 is located along Colonial Trail West to the north of the PSA boundary. The site was surveyed to determine if the calling Barking Treefrogs heard at Site 10 were potentially located outside of the PSA. Only three species were heard which did not include Barking Treefrogs (Table 2).

Table 3. Frog Species Identified: Sites 1-13

Scientific Name	Common Name	Abundance
<i>Lithobates clamitans</i>	Green Frog	3-5+
<i>Hyla femoralis</i>	Pine Woods Treefrog	10+

Scientific Name	Common Name	Abundance
<i>Acris gryllus</i>	Southern Cricket Frog	Abundant

4.0 DISCUSSION

The targeted species, Barking Treefrog, was heard calling at one location within the PSA during the Auditory Calling Survey. The survey results indicate that there is one potential breeding site for Barking Treefrogs. Additionally, other frog species were heard calling at seven other locations within the PSA and one outside of the PSA which may also be utilized by the Barking Treefrog; however, it was not heard at these other locations.

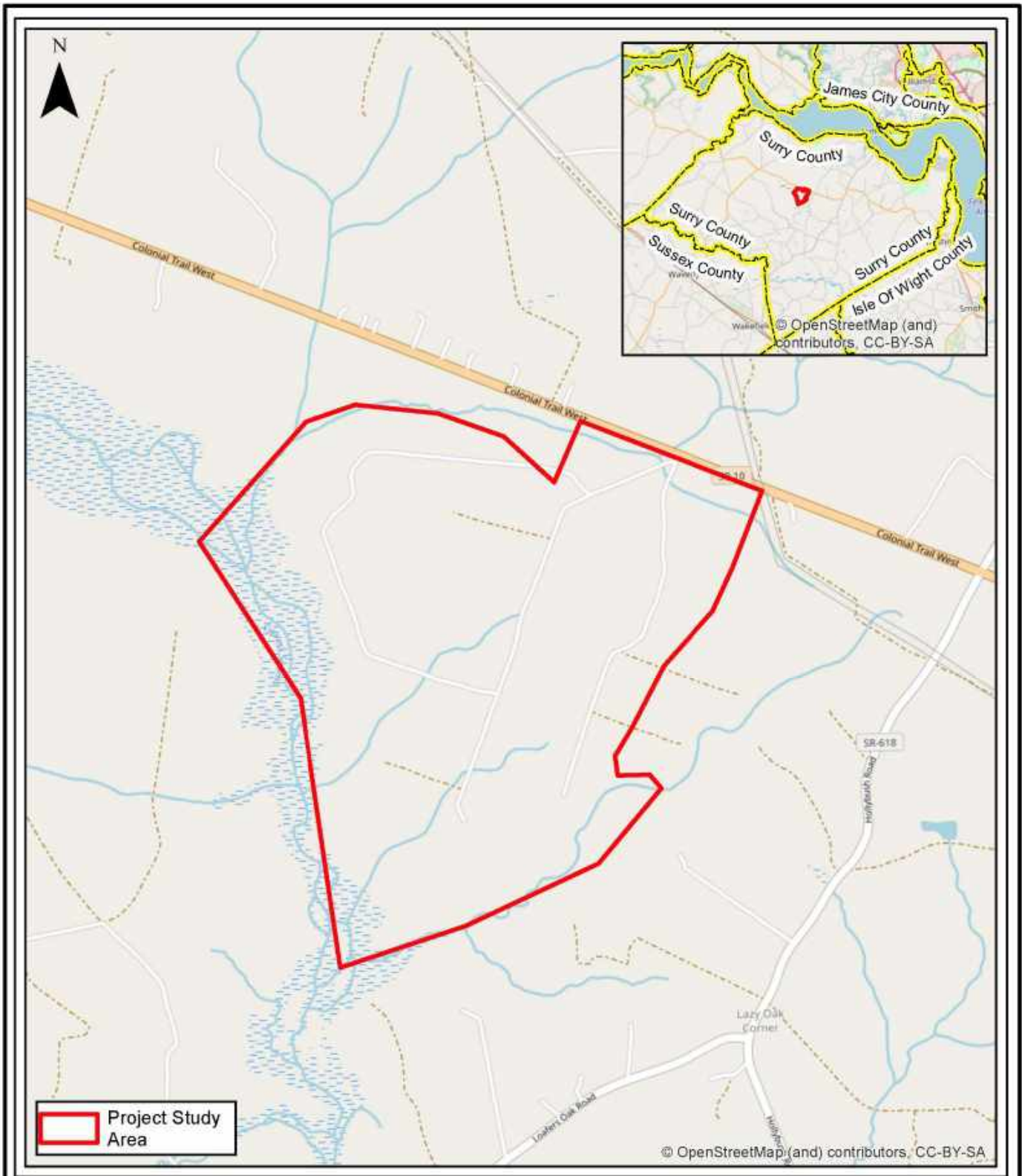
The survey results indicate that there is at least one breeding pond utilized by the Barking Treefrog within the PSA. Efforts to avoid this pond should be taken into consideration during the design of the proposed project to minimize project related effects to this population.

5.0 LITERATURE CITED

Dorcas, M. and W. Gibbons. 2008. Frogs and Toads of the Southeast. University of Georgia Press. Athens, GA. 238 pages

Appendix A

Figures



Prepared For:



TIMMONS GROUP

Amphibian Species Survey

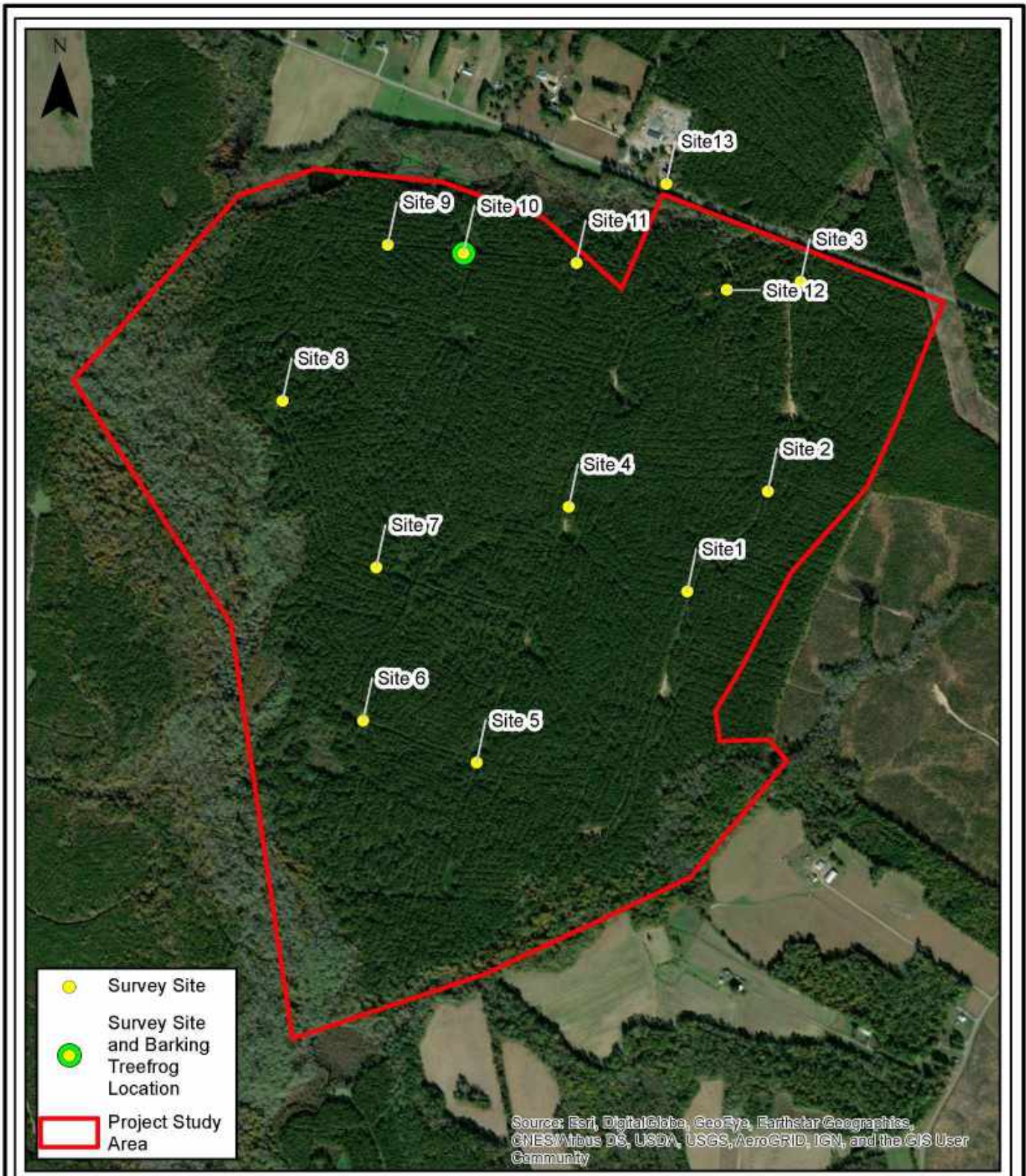
**Proposed Spring Grove II
Solar Site
Vicinity Map**

