FRANKLIN COUNTY
PETITION/APPLICATION FOR COMPREHENSIVE PLAN CONFORMANCE REVIEW
(Type or Print)

I/We, Constitution Solar, LLC as Owner(s), Contract Purchasers, or Owner's Authorized Agent of the property described below, hereby apply to the Franklin County Board of Supervisors for a Comprehensive Plan conformance review on the property as described below:

1. Petitioners Name: Constitution Solar, LLC

2. Property Owner's Name: Virgil Goode and Elizabeth Goode Brumfield

   Phone Number: 302-593-3851

   Address: 235 S. Main St.
   Rocky Mount, VA Zip: 24151

3. Exact Directions to Property from Rocky Mount: US 220 South for approximately 13.6 miles and property is on the left

4. Tax Map and Parcel Number: 1110017401

5. Election District: Snow Creek

6. Property Information:

   A. Size of Property: Approximately 168 acres

   B. Existing Zoning: NZ

   C. Existing Land Use: Timber and hay production

   D. Is property located within any of the following overlay zoning districts:

   ___Corridor District ___Westlake Overlay District ___Smith Mountain Lake Surface District

   E. Is any land submerged under water or part of a lake? [Yes] No If yes, explain.
   Small ephemeral and intermittent streams which are shown on the site plan

7. Proposed Comprehensive Plan conformance review information:

   A. Proposed Land Use: Distribution scale solar power generation facility

   B. Size of Proposed Use: Approximately 35 acres

   C. Other Details of Proposed Use: Please see attached project narrative

Checklist for completed items:

_____ Application Form

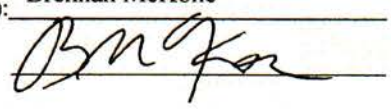
_____ Letter of Application

_____ Concept Plan

_____ Application Fee

****I certify that this application for a Comprehensive Plan conformance review and the information submitted herein is correct and accurate. I authorize County staff to access this property for purposes related to the review and processing of this application.**

Petitioner's Name (Print): Brennan McKone

Signature of Petitioner: 

Date: July 9, 2025

Mailing Address: 19890 State Line Rd.
South Bend, IN 46637

Telephone: 302-593-3851

Email Address: brennan.mckone@inovateus.com

Owner's consent, if petitioner is not property owner:

Owner's Name (Print): _____

Signature of Owner: _____

Date: _____

Updated: January 10, 2023

Checklist for completed items:

_____ Application Form

_____ Letter of Application

_____ Concept Plan

_____ Application Fee

****I certify that this application for a Comprehensive Plan conformance review and the information submitted herein is correct and accurate. I authorize County staff to access this property for purposes related to the review and processing of this application.**

Petitioner's Name (Print):_____

Signature of Petitioner: _____

Date:_____

Mailing Address:_____

_____

Telephone:_____

Email Address:_____

Owner's consent, if petitioner is not property owner:

Owner's Name (Print): Virgil Goode Jr Elizabeth Goode Brownfield

Signature of Owner: Virgil Goode Jr

Date: June 8, 2025

Updated: January 10, 2023

Inovateus Solar™
DEVELOPMENT | ENGINEERING | PROCUREMENT | CONSTRUCTION

Franklin County
Planning and Community Development
1255 Franklin Street
Suite 103
Rocky Mount, Virginia 24151

Constitution Solar, LLC
19890 State Line Rd
South Bend, IN 46637
Tel: 302-593-3851
Email: brennan.mckone@inovateus.com

To: Franklin County Planning & Community Development
From: Inovateus Solar

Inovateus Solar is pleased to submit the enclosed Comprehensive Plan Conformance Review application on behalf of Constitution Solar, LLC (the "Applicant") for the Constitution Solar Project (the "Project"). The Project is a proposed distribution-scale solar energy facility to be located on a portion of a single parcel in the Snow Creek District of Franklin County.

Designed to generate up to 5 megawatts alternating current (MWac) of clean, renewable energy, the Project will deliver power directly to the local distribution system within Appalachian Power Company's service territory. Based on data from the U.S. Energy Information Administration (EIA), this output is sufficient to meet the annual energy needs of approximately 560 Virginia homes. Notably, the Project will not require the construction of a new substation or include battery storage infrastructure.

The Project site is currently used for limited hay and timber production. Development will occupy approximately 21% of the parcel, enabling the Project to meet—and in some areas exceed—Franklin County's setback requirements. Once operational, the Project is not expected to produce noticeable visual or auditory impacts. Furthermore, the facility will utilize less than 0.01% of Franklin County's total land area.

The Constitution Solar Project is designed to be substantially in accord with the Franklin County Comprehensive Plan. It will be fully screened from public rights-of-way and adjacent properties, thereby preserving the visual character of the surrounding landscape and avoiding adverse effects on scenic or cultural resources. The Project is sited outside of any Designated Growth Areas and aligns with the County's objective to support solar development while protecting natural, agricultural, scenic, tourism, and cultural assets.

In addition to its environmental benefits, the Project will generate significantly more local tax revenue compared to the current land use and will not impose additional demands on public services or infrastructure. Constitution Solar will contribute to the County's clean energy goals while supporting long-term economic development through the generation of affordable, emission-free electricity.

We look forward to continuing our collaboration with Franklin County to ensure that the Constitution Solar Project is developed in a manner that benefits residents and preserves land use flexibility for future generations. Should you have any questions or require additional information, please do not hesitate to contact me.

Brennan McKone
Brennan.mckone@inovateus.com
302-593-3851

Project Narrative -Table of Contents

1. Project Details

Constitution Solar, LLC (the "Applicant") is seeking approval of a Comprehensive Plan Conformance Review to enable it to construct and operate a solar energy facility with a maximum nameplate capacity up to 5-Megawatts alternating current (MWac). Constitution Solar (the "Project") will be situated on a portion of one un-zoned parcel owned by Virgil Goode and Elizabeth Goode Brumfield located in a non-zoned portion of Franklin County. The parcel number is 1110017401. The land is currently used for pasture and timberland. The Project will be along Route 220, Virgil Goode Hwy.

The project parcel is approximately 168 acres. The Project will be comprised of approximately 35 acres, with approximately 8 acres of solar panels and Project infrastructure. Thus, while Constitution Solar is in operation, there will be approximately 133 acres of open green space, forestland, and other vegetation unused by the project. A portion of this land will be used for required setbacks and buffers, while the remainder will be retained and used by the landowner.

The Project site is approximately 15 miles south of Rocky Mount in the Snow Creek District. Site control has been secured through an option to lease agreement as demonstrated in Exhibit 8.9, Site Control. The Project will deliver clean and cost-competitive energy through a distribution circuit that crosses Virgil Goode Hwy next to the project site and connects to Appalachian Power Company's Oak Level substation.

The Project is being developed by Inovateus Solar, an Indiana-based renewable energy development and EPC (engineering, procurement, and construction) firm. Inovateus specializes in delivering a portfolio of sustainable energy solutions throughout the Commonwealth of Virginia and has successfully constructed over 700 megawatts of renewable energy projects nationwide. Inovateus is committed to utilizing local labor, leveraging regional expertise to foster collaboration and promote economic development within the communities it serves.

Inovateus Solar submits this Application, on behalf of Constitution Solar, LLC, in compliance with the County Zoning Ordinance requirements for a utility-scale solar energy facility. We share the County's commitment to ensure that the best practices in solar development are being implemented in Franklin County, and we look forward to demonstrating that commitment with this Project.

The Project's final site plan will be completed after field studies and advanced engineering have been conducted, and it will be submitted to the County along with construction plans at the time of final site plan application.

2.0 Planning Considerations

2.1 Current Use and Proposed Use

Of the approximately 168 acres of project land about 15 acres are used for pasture and hay production and the remaining approximately 153 acres are forested. The forest land was logged in 2010 and has grown back as mostly monoculture pine. The proposed land use is a solar farm consisting of photovoltaic (PV) panels. The PV panels produce clean and affordable energy that flows into the local distribution grid, powering local homes and businesses.

2.2 Conformity with Comprehensive Plan

Pursuant to Virginia Code § 15.2-2232, the County's Comprehensive Plan governs "the general or approximate location, character, and extent of each feature shown on the plan." For any proposed "public utility facility" following the adoption of the Comprehensive Plan, the Planning Commission is responsible for determining whether the proposed facility's "general or approximate location, character, and extent" are "substantially in accord with the adopted comprehensive plan or part thereof." As the Project qualifies as a public utility facility under Virginia Code § 56-232, the Planning Commission is accordingly required to assess whether its proposed location, character, and extent are consistent with the Comprehensive Plan.

This analysis can be found in Exhibit 8.11 Constitution Solar 2232 Analysis.

3.0 General Development Considerations

3.1 Compatibility with the Community and Adjacent Properties

Due to the passive nature of solar energy facilities, there are no anticipated adverse impacts to the public health, safety, or welfare of the citizens of Franklin County. During operation and maintenance, the facility produces no vibration, emissions, odor, or fumes; during construction, there will be limited noise and equipment emissions, which will be mitigated as required by the ordinance, including limiting the hours of operation of post-driving and other construction equipment from sunrise to sunset. Because the Project

does not use any public utilities, there is no impact on public infrastructure. The Project will be set back a minimum of 150 feet from public rights of way and 300 feet from residences.

Solar projects also make good neighbors – they generate minimal sound during operation and are screened effectively with vegetative buffers and existing vegetation given their minimal-to-no impact on the County's resources. Other forms of development (commercial, residential housing, etc.) require additional services such as roads, utilities, schools, and law enforcement.

The Project is compatible with the existing use of the project land and the adjoining parcels. The project will be set back over 300 feet from adjacent residences and will utilize 120 feet of dense existing vegetation to screen the project from view. Supplemental plantings, with a minimum width of 30 feet, will be installed in areas where breaks occur in the existing vegetation, in compliance with the Franklin County Solar Ordinance.

We have made attempts via mailings, phone calls and door knocking to contact all adjacent landowners to discuss project details and have not received any notice of objection. Please see Exhibit 8.8 for signed copies of approval letters from adjacent landowners and community engagement.

3.2 Glint and Glare / Airport Operations

The Federal Aviation Administration's ("FAA") Obstruction Evaluation / Airport Airspace Analysis Notice Criteria Tool was used to determine the impact of the project on airways. The notice criteria tool is a tool provided by the FAA to determine if the project needs to be filed for a hazard study with the FAA. If the tool determines that the project is eligible, the FAA will further evaluate the project for its impact on the surroundings. If the project is deemed ineligible by the criteria tool, no further steps are required by the FAA.

The tool determined that the Constitution Solar Project did not exceed the agency's criteria, and the project does not need any further FAA study. Therefore, the Constitution Solar Project poses no potential hazard for, and will not interfere with, airport operations. The notice criteria tool results are attached as Exhibit 8.7 FAA Notice Criteria in the application.

Additionally, to further demonstrate "that the panels will be sited, designed, and installed to eliminate glint and glare effects on airport operations" (Sec. 25-147. (b)(5) (i)), Inovateus Solar engineering team used ForgeSolar software to evaluate glint and glare for Blue Ridge Regional Airport, approximately 15 miles southwest of the site. The software results predict zero glint and glare effects on operations at the airfield.

This report can be found in Exhibit 8.6 Glint and Glare Study.

3.3 Sound

During operation, the Constitution Solar Farm will not produce sound outside of the Project boundaries. Project components that produce sound, such as inverters, will be set back from the Project boundary so they will not be heard from adjacent properties. Additionally, the Project will only be operating during the day, so there will be no sound produced at night. During construction, there will be a temporary increase in sound levels due to the operation of construction equipment. The construction period is expected to last 6-8 months or less, during which construction activities will be limited in accordance with applicable sections of the Franklin County Land Development Ordinance. Once the Project is constructed, the inverter sound shall not exceed 50 dBA from the fence line, which is equivalent to the normal operational sound of a consumer refrigerator.

3.4 Fire Safety

While the occurrence of electrical fires at photovoltaic (PV) facilities is extremely low, such incidents may arise due to faults such as improper electrical connections. To address these risks, all system components—including PV modules, inverters, and balance-of-system equipment—will be certified to meet applicable safety and performance standards and will undergo testing in accordance with industry protocols.

The Project will be designed, constructed, and operated in full compliance with the National Electrical Code (NEC), as well as relevant standards established by the National Fire Protection Association (NFPA), to ensure adherence to established electrical safety requirements. Project access roads and turn arounds are compliant with Section D103.1 of the Virginia Statewide Fire Prevention Code.

In coordination with Franklin County Public Safety, the Project owner will develop and implement a site-specific emergency response training program. This program will include instruction on appropriate response procedures for electrical and fire-related incidents and will be offered to first responders prior to commissioning. Pursuant to the Franklin County Zoning Ordinance, a comprehensive post-construction Emergency Response and Safety Plan will be provided to applicable public safety agencies. This plan will outline equipment specifications, site access protocols, and optional hands-on training for emergency personnel.

4.0 Economic Impacts

Constitution Solar will deliver a significant increase in economic value to Franklin County, far surpassing the current revenue generated by the project parcel. In addition to its fiscal contributions, the Project will provide both environmental and economic benefits through the generation of clean, emissions-free, and cost-effective energy.

Unlike more intensive forms of development, the solar facility will have minimal impact on County infrastructure and public services. As a result, the revenues generated—primarily through taxes and related financial agreements—will contribute directly to the County's general fund, supporting public programs and services without incurring additional public costs.

Furthermore, the presence of utility-scale renewable energy infrastructure can enhance the County's competitiveness in attracting new business investment. Many corporations now prioritize access to clean energy as a criterion when selecting sites for new operations. In this context, the Project supports local economic development by generating short-term employment and supplier opportunities during construction, while creating long-term value through energy stability and enhanced regional appeal.

Tax revenues from the Project are expected to help reduce fiscal pressure on local taxpayers and enable the County to invest in capital improvements and community initiatives.

Additional information can be found on Exhibit 8.12, Economic Impact Report

5.0 Environmental and Cultural Considerations-

Solar energy facilities represent a temporary and reversible land use that preserves long-term land use flexibility. Unlike permanent developments such as residential subdivisions or industrial complexes, a solar project can be fully decommissioned at the end of its operational life—typically 30 to 40 years—allowing the land to be restored to its previous condition or repurposed for future uses, including agricultural, residential, or industrial development. This effectively functions as a land banking mechanism, enabling the County to preserve strategic land assets while meeting current energy and economic goals.

During this interim use period, Franklin County will benefit from consistent tax revenues and economic contributions generated by the Project, without compromising its ability to adapt land use strategies to future needs and priorities.

The Project has also been designed to align with the site's existing physical characteristics. It will avoid and minimize disturbances to sensitive environmental features, including wetlands, steep slopes, and other natural resources, through careful siting and adherence to applicable environmental regulations and best management practices.

5.1 Environmental Preservation

Compared to residential, commercial, or industrial development, utility-scale solar represents a low-impact and non-permanent land use. The physical footprint of the facility is minimal, primarily consisting of driven steel pilings to support photovoltaic panels, a limited number of concrete pads for inverters, perimeter fencing, and gravel access roads.

Upon decommissioning, all above-ground and sub-surface equipment will be removed in accordance with an approved decommissioning plan, and the site can be restored to its original condition or repurposed for other compatible land uses, such as agriculture, forestry or other forms of development consistent with the County's long-term land use planning objectives.

More information can be found on Exhibit 8.5, Decommissioning Plan

5.2 Considerations of Air Quality

Clean, renewable energy sources such as solar farms generate emissions-free electricity and significantly reduce reliance on carbon-based fuels. This transition helps improve regional air quality by limiting the release of airborne pollutants. As a passive energy generation use, the Project also minimizes ongoing land disturbance activities, such as tree thinning and soil discing. Furthermore, the establishment of pollinator-friendly vegetation across the site will promote soil health, reduce sediment runoff, enhance biodiversity, and support long-term land regeneration throughout the operational life of the facility.

5.3 Surface and Groundwater Quality

To protect Franklin County's water and soil resources, the Applicant will comply with all applicable erosion and sediment control laws and regulations. The site is subject to the Virginia stormwater regulations which dictate requirements for construction best management practices (BMPs) and stormwater quantity and quality requirements. Temporary and permanent BMPs on site will be designed to prevent the discharge of sediment and other pollutants into nearby waterways during construction and once the project is in operation. The Applicant will coordinate with Franklin County as well as an Erosion and Sediment Control program ("VESCP") Authority for submission and review of the Project's erosion and sediment control (E&S) plans. During construction, the site will

also abide by the state regulations which include following the Virginia Stormwater Management Handbook (VSMH).

The applicant is also required by the Ordinance to submit an Environmental Impact Report (EIR) prior to construction. In this report, the applicant is required to address potential impacts on soil, including erosion, siltation, toxicity, productivity, and suitability for agriculture. The EIR can be found in Exhibit 8.13.

The site contains environmentally sensitive areas such as streams and wetlands. During construction the project will implement construction BMPs such as super silt fence, silt fence, temporary diversions dikes, sediment traps / basins, and outfall protection to name a few. All of which can be found in Chapter 7 of the VSMH (Document Viewer | Virginia Stormwater Management Handbook). These measures are implemented specifically to capture and filter the sediment-laden runoff from project sites during construction.

Post-construction stormwater quantity requirements regulate the volume of runoff allowed from a site. Runoff calculations for solar sites will be conducted per VADEQ standards, and in accordance with the applicable governing memorandums issued for solar sites. The project's System Impact Study (SIS) was issued by APCo on 09/24/2021. Per Viginia guidance, since the SIS was issued prior to 12/31/2024, the project is grandfathered under the stormwater management regulations. As such, the proposed modules onsite will be considered pervious for purposes of stormwater management calculations. Calculations have not been conducted for the site given the current conceptual-phase milestone. However, the potential post-construction, permanent BMPs for stormwater quantity could be detention ponds if needed and as shown on the concept plan. If utilized, the ponds will release the runoff from the site overtime at a rate that is equal to or less than the existing conditions and, as such, will not negatively impact downstream properties.

Post-construction stormwater quality requirements regulate the amount of phosphorous leaving the site. This is typically met by improving the ground cover for these sites. Since this site will comply with the pollinator-smart program, the ground cover quality will greatly improve from the existing condition. With an improved ground cover, the amount of phosphorous contained in the runoff will be decreased from existing conditions due to the increase filtering ability of the new ground cover.

Additionally, the applicant must assess potential impacts on water, including quantity, quality, and flow of streams, and groundwater. The streams within the project footprint are part of the Upper Roanoke River watershed. The project is not expected to have any impact on the water quality of Smith Mountain Lake.

The Project will minimize impact to wetlands and surface waters and will provide the required buffers for onsite wetlands and intermittent streams. The site will not require

water during operation and no new wells or water connections will be required. There is no anticipated impact on groundwater recharge. The operation of the Project does not produce wastewater, nor is it expected to degrade the quantity or quality of surface water from sedimentation.

5.4 Wildlife Resources

A desktop analysis of wildlife and wildlife habitats was conducted for the Constitution Solar Farm by Colliers Engineering, an industry expert. A threatened and endangered species review was conducted to gain insight regarding the potential presence of Endangered Species Act (ESA) listed species as well as State listed species onsite or in the vicinity of the Site. According to the Threatened and Endangered Species analysis, there is low probability for rare, threatened, and endangered species to occur on-site. If state or federal permits are necessary, the Applicant will coordinate with agencies to ensure the protection and avoidance of T&E species.

This report can be seen as part of Exhibit 8.13 Environmental Impact Report

5.5 Cultural and Historical Resource Analysis

Bowman Consulting has also conducted a Virginia Department of Historic Resources (VDHR) database search that encompasses the Project site and one-half mile buffer surrounding the Project site. There is one known architectural resource (VDHR ID # 033-5310) within the parcel limits, and it has been determined to be not eligible for listing on the National Register of Historic Places (NRHP) or the Virginia Landmarks Register (VLR). If state or federal permits are necessary, the Applicant will coordinate with agencies to ensure the protection and avoidance of cultural and historical resources

This report can be seen in Exhibit 8.10 Constitution Solar Cultural Resource Study

6.0 Preliminary Site Plan and Project Design

6.1 Project Interconnection

The Applicant has submitted an application for interconnection to Appalachian Power Company's (APCo) electrical grid in January, 2021, and the Project has received the System Impact Study (SIS) back from APCo on September 24, 2021. The Project will supply power to the existing Oak Level substation located off Virgil Goode Hwy, Route 220 and will flow to Appalachian Power Company's electrical grid via distribution lines adjacent to the site. The Project will add up to 5 MWac of renewable energy to the grid, enough to meet the energy needs of about 560 Virginia homes, based on U.S. Energy Information Administration (EIA) data.

There will be one Point of Interconnection (POI), as indicated on Exhibit 8.3 Preliminary Site Exhibit. Interconnection for the Project will not require the construction of a new electrical substation as is the case with larger-scale transmission interconnected projects. The Project is a smaller-scale distribution project and will be integrated into existing infrastructure and will require few modifications. Distribution projects interconnect at the distribution level which directly benefits the local grid by improving grid stability and reducing transmission losses.

6.2 Facility Construction

The Applicant estimates that construction could start as soon as 2026 and the Project may commence operations as early as 2027. It is estimated that construction of the Project will require between 6-8 months, though the project may be required to align with the utility grid interconnection process. Construction and operational activities will conform to ordinance requirements and SUP conditions. The Project is expected to be in operation for at least 40 years and the electric solar system components will be Underwriters Laboratory (UL), listed or equivalent.