Surry County, Virginia

Date:	June 2019
Scale:	0 300 600 Feet
Job No.:	19-308
Drawn By:	KMS
Checked By:	TS

Figure

1



Prepared For:

TIMMONS GROUP

Amphibian Species Survey
 Proposed Spring Grove II
 Solar Site
 Survey Sites
 Surry County, Virginia

Date: June 2019
 Scale: 0 300 600 Feet
 Job No.: 19-308
 Drawn By: KMS
 Checked By: TS

Figure
2

Appendix B

Threatened/Endangered Species Collection Permit



Virginia Department of Game and Inland Fisheries
 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
 (804) 367-1000 (V/TDD)
 Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia & DGIF Policy E-1-90



Threatened/Endangered Species Permit

Permit Type: **Renewal** Fee Paid: \$20.00 VADGIF Permit No. **065019**

Permittee: **Kate Montieth Sevick**
 Address: **Three Oaks Engineering**
324 Blackwell Street, Suite 1200
Durham, NC 27701
 Email:

Office: (919) 698-8972
 City/County:

Contract Species Surveys/MAMAV WW Collection Line Survey

Authorized Collection Methods: By Hand/Dip Nets/Electrofishing/Aquatic Kick Samples/Seine Nets/Traps (Minnow/Pot/Bell)/Visual Encounter (turning over rocks/logs)/Nocturnal (i.e. shining w/high-power spot light)/Audio (Anurans/Birds)
Authorized Waterbodies: All within the authorized county.
Authorized Marking Techniques: N/A

Authorized Counties / Cities:
 Greenville
 Surry

SPECIAL CONDITIONS: Permittee **MUST** coordinate with Mike Pinder prior to any Blackbanded Sunfish sampling. Mike can be reached via phone at (540) 961-8304 or via email at mike.pinder@dgif.virginia.gov
 Capture, ID, and release only for Herps

PERMIT AMENDMENT 5/16/2019: This amendment adds the following:
Authorized Subpermittee: Tess Moody
Authorized Purpose: Colonial Trail West Proposed Solar Site
Authorized County: Surry

PERMIT AMENDMENT 5/13/2019: This amendment adds the following:
Authorized Purpose: MAMAC WW Collection Line Project
Authorized County: Greenville

Permittee **MUST** notify VDGIF within the 7 day period prior to each sampling event. Notification must be made via email to: collectionpermits@dgif.virginia.gov

Report Due: 31 January 2020

ANNUAL REPORTS MUST BE SUBMITTED VIA:
https://vafwis.dgif.virginia.gov/collection_permits/

STANDARD CONDITIONS ATTACHED APPLY TO THIS PERMIT.

Authorized Species:

<u>Description</u>	<u>ID Number</u>	<u>Scientific Name</u>
Barking Treefrog		<i>Hyla gratiosa</i>
Blackbanded Sunfish		<i>Enneacanthus chaetodon</i>
Mabee's Salamander		<i>Ambystoma mabeei</i>
Oak Toad		<i>Bufo quercicus</i>
Tiger Salamander		<i>Ambystoma tigrinum</i>



Virginia Department of Game and Inland Fisheries
 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
 (804) 367-1000 (V/TDD)
 Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia & DGIF Policy E-1-90



Threatened/Endangered Species Permit

Permit Type: **Renewal** Fee Paid: **\$20.00** VADGIF Permit No. **065019**

Authorized Sub-Permittees:
See Attached Sheet

Approved by: 

Applicants may appeal permit decisions within 30 days of issuance. The appeal must be in writing to the Director, Department of Game and Inland Fisheries.

Title: **Randall T. Francis - Permits Manager**

Date: **4/2/2019**

20

Permit Effective **4/2/2019** through **12/31/2019**

19



Virginia Department of Game and Inland Fisheries

7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228-0778
(804) 367-1000 (V/TDD)



Under Authority of § 29.1-412, § 29.1-417, & § 29.1-568 of the Code of Virginia & DGIF Policy E-1-90

Threatened/Endangered Species Permit

Permit Type: **Renewal**

FeePaid:

\$20.00

VADGIF Permit No.

065019

Authorized Sub-Permittees:

Nancy Scott, Three Oaks Engineering

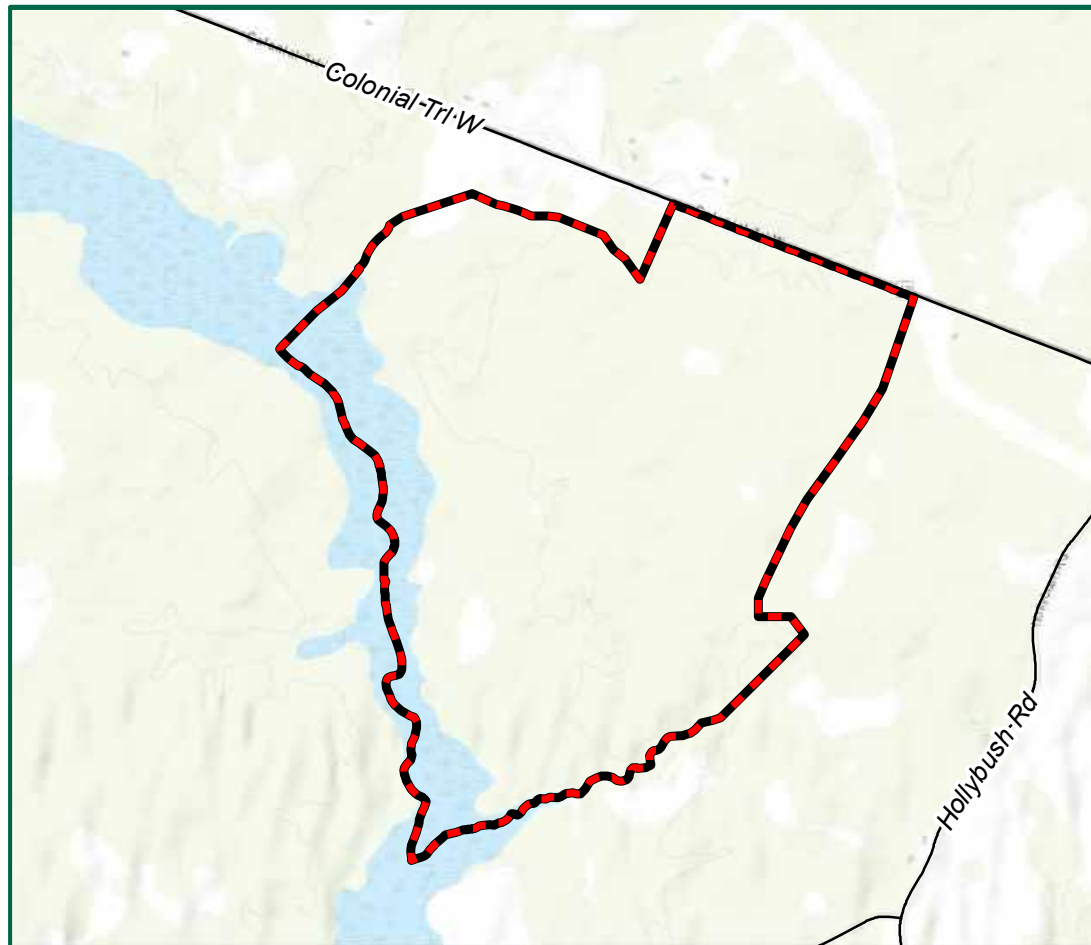
Tom Dickinson, Three Oaks Engineering

Mary Frazer, Three Oaks Engineering

Lizzy Stokes Stokes-Cawley, Three Oaks Engineering

Tim Savidge, Three Oaks Engineering

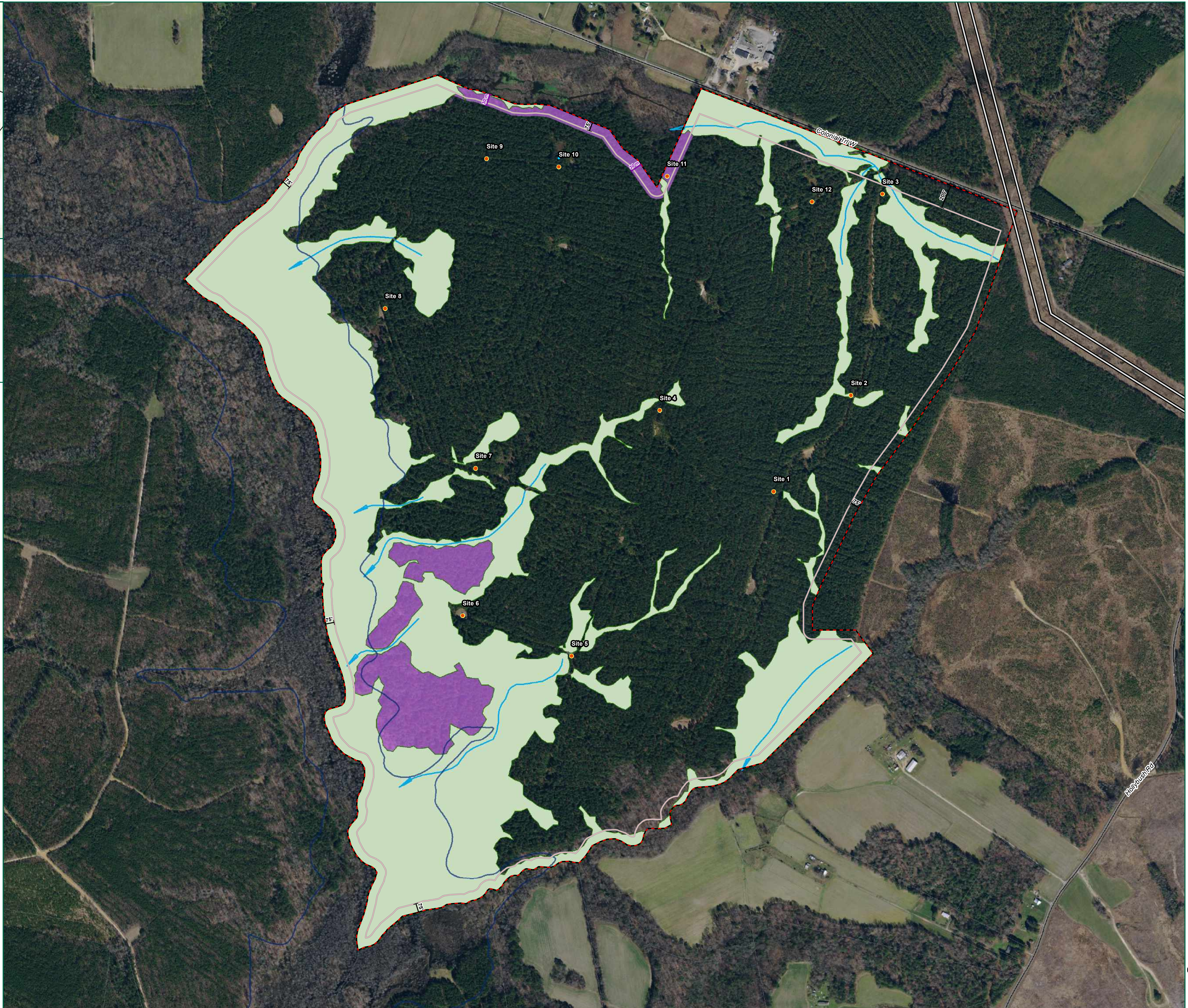
Tess Moody, Three Oaks Engineering



NOTES:

1. Project limits are approximate.
2. Tax parcels from Surry county GIS database.
3. Parcel boundaries subject to title review.
4. Waters of the U.S. delineated by GeoEnvironmental Services, November 2019, pending USACE confirmation.
5. Flood zone data from FEMA National Flood Hazard Layer (NFHL).
6. A minimum seventy-five (75) foot buffer/setback shall be maintained where the property abuts lands owned by others, including easements. A minimum two hundred (200) foot buffer/setback shall be maintained where the property abuts a right of way.
7. Vegetation on the perimeter of adjacent residential parcels will be retained as buffer where it exists, otherwise it will be planted as necessary along Colonial Trail West.
8. Parcel is located in the Blackwater River Watershed.
9. Barking Tree Frog field survey completed by Three Oaks Engineering.

- Legend**
- Project Limits - 668 Acres
 - Property Setbacks - 75' / 200'
 - Existing Transmission Line
 - Stream
 - Culvert
 - Wetlands Delineated
 - 1% Chance Annual Flood Hazard
 - Surry County Tax Parcels
- 5' Topographic Contours**
- Major
 - Minor
- Barking Tree Frog Field Survey**
- Survey Sites
 - Potential Breeding Area
 - Proposed Protection Area



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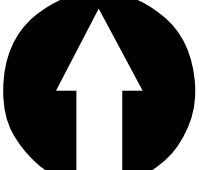
PROJECT NAME & LOCATION
SPRING GROVE III, LLC
 SURRY COUNTY,
 VIRGINIA

DATE: 05/06/2020
 PROJECT NUMBER: 43849
 PROJECT NAME: SPRING GROVE III, LLC
 DESIGNED BY / DRAWN BY: L. WHEELER

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REVISIONS	
#	DESCRIPTION
1	02/13/20 Delineated waters added, plan adjusted

DRAWING DESCRIPTION
BARKING TREE FROG FIELD SURVEY


 SCALE (FEET)
 0 400 800
 PLANS PRINTED AS 11X17 ARE HALF SCALE
 SCALE SHEET NUMBER
 H:1" = 400' 1

Attachment J – Certification of Design

**Virginia Department of Department of Environmental Quality
Small Renewable Energy Projects**

Certification of Design

Facility Name and Location

Name: Spring Grove Solar II

Location: Surry, VA

Applicant's Name: Spring Grove Solar II LLC

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

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

Certification Requirement: The applicant is submitting an application for a small renewable energy Permit by Rule from the Virginia DEQ, in accordance with §10.1-1197.6 B9 of the Code of Virginia, before such permit application can be considered complete, the applicant furnishes to the department a certification signed by a professional engineer licensed in Virginia that the project is designed in accordance with 9VAC15-60-80.

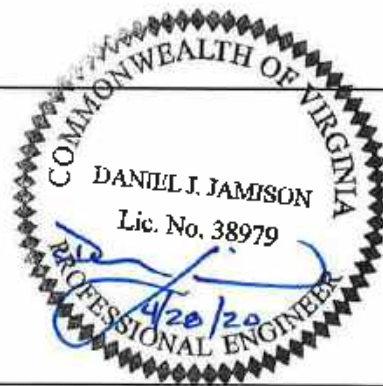
Professional Engineer Licensed in Virginia

Name: Dan Jamison, P.E.

License Number: 38979

Phone: 804-200-6538

Email: dan.jamison@timmons.com



I hereby certify that the site plan furnished to comply with §10.1-1197.6 B 1) submitted as part of this Permit by Rule application is correct and fulfills the requirements of §10.1-1197.6 B 9 of the Code of Virginia.