The solar panel area is approximately 8 acres and within the 35 acre Project area, the Project will utilize approximately 9,240 solar panels. The current proposed equipment will be 710-watt photovoltaic (PV) modules or equivalent, but depending on advancements in technology, the panel rating may exceed 710 watts. The PV panels are anticipated to be secured to single axis trackers on a racking system. The axis of rotation is horizontal, usually orientated North-South with the modules facing toward the East in the morning and the West in the afternoon.

6.3 Panel Materials and Construction

Solar photovoltaic (PV) panels are primarily composed of glass, polymer, aluminum, copper, and semiconductor materials, all of which can be recovered and recycled at the end of the panels' operational life. Utility-scale solar facilities generally utilize two main PV technologies: crystalline silicon and thin film. In Virginia, the majority of installations employ crystalline silicon technology.

Although crystalline silicon and thin film panels differ in composition and manufacturing processes, they share many similarities in structural design. PV cells are encapsulated between two layers of plastic to protect them from air and moisture. This encapsulation is further safeguarded by a tempered glass front and a polymer backsheet.

Crystalline silicon panels are constructed from silicon wafers that are assembled into PV cells and mounted into panels. By weight, more than 80% of a crystalline silicon panel consists of tempered glass and aluminum. The remaining components are primarily

common plastics, such as polyethylene terephthalate (PET) in the backsheet, ethylene vinyl acetate (EVA) as encapsulant, polyphenyl ether in the junction box, and polyethylene insulation for the wiring. The active electrical components—silicon cells, electrical leads, and wiring—account for less than 5% of the panel's total weight. The PV cells themselves are nearly pure silicon, with trace amounts of boron and phosphorus added to create the necessary electrical properties; both are common elements with low toxicity.

All PV panels, mounting systems, and associated infrastructure will feature non-reflective finishes to minimize glare and visual impact.

6.4 Lighting

Project lighting will be limited to the minimum levels necessary to ensure site security and operational safety. All lighting will be designed and installed to minimize light spill, glare, and off-site impacts. Fixtures will be fully shielded and compliant with dark sky standards, in accordance with International Dark-Sky Association (IDA) guidelines or equivalent specifications, to preserve nighttime visibility and reduce light pollution in surrounding areas

6.5 Setbacks and Buffers

A preliminary site plan is shown in Exhibit 8.3 Preliminary Site Exhibit. The preliminary site plan design shows perimeter setbacks, buffers, and avoidance of wetlands. While the panel layouts in the development envelope are preliminary and may change based on further technical analysis and refinement, the development envelope in the site plan shows approximate boundaries for the solar facility installations. Additional clearing or grading may be required outside of the development envelope for ingress, egress, and other infrastructure. If existing trees and vegetation are disturbed within the area required for buffer compliance, new plantings shall be provided for the buffer.

Setbacks will comply with the County's requirements for utility-scale solar energy facilities outlined in Sec. 25-147 (b). The facility area shall be set back a distance of at least a minimum 150 feet from all property lines and public right of way. Access, erosion and stormwater structures, and interconnection to the electrical grid may be made through setbacks area if such are generally perpendicular to the property line or underground."

6.6 Traffic and Site Access

Coordination with VDOT for the Project based on anticipated site entrance locations and access can be found in Exhibit 8.4 VDOT Correspondence. The correspondence discusses preferred routes to the Project. The northern entrance will require a site distance study by

VDOT and associated BMPs. Once the Project is in operation, site visits will be limited to a few times per month, resulting in a negligible impact on traffic in the area.

If it is determined during final site plan review that alternate points of ingress and egress are needed, the design will comply with applicable VDOT regulations. Moreover, a parking area for vehicles, construction equipment, staging, and other needs will be placed near the access point of the Project. The Project owner will be responsible for maintaining the Project's access roads.

The Ordinance requires written confirmation from the Virginia Department of Transportation (VDOT) that all entrances satisfy applicable VDOT requirements. The pertaining correspondence with VDOT can be found in Exhibit 8.4 VDOT Correspondence.

6.7 Decommissioning

A preliminary Decommissioning Plan has been developed to outline the decommissioning processes that will be used for the Project. The plan details the process for removing the solar energy facility equipment and restoring the land to its previous use and has been designed to comply with applicable state regulations and Franklin County ordinance.

As per County ordinance Sec. 25-147 (d) (2), the Applicant will provide "assurance of decommissioning in the form of certified funds, cash escrow, bond, letter of credit, or parent guarantee, based upon an estimate of a professional engineer licensed in the Commonwealth, who is engaged by the applicant, with experience in preparing decommissioning estimates and approved by Franklin County.

The preliminary Decommissioning Plan can be found in Exhibit 8.5. The final Decommissioning Plan will be submitted for review with the final site plan of the Project.

6.8 Landscaping and Screening Plan

Bowman Consulting has prepared a landscape and screening plan for Constitution Solar. The plan includes the location, size, and type of planting yards including the use of existing and newly installed vegetation to screen the facility. A significant portion of the setback areas surrounding the project will consist of retained dense natural buffer of 120 feet, 4 times the required set back per the Franklin County Solar Ordinance. A Solar Farm Seed Mix of low-growing clover and grasses and Native Pollinators will be used beneath solar panels. Seasonal maintenance will maintain healthy growth and weed control. Wetlands and stream corridors will remain preserved, ensuring continued benefits for wildlife and pollinators. The landscape design aligns with county ordinances and prioritizes

environmental sustainability. A detailed landscaping and screening plan with plant species, size, number, spacing, and height will be required at the time of Site Plan review.

7.0 Community Engagement

The Applicant has conducted community outreach and engagement in several ways. Mailers were sent out prior to the community meeting to all adjacent landowners, as shown in Exhibit 8.8 Community Engagement. List of Adjacent Parcels. Mailers included an invitation to the community meeting and contact information.

A Public Notice was posted in the Franklin Post on June 18, 2025 shown in Exhibit 8.8

The Constitution Solar Farm community meeting was held at the Essig Recreation Center on June 25, 2025, from 5:00 to 7:00 PM. Sign-in cards with contact information were encouraged to be filled out upon entrance of the community meeting. The sign-in cards offered attendees an opportunity to request follow-up meetings with Inovateus Solar. During the community meeting, the Applicant provided posterboards of The Project. The posterboards included a preliminary site plan map and viewshed simulations. Informational sheets and project website information were also available at the community meeting. The informational sheets included information on Soil Quality, Biodiversity, Decommissioning, Solar Components, Storm Water Pollution Prevention Plans (SWPPP), Pollinator Habitats and Operating and Maintaining Utility-Scale Solar Projects.

The Applicant continues community outreach efforts post community meeting with neighbors and encourages community members to reach out with any questions. A Summary of the community meeting, the sign in sheet, and the mailed invitation can be seen in Exhibits 8.8 Community Meeting Summary.

Additional project information and information sheets were shared at the community meeting and are posted on the project website below:

Constitution Solar - Inovateus Solar

8.0 Constitution Solar Exhibits

8.1- List of Project Parcels

8.2- List of Adjacent Parcel

8.1 List of Project Parcels

Parcel ID	Owner Name	Acreage	Zoning
1110017401	GOODE VIRGIL JR & MADDEN ELIZABETH	159.99	NZ

8.2 List of Adjacent Parcels

Parcel ID	Owner Name	Acreage	Zoning
1110017400	GUZMAN ELVA P	33	NZ
1110017300	YARID DENISE	2.33	NZ
1110017200	SURBER KIMBERLY A	2.42	NZ
1110017100	BRYANT MADGE (LE) & KNIGHT DEBORAH	2.25	NZ
1110017000	SMITH JOHNNIE W & WENDY C	2.08	NZ
1110016900	YOUNG DEBORAH K & HOLLAND VICKY	1.89	NZ
1110016800	HARMON RANDY & PAULA D (TRUSTEES)	1.97	NZ
1110016500	SCHMIDT MICHAEL R & MASON DEBRA L	92.4	NZ
1190000500	CAMPBELL MICHAEL D	60.83	NZ
1190000401	KAUFHOLZ LANE & TAMMY	12.77	NZ

8.3 Preliminary Site Exhibits

UTILITY LEGEND	
ID	DESCRIPTION
1	CUSTOMER RISER POLE W/FUSED CUTOUTS
2	CUSTOMER METER
3	CUSTOMER RECLOSER
4	CUSTOMER LOADBREAK
5	UTILITY LOADBREAK
6	UTILITY METER
7	POI

NOTES:

1. INTERNAL ROAD RADII ARE 30'.
2. ROAD WIDTHS ARE 20'.
3. FRANKLIN COUNTY HAS ADOPTED THE VIRGINIA STATEWIDE FIRE PREVENTION CODE. THE PROPOSED ACCESS ROADS AND TURNAROUNDS COMPLY WITH SECTION D103.1 OF THE VIRGINIA STATEWIDE FIRE PREVENTION CODE.
4. SOLAR MODULES SETBACKS:
   A. 150' FROM PROPERTY LINES AND PUBLIC ROADS.
   B. 100' FROM WETLANDS AND PONDS.
   C. 300' FROM RESIDENTIAL STRUCTURES.
4. MINIMUM DISTANCE FROM PROPOSED ROAD TO ARRAYS = 10'
5. DIMENSIONS OF MODULE = 7.82 FT (L) x 4.28 FT (W).
6. SITE SUMMARY:
   NORTHERN FENCED AREA = 23.77 AC
   NORTHERN FENCE LENGTH = 5160.64 LF
   SOUTHERN FENCED AREA = 8.32 AC
   SOUTHERN FENCE LENGTH = 3310.93 LF
7. MODULE QTY: 9,240 (6560 KW DC)
8. INVERTER QTY: 31 (5000 KW AC)
9. RACKING: SINGLE AXIS TRACKER GROUND MOUNT

CONCEPT LAYOUT LEGEND

- PROPERTY BOUNDARY
- RIGHT-OF-WAY
- ADJOINING PROPERTY LINE
- STREAMLINE (PER ALTA)
- STREAMLINE (PER WETLANDS SHAPEFILE)
- 100' WETLAND SETBACK
- EXISTING EASEMENT
- EXISTING FENCE
- TREE LINE
- EXISTING TRAIL
- EXISTING ROAD
- EXISTING WETLANDS
- EXISTING ≥ 30' LANDSCAPE BUFFER
- PROPOSED 30' LANDSCAPE BUFFER
- PROPOSED SWM POND SURFACE

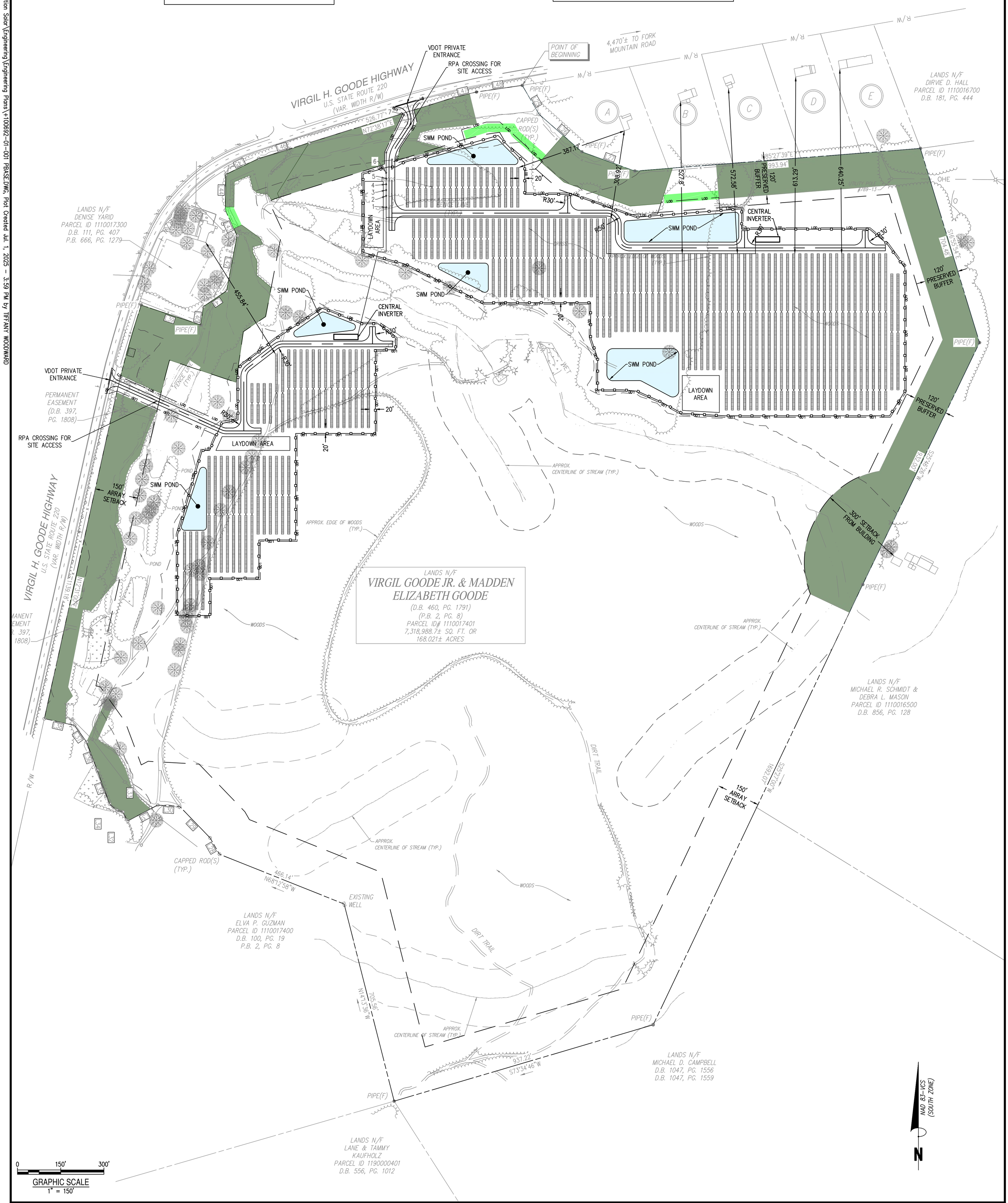
A — LANDS N/F KIMBERLY A. SURBER (D.B. 1171, PG. 2941) PARCEL ID 1110017200

B — LANDS N/F MADGE BRYANT & DEBORAH BRYANT KNIGHT (D.B. 1044, PG. 55) PARCEL ID 1110017100

C — LANDS N/F JOHNNIE W. & WENDY C. SMITH (D.B. 1119, PG. 143) (P.B. 472, PG. 1079) PARCEL ID 1110017000

D — LANDS N/F DEBORAH K. YOUNG, VICKY LYNN HOLLAND & JAMES GREGORY CHITWOOD (D.B. 356, PG. 887) PARCEL ID 1110016900

E — LANDS N/F RANDY & PAULA D. HARMON (D.B. 587, PG. 481) PARCEL ID 1110016800



SHEET	DATE :	JOB No.	DESIGN	DRAWN	CHKD
C1.0	July 1, 2025	100692-01-001	MG	MG	TW

PROJECT MILESTONE SUMMARY

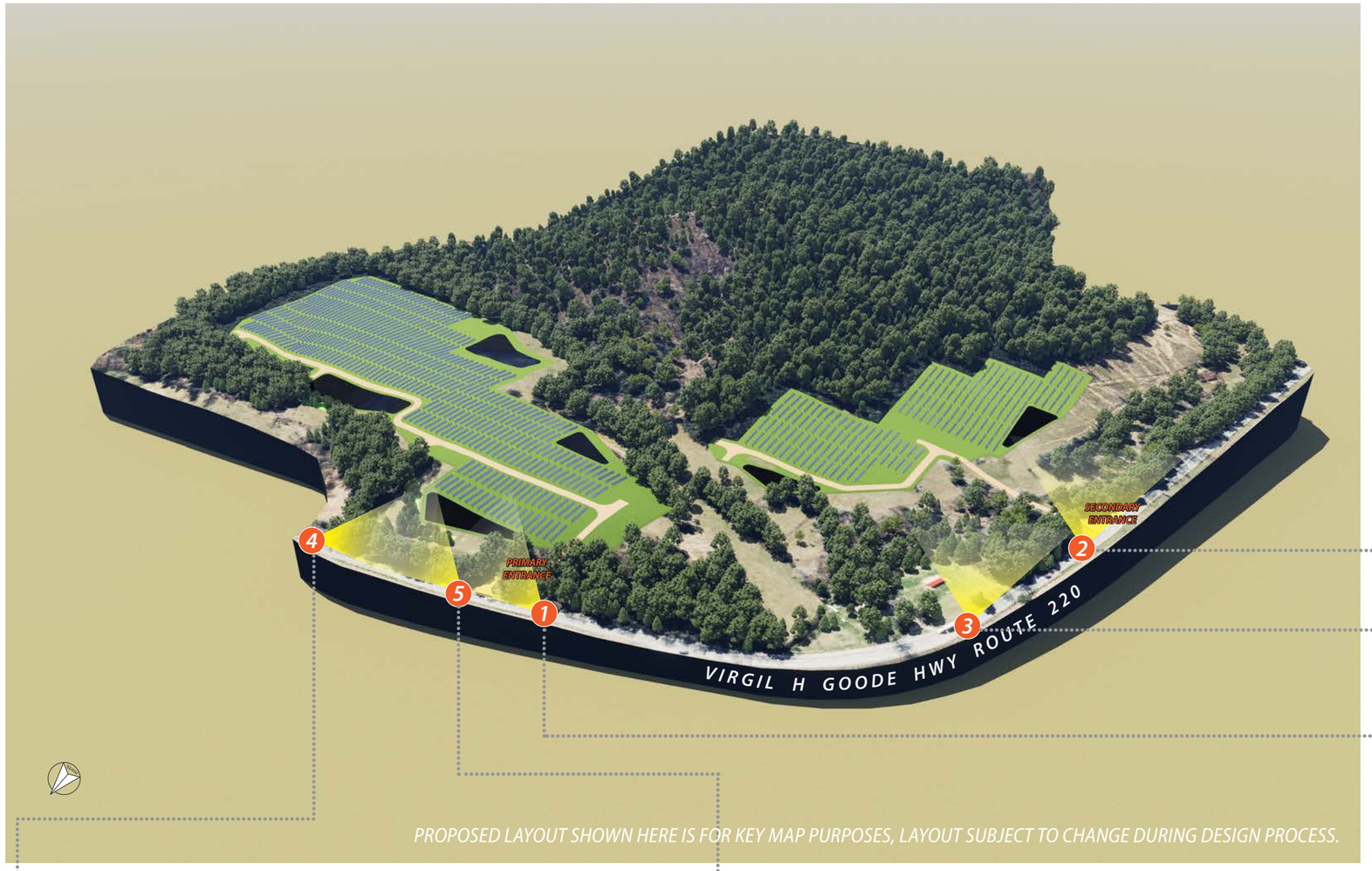
NO.	DATE	DESCRIPTION

CONCEPT LAYOUT

CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC

SNOW CREEK MAGISTERIAL DISTRICT — FRANKLIN COUNTY, VA

Bowman
947 Myers St | Ste B
Richmond, VA 23230
Phone: (804) 616-3240
Fax: (804) 270-2008
www.bowman.com



PROPOSED LAYOUT SHOWN HERE IS FOR KEY MAP PURPOSES, LAYOUT SUBJECT TO CHANGE DURING DESIGN PROCESS.