Signature

DAN JAMISON, P.E.
Name

4/28/2020
Date

Attachment K – Operating Plan

Spring Grove Solar II, LLC

Facility Operations Plan

The Spring Grove Solar II project ("Project") is a 150 MW solar facility proposed by Spring Grove Solar II, LLC. The Project is located east of Spring Grove, Virginia, and spans Route 10, and is generally bound by Hollybush Rd (Route 618) and Swanns Point Road (Route 610) in Surry County. It is located on approximately 1,650 acres of multiple parcels.

This Operations Plan describes basic criteria for usage during routine operations at Spring Grove Solar II.

Grounds Maintenance

Vegetation around the solar panel modules and inverters (typically grass) will be maintained to appropriate height. When necessary, the presence of invasive herbaceous species will be managed with approved herbicides.

Areas outside of the fenced solar array will not be manicured to maintain natural conditions (typically forested).

If necessary, tree management via trimming and removal will occur periodically in areas that shade solar panels or that present a hazard to the solar array and/or related equipment.

Areas designated as protected for the barking treefrog will not be disturbed.

Site Access

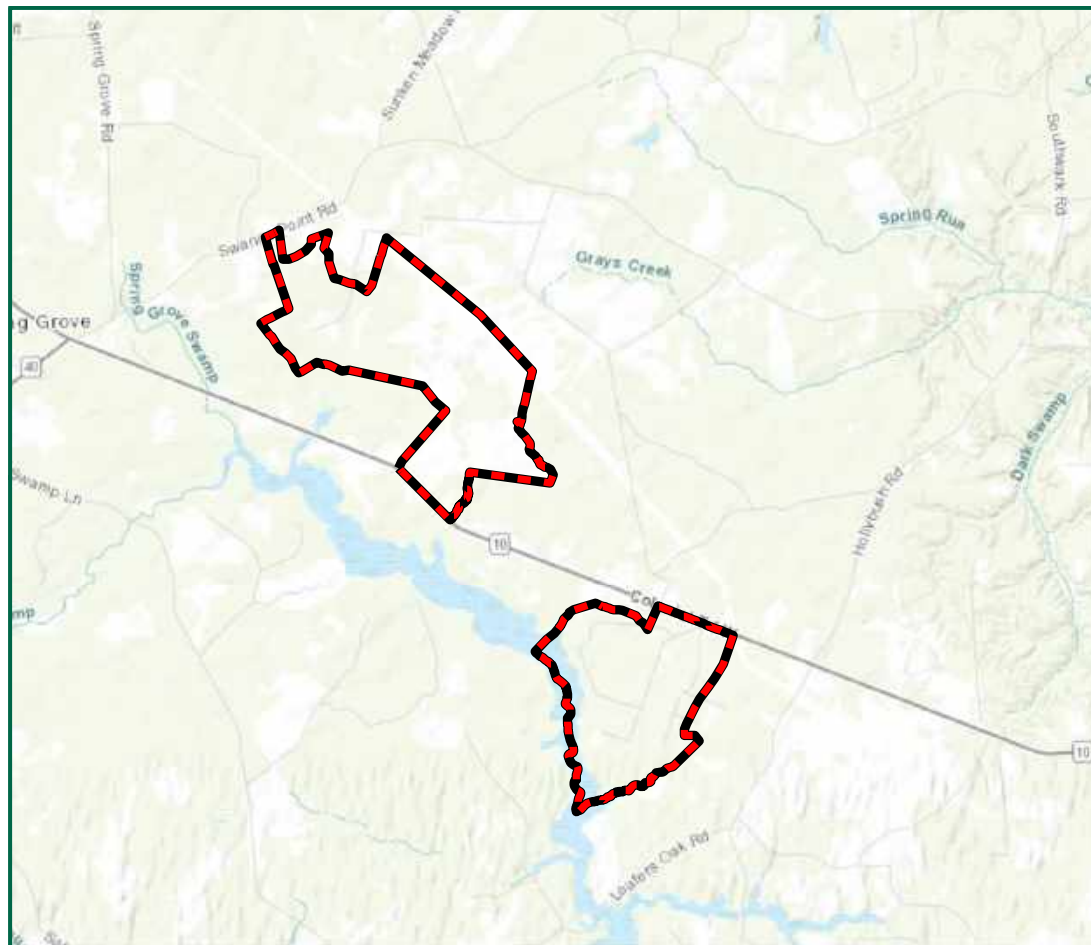
Entrances to the Project will be maintained as authorized and approved by the Virginia Department of Transportation.

Site access will be controlled by fencing around the solar array and inverters. No trespassing signs with appropriate contact information will be posted along the fence for security.

Solar Equipment

Equipment status will be monitored by Spring Grove Solar II, LLC personnel, or its designees. If maintenance is required, staff will be dispatched to the location to identify and correct the issue(s).

Attachment L – Site Plan, Context Map

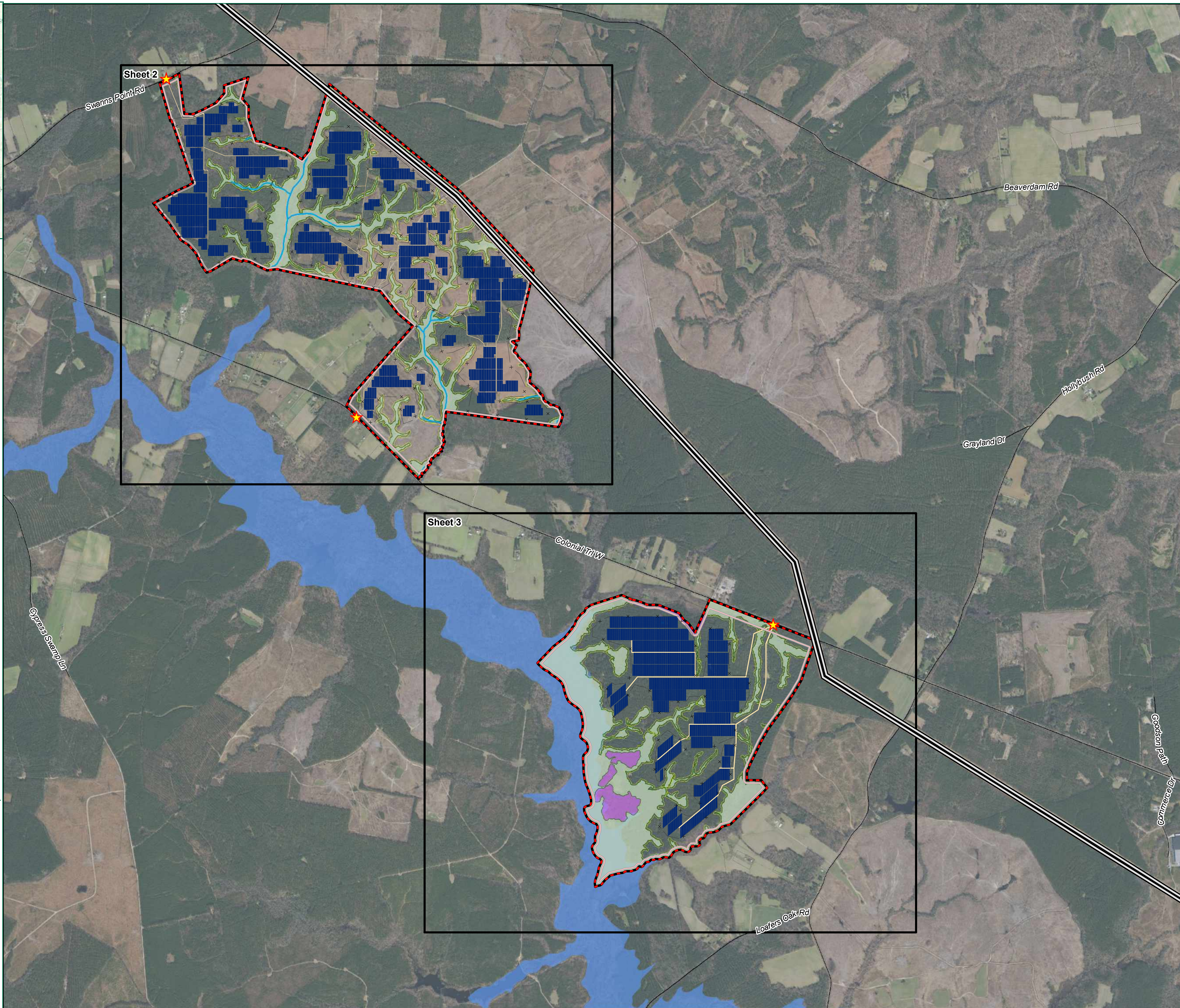


Legend

- Project Limits - 1,650.7 Acres
- ★ Entrance
- Existing Electric Transmission Line
- Stream
- Wetland
- Wetland Buffer - 25'
- 1% Chance Annual Flood Hazard
- Potential Barking Tree Frog Breeding Area
- Proposed Barking Tree Frog Protection Area
- Fence
- Setbacks
- Panels
- Internal Road
- Inverter

NOTES

1. Project Limits have been ALTA surveyed by Timmons Group.
2. Site layout is for design purposes only. Not for construction.
3. A minimum setback as shown on the map will be maintained where the project abuts non-participating land, public rights of way, and transmission lines.
4. Proposed fence will be at least six (6) feet in height and not greater than twelve (12) feet in height.
5. Wetlands and streams delineated by GeoEnvironmental and confirmed under NAO-2017-01277 and NAO-2020-0275.
6. Flood Hazard data from the FEMA National Flood Hazard Layer.



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 Richmond, VA 23228
 TEL: 804.601.6500
 www.timmons.com

PROJECT NAME & LOCATION
SPRING GROVE II, LLC
 SURRY COUNTY,
 VIRGINIA

DATE: 08/21/2020
 PROJECT NUMBER: 39227
 PROJECT NAME: SPRING GROVE II, LLC
 DESIGNED BY: L. WHEELER
 DRAWN BY: L. WHEELER

NOTES

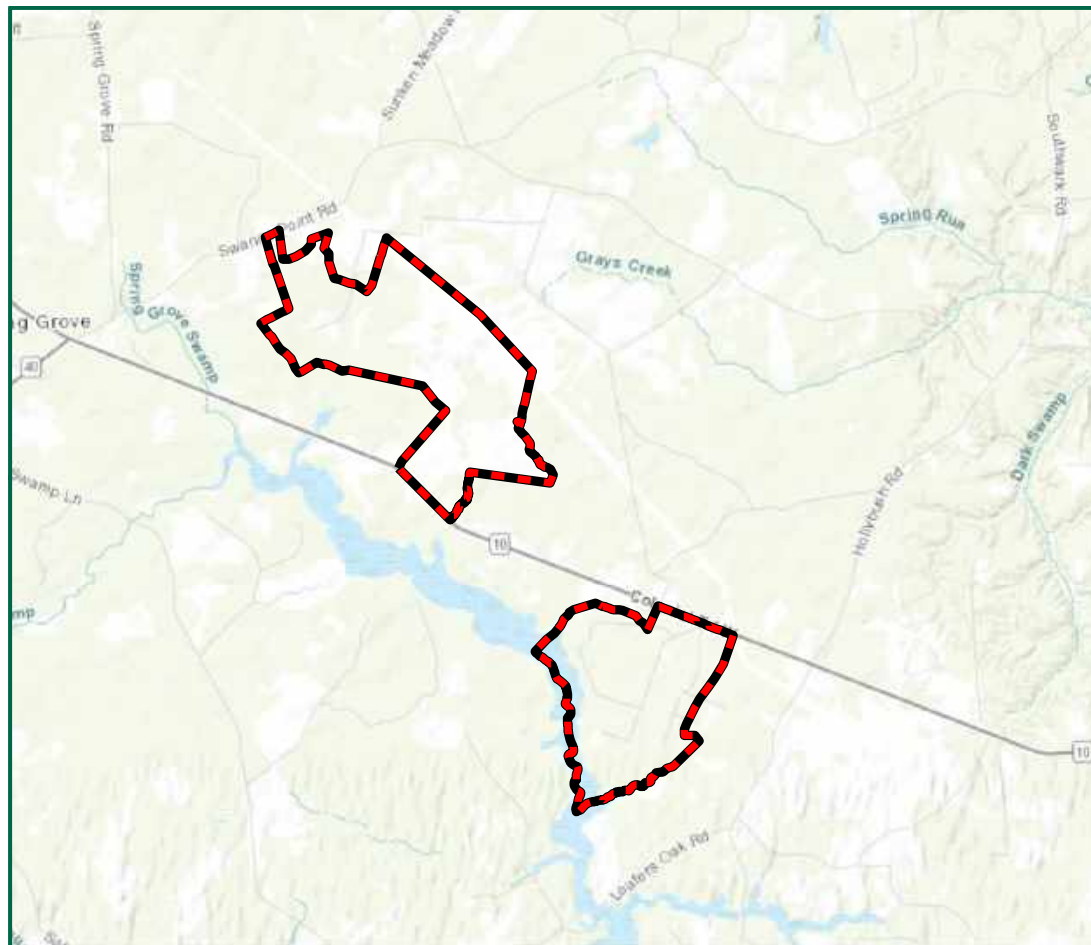
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#	MMDDYY	DESCRIPTION

DRAWING DESCRIPTION
PRELIMINARY SITE PLAN

↑
SCALE (FEET)

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 PLANS PRINTED AS 11X17 ANGLE HALF SCALE
 SCALE SHEET NUMBER
 H:1" = 1,200' 1