CONSTITUTION SOLAR

VIEW SIMULATIONS FROM VIRGIL H GOODE HWY

6-27-2025

Bowman

8.5- Decommissioning Plan

CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC
FRANKLIN COUNTY,VA
DECOMMISSIONING PLAN

SITE DATA:

1. OWNER/DEVELOPER:
   DEVELOPER: INOVATEUS SOLAR LLC & CONSTITUTION SOLAR LLC
   1980 STATE LINE RD,
   SOUTH BEND, IN, 46637

2. ELECTRICAL INTERCONNECTION:
   UTILITY COMPANY: DOMINION ENERGY

3. ENGINEER/SURVEYOR:
   BOWMAN
   947 MYERS STREET, SUITE B
   RICHMOND, VA 23230
   PHONE: (804) 616-3240
   CONTACT: TIFFANY WOODWARD
   EMAIL: tiffany.woodward@bowman.com

4. PARCEL INFORMATION/GPIN(S):
   PARCEL ID: 111017401

5. PROJECT ADDRESS:
   1778 VIRGIL GOODE HWY,
   ROCKY MOUNT, FRANKLIN COUNTY
   VA, 24151

6. ZONING & OVERLAY DISTRICT:
   Zoning: NOT ZONED
   Overlay District: N/A

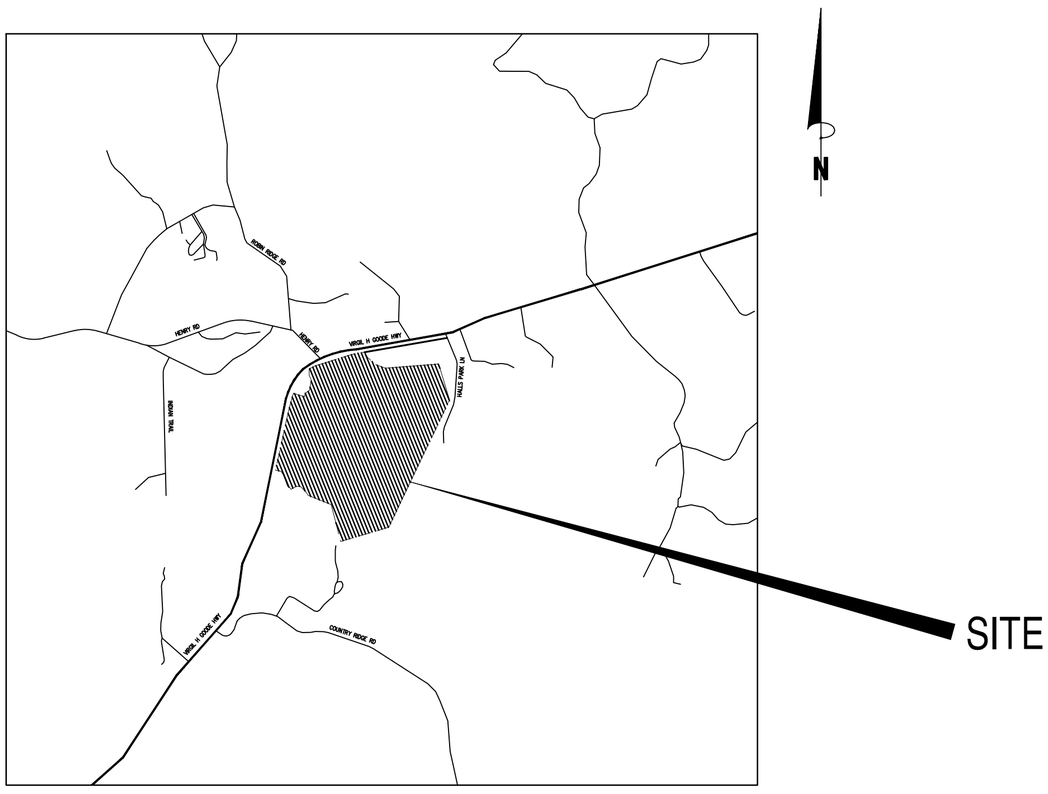
7. PARCEL AREA:
   Site Total: ±168.02 AC

8. USES:
   Existing Use: PASTURE/TIMBERED
   Proposed Use: Utility scale solar energy facility

9. FLOOD ZONE:
   FEMA community panel 51067C0500C dated DEC, 16, 2008 includes the site and shows that the site is within Zone X

10. ZONING SETBACKS:

REGULATION	REQUIRED	PROPOSED
PROPERTY LINES	150' MIN	210 MIN'
WETLANDS/PONDS	100' MIN	130 MIN'
RESIDENTIAL AREA	300' MIN	305 MIN'



VICINITY MAP
SCALE 1" = 2,000'

Sheet List Table	
SHEET NUMBER	SHEET TITLE
C0.0	COVER SHEET
C1.0	EXISTING CONDITIONS
C2.0	RESTORATION
C3.0	FINAL SITE PLAN

GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT MISS UTILITY AT 811 OR 1-800-522- 7001, UTILITY COMPANY REPRESENTATIVES, PERFORM TEST PITS, REVIEW CURRENT TEST PIT DATA, AND WHATEVER OTHER OPERATIONS AVAILABLE TO INSURE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES IN THE AREA OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY BOWMAN CONSULTING GROUP, LTD. OF ANY POTENTIAL CONFLICTS PRIOR TO COMMENCING CONSTRUCTION.
2. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND MAKE ALL INSPECTIONS NECESSARY IN ORDER TO DETERMINE THE FULL EXTENT OF THE WORK REQUIRED TO MAKE THE PROPOSED WORK CONFORM TO THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL SATISFY THEMSELVES AS TO THE NATURE AND LOCATION OF THE WORK, CONDITIONS, AND CONFORMATION AND CONDITION OF EXISTING GROUND SURFACE AND THE CHARACTER OF THE EQUIPMENT AND FACILITIES NEEDED PRIOR TO AND DURING PROSECUTION OF THE WORK. THE CONTRACTOR SHALL SATISFY THEMSELVES AS TO THE CHARACTER, QUANTITY AND QUALITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES TO BE ENCOUNTERED. ANY INACCURACIES OR DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS MUST BE BOUGHT TO THE OWNER'S ATTENTION IN ORDER TO CLARIFY THE EXACT NATURE OF THE WORK TO BE PERFORMED PRIOR TO THE COMMENCEMENT OF ANY WORK.
3. UTILITY COMPANIES SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF ANY EXCAVATION.
4. ADDITIONAL SILTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS DIRECTED BY THE INSPECTOR DURING FIELD REVIEW.
5. ALL SURFACED STREETS SHALL BE MAINTAINED IN A CLEAR CONDITION; FREE OF DUST, MUD OR SNOW AT ALL TIMES. THE DEVELOPER SHALL PROVIDE ADEQUATE MEANS TO CLEAN TRUCKS AND OTHER EQUIPMENT USING SURFACED STREETS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTMENTS AND/OR RECONSTRUCTION OF ALL UTILITY COVERS (MANHOLE FRAMES AND COVERS, VALVE BOX COVERS, ETC.) TO MATCH THE FINISHED GRADES OF THE AREAS EFFECTED BY THE CONSTRUCTION.
7. THE CONTRACTOR MUST HAVE THE APPROVED CONSTRUCTION DRAWINGS IN POSSESSION PRIOR TO THE START OF CONSTRUCTION. AT LEAST ONE (1) COPY OF THE APPROVED PLANS, WITH REVISIONS, MUST BE KEPT ON-SITE AT ALL TIMES.
8. THESE PLANS MAKE NO REPRESENTATION AS TO THE SUBSURFACE CONDITIONS AND THE PRESENCE OF SUBSURFACE WATER OR THE NEED FOR SUBSURFACE DRAINAGE FACILITIES.
9. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A SAFE CONSTRUCTION SITE AND COMPLYING WITH ALL OSHA REGULATIONS.
10. EMERGENCY VEHICLE ACCESS SHALL BE PROVIDED DURING ALL PHASES OF CONSTRUCTION.
11. WHERE WORK IS PROPOSED WITHIN EXISTING EASEMENTS OF RECORD, THE DEVELOPER SHALL OBTAIN WRITTEN PERMISSION FROM THE AUTHORITIES THAT ARE DOMINANT TENEMENTS OF THESE EASEMENTS FOR PERMIT FOR ANY DISTURBANCES WITHIN THESE AREAS PRIOR TO CONSTRUCTION.
12. ALL FINISHED GRADING, SEEDING, SODDING OR PAVING SHALL BE DONE IN SUCH A MANNER TO PRECLUDE THE PONDING OF WATER.
13. THE ENGINEER SHALL NOT HAVE CONTROL OVER OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK SHOWN ON THESE PLANS. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK. THE ENGINEER IS NOT RESPONSIBLE FOR ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR THEIR AGENTS OR EMPLOYEES, OR OF ANY OTHER PERSONS PERFORMING PORTIONS OF THE WORK.
14. UPON AWARD OF CONTRACT, THE CONTRACTOR SHALL OBTAIN THE NECESSARY LOCAL TRADE PERMITS (INCLUDING APPLICATIONS AND FEES) ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS AND IN THE CONTRACT DOCUMENTS.

EARTHWORK NOTES:

1. ALL UTILITY TRENCH BACKFILL SHOULD BE ADEQUATELY COMPACTED. UTILITY TRENCH BACKFILL, AS WELL AS BACKFILL ABOVE FOOTINGS AND BELOW SLABS, SHOULD BE MOISTURE CONDITIONED TO WITHIN +/- 3 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT THEN BE COMPACTED TO A DRY DENSITY AT LEAST 95% OF THAT SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). FIELD DENSITY TESTING OF TRENCH BACKFILL SHOULD BE PERFORMED AT A RATE OF NO LESS THAN ONE TEST PER 50 LINEAR FEET OF TRENCH, BUT NOT LESS THAN 1 TEST PER LIFT.
2. SUBGRADE SOILS DISTURBED BY CONTRACTOR OPERATIONS, INCLUDING DURING DEMOLITION, SHALL BE RECOMPACTED TO THE SPECIFICATIONS OF THIS REPORT. SUBGRADE SOILS WHICH ARE EXCESSIVELY WET BUT OTHERWISE SUITABLE BY SOIL CLASSIFICATION (INORGANIC SOIL MATERIAL MEETING THE SPECIFICATIONS) ARE NOT CONSIDERED UNSUITABLE BY DEFINITION AND SHALL BE MOISTURE CONDITIONED AND RECOMPACTED.

DECOMMISSIONING PLAN NOTES:

1. THE MINIMUM OPERATIONAL LIFETIME OF THE CONSTITUTION SOLAR FACILITY IS ANTICIPATED TO BE 30-40 YEARS. HOWEVER, DEPENDING ON ECONOMIC OR OTHER UNFORESEEN CIRCUMSTANCES, THE LIFE OF THE PROJECT MAY BE LONGER OR SHORTER.
2. THIS DECOMMISSIONING PLAN SHALL GO INTO EFFECT SHOULD ONE OF THE FOLLOWING OCCUR:
   - END OF ITS USEFUL LIFE
   - NOT IN SERVICE FOR MORE THAN 1+ YEAR (EXCLUDING PERIODS DUE TO MAJOR EVENTS SUCH AS STORMS, ACTS OF GOD, ETC., OR PERIODS WHEN THE SYSTEM IS UNDERGOING MAINTENANCE OR REPAIR)
3. AT THE TIME OF THE DECOMMISSIONING, THE INSTALLED COMPONENTS WILL BE REMOVED, REUSED, DISPOSED OF, AND RECYCLED WHERE POSSIBLE. THE SITE WILL BE RESTORED TO A STATE SIMILAR TO IT'S PRE-CONSTRUCTION CONDITION. ALL REMOVAL OF EQUIPMENT WILL BE DONE IN ACCORDANCE WITH ANY APPLICABLE REGULATIONS AND MANUFACTURER RECOMMENDATIONS. ALL APPLICABLE PERMITS WILL BE ACQUIRED.
4. ENVIRONMENTAL MITIGATION MEASURES SIMILAR TO THOSE EMPLOYED DURING THE CONSTRUCTION PHASE OF THE SOLAR FACILITY SHALL BE IMPLEMENTED TO REDUCE ENVIRONMENTAL EFFECTS DURING THE DECOMMISSIONING.
5. ALL DECOMMISSIONING CONSTRUCTION SHALL TAKE PLACE DURING DAYLIGHT HOURS AND SHALL CONFORM TO ANY APPLICABLE RESTRICTIONS AS RELATED TO NOISE LEVELS.
6. REHABILITATED LANDS MAY BE SEEDED WITH A LOW-GROWING SPECIES TO HELP STABILIZE SOIL CONDITIONS, ENHANCE SOIL STRUCTURE AND INCREASE SOIL FERTILITY.
7. DURING THE DECOMMISSIONING PHASE A VARIETY OF EXCESS MATERIALS AND WASTES WILL BE GENERATED. MOST OF THE MATERIALS USED IN A SOLAR FACILITY ARE REUSABLE OR RECYCLABLE AND SOME EQUIPMENT MAY HAVE MANUFACTURER TAKE-BACK AND RECYCLING REQUIREMENTS. ANY REMAINING MATERIALS WILL BE REMOVED AND DISPOSED OF OFF-SITE AT AN APPROPRIATE FACILITY.
8. FRANKLIN COUNTY AND ALL STAKEHOLDERS SHALL BE NOTIFIED THIRTY DAYS IN ADVANCE OF ANY ACTION TO DECOMMISSION THE SOLAR FARM.

DECOMMISSIONING PLAN CONSTRUCTION SEQUENCE:

1. THE SOLAR FACILITY SHALL BE DISCONNECTED FROM THE UTILITY POWER GRID.
2. SOLAR PANELS SHALL BE DISCONNECTED, COLLECTED AND DISPOSED OF AT AN APPROVED SOLAR MODULE RECYCLER OR REUSED/RESOLD ON THE MARKET.
3. ALL ABOVEGROUND AND UNDERGROUND ELECTRICAL INTERCONNECTION AND DISTRIBUTION CABLES SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT AN APPROVED FACILITY.
4. ALL SOLAR PANEL SUPPORT AND RACKING SYSTEM SUPPORT POSTS SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT AN APPROVED FACILITY.
5. UNDERGROUND UTILITY LINES 3' OR LESS BELOW THE SURFACE SHALL BE REMOVED AND DISPOSED OF PROPERLY. ALL UTILITY LINES SHALL BE REMOVED FROM CONDUIT AND RECYCLED OR DISPOSED OF PROPERLY. CONDUIT SHALL BE CUT 3' BELOW GRADE IF UTILITY LINES HAVE A DEPTH GREATER THAN 3' AND ABANDONED IN PLACE.
6. THE OWNER SHALL PROVIDE PROOF OF DISPOSAL TO FRANKLIN COUNTY OR OTHER AGENCIES UPON REQUEST.
7. ELECTRICAL AND ELECTRONIC DEVICES, INCLUDING TRANSFORMERS AND INVERTERS SHALL BE REMOVED AND DISPOSED OFF-SITE AT AN APPROVED FACILITY.
8. ANY HAZARDOUS WASTE WILL BE HANDLED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS AND BE DISPOSED OF AT A FACILITY CAPABLE OF HANDLING SUCH MATERIALS.
9. FENCING SHALL BE REMOVED AND DISPOSED OFF-SITE AT AN APPROVED FACILITY.
10. EXISTING ROADWAYS SHALL BE LEFT IN PLACE SO THAT THE PROPERTY OWNER CAN CONTINUE TO ACCESS THEIR PROPERTY.
11. THE SITE SHALL BE REGRADED TO NATURAL GRADES AS MUCH AS PRACTICAL AND RESEEDED.
12. PERMANENT VEGETATIVE COVER WILL BE ESTABLISHED OVER ALL AREAS DISTURBED DURING DECOMMISSIONING OF THE SITE.

PERMANENT STABILIZATION NOTES:

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED BY APPLYING PERMANENT SEEDING (PER STD. & SPEC. C-SSM-10 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, CURRENT) IMMEDIATELY FOLLOWING FINISH GRADING. UNDER THIS CONTRACT, PERMANENT STABILIZATION SHALL INCLUDE, BUT IS NOT LIMITED TO:

A. ADDITION OF AT LEAST 6" OF CLEAN, FRIABLE TOPSOIL (PER STD. & SPEC. C-SSM-10-1 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, CURRENT). TOPSOIL SHALL BE FREE OF TRASH OF ANY KIND AND ROOTS, BRANCHES, STONES AND CLODS OF EARTH LARGER THAN 1".
B. PROFESSIONAL SOIL TESTING AND THE APPLICATION OF AGRICULTURAL LIME AND/OR FERTILIZER AND ORGANIC MATERIAL AS INDICATED BY THE TESTING RECOMMENDATIONS. PROVIDE TEST RESULTS TO OWNER AND ENGINEER.
C. SURFACE ROUGHENING (PER STD. & SPEC. C-SSM-03 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, CURRENT).
D. APPLICATION OF AT LEAST 250 LBS/ACRE OF VIRGINIA CROP IMPROVEMENT ASSOCIATION APPROVED TALL FESCUE OR APPROVED EQUAL TURF GRASS SEED. SUBMIT SEED SPEC AND SOURCE FOR APPROVAL BY OWNER AND ENGINEER.
E. MULCHING (PER STD. & SPEC. C-SSM-11 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, CURRENT) IN AREAS SPECIFIED IN PLANS.
F. SODDING (PER STD. & SPEC. C-SSM-06 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, CURRENT) IN AREAS SPECIFIED IN PLANS.
G. SOIL STABILIZATION BLANKETS & MATTING (PER STD. & SPEC. C-SSM-05 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, CURRENT) ON SLOPES STEEPER THAN 3H:1V, IN DITCHES, SWALES AND OTHER AREAS SUBJECTED TO CONCENTRATED FLOW OF WATER AND IN AREAS SPECIFIED IN PLANS.
H. WATERING AS NEEDED TO ESTABLISH PLANTINGS.
I. REGULAR MAINTENANCE IS REQUIRED UNTIL A CERTIFICATE OF OCCUPANCY HAS BEEN AWARDED. MAINTENANCE SHALL INCLUDE MOWING, FERTILIZING, WEEDING, WATERING, RE-SEEDING AS NECESSARY AND THE APPLICATION OF APPROPRIATE INSECTICIDES AND FUNGICIDES NECESSARY TO MAINTAIN LAWN FREE OF INSECTS AND DISEASE.
J. WHERE/IF SOIL COMPOST AMENDMENTS ARE PROPOSED (PER STD. & SPEC. C-SSM-10-2 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK, CURRENT), NOTE THAT THEY ARE NOT A SUBSTITUTION FOR TOPSOIL.

Dig With CARE. Keep Virginia Safe!
- C *Call Miss Utility @ 811 before you dig.*
- A *Allow required time for marking.*
- R *Respect the marks.*
- E *Excavate carefully.*

811

SHEET C0.0 | DATE : July 1, 2025 | JOB No. 100692-01-001 | DESIGN MG | DRAWN MG | CHKD TW

PROJECT MILESTONE SUMMARY

NO.	DATE	DESCRIPTION

COVER SHEET
CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC
SNOW CREEK MAGISTERIAL DISTRICT — FRANKLIN COUNTY, VA

Bowman
947 Myers St | Ste B
Richmond, VA 23230
Phone: (804) 616-3240
Fax: (804) 270-2008
www.bowman.com

LANDS N/F
DIRVIE D. HALL
PARCEL ID 1110016700
D.B. 181, PG. 444

LANDS N/F
DENISE YARID
PARCEL ID 1110017300
D.B. 111, PG. 407
P.B. 666, PG. 1279

SWM POND

CENTRAL INVERTER

SWM POND

SWM POND

SWM POND

CENTRAL INVERTER

SWM POND

SWM POND

WETLAND BUFFER

LANDS N/F
VIRGIL GOODE JR. & MADDEN ELIZABETH GOODE
(D.B. 460, PG. 1791)
(P.B. 2, PG. 8)
PARCEL ID# 1110017401
7,318,988.7± SQ. FT. OR
168.021± ACRES

LANDS N/F
MICHAEL R. SCHMIDT &
DEBRA L. MASON
PARCEL ID 1110016500
D.B. 856, PG. 128

LANDS N/F
ELVA P. GUZMAN
PARCEL ID 1110017400
D.B. 100, PG. 19
P.B. 2, PG. 8

LANDS N/F
MICHAEL D. CAMPBELL
D.B. 1047, PG. 1556
D.B. 1047, PG. 1559

LANDS N/F
LANE & TAMMY KAUFHOLZ
PARCEL ID 1190000401
D.B. 556, PG. 1012

NAD 83-VCS (SOUTH ZONE)

N

0 150' 300'

GRAPHIC SCALE
1" = 150'

SHEET C1.0

DATE : July 1, 2025

JOB No. 100692-01-001

DESIGN MG | DRAWN MG | CHKD TW

PROJECT MILESTONE SUMMARY

NO.	DATE	DESCRIPTION

EXISTING CONDITIONS

CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC

SNOW CREEK MAGISTERIAL DISTRICT FRANKLIN COUNTY, VA

Bowman

947 Myers St | Ste B
Richmond, VA 23230

Phone: (804) 616-3240
Fax: (804) 270-2008

www.bowman.com

PREVIOUSLY PROPOSED VEGETATION IS TO REMAIN

SWM PONDS ARE TO REMAIN UNLESS COUNTY SPECIFIES OTHERWISE AT TIME OF DECOMMISSIONING.

PREVIOUSLY PROPOSED VEGETATION IS TO REMAIN

SECURITY FENCE TO BE REMOVED

INVERTER TO BE REMOVED, THIS AREA TO BE RESTORED PER NOTES ON COVER SHEET

ROAD TO BE REMOVED

ROAD TO BE REMOVED

SOLAR PANELS TO BE REMOVED, THIS AREA TO BE RESTORED PER NOTES ON COVER SHEET

SWM PONDS ARE TO REMAIN UNLESS COUNTY SPECIFIES OTHERWISE AT TIME OF DECOMMISSIONING.

INVERTER TO BE REMOVED, THIS AREA TO BE RESTORED PER NOTES ON COVER SHEET

SOLAR PANELS TO BE REMOVED, THIS AREA TO BE RESTORED PER NOTES ON COVER SHEET

SECURITY FENCE TO BE REMOVED

SWM PONDS ARE TO REMAIN UNLESS COUNTY SPECIFIES OTHERWISE AT TIME OF DECOMMISSIONING.