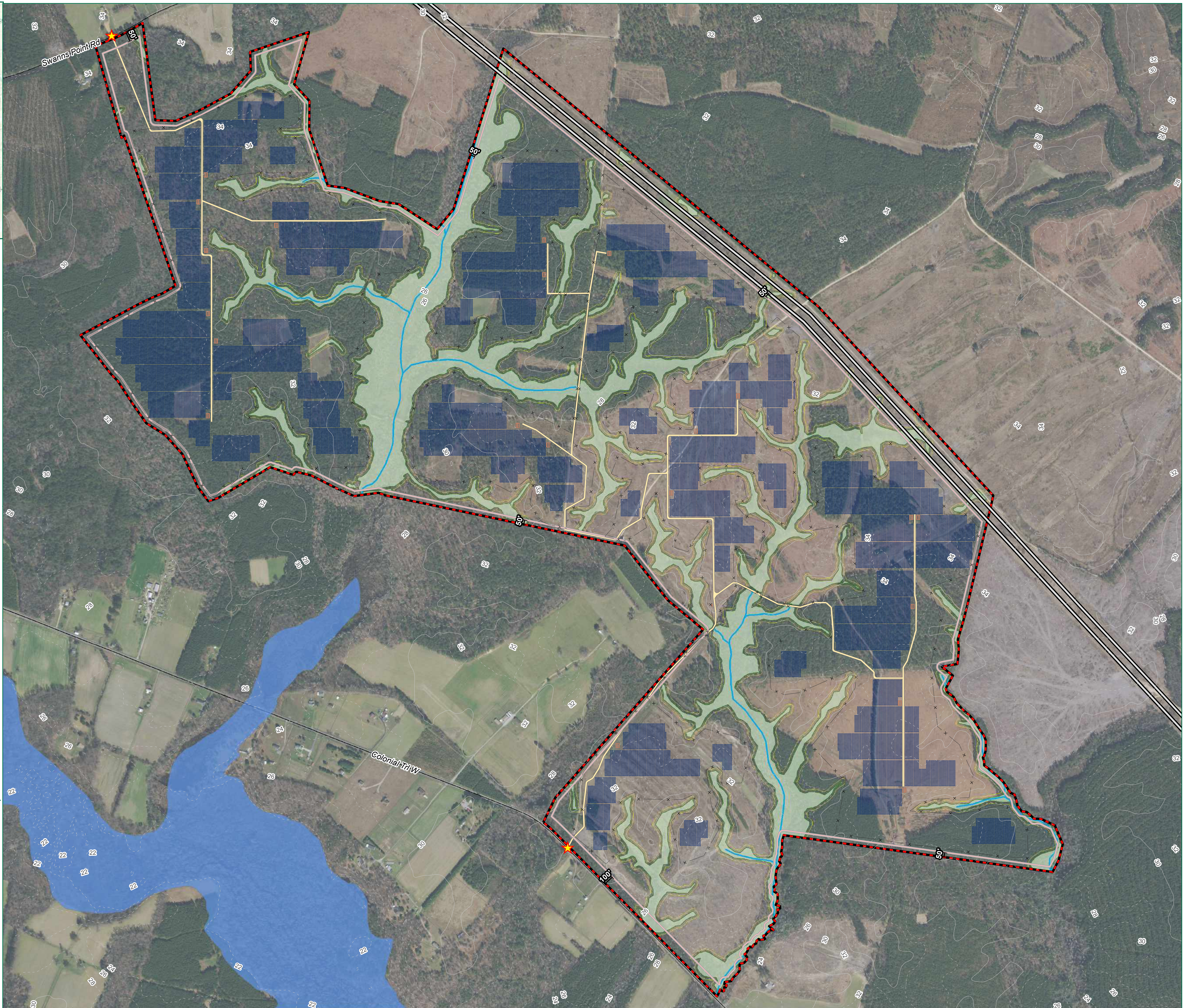


Legend

- Project Limits - 1,650.7 Acres
- ★ Entrance
- Existing Electric Transmission Line
- Stream
- Wetland
- Wetland Buffer - 25'
- 1% Chance Annual Flood Hazard
- Potential Barking Tree Frog Breeding Area
- Proposed Barking Tree Frog Protection Area
- Fence
- Setbacks
- Panels
- Internal Road
- Inverter
- 2' Topographic Contours**
- Major
- Minor

NOTES

1. Project Limits have been ALTA surveyed by Timmons Group.
2. Site layout is for design purposes only. Not for construction.
3. A minimum setback as shown on the map will be maintained where the project abuts non-participating land, public rights of way, and transmission lines.
4. Proposed fence will be at least six (6) feet in height and not greater than twelve (12) feet in height.
5. Wetlands and streams delineated by GeoEnvironmental and confirmed under NAO-2017-01277 and NAO-2020-0275.
6. Flood Hazard data from the FEMA National Flood Hazard Layer.



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PROJECT NAME & LOCATION
SPRING GROVE II, LLC
 SURRY COUNTY,
 VIRGINIA

DATE: 08/21/2020
 PROJECT NUMBER: 39227
 PROJECT NAME: SPRING GROVE II, LLC
 DESIGNED BY / DRAWN BY: L. WHEELER

NOTES

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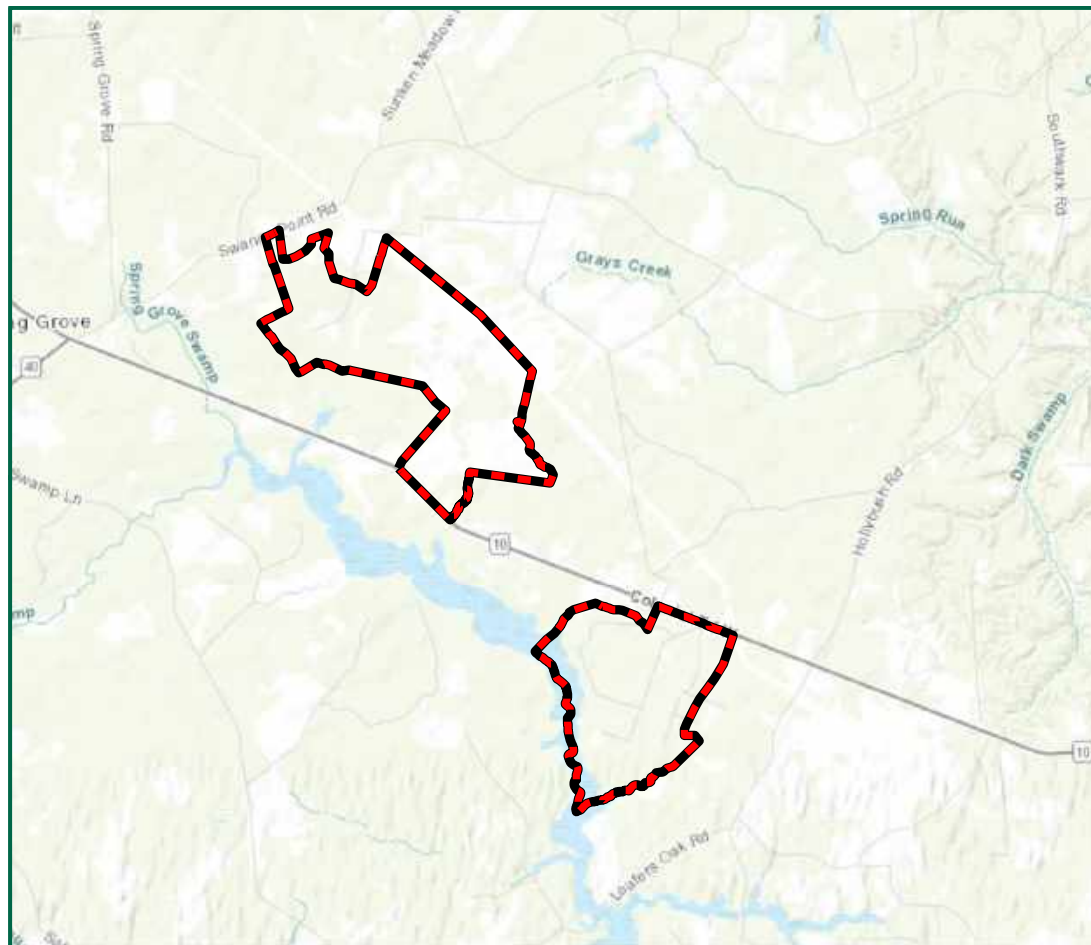
#	MM/DD/YYYY	DESCRIPTION

DRAWING DESCRIPTION
PRELIMINARY SITE PLAN

SCALE (FEET)