SECURITY FENCE TO BE REMOVED

SOLAR PANELS TO BE REMOVED, THIS AREA TO BE RESTORED PER NOTES ON COVER SHEET

TRAIL TO BE RESTORED

ROAD TO BE REMOVED

SOLAR PANELS TO BE REMOVED, THIS AREA TO BE RESTORED PER NOTES ON COVER SHEET

SECURITY FENCE TO BE REMOVED

DIRT TRAIL

NAD 83-VCS (SOUTH ZONE)

N

0 150' 300'

GRAPHIC SCALE
1" = 150'

SHEET C2.0

DATE : July 1, 2025

JOB No. 100692-01-001

DESIGN MG | DRAWN MG | CHKD TW

PROJECT MILESTONE SUMMARY

NO.	DATE	DESCRIPTION

RESTORATION

CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC

SNOW CREEK MAGISTERIAL DISTRICT

FRANKLIN COUNTY, VA

Bowman

947 Myers St | Ste B
Richmond, VA 23230

Phone: (804) 616-3240
Fax: (804) 270-2008

www.bowman.com

VIRGIL H. GOODE HIGHWAY
U.S. STATE ROUTE 220
(VAR. WIDTH R/W)

LANDS N/F
DIRVIE D. HALL
PARCEL ID 1110016700
D.B. 181, PG. 444

LANDS N/F
DENISE YARID
PARCEL ID 1110017300
D.B. 111, PG. 407
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D.B. 1047, PG. 1559

LANDS N/F
LANE & TAMMY KAUFHOLZ
PARCEL ID 1190000401
D.B. 556, PG. 1012

R/W
WET
POND
EXISTING WELL
DIRT TRAIL

NAD 83-VCS (SOUTH ZONE)
N

0 150' 300'
GRAPHIC SCALE
1" = 150'

SHEET C3.0
DATE : July 1, 2025
JOB No. 100692-01-001
DESIGN MG
DRAWN MG
CHKD TW

PROJECT MILESTONE SUMMARY

NO.	DATE	DESCRIPTION

FINAL SITE PLAN

CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC

SNOW CREEK MAGISTERIAL DISTRICT FRANKLIN COUNTY, VA

Bowman
947 Myers St | Ste B
Richmond, VA 23230
Phone: (804) 616-3240
Fax: (804) 270-2008
www.bowman.com

CONSTITUTION DECOMMISSIONING PLAN

Franklin County. VA

Methodology:

Unit costs have been derived from a combination of working on estimates for solar power plants with various installation contractors (and getting their input) along with confirming accuracy for some items using publicly available state Department of Transportation unit costs, as applicable. For example DOTs provide unit cost data for public projects that is updated annually for items such as excavation activities, erosion control BMPs, transportation of materials, etc. Quantities of materials were derived using Bluebeam Revu and AutoCAD.

ITEM	UNIT	QUANTITY	COST PER UNIT	COST	NOTES
Estimated Administrative Costs	LS	1.0	$5,000.00	$5,000.00	
Mobilization	LS	1.0	$15,000.00	$15,000.00	
Electrical Disconnect	EA	1.0	$6,000.00	$6,000.00	
Permitting (NPDES)	LS	1.0	$6,000.00	$6,000.00	
Permitting (Franklin County SWM Permit)	LS	1.0	$6,000.00	$6,000.00	
Remove and Haul Gravel Surfacing from Road	LF	4,093	$6.00	$24,558.00	
Sediment Control (Silt fence)	LF	9,635	$9.00	$86,715.00	
Decompact and Grade Road	LF	4,093	$3.00	$12,280.20	
Removal of Security Fence	LF	8,470	$2.70	$22,869.00	
Chain Link Fence Haul and Offsite Disposal	LF	8,470	$1.00	$8,469.80	
Remove and Haul Pier Foundations	EA	2,565	$54.00	$138,510.00	Assume 4 Foundations per table
Remove Trackers	EA	166	$60.00	$9,960.00	
Remove, Load, and Haul Concrete Electrical Pads	EA	2.0	$1,500.00	$3,000.00	
Remove and Haul PV Modules	EA	10,260	$17.00	$174,420.00	
Remove and Load Inverters	EA	2.0	$300.00	$600.00	
Haul Inverters	EA	2.0	$30.00	$60.00	
Remove Load and Haul Transformers	EA	1.0	$1,500.00	$1,500.00	
Remove and Load Underground Cables and Conduit	LF	3,345	$0.60	$2,007.00	
Haul Cables and Conduit	LF	3,345	$0.50	$1,672.50	
Utility Pole Removal	EA	8.0	$2,000.00	$16,000.00	
Combiner Box Removal	EA	127	$500.00	$63,500.00	Assumed 1 per Row
Removal of Scada Equipment	EA	1.0	$1,200.00	$1,200.00	
Removal of Aux Panel/Weather Station	EA	1.0	$1,200.00	$1,200.00	
Removal of Switchgear/Xfmr	EA	1.0	$5,000.00	$5,000.00	
Remove Load and Haul Other Electrical Equipment	AC	1.0	$1,500.00	$1,500.00	
Topsoil and Turf Re-establishment	AC	5.67	$7,000.00	$39,690.00	
Decommissioning Total (Present Value)				**$608,021.50**	
Assuming inflation of 2.5% per year for 25 Years					
Cost Estimate Effective at 01/01/2050)				**$1,127,237.87**	

CONSTITUTION DECOMMISSIONING PLAN

Franklin County. VA

Methodology:

Unit costs have been derived from a combination of working on estimates for solar power plants with various installation contractors (and getting their input) along with confirming accuracy for some items using publicly available state Department of Transportation unit costs, as applicable. For example DOTs provide unit cost data for public projects that is updated annually for items such as excavation activities, erosion control BMPs, transportation of materials, etc. Quantities of materials were derived using Bluebeam Revu and AutoCAD.

ITEM	UNIT	QUANTITY	COST PER UNIT	COST	NOTES
Estimated Administrative Costs	LS	1.0	$5,000.00	$5,000.00	
Mobilization	LS	1.0	$15,000.00	$15,000.00	
Electrical Disconnect	EA	1.0	$6,000.00	$6,000.00	
Permitting (NPDES)	LS	1.0	$6,000.00	$6,000.00	
Permitting (Franklin County SWM Permit)	LS	1.0	$6,000.00	$6,000.00	
Remove and Haul Gravel Surfacing from Road	LF	4,093	$6.00	$24,558.00	
Sediment Control (Silt fence)	LF	9,635	$9.00	$86,715.00	
Decompact and Grade Road	LF	4,093	$3.00	$12,280.20	
Removal of Security Fence	LF	8,470	$2.70	$22,869.00	
Chain Link Fence Haul and Offsite Disposal	LF	8,470	$1.00	$8,469.80	
Remove and Haul Pier Foundations	EA	2,565	$54.00	$138,510.00	Assume 4 Foundations per table
Remove Trackers	EA	166	$60.00	$9,960.00	
Remove, Load, and Haul Concrete Electrical Pads	EA	2.0	$1,500.00	$3,000.00	
Remove and Haul PV Modules	EA	10,260	$17.00	$174,420.00	
Remove and Load Inverters	EA	2.0	$300.00	$600.00	
Haul Inverters	EA	2.0	$30.00	$60.00	
Remove Load and Haul Transformers	EA	1.0	$1,500.00	$1,500.00	
Remove and Load Underground Cables and Conduit	LF	3,345	$0.60	$2,007.00	
Haul Cables and Conduit	LF	3,345	$0.50	$1,672.50	
Utility Pole Removal	EA	8.0	$2,000.00	$16,000.00	
Combiner Box Removal	EA	127	$500.00	$63,500.00	Assumed 1 per Row
Removal of Scada Equipment	EA	1.0	$1,200.00	$1,200.00	
Removal of Aux Panel/Weather Station	EA	1.0	$1,200.00	$1,200.00	
Removal of Switchgear/Xfmr	EA	1.0	$5,000.00	$5,000.00	
Remove Load and Haul Other Electrical Equipment	AC	1.0	$1,500.00	$1,500.00	
Topsoil and Turf Re-establishment	AC	5.67	$7,000.00	$39,690.00	
Decommissioning Total (Present Value)				**$608,021.50**	
Assuming inflation of 2.5% per year for 25 Years					
Cost Estimate Effective at 01/01/2050)				**$1,127,237.87**	

CONSTITUTION DECOMMISSIONING PLAN

Franklin County. VA

SALVAGE VALUES

ITEM	UNIT	QUANTITY	SALVAGE PRICE PER UNIT	RETURN
Security Fence	Tn	31.3	$100.00	$3,133.90
Salvage Trackers	Tn	1.6	$90.00	$144.00
Salvage PV Modules	EA	10,260	$15.00	$153,900.00
Salvage Inverters	EA	2.0	$700.00	$1,400.00
Salvage Transformers	EA	1.0	$10,000.00	$10,000.00
Other Electrical Equipment	EA	1.0	$7,000.00	$7,000.00
Underground Cables and Conduit	LF	3,345.0	$0.30	$1,003.50
Combiner Box	EA	127.0	$10.00	$1,270.00
Scada Equipment	EA	1.0	$1,000.00	$1,000.00
Gravel	LF	4,093.0	$5.00	$20,465.00
Salvage Total (Present Value)				**$178,851.40**
(Surety to 100% - effective after 01/14/25)				**$178,851.40**

8.6- Glint and Glare Study

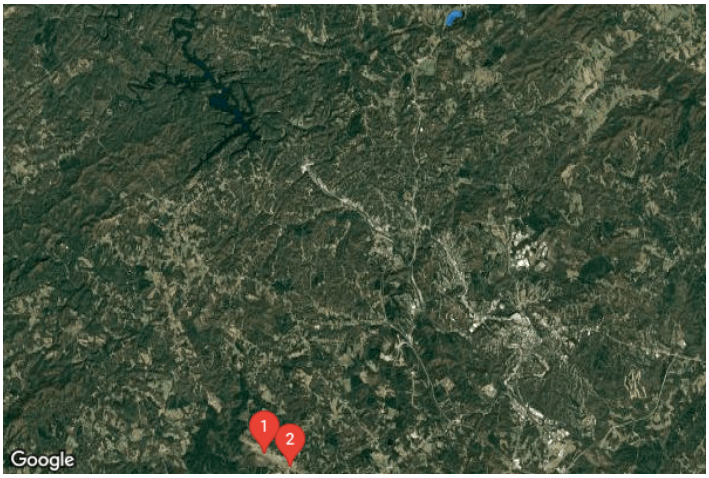
FORGESOLAR GLARE ANALYSIS

Project: **Constitution**
Site configuration: **Constitution**

Site description: Nearest airport identified and evaluated is: Blue Ridge Regional Airport (MTV)(KMTV) in Martinsville

Created 06 Jun, 2025
Updated 01 Jul, 2025
Time-step 1 minute
Timezone offset UTC-8
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 500 kW to 1 MW
Site ID 151361.25383

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	36.835442	-79.917679	1276.42	0.00	1276.42
2	36.835631	-79.918538	1220.94	0.00	1220.94
3	36.838739	-79.917658	1165.17	0.00	1165.17
4	36.839478	-79.916456	1160.65	0.00	1160.65
5	36.839478	-79.915019	1182.61	0.00	1182.61
6	36.838224	-79.915104	1281.20	0.00	1281.20
7	36.838172	-79.916692	1208.58	0.00	1208.58
8	36.836644	-79.916628	1307.39	0.00	1307.39
9	36.836575	-79.917443	1249.93	0.00	1249.93
10	36.835940	-79.917379	1283.89	0.00	1283.89
11	36.835957	-79.918001	1237.63	0.00	1237.63

Name: PV array 2
Axis tracking: Single-axis rotation
Backtracking: Shade
Tracking axis orientation: 180.0°
Max tracking angle: 60.0°
Resting angle: 0.0°
Ground Coverage Ratio: 0.5
Rated power: -
Panel material: Smooth glass without AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	36.840880	-79.914336	1184.01	0.00	1184.01
2	36.840536	-79.915323	1176.83	0.00	1176.83
3	36.840519	-79.914658	1187.02	0.00	1187.02
4	36.840176	-79.914594	1182.29	0.00	1182.29
5	36.840176	-79.913821	1199.60	0.00	1199.60
6	36.839884	-79.913821	1193.61	0.00	1193.61
7	36.839884	-79.913113	1207.96	0.00	1207.96
8	36.839540	-79.912942	1204.18	0.00	1204.18
9	36.839523	-79.911504	1234.28	0.00	1234.28
10	36.840433	-79.911482	1210.75	0.00	1210.75
11	36.840451	-79.913199	1206.80	0.00	1206.80
12	36.840794	-79.913220	1195.07	0.00	1195.07
13	36.840777	-79.914186	1185.76	0.00	1185.76

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	36.633946	-80.025719	936.47	0.00
OP 2	2	36.627574	-80.010935	909.95	0.00

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-
PV array 2	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV: PV array 2 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0

PV array 2 and OP 1

No glare found

PV array 2 and OP 2

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

8.7- FAA Notice Criteria

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

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

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

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

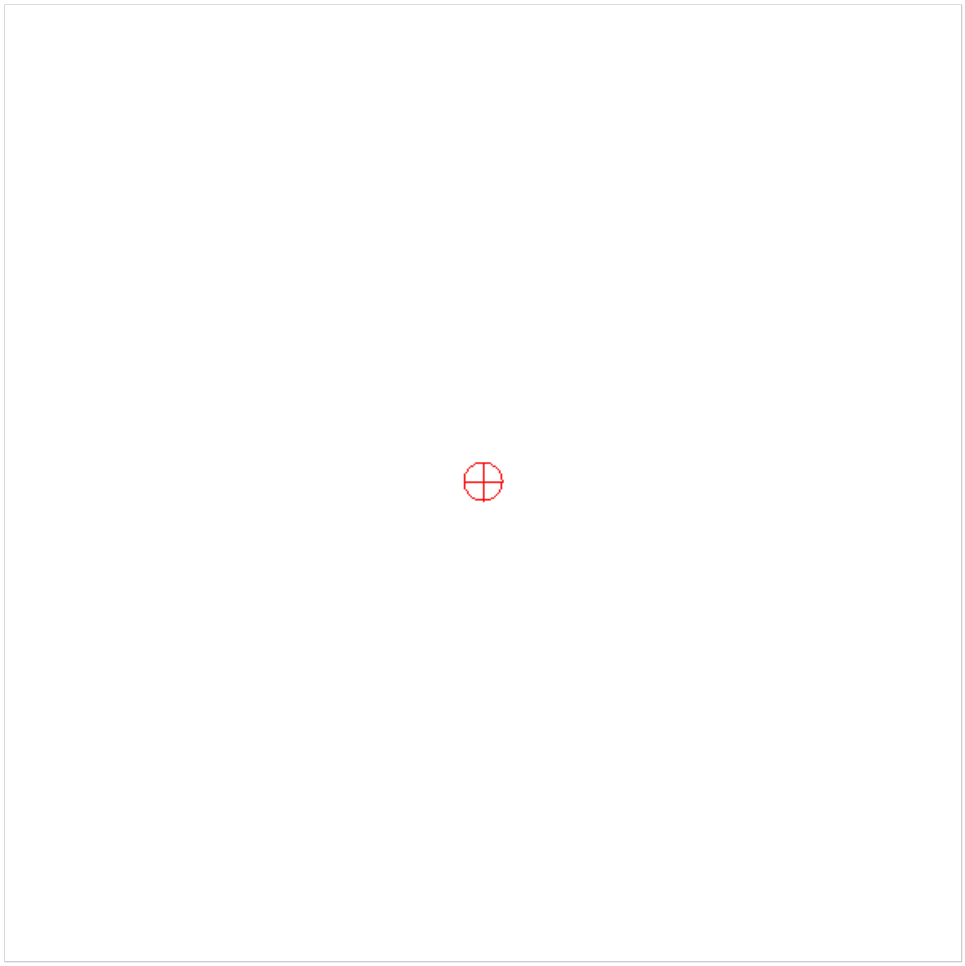
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport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

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

Latitude:	36 Deg 50 M 29.31 S N
Longitude:	79 Deg 54 M 28.39 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1230 (nearest foot)
Structure Height :	15 (nearest foot)
Traverseway:	No Traverseway (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

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- filing has been requested by the FAA

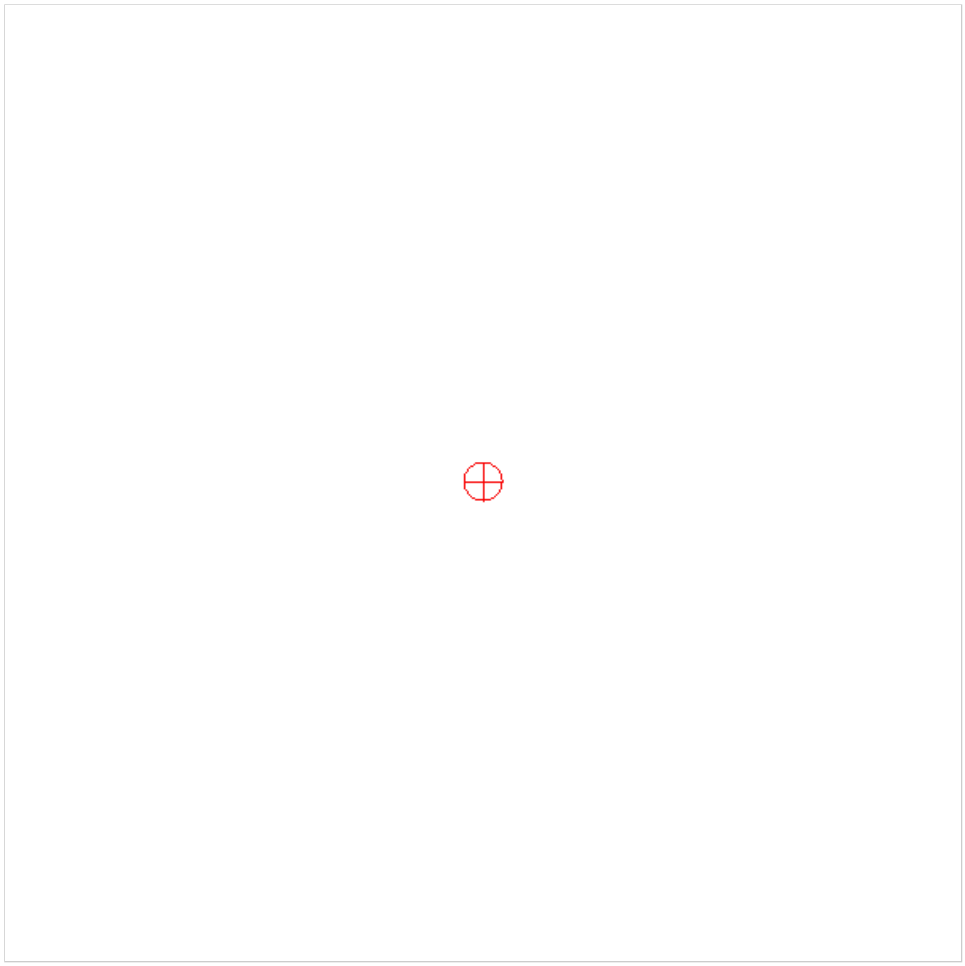
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport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

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

Latitude:	36 Deg 50 M 29.05 S N
Longitude:	79 Deg 55 M 5.81 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1161 (nearest foot)
Structure Height :	15 (nearest foot)
Traverseway:	No Traverseway (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

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

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

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

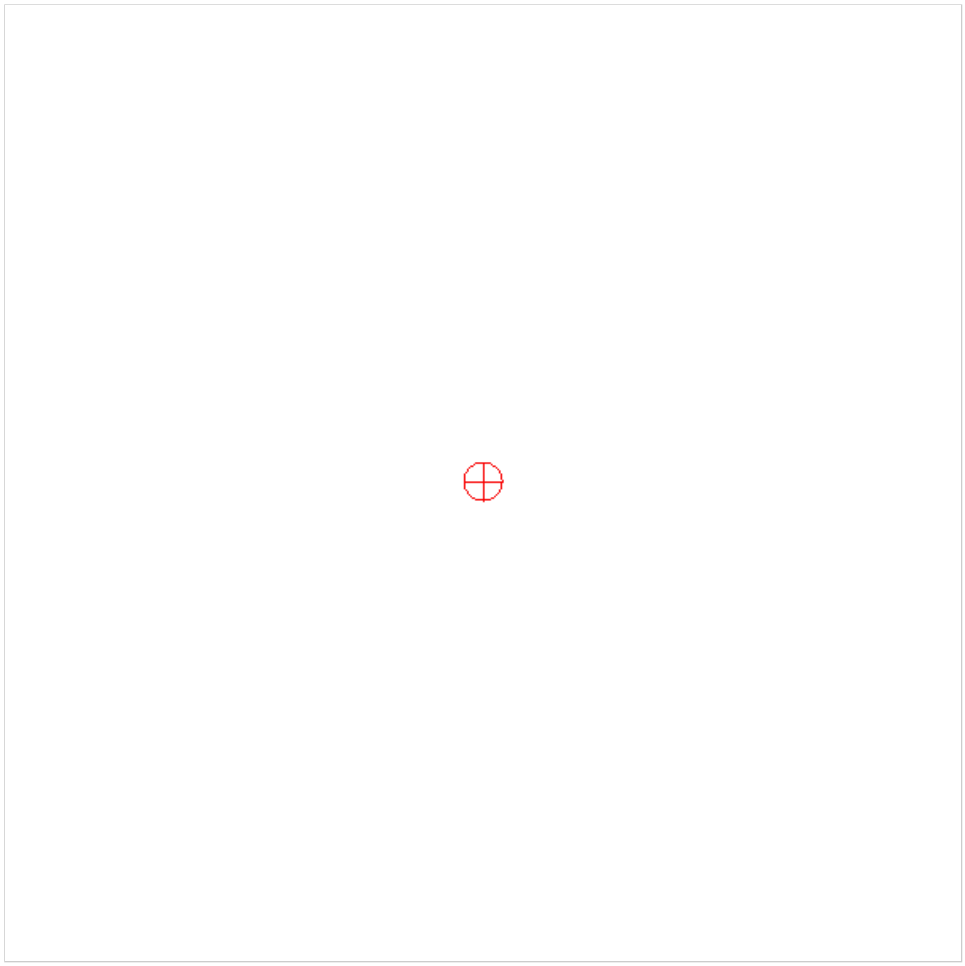
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport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