0 500 1,000
 PLANS PRINTED AS 1/4" = 1' HALF SCALE
 SCALE SHEET NUMBER

H: 1" = 500' 2

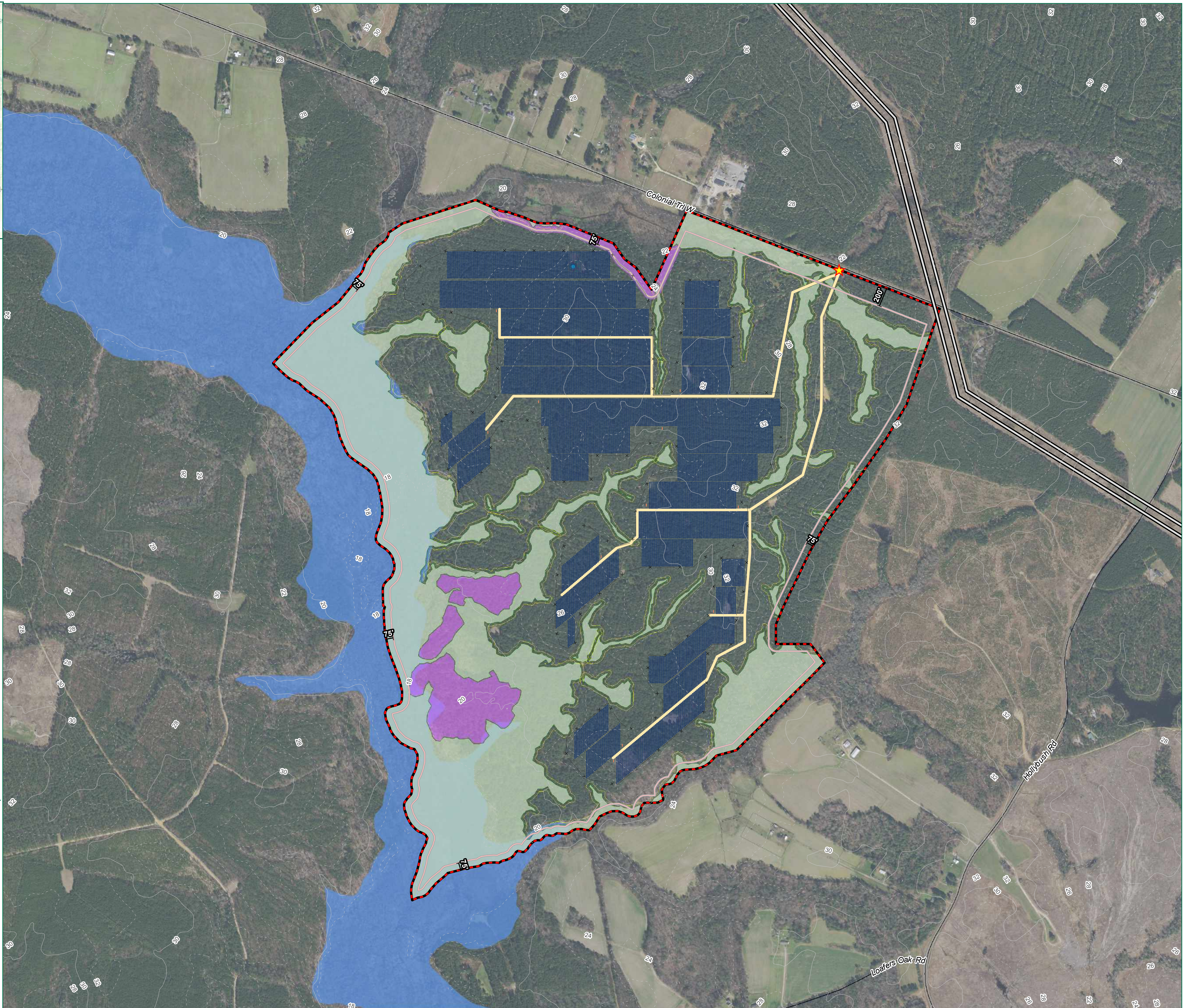


Legend

- Project Limits - 1,650.7 Acres
- ★ Entrance
- Existing Electric Transmission Line
- Stream
- Wetland
- Wetland Buffer - 25'
- 1% Chance Annual Flood Hazard
- Potential Barking Tree Frog Breeding Area
- Proposed Barking Tree Frog Protection Area
- Fence
- Setbacks
- Panels
- Internal Road
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- 2' Topographic Contours**
- Major
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NOTES

1. Project Limits have been ALTA surveyed by Timmons Group.
2. Site layout is for design purposes only. Not for construction.
3. A minimum setback as shown on the map will be maintained where the project abuts non-participating land, public rights of way, and transmission lines.
4. Proposed fence will be at least six (6) feet in height and not greater than twelve (12) feet in height.
5. Wetlands and streams delineated by GeoEnvironmental and confirmed under NAO-2017-01277 and NAO-2020-0275.
6. Flood Hazard data from the FEMA National Flood Hazard Layer.



TIMMONS GROUP
 YOUR VISION ACHIEVED THROUGH OURS.
 1001 Boulders Parkway, Suite 300
 Richmond, VA 23228
 TEL: 804.601.6500
 www.timmons.com

PROJECT NAME & LOCATION

SPRING GROVE II, LLC
 SURRY COUNTY,
 VIRGINIA

DATE	08/21/2020
PROJECT NUMBER	39227
PROJECT NAME	SPRING GROVE II, LLC
DESIGNED BY / DRAWN BY	L. WHEELER

NOTES

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REVISIONS

#	MMDDYY	DESCRIPTION

DRAWING DESCRIPTION
PRELIMINARY SITE PLAN

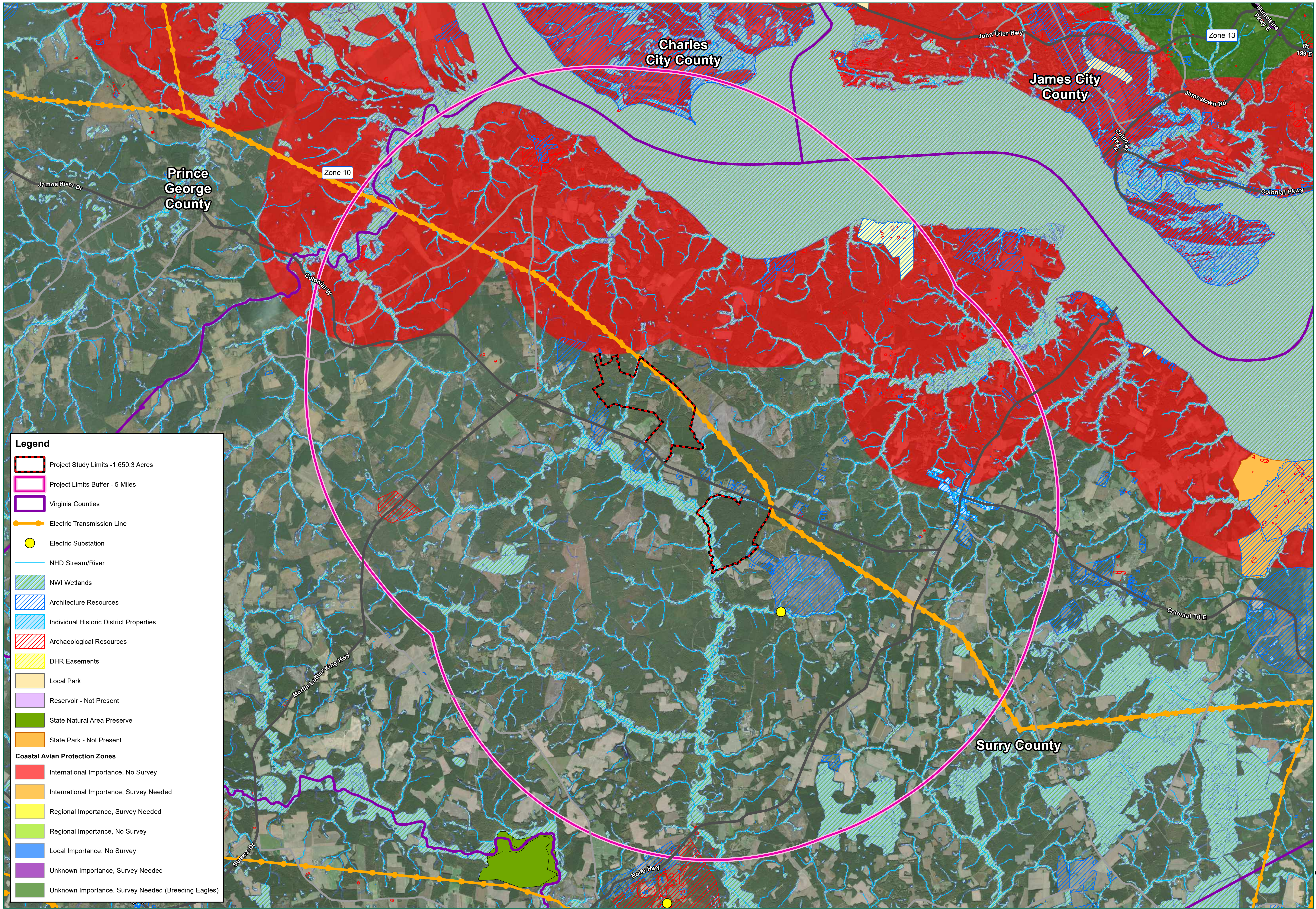
SCALE (FEET)

0 500 1,000

PLANS PRINTED AS 11X17 ARE HALF SCALE

SCALE SHEET NUMBER

H:1" = 500' 3



Legend

- Project Study Limits -1,650.3 Acres
- Project Limits Buffer - 5 Miles
- Virginia Counties
- Electric Transmission Line
- Electric Substation
- NHD Stream/River
- NWI Wetlands
- Architecture Resources
- Individual Historic District Properties
- Archaeological Resources
- DHR Easements
- Local Park
- Reservoir - Not Present
- State Natural Area Preserve
- State Park - Not Present
- Coastal Avian Protection Zones**
- International Importance, No Survey
- International Importance, Survey Needed
- Regional Importance, Survey Needed
- Regional Importance, No Survey
- Local Importance, No Survey
- Unknown Importance, Survey Needed
- Unknown Importance, Survey Needed (Breeding Eagles)

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 1001 Boulder Parkway, Suite 300
 Richmond, VA 23226
 TEL: 804-200-6500
 www.timmons.com

PROJECT NAME & LOCATION
SPRING GROVE SOLAR II LLC
 SURRY COUNTY,
 VIRGINIA

DATE: 08/28/2020
 PROJECT NUMBER: 39227
 PROJECT NAME: SPRING GROVE SOLAR II LLC
 DESIGNED BY / DRAWN BY: L. WHEELER

NOTES:
 Project Limits are approximate.
 Cultural Resource data from DHR.
 Parks data from DCR.
 Aerial imagery from VGIN.