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

Latitude:	36 Deg 49 M 57.1 S N
Longitude:	79 Deg 55 M 8.20 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1373 (nearest foot)
Structure Height :	15 (nearest foot)
Traverseway:	No Traverseway (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

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

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

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
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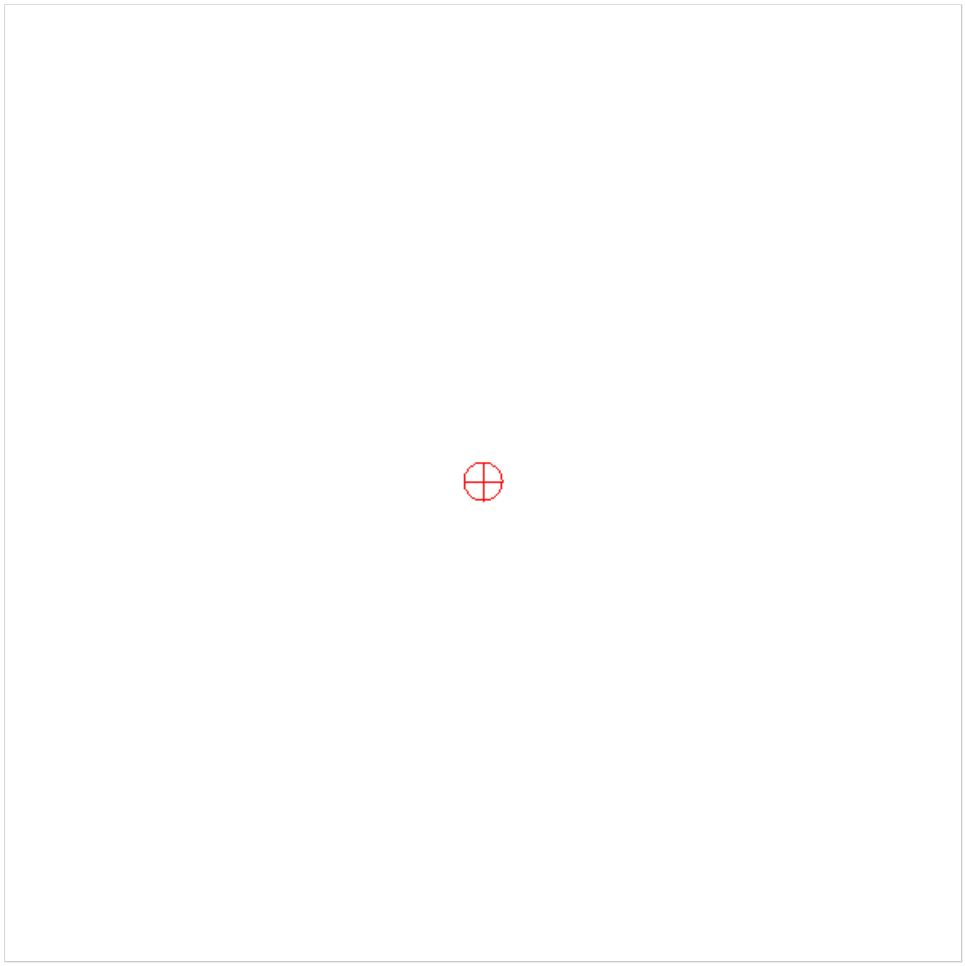
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

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

Latitude:	36 Deg 49 M 56.47 S N
Longitude:	79 Deg 54 M 32.81 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	1646 (nearest foot)
Structure Height :	15 (nearest foot)
Traverseway:	No Traverseway (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



8.8- Community Meeting Summary

Inovateus Solar™
DEVELOPMENT | ENGINEERING | PROCUREMENT | CONSTRUCTION

June 12, 2025

Neighbor
Virgil Goode Hwy
Rocky Mount, VA 24151

Dear Neighbor

I hope this letter finds you well. I am reaching out on behalf of Constitution Solar, LLC to notify you of a proposed solar development project in your area. Constitution Solar is planning to construct a 5 MW distribution level solar facility on land owned by a neighboring community member. A search of the Franklin County property records indicates that you are an adjacent property owner to the project which will be located on parcel 1110017401 along Virgil Goode Hwy.

In our efforts to be good neighbors, we will be hosting an informal open house style community meeting on June 25th from 5pm – 7pm in the Community Room at the Essig Recreation Center at 295 Technology Dr. Rocky Mount, VA 24151. Our goal for the meeting is to engage with neighbors and community members to address any questions or concerns they may have regarding the project. If you are unable to attend and would like to reach out, please contact me at Brennan.mckone@inovateus.com.

Kindest Regards,

Brennan McKone

Brennan McKone
Sr. Project Development Manager
Constitution Solar, LLC

The Franklin News-Post

See Proof on Next Page

AFFIDAVIT OF PUBLICATION

State of Florida, County of Broward, ss:

Rachel Cozart, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Franklin News-Post, a newspaper printed and published in the Town of Rocky Mount, County of Franklin, State of Virginia, and that this affidavit is Page 1 of 2 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

PUBLICATION DATES:
Jun. 18, 2025

NOTICE ID: 6Cwi0HmdCA21F94Q72cc
PUBLISHER ID: COL-1500312
NOTICE NAME: Public Notice
Publication Fee: 67.78
Ad Size: 2 X 10 L
Category: General Legal Notice

Under penalty of perjury, I, the undersigned affiant swear or affirm that the statements above are true and accurate to the best of my knowledge and belief.

Rachel Cozart

(Signed)_____

SHERI SMITH
Notary Public - State of Florida
Commission # HH269383
Expires on May 31, 2026

VERIFICATION

State of Florida
County of Broward

Subscribed in my presence and sworn to before me on this: 06/19/2025

S Smith

Notary Public
Notarized remotely online using communication technology via Proof.

NOTICE

CONSTITUTION SOLAR
COMMUNITY MEETING
When: JUNE 25, 2025
Where: ESSIG RECREATION CENTER
295 TECHNOLOGY DR.
ROCKY MOUNT, VA 24151
COMMUNITY ROOM
Time: 5:00-7:00 PM

COL-1500312

Welcome to the Constitution Solar Community Meeting

Please Sign in below:

Name	Address	Phone	Email	Preferred Method of Contact
Ray Pendleton	298 Horseshoe Pt. Henry VA 24102	5403652214		Phone
James Brumfield	215 Knollwood Dr	5405881740		"
Cindy & Ron Jefferson	570 Back Nine Dr Moneta VA	804 4029912		
Sage & Paul Jadnicek	260 Liberty College St. Rocky Mount VA	843 300 2216	sagejadnicek@gmail.com	email
Lisa Cooper	Franklin Co	(540)483-6642		email
Tina Franklin	Franklin Co.	(540) 483-3027		
Kim Surber	Franklin Co	540 488 2301		

Inovateus Solar™
DEVELOPMENT | ENGINEERING | PROCUREMENT | CONSTRUCTION

June 25, 2025

Kenny Smith
2010 Virgil Goode Hwy
Rocky Mount, VA 24151

Subject: Approval for Constitution Solar

As a neighboring landowner of the Constitution Solar project, I acknowledge that the development representatives on behalf of Constitution Solar discussed future site plans with me on June 25, 2025. The signature below indicates my consent for the development and installation of the solar project.

Signature: Kenneth Smith

Name: Kenneth Smith

Date: 6-24-2025

Inovateus Solar™
DEVELOPMENT | ENGINEERING | PROCUREMENT | CONSTRUCTION

June 25, 2025

Elva Guzman & Curtis James Paul
1300 Virgil Goode Hwy
Rocky Mount, VA 24151

Subject: Approval for Constitution Solar

As a neighboring landowner of the Constitution Solar project, I acknowledge that the development representatives on behalf of Constitution Solar discussed future site plans with me on June 25, 2025. The signature below indicates my consent for the development and installation of the solar project.

Signature: _____

Name: Curtis Paul

Date: 6-24-25

Inovateus Solar™
DEVELOPMENT | ENGINEERING | PROCUREMENT | CONSTRUCTION

June 25, 2025

Madge Bryant
2000 Virgil Goode Hwy
Rocky Mount, VA 24151

Subject: Approval for Constitution Solar

As a neighboring landowner of the Constitution Solar project, I acknowledge that the development representatives on behalf of Constitution Solar discussed future site plans with me on June 25, 2025. The signature below indicates my consent for the development and installation of the solar project.

Signature: Madge Bryant

Name: Madge BRYANT

Date: 6-26-2025

Inovateus Solar™
DEVELOPMENT | ENGINEERING | PROCUREMENT | CONSTRUCTION

June 25, 2025

Name: Greg Chitwood
Address: 2120 Virgil Goode Hwy
Rocky Mount, VA 24151

Subject: Approval for Constitution Solar

As a neighboring landowner of the Constitution Solar project, I acknowledge that the development representatives on behalf of Constitution Solar discussed future site plans with me on June 25, 2025. The signature below indicates my consent for the development and installation of the solar project.

Signature: James G. Chitwood
Name: Greg Chitwood
Date: 6-25-025

Inovateus Solar™
DEVELOPMENT | ENGINEERING | PROCUREMENT | CONSTRUCTION

June 25, 2025

Kim Surber
1974 Virgil Goode Hwy
Rocky Mount, VA 24151

Subject: Approval for Constitution Solar

As a neighboring landowner of the Constitution Solar project, I acknowledge that the development representatives on behalf of Constitution Solar discussed future site plans with me on June 25, 2025. The signature below indicates my consent for the development and installation of the solar project.

Signature: KaSurber

Name: Kim Surber

Date: 6-25-25

Inovateus Solar
DEVELOPMENT | ENGINEERING | PROCUREMENT | CONSTRUCTION

June 25, 2025

Debra Mason and Michael Schmidt
2354 Virgil Goode Hwy
Rocky Mount, VA 24151

Subject: Approval for Constitution Solar

As a neighboring landowner of the Constitution Solar project, I acknowledge that the development representatives on behalf of Constitution Solar discussed future site plans with me on June 25, 2025. The signature below indicates my consent for the development and installation of the solar project.

Signature: Debra Mason

Name: Debra Mason

Date: 7-1-25

Signature:

Name: Mike Schmidt

Date: 7/1/25

8.9 Site Control

MEMORANDUM OF OPTION TO LEASE

Drawn by and after recording return to:
Constitution Solar, LLC
Attn: Asset Management Department
1151 Falls Road, Suite 2004
Rocky Mount, North Carolina 27804

STATE OF VIRGINIA
COUNTY OF FRANKLIN

Reference:
Tax Parcel Numbers: 1110017401
Tenant: Constitution Solar, LLC
Property Value: $256,500.00 USD
Diligence Fee(s) up to: $12,250.00 USD

THIS MEMORANDUM OF OPTION TO LEASE is made and entered into as of this 7th day of June, 2021, by and between **Virgil Goode, Jr. and Elizabeth Goode Brumfield** ("**Landlord**") and **Constitution Solar, LLC,** a Virginia Limited Liability Company or Assigns ("**Tenant**");

WITNESSETH:

1. On December 3rd, 2020 ("the Effective Date") Landlord and Tenant entered into an Initial Diligence Period of that certain Ground Lease Agreement, (the "**Lease**"), for all or a portion of the property commonly known as Franklin County Assessor's Tax Parcel Numbers 1110017401 as more particularly described on Exhibit A attached hereto and incorporated herein by reference (the "**Property**").

2. After satisfaction of the terms and provisions of the **"Diligence Period"** and upon Notice, the Lease has an Initial Term commencing on the "**Rent Commencement Date"** upon and in accordance with the terms and provisions of the Lease and expiring on the last day of the twentieth (20th) Lease Year anniversary thereafter. Tenant has the right to extend the Term for four (4) additional periods of five (5) years in accordance with the terms and provisions of the Lease. A Memorandum of Lease containing the date of Rent Commencement and final site will be filed at that time.

During the Diligence Period, Tenant may terminate the Lease, exercisable upon written notice from Tenant to Landlord by Project Termination Notice of its election not to extend or to terminate delivered on or before the expiration of the Diligence Period, in which event Landlord and Tenant shall have no further rights or obligations under the Lease except as otherwise expressly provided in the Lease.

3. The purpose of this Memorandum is to give record notice of the Lease Option and of the rights created thereby. The terms and conditions of the Lease are hereby incorporated herein by reference as if fully set forth herein. If any term or condition of this Memorandum shall conflict with any term or condition of the Lease, the terms and conditions of the Lease shall control. Counterpart originals may be assembled in order to make one complete copy of this Memorandum and all such counterpart originals, when taken together, shall comprise but one and the same instrument. Any capitalized term used but not defined herein shall have the meaning ascribed such term in the Lease.

Signature pages to follow.

IN WITNESS WHEREOF, the undersigned have duly executed these presents as of the day and year first above written.

LANDLORD:

Virgil Goode, Jr.
Landowner Name or Entity
Virgil Goode Jr
Authorized Signature
Virgil Goode Jr Co-owner
Printed Name and Title

Elizabeth Goode Brumfield
Landowner Name or Entity
Elizabeth Goode Brumfield
Authorized Signature
Elizabeth Goode Brumfield
Printed Name and Title Co-owner

SIGNED, SEALED, AND DELIVERED IN THE PRESENCE OF:

Witness Signature

Printed Name

Witness Signature

Printed Name

ACKNOWLEDGEMENT:

STATE OF Virginia
COUNTY OF Franklin

I, Jasmine McHeimer, a Notary Public for the above State and County, hereby certify that Virgil Goode, Jr. & Elizabeth Goode Brumfield personally came before me this day and acknowledged the execution of the foregoing instrument.

WITNESS my hand and official seal, this the 3 day of December, 2020.

My commission Expires 2-29-2024

NOTARY SEAL:

Jasmine McHeimer
Notary Public

Jasmine McHeimer
Printed Name

24

IN WITNESS WHEREOF, the undersigned have duly executed these presents as of the day and year first above written.

TENANT:

Constitution Solar, LLC
a Limited Liability Company, or Assigns

Authorized Signature

Alexandria Hernandez
Printed Name

SIGNED, SEALED, AND DELIVERED IN THE PRESENCE OF:

Witness Signature

Printed Name

Witness Signature

Printed Name

ACKNOWLEDGEMENT:

STATE OF North Carolina
COUNTY OF Nash

I, Sara W. Carter, a Notary Public for the above State and County, hereby certify that Alexandria Hernandez, an authorized signatory for Constitution Solar, LLC a Virginia Limited Liability Company, personally came before me this day and acknowledged the execution of the foregoing instrument.

WITNESS my hand and official seal, this the 7th day of December, 2020.

My commission Expires June 5, 2022

NOTARY SEAL:

Sara W. Carter
Notary Public
Nash County, NC

Sara W. Carter
Notary Public

Sara W. Carter
Printed Name

EXHIBIT A
DESCRIPTION OF THE PROPERTY

Real property in the County of Franklin, State of Virginia described as follows:

All or a portion of Assessor's Tax Parcel Numbers:

1110017401

More particularly described as follows:

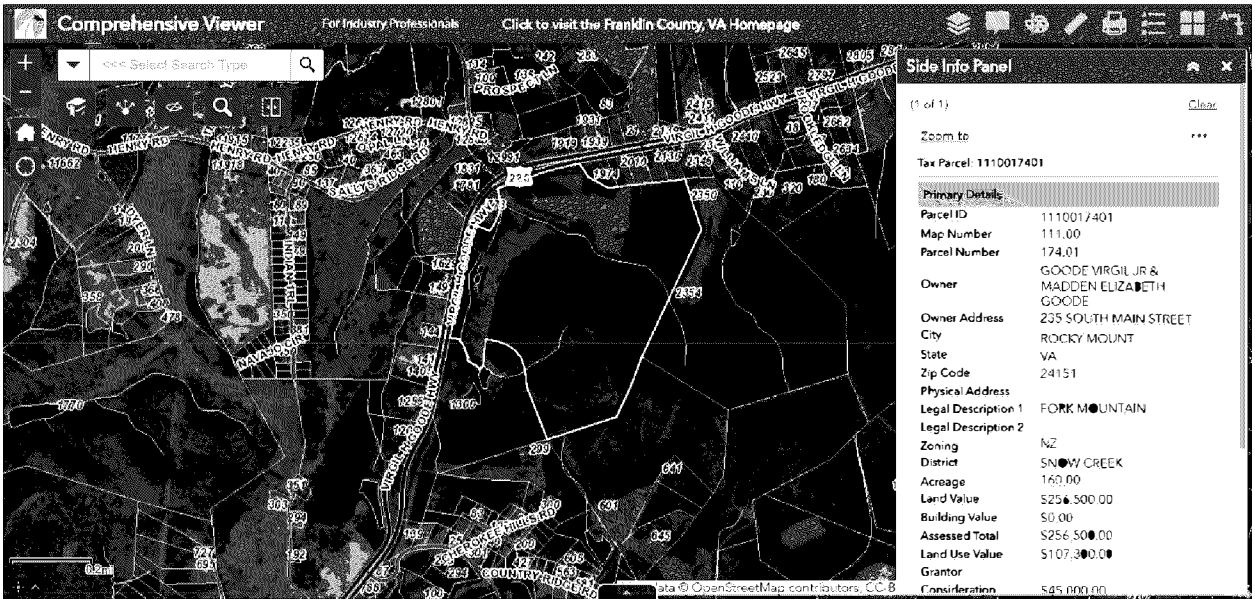
100 acres +/-, being all or a portion of that property in Franklin County.

Book Reference: 100 acres +/-, being all or a portion of that property described in Book 460, Pages 1791

Property Value as of 2021 Tax Card: $256,500.00 USD
Consideration for Diligence up to: $12,250.00 USD

together with, and including, (i) the non-exclusive right to use all of Landlord's easement rights and rights appurtenant to the Property where reasonably necessary for Tenant's conduct of its business on the Premises; (ii) an easement for light, solar energy resources, ingress, egress, and utility access over, under and across the Property as reasonably necessary for Tenant's conduct of its business on the Premises; and (iii) all other easements and rights set forth in the Lease.

Depiction of Property:



INSTRUMENT 210005349
RECORDED IN THE CLERK'S OFFICE OF
FRANKLIN COUNTY CIRCUIT ON
JUNE 8, 2021 AT 11:25 AM
TERESA J. BROWN, CLERK
RECORDED BY: KYB

8.10 Cultural Resource Study

Bowman

July 1, 2025

Brennan McKone
Inovateus Solar, LLC
19890 State Line Rd.
South Bend, Indiana 46637

RE: Cultural Resources Desktop Review and Assessment, Constitution Solar, Franklin County, Virginia

Mr. McKone:

On behalf of Constitution Solar, LLC (Constitution Solar), Bowman Consulting (Bowman) conducted a desktop cultural resource review and assessment for the proposed Constitution Solar Facility in Franklin County, Virginia (Figures 1 and 2). This review and assessment are provided for the purpose of due diligence scoping and does not represent a comprehensive cultural resource survey should the project require review by the Virginia State Historic Preservation Office (SHPO), Department of Historic Resources (DHR).

The following report provides a review of known previously recorded cultural resources (e.g. archaeological sites, cemeteries, or historic architecture) and an assessment of the potential for encountering undocumented resources within the project area. Should the project require review by the SHPO, due to federal or state permitting requirements, this report serves as the initial step in identifying potential risks to assist Constitution Solar in its scoping process.

Environmental Setting

Physical Setting

The subject property is located at an unnumbered address adjacent to U.S. Route 220/Virgil H Goode Highway located in Franklin County, Virginia, approximately 3 miles northeast of the census designated place, Oak Level in northern Henry County, Virginia. The subject property is approximately 164-acres consisting of Franklin County Property ID: 30516 (Parcel ID: 1110017401).

The subject property primarily consists of pine plantation and deciduous forest along the steep elevation of the Skelt Mountain within the eastern portion, and pasture along the western portion.

The subject property boundaries and the surrounding area are shown in Figures 1 and 2. It is centrally located at 36.837645° latitude and -79.913664° longitude and has most recently been mapped on the United States Geological Survey (USGS) Bassett, VA 7.5-Minute Topographic Quadrangle.

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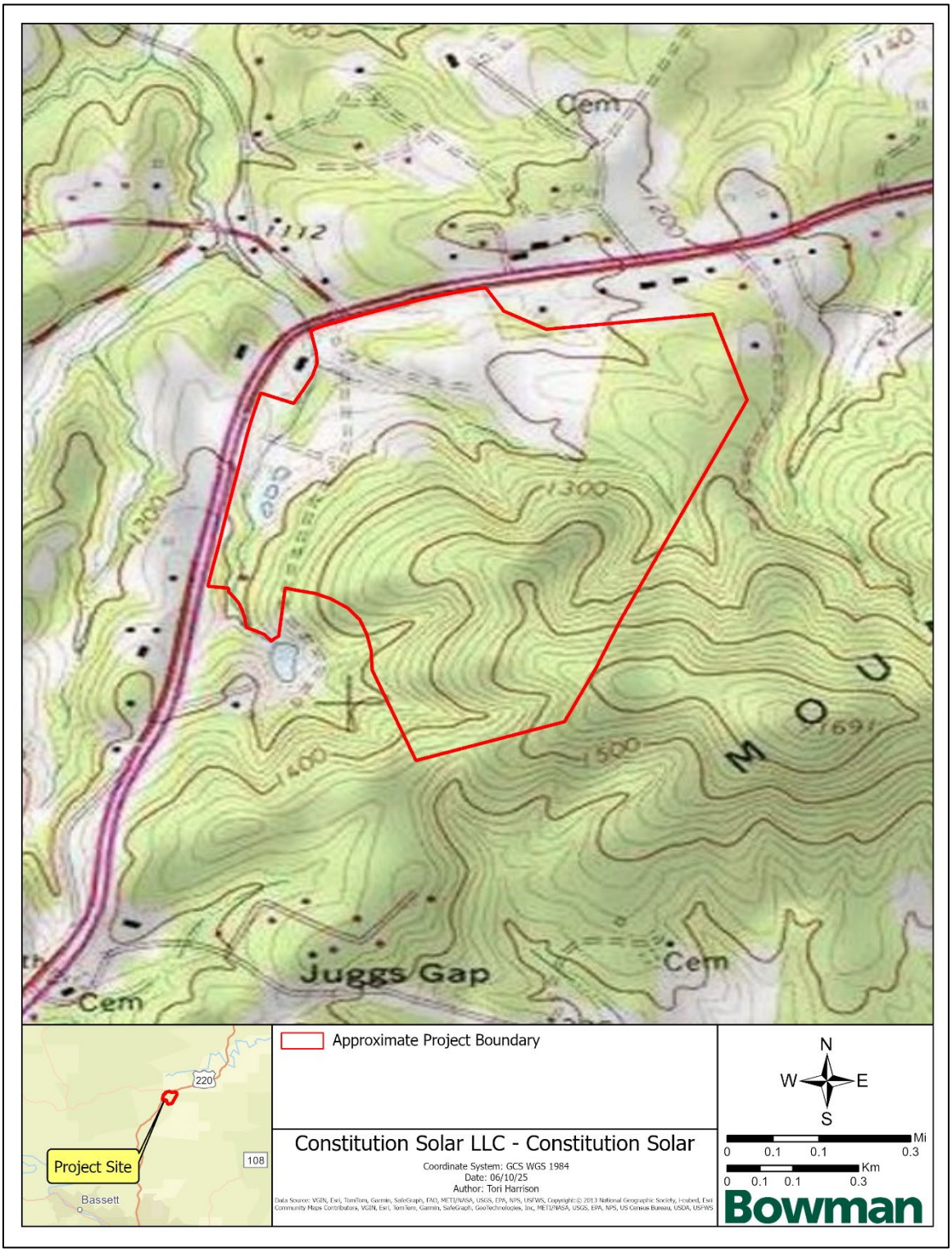

Figure 1. Project Location Map, Bassett, Virginia USGS Topo, 1:24000.

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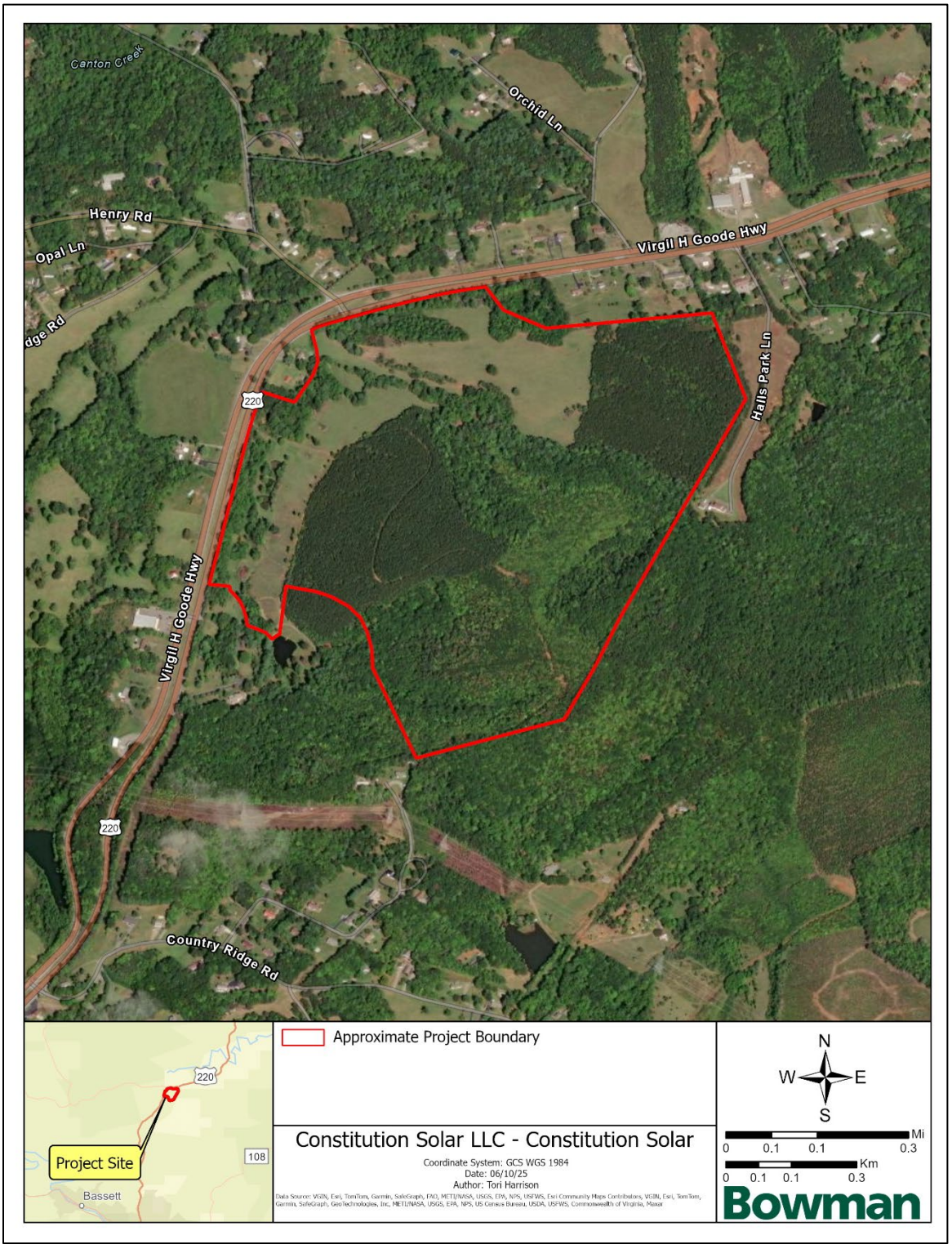

Figure 2. Project Area, Current Conditions, Aerial Photography.

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Geology and Hydrology

The subject property is situated in the Northern Inner Piedmont Level IV ecoregion within the Piedmont Level III ecoregion. The ecoregion's physiography is described as "largely wooded and consists of irregular plains, low rounded hills and ridges, shallow valleys, and scattered monadnocks" (Woods, et al., 1999).

Subject property elevation ranges from 2,150 ft above mean sea level (amsl) to 1,590 ft amsl. Surface water from the subject property generally flows northwest toward an unnamed tributary to Big Chestnut Creek. Intermittent streams extend from the northern portion of the subject property to the southeast with several perennial streams branching off throughout the northwest portion. Data from the U.S. Fish and Wildlife Service shows several freshwater pond and riverine features within approximately 0.25 miles of the subject property.

Soils

Soil constitutes the surrounding matrix in which archaeological material is often recovered. Understanding its formation processes, its typical composition and its potential disturbances can aid archaeologists in evaluating their assemblages as well as necessary sampling strategies. According to the existing USDA Web Soil Survey for Franklin County (June 10, 2025), the following soil types are mapped on the subject property (Table 1). The Woolwine-Fairview-Westfield complex comprises the majority of the subject property soils.

Table 1. Soil Types within the Project Area

Map Unit Symbol	Map Unit Name	Drainage Class	Acres in AOI	Percent of AOI
10B	Colescreek-Delanco complex, 2 to 8 percent slopes, rarely flooded	Somewhat Poorly Drained	6.4	3.9%
22E	Hickoryknob-Rhodhiss-Stott Knob complex, 25 to 60 percent slopes	Well Drained	34.6	21.1%
26C	Littlejoe-Strawfield-Penhook complex, 8 to 15 percent slopes	Well Drained	25.6	15.6%
26D	Littlejoe-Strawfield-Penhook complex, 15 to 25 percent slopes	Well Drained	19.3	11.8%

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Map Unit Symbol	Map Unit Name	Drainage Class	Acres in AOI	Percent of AOI
40C	Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, stony	Well Drained	43.9	26.8%
40D	Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony	Well Drained	24.0	14.6%
40E	Woolwine-Fairview-Westfield complex, 25 to 60 percent slopes, stony	Well Drained	10.2	6.2%
Subtotals for Soil Survey Area			**164**	**100.0%**

Regulatory and Compliance Framework

Federal Regulations

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C § 306108) requires Federal agencies, or those they fund or permit, to consider the effects of their actions on the properties that may be eligible for listing or are listed in the National Register of Historic Places (NRHP). The Section 106 process generally requires four steps: 1) establishment of an area of potential effect (APE) and initiating the process through early coordination with the SHPO and other interested parties, 2) identification of cultural resources that are listed in or eligible for listing in the NRHP, 3) assessment of the effects the project will have on eligible or listed properties, and 4) resolution of adverse effects in consultation with the SHPO. In Virginia, this role is performed by the DHR, which oversees the management of historic resources, both archaeological and architectural. Background research regarding the presence of recorded historical and archaeological resources is summarized in this section and serves to identify significant resources for the purpose of NEPA Section 101 (b)(4) development of federal funds or requirement of federal approval/permits.

State Requirements

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Projects under the ownership or control of the State of Virginia fall under the purview of the DHR to review any action that has the potential to have an effect on archaeological or historic resources within the public domain of the State of Virginia. In the event an archaeological survey is necessary on lands controlled by the State of Virginia, the DHR will issue a permit that stipulates conditions under which survey, discovery, excavation, demolition, restoration, or scientific investigations can occur on state lands. It is therefore unlawful for any person to knowingly disturb, by themselves or through an agent, any archaeological site on state lands.

In addition to conducting cultural resource surveys on state lands, all projects whether conducted under the purview of the SHPO/DHR or not, are subject to compliance with Virginia Administrative Code § 57-36 and § 57-38.1. Under these codes dealing with Abandoned or Previously Unidentified Cemeteries, it is unlawful to intentionally disturb, excavate, or remove human graves or grave materials without consultation with the DHR. Removal may be performed only following consultation, the "good-faith effort" to notify descendants, and issuance of burial permit.

Cultural Resource Assessment

This section of the desktop report follows the procedures outlined in the Guidelines for Archaeological Investigations in the State of Virginia as well as the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37). This information is intended to: 1) locate previously identified archaeological or historic architectural resources within or in close proximity to the project area; 2) assess whether additional archaeological investigations would be required within the APE, in compliance with Section 106 of NHPA of 1966, as amended (54 U.S.C § 306108); 3) identify the potential for unrecorded architectural resources over 50 years of age; 4) identify cemeteries or other relevant cultural potentially affected by the project; and 5) provide recommendations concerning the need for conducting subsequent cultural resource studies.

For management purposes, the project's initial APE is established as 0.5 miles from the boundaries of the undertaking, which would encompass any potential direct or indirect effects to cultural resources. Direct effects are generally interpreted to be those that would have a direct physical impact to cultural resources but may include causative impacts to the integrity of a specific property (e.g., visual impacts). Indirect effects are those that may contribute to the degradation of a particular resource at an unforeseen time through project implementation (e.g., erosion). This report reviewed the Virginia Cultural Resources Information System (VCRIS), historic aerial photographs and maps, and archaeological survey data from the DHR for the project APE. The results of these resource searches and recommendations for further work are below.

<u>Previously Recorded Cultural Resources</u>

Examination of VCRIS showed that there are no previously recorded archeological sites or cemeteries located within the project area. Additionally, no previous cultural resource surveys have been conducted within or adjacent to the project; however, one cultural resource survey extends into the southwestern and

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southeastern portion of the APE (DHR Report Number: GS-025). One cemetery is recorded within 0.5 miles of the subject property, the Starkey Cemetery (DHR ID: 033-5024). No other cemeteries are listed or recorded within the project area.

The nearest recorded archeological site is located approximately 0.6 miles southwest of the project. The site, 44FR0301, is a precontact lithic artifact scatter. The site was identified in 2002 by the URS Corporation in association with a pipeline installation. The site was likely a temporary camp surrounding a massive oak tree in a shallow swale at the base of a small tributary of Canton Creek. The site was recommended not eligible for listing to the NRHP and no effects to the resource are anticipated by the project. No archaeological sites were reported within 0.5 miles of the current undertaking.

A total of three (3) architectural resources (structures) have been recorded within 0.5 miles of the project area (Figure 3). These resources represent a range of domestic dwellings. All three properties have not been evaluated for NRHP eligibility. Additionally, although not eligible for the NRHP, one cemetery (Starkey Cemetery) is located 0.5 miles southwest of the project boundaries. Additional information concerning historic resources in the project vicinity is found below in Table 2.

Table 2. Previously Recorded Architectural Resources, within 0.5 miles of the project area.

DHR_ID	Property Name(s)	NRHP Eligibility Status	Primary Resource Type
033-5018	House, 2407 Virgil H Goode Highway	Not Evaluated	Single Dwelling
033-5026	House, Route 220	Not Evaluated	Single Dwelling
033-5030	House, Route 220	Not Evaluated	Single Dwelling

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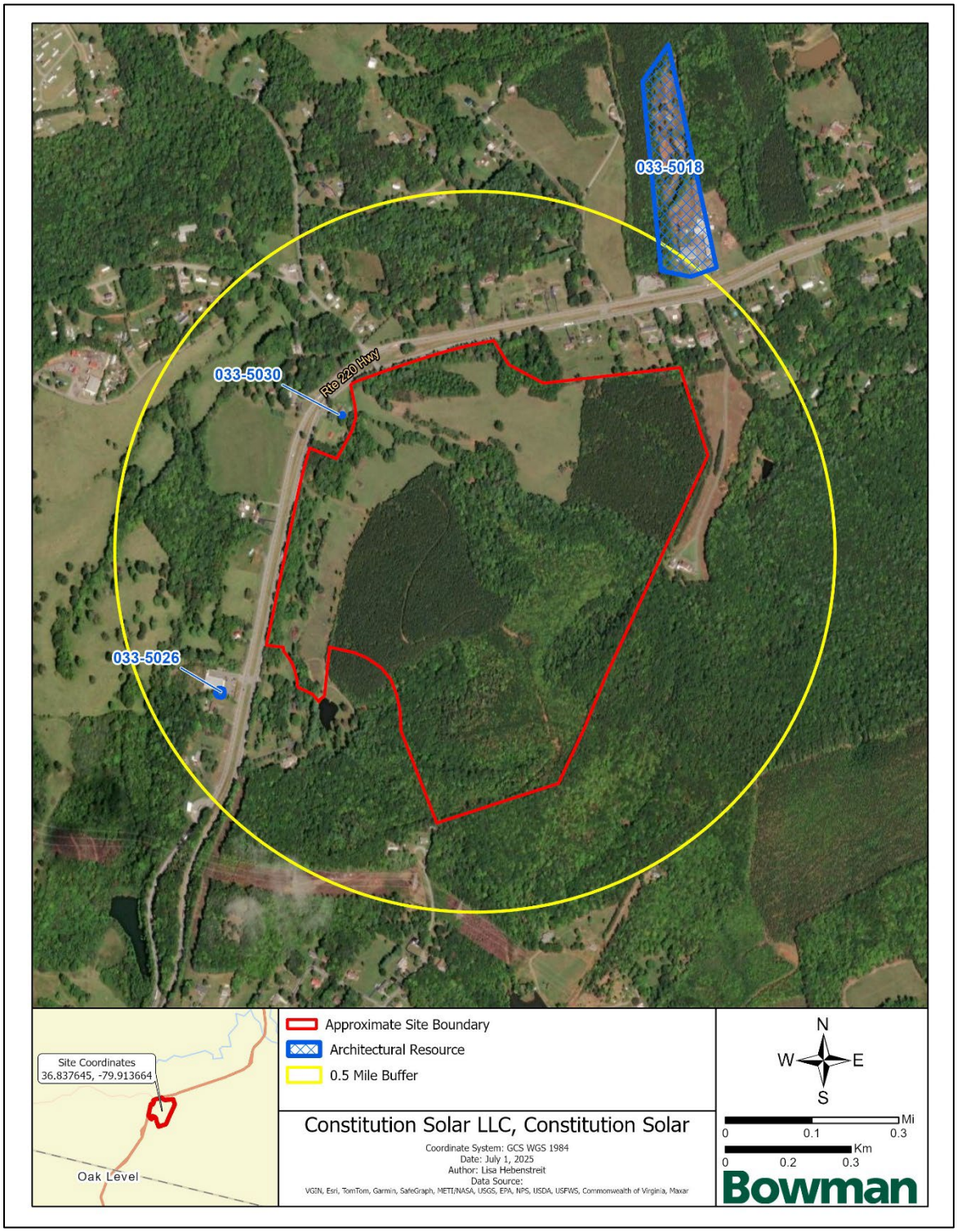

Figure 3. Constitution Solar Project Area, Cultural Resources within 0.5 miles.

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Historical Map Review and Archaeological Probability

An examination of historic aerial photographs and USGS topographic maps helps establish the development or continuity within the project area over time. The earliest historic map depicting the project APE is the 1925 Rocky Mount, Virginia (1:48000) USGS map (Figure 4). Beginning with the 1953 Greensboro, North Carolina USGS (1:250000) map, Route 220 is visible running north to south in the western portion of the project area (Figure 5). The project area and surroundings are shown largely in their current state as depicted on the 1984 Danville, Virginia USGS (1:100000) map with no structures shown within the project boundaries (Figure 6). Based on google earth imagery, the project area appears largely unchanged since 1995, with limited development adjacent to it.

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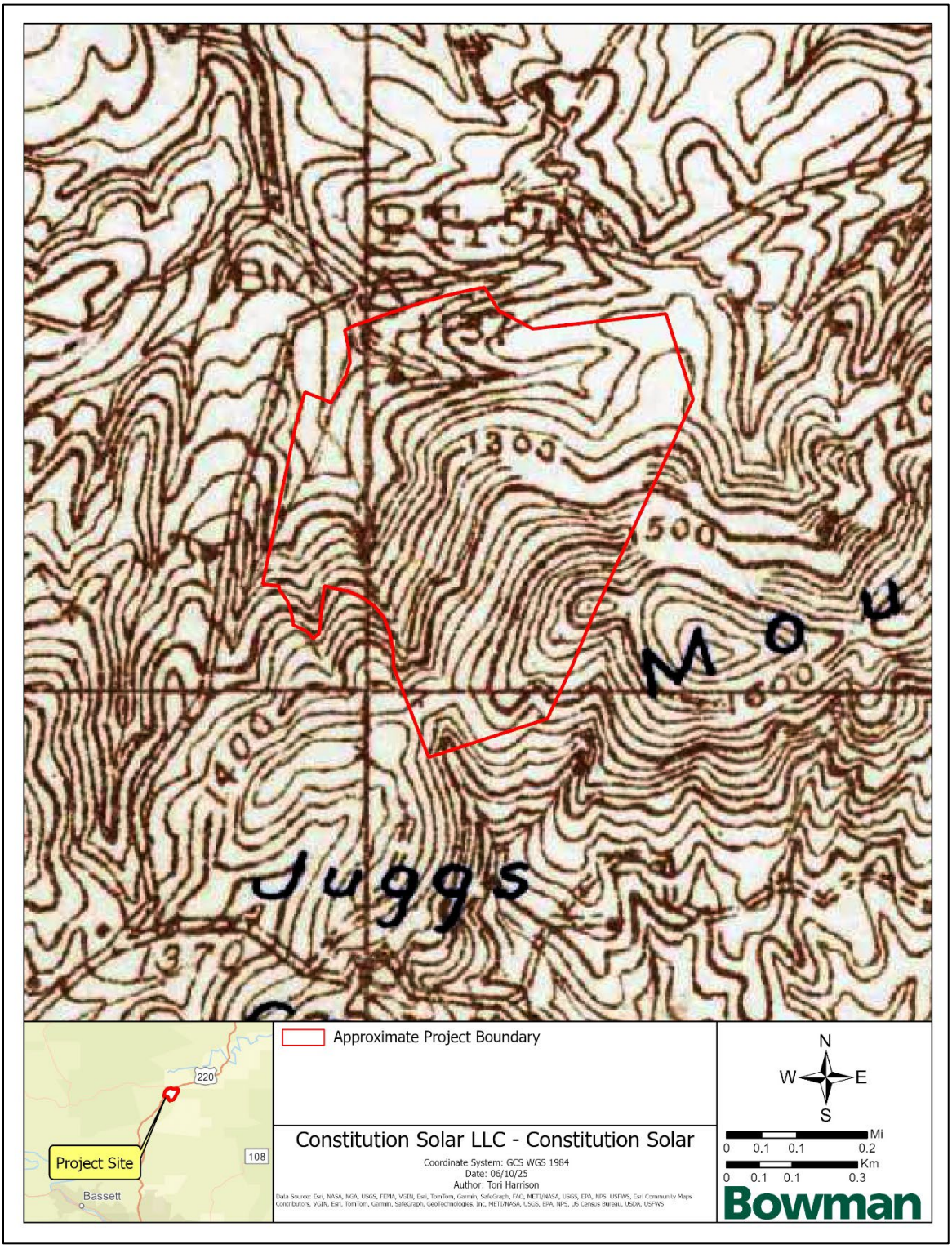

Figure 4. The Constitution Solar Project Area, 1925 Rocky Mount, Virginia USGS (1:48000) Map.