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REVISIONS

#	DATE	DESCRIPTION

DRAWING DESCRIPTION
CONTEXT MAP

SCALE (FEET)

0 4,000 8,000
 PLANS PRINTED AS 11x17 ARE HALF SCALE
 SCALE SHEET NUMBER
 H:1" = 4,000' 1

Attachment M – Environmental Permit Certification Form

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

Facility Name and Location: Spring Grove Solar II
Surry, VA

Applicant's Name & Title: Spring Grove Solar II, LLC

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

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

The applicant is submitting an application for a small renewable energy permit by rule from the Virginia DEQ. In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, before such permit application can be considered complete, the applicant must certify that the small renewable energy project has applied for or obtained all necessary environmental permits.

List all state and local environmental permits that are necessary for the small renewable energy project listed above. Indicate for each whether the permit has been applied for and/or obtained. If the permit has been obtained, attach either a copy of the permit or a letter from the appropriate agency staff member on agency stationery stating that the permit has been issued and the date of issuance. If a permit has not yet been obtained but has been applied for, provide the name of the permit, name and address of the receiving agency, name of the staff person at the receiving agency to whom the application was addressed (if available), and the date on which the application was submitted. If no permits are necessary, write the word "none" in the first column.

Permit	Permitting Agency / Authority, Address, Contact Person	Applied for (Date)	Obtained (Date)
General VDPES Permit for Discharges of Stormwater from Construction Activities	Office of Stormwater Management/DEQ 1111 E Main Street Richmond, VA 23219 Heather McAlister	10/13/2020	

I hereby certify that the information provided above (and any attached information) is correct and fulfills the requirements of § 10.1-1197.6 B 12 of the Code of Virginia and 9 VAC 15-40-30 A 12.

Applicant's Signature

James A Crawford Jr

Date:

10/13/2020

Attachment N – Non-Utility Certification Form

**Virginia Department of Environmental Quality
Small Renewable Energy Projects
Non-Utility Certification Form**

Facility Name and Location: Spring Grove Solar II
Surry, VA

Applicant's Name: Spring Grove Solar II LLC

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

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

The applicant or his authorized representative an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 -1197.6 H of the Code of Virginia, before such permit application can be considered complete, the applicant must certify the project is proposed, developed, constructed or purchase by a person that is NOT a utility regulated pursuant to Title 56 of the Code of Virginia.

The undersigned is an responsible official for the proposed project and certifies that the project is proposed, developed, constructed or purchased by a person that is NOT a utility regulated pursuant to Title 56 of the Code of Virginia.

Applicant's signature:



Date:

04/13/2020

Attachment O – Public Review Documents

WOMACK PUBLISHING
PO BOX 530
CHATHAM VA 24531
(434)432-1654ext

ORDER CONFIRMATION

Salesperson: AMY ELLIOT

Printed at 10/19/20 08:01 by aelli-wp

Acct #: 943

Ad #: 17268

Status: New WHOLD

TIMMONS GROUP
1001 BOULDERS PKWY SUITE 300
RICHMOND VA 23225

Start: 10/21/2020 Stop: 10/28/2020

Times Ord: 2 Times Run: ***

STD 3.00 X 8.15 Words: 2

Total STD 24.45

Class: 650 Legal Notices

Rate: LEG Cost: 537.46

Affidavits: 1

Ad Descrpt: SCO SOLAR

Descr Cont: LEGAL NOTICE

Given by: *

P.O. #:

Contact:

Phone: (757)247-2257

Fax#:

Email: lou.atkins@mrc.virginia.gov

Agency:

Created: aelli 10/19/20 07:47

Last Changed: aelli 10/19/20 08:01

PUB ZONE EDT TP RUN DATES
SSD A 99 S 10/21,28

AUTHORIZATION

Under this agreement rates are subject to change with 30 days notice. In the event of a cancellation before schedule completion, I understand that the rate charged will be based upon the rate for the number of insertions used.

Name (print or type)

Name (signature)

(CONTINUED ON NEXT PAGE)

WOMACK PUBLISHING
PO BOX 530
CHATHAM VA 24531
(434)432-1654ext

ORDER CONFIRMATION (CONTINUED)

Salesperson: AMY ELLIOT

Printed at 10/19/20 08:01 by aelli-wp

Acct #: 943

Ad #: 17268

Status: New WHOLD WHOI

LEGAL NOTICE

PUBLIC NOTICE

SPRING GROVE SOLAR II, LLC

A solar renewable energy project is proposed to be located in Surry County, Virginia. The Project is located east of Spring Grove and spans Route 10 and is generally bound by Hollybush Rd (Route 618) and Swanns Point Road (Route 610). It is located on approximately 1,650 acres of multiple parcels. The project has been approved by the Surry County Board of Supervisors under a Conditional Use Permit. The proposed project is now proceeding through the Virginia Permit by Rule process. The project will have a maximum capacity of 150 Megawatts Alternating Current (AC) utilizing traditional photovoltaic solar modules which will rotate on a single axis to track the sun. Approximately 346,710 panels will be utilized with a maximum height of 12'.

We welcome the opportunity to present this project to interested parties. The purpose of the public participation is to (i) acquaint the public with the technical aspects of the proposed project and how the standards and the requirements of the Virginia Department of Environmental Quality PBR regulations will be met, (ii) identify issues of concern, (iii) facilitate communication, and (iv) establish a dialogue between the owner or operator and persons who may be affected by the project. A 30+ day comment period, in accordance with 9VAC15-60-90 C will be held commencing Thursday, November 5, 2020 through Thursday, December 10, 2020. Any interested parties may contact the applicant to ask questions or provide comments, or request a copy of the application materials by contacting:

Urban Grid Solar Project, LLC
ATTN: James Crawford
337 Log Canoe Circle
Stevensville, MD 21666
434-953-8810
James.Crawford@UrbanGridCo.com

A public meeting will be held in accordance with 9VAC15-60-90 C and Executive Order 53 on Wednesday, December 2nd, from 5:30-7:00PM in the parking lot of the Ruritan Club, located at 2144 Colonial Trail W, Dendron, VA 23839. Information will be presented on poster boards which will be visible by attendees' cars. Following the viewing of this information, citizens are asked to park and remain in their cars. Citizens may ask questions by raising their hand out of the window or honking their horn, at which time a representative from Spring Grove Solar II, LLC will come to receive comments while maintaining required social distancing practices. Questions will then be addressed by a Spring Grove Solar II, LLC representative.

For those who would prefer to stay home to help prevent the spread of COVID-19, or are unable to attend the meeting at the Ruritan Club, a digital public hearing will be held via RingCentral Meeting teleconferencing service and in compliance with Item 4-0.01 g of Chapter 1283 of the 2020 Acts of Assembly. To participate in the virtual presentation, please email James Crawford at james.crawford@urbangridco.com and type "Spring Grove Solar II, LLC, Virtual Presentation" in the subject line to receive a personalized access code for the meeting and participation instructions. The virtual presentation will be accessible fifteen minutes prior to the start of the live presentation.

Copies of the documentation to be submitted to the DEQ in support of the Permit by Rule application will be available for inspection on the following website:
<http://www.urbangridsolar.com/news>.