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Figure 5. The Constitution Solar Project Area, 1953 Greensboro, North Carolina USGS (1:250000) Map.

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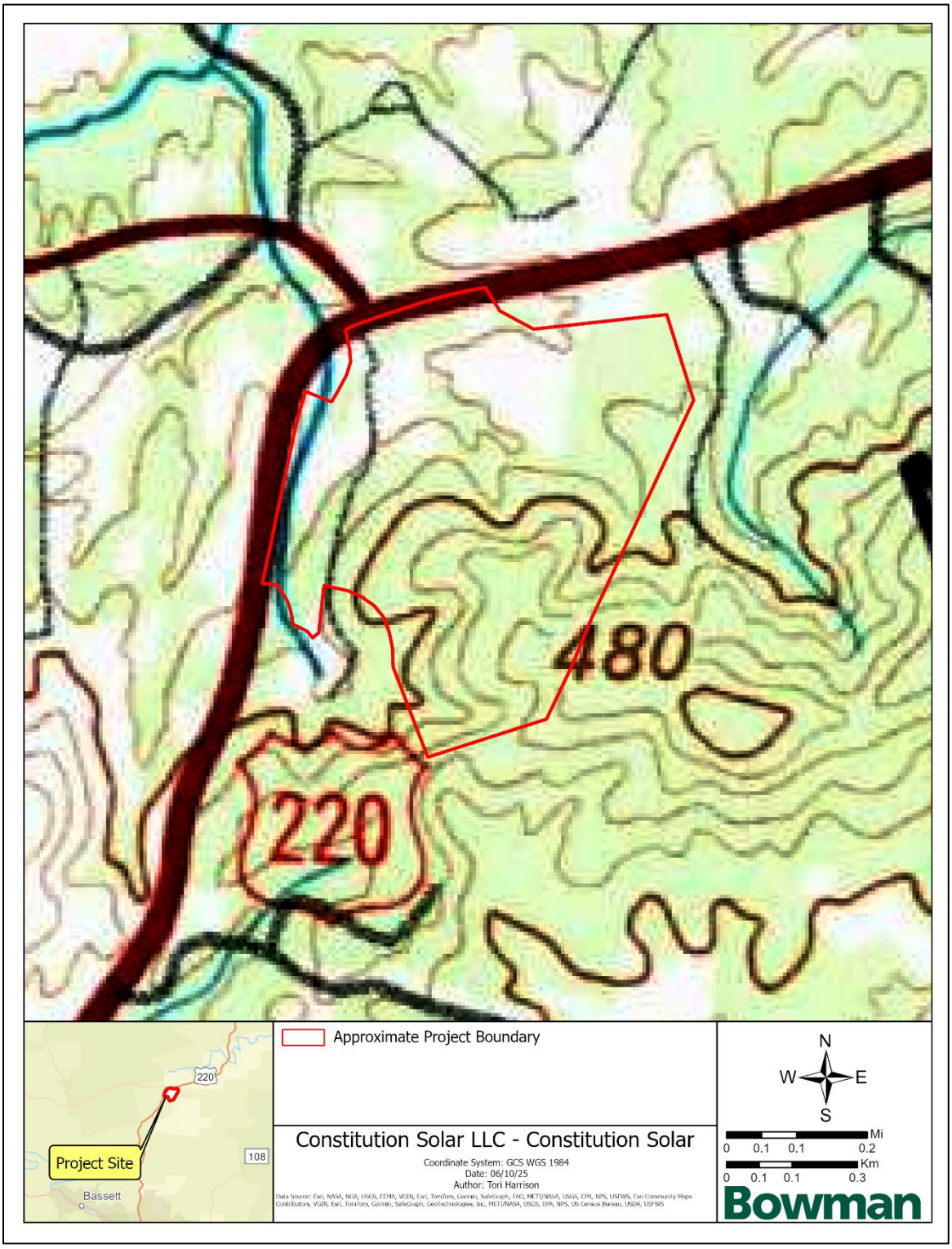

Figure 6. The Constitution Solar Project Area, 1984 Danville, Virginia USGS (1:100000) Map.

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No statewide model exists for Virginia concerning archaeological probability. In a general sense, archaeological probability may be assessed based on landform, soils, level of prior disturbance, distance to water, and previously recorded sites in the vicinity. An examination of the entire project area indicates a moderate probability for precontact archaeological remains. While a majority of the project area contains well drained soils, the steep slopes of Skelt Mountain that encompass most of the eastern portion of the project area and lack of cultural resources identified adjacent make the potential of precontact sites moderate to low. Potential for historic period sites increases along the northern, southern, and western portion of the project area, along Route 220, where the three historic resources were reported (see Table 2).

Summary and Recommendations

As part of the due diligence process for the Constitution Solar Project, Bowman conducted a review of known cultural resources within the project's APE. This review yielded information concerning previously recorded resources in the vicinity and provides the basis for an assessment concerning potential unrecorded resources in the project area. Overall, the potential for undocumented historic resources within the project area is moderate. Based on these collective data (historic maps, soil/environmental data, DHR data), a cultural resource inventory and assessment may be requested by the SHPO should federal or state coordination be required.

Regulations that protect cultural resources apply differently depending on the jurisdiction associated with a project. If the developer is using federal funds or is required to obtain a federal permit, then compliance with Section 106 of the National Historic Preservation Act would apply. In all these regulatory situations an archaeological survey of the area of direct effects will likely be required to conclusively assess the effects to historic properties. Outside of these regulatory requirements, there are state laws that apply if human burials are discovered. An archaeological survey will limit this risk if burials occur on the property, but in lieu of this if a burial were inadvertently discovered during project development, all activity within the immediate vicinity of the find should cease and that the Virginia DHR be promptly notified.

Sincerely,

Tori Harrison, RPA
Cultural Resource Lead – Assistant Project Manager

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References

United States Department of Agriculture (2023) Web Soil Survey. Electronic Document, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, accessed June 10, 2025.

Woods, A.J., Omernik, J.M., Brown, D.D. (1999). Level III and IV Ecoregions of Delaware, Maryland, Pennsylvania, Virginia, and West Virginia. U.S. Environmental Protection Agency: National Health and Environmental Effects Research Laboratory, Corvallis, OR.

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8.11 Constitution Solar 2232 Analysis

CONSTITUTION SOLAR 2232 REVIEW

Project Location and Description

Location

Constitution Solar is a 5 MW solar energy project located at 1778 Virgil Goode Hwy, in Oak Level, Franklin County, Virginia.

Conformance with the Code of Virginia

Compliance with Code of Virginia § 15.2-2232

Section 15.2-2232 of the Code of Virginia requires that any proposed public utility facility — including solar energy facilities — be reviewed by the local planning commission to determine whether its "general location or approximate location, character, and extent" are substantially in accord with the adopted Comprehensive Plan. This process, commonly known as a "2232 Review," ensures that such projects align with the community's long-term planning goals. The Constitution Solar project is being submitted for this review to demonstrate consistency with Franklin County's Comprehensive Plan.

Conformance with Comprehensive Plan

Conformance with 2025 Comprehensive Plan

Franklin County's Vision

The 2023 amendment to Chapter 11, Objective 36.0: »To promote the use of residential, commercial, and utility-scale renewable energy in the way of solar generator facilities and wind turbines while minimizing the impact of such facilities on Franklin County's view shed and the County's natural, agricultural, scenic, tourism, and cultural resources¡« highlights the importance of integrating solar energy into the county. Constitution Solar aligns with this vision by providing clean, renewable energy that supports both local and state energy goals while minimizing the impact of Franklin County's viewshed with the use of vegetation buffers.

Future Land Use - Comprehensive Plan

The Future Land Use section of the Comprehensive Plan states on page 12-12 Policies for Farmland: "Agribusiness: Support and encourage both temporary and ongoing agribusiness activities on farms that contribute to their continuing economic operation. Ensure flexible siting standards to permit the location and continuation of agribusiness that

support or are a part of the agricultural and forestall economy." Constitution Solar supports agribusiness by integrating agrivoltaics, allowing farmers to generate income from solar energy while maintaining agricultural activities. This dual-use approach provides diversified revenue sources while encouraging agribusiness that contributes to their continuing operations.

Environmentally Responsible Development

Strategy 36.0a emphasizes the importance of avoiding negative impacts on farmland and natural resources and The Constitution Solar Project includes measures to minimize environmental impact, such as preserving existing vegetation where possible and use of erosion and sediment control plans. These actions are in line with the county's objectives for environmentally responsible development.

Electrical Utilities – Comprehensive Plan

The Utilities section of the Comprehensive plan states on page 9-22: "Franklin County is home to the fastest growing electric demand in Appalachian Power's three-state service area. The area between U.S. Route 220 and Moneta has experienced an annual load growth rate of 6.7 percent per year for the past 17 years and has seen a 17 percent annual load growth rate in the last three years." Constitution Solar is poised to meet this increasing demand and will deliver reliable electricity to support the area's rapid growth and sustain the ongoing 17% annual load increase.

Goals, Objectives, and Strategies – Comprehensive Plan

Goal: Preserve and improve the quality of the County's soil, water and air.

Constitution Solar is committed to producing clean, renewable energy while minimizing environmental impact. Unlike traditional energy sources that burn fossil fuels and release harmful emissions, solar farms generate electricity without polluting the air, water, or soil, allowing Franklin County to produce electricity all while preserving the quality of the county's soil, water, and air and meet the goals of the Comprehensive Plan.

Economic Development

The Constitution Solar project supports Franklin County's goal of promoting sustainable and diverse economic development. It ties into Objective 2.0 and Strategy 2.0b of the Comprehensive Plan, which encourages investment in emerging technologies like renewable energy. By generating clean power, boosting the local tax base, and creating construction-related jobs, the project helps grow the economy in a way that's consistent with the County's long-term vision and rural character.

Conformance with 2045 Comprehensive Plan

The following policies apply to new utility-scale solar (solar "farms") facilities:

- No more than 1,500 cumulative acres of leased area should be occupied by utility-scale solar projects throughout the County.
- Utility-scale solar facilities should be screened from all public rights-of-way and all adjacent properties.
- Utility-scale solar facilities should not visually impact scenic and cultural resources, including viewsheds from residential areas.
- Promote sustainable building design and management practices of utility-scale solar facilities and sites, to serve current and future generations.
- Encourage agriphotovoltaics (APV) for farmers to still use the area of their land where solar facilities are located. APV refers to a dual land use combining solar energy generation with agricultural production.
- Utility-scale solar facilities should not be located within Designated Growth Areas (DGA).
- All projects must comply with the policies found in the most recently adopted Solar Energy Facility Siting Policy document.

Conformance with the County's "Utility-Scale Solar Generation Facility Siting Policy, dated March 28, 2025 (Draft)(the "Solar Policy")

In addition to the 1,500 minimum acreage requirement set forth above, the Project conforms with the guidelines set forth in Article II of the Solar Policy. Specifically, the Project satisfies the following criteria:

- The Project is located and designed to be compatible with the surrounding community character and design:
    - Proposed location of the utility-scale solar generation facility
    - Site design and facilities, including fencing and other ground-mounted equipment
    - New or modified road, access, or utility corridors
    - Mitigation of community impacts

The following objectives that are considered by County Planning staff, the Planning Commission, and the Board of Supervisors are satisfied as follows:

- Franklin.County.desires.to.protect.and.enhance.its.agricultural.and.rural.heritage?.cultural?and.recreational.resources¡

    a. Location of utility-scale solar generation facilities within areas planned to be serviced by public water or wastewater will be discouraged, and will not be recommended for approval.

    b. In order to protect the integrity of agricultural soils, mass grading of sites shall be limited to the greatest extent possible. Development of areas with steep contours shall be avoided.

    c. Sites located near recreational, cultural, or historic resources shall be avoided.

- Franklin.County.desires.to.protect?maintain?and.improve.the.quality.of.the.natural.environment?including.elements.such.as.air?water?natural.habitats?and.wetlands¡

    a. Site groundcover for utility-scale solar generation facilities shall consist of a variety of native groundcovers that benefit birds, bees, and other insects. Turf grass shall not be allowed.

    b. Groundcover shall be expeditiously established following the completion of construction activities to minimize erosion and loss of soil.

    c. Use of synthetic herbicides to control and maintain groundcover shall not be allowed.

    d. Wildlife corridors shall be considered in the layout and design of the site. Breaks in fencing and equipment shall be provided where appropriate.

    e. Development on wetlands, forested areas, and other valuable habitats shall be avoided or minimized to the greatest extent possible.

Sources:

https://www.franklincountyva.gov/309/Comprehensive-Plan

https://www.franklincountyva.gov/AgendaCenter/ViewFile/Agenda/_01102023-415?utm_source=chatgpt.com

8.12 Economic Impact Report

CONSTITUTION SOLAR

ECONOMIC & FISCAL CONTRIBUTION TO FRANKLIN COUNTY, VIRGINIA

Prepared for

Constitution Solar, LLC

MANGUM economics®

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JUNE 2025

About Mangum Economics, LLC

Mangum Economics was founded in 2003 and since then, we have become known as a leader in industry analysis, economic impact assessment, policy and program evaluation, and economic and workforce strategy development. The Mangum Team specializes in producing objective and actionable quantitative economic research that our clients use for strategic decision making in a variety of industries and environments. We know that our clients are unique, and that one size does not fit all. As a result, we have a well-earned reputation for tailoring our analyses to meet the specific needs of specific clients, with a specific audience.

Most of our research falls into four general categories:

- **Energy:** The Mangum Team has produced analyses of the economic and fiscal impact of over 40 GW of proposed solar, wind, battery energy storage, and hydro projects spanning more than thirty states ranging from 1 MW to over 800 MW in capacity, including small-scale distributed facilities. Among those projects was Dominion's 2.6 GW Coastal Virginia Offshore Wind project off of Virginia Beach. In addition, the Mangum Team has also performed economic and fiscal impact analyses for the natural gas, nuclear, oil, and pipeline industries.
- **Economic Development and Special Projects:** The Mangum Team has performed hundreds of analyses of proposed economic development projects and existing entities including museums and tourist attractions, hospital systems, industrial development and mixed-use projects, and economic development regions. The Mangum Team has also authored multiple economic development plans and assessed the impacts of international trade and an overseas trade office.
- **Advanced Applied Technology:** The Mangum Team specializes in analyzing how advanced technology developments (like data centers, fiber networks, and advanced manufacturing plants) contribute to the state and local economies. We have worked with local governments, trade associations, developers, and operating firms across the country to show how investments in advanced critical infrastructure transform local economies across the country.
- **Policy Analysis:** The Mangum Team also has extensive experience in identifying and quantifying the intended and unintended economic consequences of proposed legislative and regulatory initiatives.

The Project Team

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Executive Summary

This report assesses the economic and fiscal contribution that the proposed Constitution Solar, LLC (Constitution Solar) project would make to Franklin County, Virginia.

Constitution Solar is a proposed 5-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The project would be located west of Virgil Goode Highway in Franklin County, Virginia. The total acreage to be leased for the project encompasses approximately 160 acres of agricultural land and timber land. The actively used, fenced-in portion of the site would be approximately 35 acres.

The primary findings from the assessment are as follows:

Economic Contribution – Construction[1,2]

- Constitution Solar would provide an estimated pulse of economic activity to Franklin County during its construction phase supporting approximately:
  - 5 direct and 4 indirect and induced local job years.
  - $510,300 in associated local wages and benefits.
  - $1.5 million in local economic output.
  - $82,800 in state and local tax revenue.

Economic Contribution – Ongoing Operations

- Constitution Solar would provide an estimated annual economic impact to Franklin County during its ongoing operational phase supporting approximately:
  - 1 direct, indirect, and induced local job.
  - $38,300 in associated local wages and benefits.
  - $123,700 in local economic output.

Fiscal Contribution – Constitution Solar

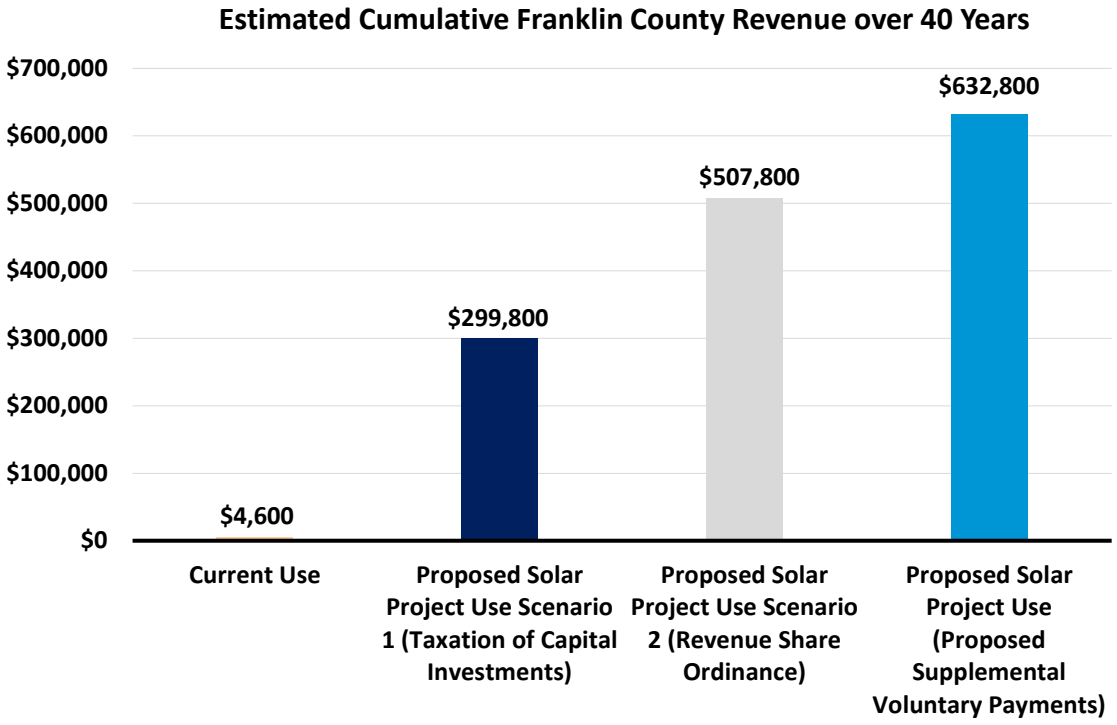
- Constitution Solar would provide additional local revenue to Franklin County over the life of the project:
  - $299,800 in cumulative county revenue over the facility's anticipated 40-year operational life assuming revenues are generated from the reassessment of the real property and the taxation of the associated capital investments (Scenario 1); or

[1] A job year is equal to one job over one year. It is used to denote employment on construction projects to account for the fact that actual on-site employment may vary over the period.
[2] Construction sector jobs are not necessarily new jobs, but the investments made can also support a job during the construction of the project. Please note, despite the large size of the county's construction sector, it is not possible to know with certainty what proportion of jobs would go to county construction contractors or be filled by county residents.

- $507,800 in cumulative county revenue over the facility's anticipated 40-year operational life assuming revenues are generated from the reassessment of the real property and payments associated with a locally adopted revenue share ordinance. (Scenario 2); or
- $632,800 in cumulative county revenue over the facility's anticipated 40-year operational life assuming revenues are generated from the reassessment of the real property, taxation of the associated capital investment, and payments associated with proposed supplemental voluntary payments between Franklin County and Constitution Solar. The proposed supplemental voluntary payments include an upfront payment, and they stipulate that in any year in which revenue from a revenue share ordinance would surpass the revenue from taxation of the capital investments, Constitution Solar would pay the difference (Supplemental Voluntary Payment).[3]

Fiscal Contribution – Current Use Comparison

- Over the facility's anticipated 40-year operational life, Constitution Solar would generate approximately $299,800 in cumulative county revenue under Scenario 1, or approximately $507,800 in cumulative county revenue under Scenario 2, or approximately $632,800 in cumulative county revenue under the proposed supplemental voluntary payments, as compared to approximately $4,600 in cumulative county revenue in the property's current use – a 65- to 137-fold increase over current revenues.



[3] Data Source: Constitution Solar, LLC. Subject to negotiation between Constitution Solar and Franklin County.

Constitution Solar would provide a boost to Franklin County's construction sector:

- At 1,471 jobs, construction is Franklin County's fifth largest major industry sector, paying average weekly wages ($1,112 per week) that are 23 percent above the countywide average ($901 per week).[4]
- Additionally, the construction sector experienced a gain of approximately 46 jobs between 2023 and 2024.[5]
- The proposed Constitution Solar project would directly support approximately 5 jobs and $353,500 in wages and benefits in Franklin County's construction sector.

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

[4] Data Source: U.S. Bureau of Labor Statistics.
[5] Data Source: U.S. Bureau of Labor Statistics.

Introduction

This report assesses the economic and fiscal contribution that the proposed Constitution Solar, LLC (Constitution Solar) project would make to Franklin County, Virginia. This report was commissioned by Constitution Solar, LLC and produced by Mangum Economics.

The Project

Constitution Solar is a proposed 5-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The project would be located west of Virgil Goode Highway in Franklin County, Virginia. The total acreage to be leased for the project encompasses approximately 160 acres of agricultural land and timber land. The actively used, fenced-in portion of the site would be approximately 35 acres.

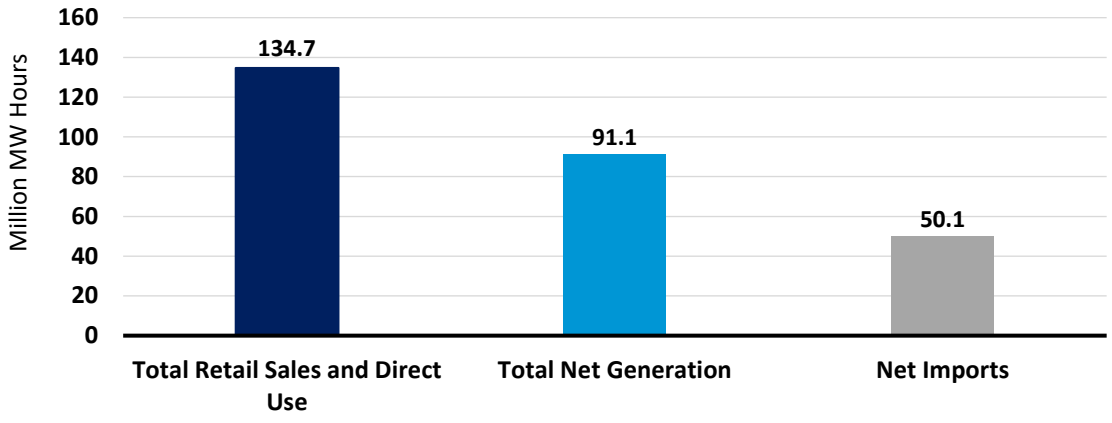
Electricity Production in Virginia

This section provides a backdrop for the proposed Constitution Solar project by profiling Virginia's electricity production sector and the role that solar energy could play in that sector.

Overall Market

As shown in Figure 1, in 2023 electricity sales and direct use in Virginia totaled 134.7 million megawatt hours. However, only 68 percent of that demand was met by in-state utilities, independent producers, and other sources. As a result, Virginia had to import the remaining electricity it consumed from producers in other states. As with all imports, this means that the jobs, wages, and economic output created by that production went to localities in those states, not to localities in Virginia.

Figure 1: Demand and Supply of Electricity in Virginia in 2023 (in millions of megawatt-hours)[6]



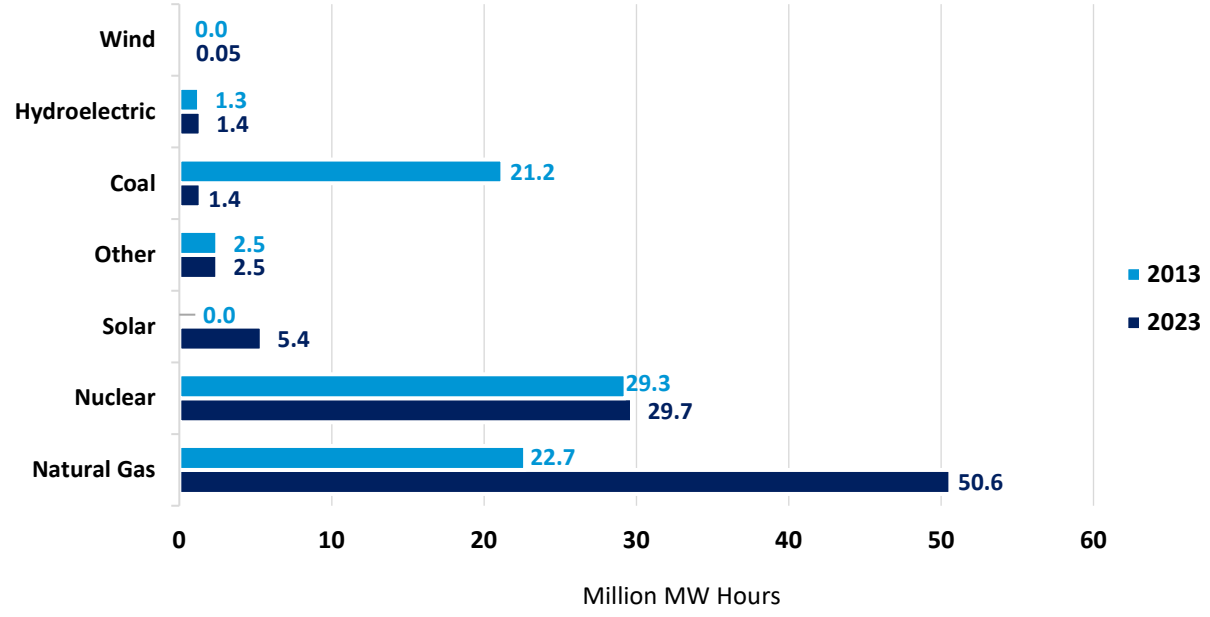
[6] Data Source: U.S. Energy Information Administration. In this chart, "Net Imports" also takes into account losses during transmission. As a result, it does not directly equal the residual of "Total Net Generation" minus "Total Retail Sales and Direct Use."

Sources of Production

Between 2013 and 2023, the total amount of electricity produced in Virginia increased from 76.9 to 91.1 million megawatt hours, while retail and direct consumption of electricity increased from 113.0 to 134.7 million megawatt hours. Consequently, imports of electricity increased by 6.5 million megawatt hours (or 15 percent) during this time.[7] Figure 2 provides a comparison of the energy sources that were used to produce electricity in Virginia in each of those years. As these data show, the most significant change between 2013 and 2023 was a decrease in the use of coal and an increase in the use of natural gas. Where coal was the state's third largest source of electricity in 2013, accounting for 21.2 million megawatt hours (or 28 percent) of production, by 2023 production had fallen by 19.8 million megawatt hours, making coal a fifth-place source of electricity with only 2 percent of production.

In contrast, the share of electricity produced using cleaner-burning low-emissions energy sources increased over the period. Where natural gas accounted for 22.7 million megawatt hours (or 30 percent) of Virginia's electricity production in 2013, by 2023 that proportion had more than doubled to 50.6 million megawatt hours (or 56 percent of production), making natural gas the state's largest source of electricity. In addition, solar, which entered the Virginia electricity production market in 2016, increased its share to 5.4 million megawatt hours in 2023.

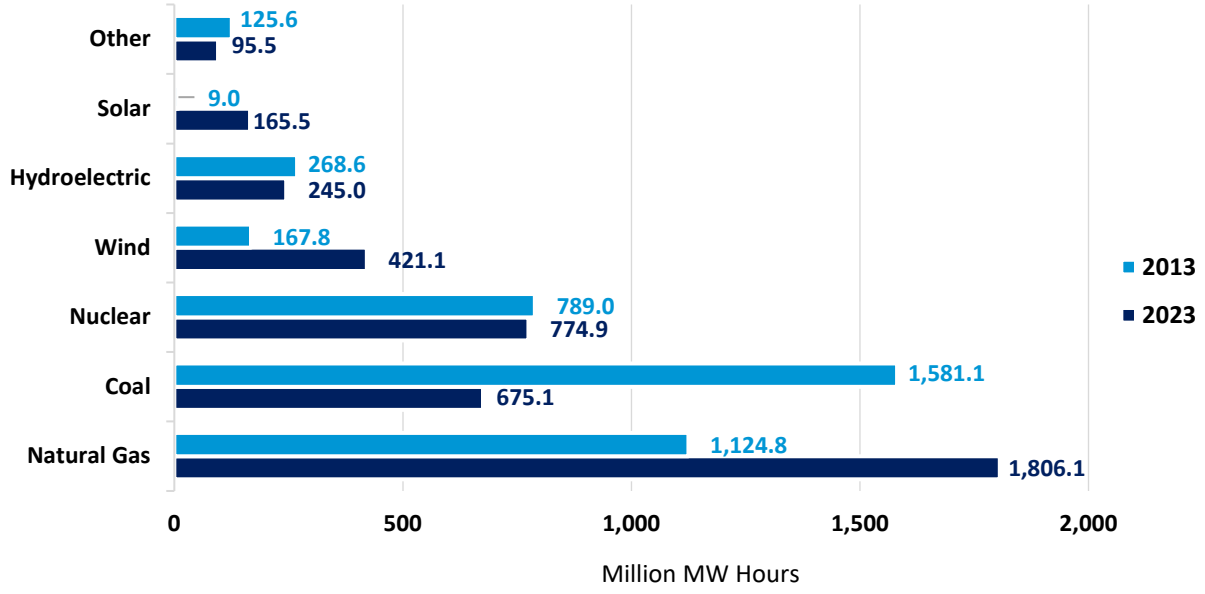
Figure 2: Electricity Generation in Virginia by Energy Source in 2013 and 2023 (in millions of megawatt-hours)[8]



[7] Imports also takes into account losses during transmission. As a result, totals do not equal sum of components.
[8] Data Source: U.S. Energy Information Administration. The "Other" category includes battery, wood, petroleum, other biomass, "other", and pumped storage.

Figure 3 provides similar data for the U.S. as a whole. A quick comparison of Figures 2 and 3 shows that although the degree of reliance on specific energy sources for electricity production is quite different between the U.S. and Virginia, the trend toward lower-emissions energy sources is the same. Nationally, between 2013 and 2023 the amount of electricity produced using coal declined by 906.0 million megawatt hours from 39 to 16 percent of production, while in contrast the amount of electricity produced using natural gas increased by 681.3 million megawatt hours from 28 to 43 percent of production. Nationwide, as in Virginia, the reliance on renewable energy sources such as solar increased during this time but at a slower pace than in Virginia. Between 2013 and 2023, the amount of electricity produced using solar increased by 156.5 million megawatt hours to 4 percent of total electricity production in the nation compared to 6 percent of total electricity production in Virginia.

Figure 3: Electricity Generation in the United States by Energy Source in 2013 and 2023 (in millions of megawatt-hours)[9]

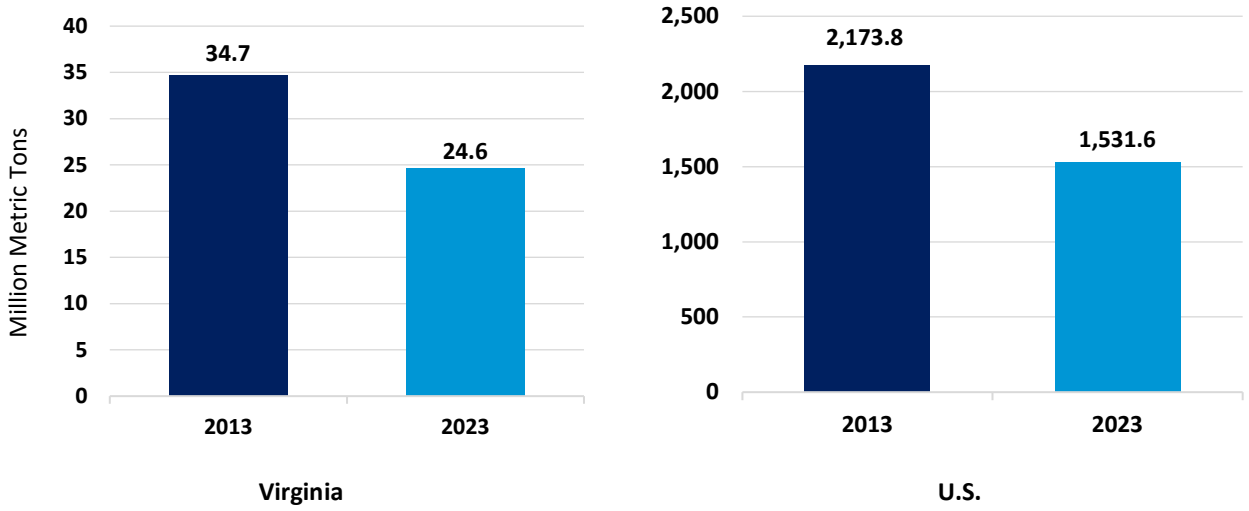


Impact on the Environment

In discussing the impact of these trends on the environment, it is important to realize that electricity production is one of the U.S.'s largest sources of greenhouse gas emissions. Figure 4 depicts carbon dioxide emissions from electricity production in 2013 and 2023 for both Virginia and the U.S. As these data indicate, between 2013 and 2023, as the share of electricity produced in Virginia by coal fell from 28 to 2 percent, carbon dioxide emissions from electricity production fell from 34.7 to 24.6 million metric tons (a 29 percent decrease). Where at the national level, as the share of electricity produced by coal fell from 39 to 16 percent, carbon dioxide emissions from electricity production fell from 2,173.8 to 1,531.6 million metric tons (a 30 percent decrease).

[9] Data Source: U.S. Energy Information Administration. "Other" includes battery, geothermal, other, other biomass, other gas, petroleum, pumped storage, and wood.

Figure 4: Carbon Dioxide Emissions from Electricity Production (millions of metric tons)[10]

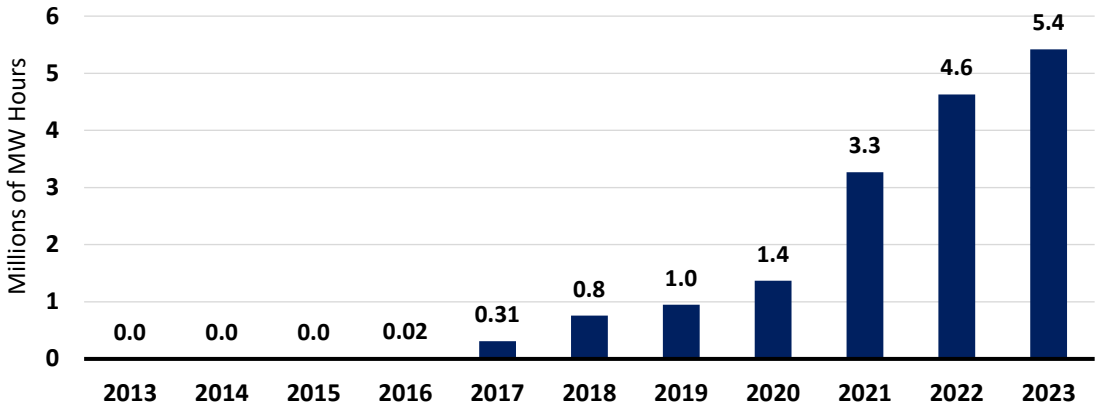


Virginia Solar Industry Trends

Virginia ranks 9th in the nation in terms of proposed solar capacity. With a total of 57 projects in the pipeline totaling a combined 3,101 megawatts of capacity, these proposed projects would add a significant amount of renewable energy to the state's grid.[11] Total investment into the solar industry in Virginia as of the first quarter of 2025 amounts to $8.5 billion.[12]

Figure 5 depicts the progression of solar energy generation in Virginia from 2013 to 2023 expressed in millions of megawatt-hours. Solar entered the electricity market in Virginia in 2016 with 0.02 million megawatt hours. Generation has continued to grow throughout the period, reaching its peak, so far, in 2023, with solar generation totaling 5.4 million megawatt-hours.

Figure 5: Solar Generation in Virginia (in millions of megawatt-hours) – 2013 to 2023[13]



[10] Data Source: U.S. Energy Information Administration.
[11] Data Source: U.S. Energy Information Administration.
[12] Data Source: Solar Energy Industries Association. Includes residential, community, commercial, and utility solar.
[13] Data Source: U.S. Energy Information Administration.

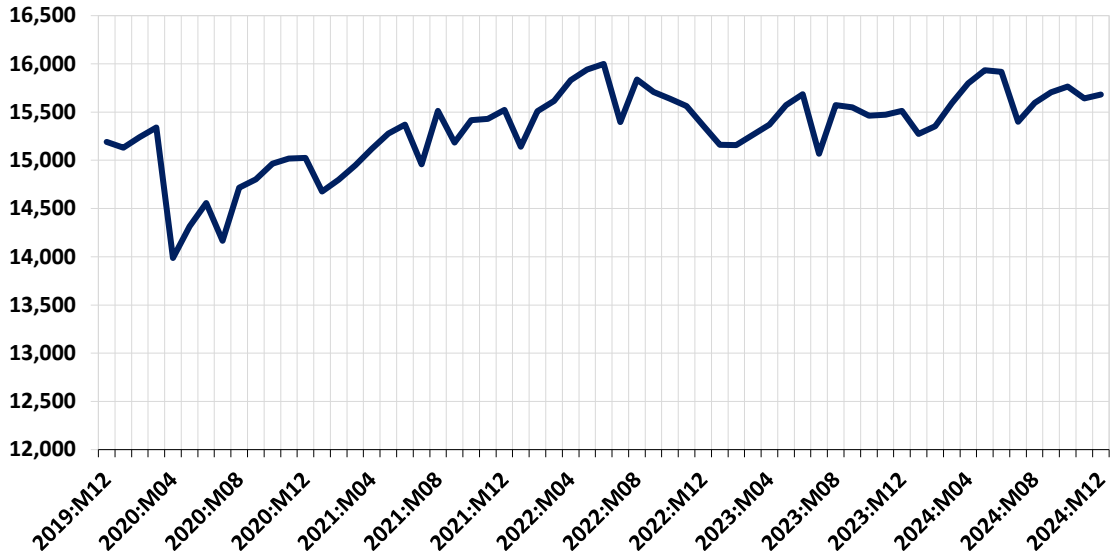
Local Economic Profile

This section provides context for the economic and fiscal impact assessments to follow by profiling the local economy of Franklin County.

Total Employment

Figure 6 depicts the trend in total employment in Franklin County during the five-year period from December 2019 through December 2024. Employment in the county experienced general seasonal fluctuations throughout the period, with a noticeable decline in the spring of 2020 due to a decrease in economic activity associated with the COVID-19 pandemic. Total employment has since recovered and surpassed pre-pandemic levels. As of December 2024, total employment in the county stood at 15,682 jobs, which represents an overall increase in employment of 3.2 percent (or 492 jobs) over the five-year period. To put this number in perspective, over this same period, total statewide employment in Virginia increased by 4.0 percent.[14]

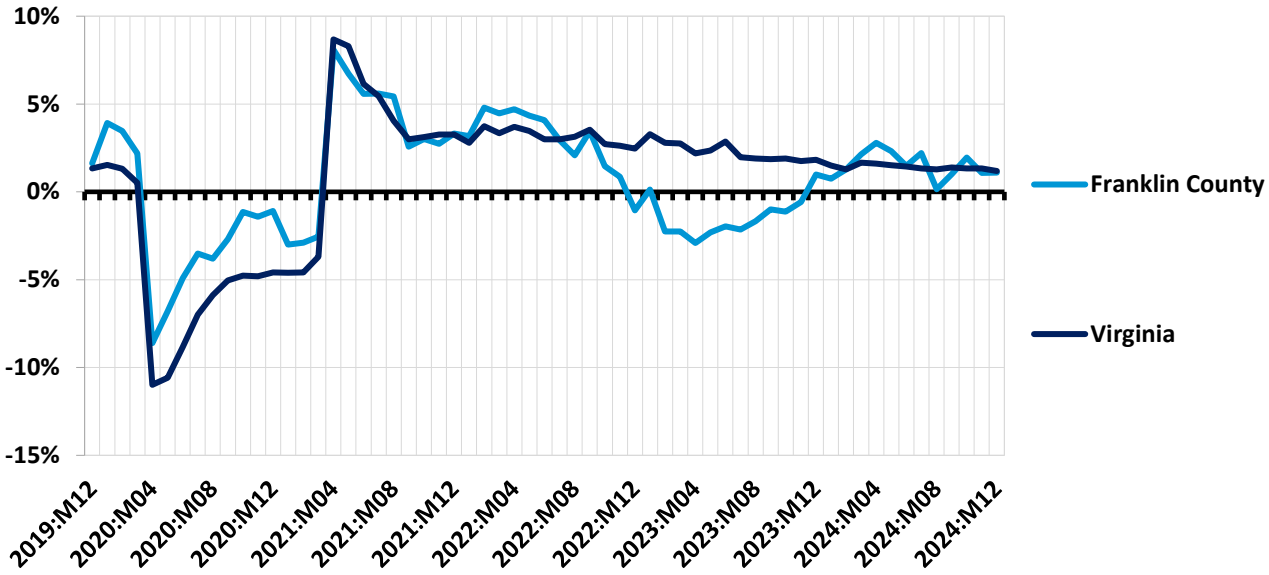
Figure 6: Total Employment in Franklin County – December 2019 to December 2024[15]



To control for seasonality and provide a point of reference, Figure 7 compares the year-over-year change in total employment in Franklin County to that of the state of Virginia over the same five-year period. Any point above the zero line in this graph indicates an increase in employment, while any point below the zero line indicates a decline in employment. As these data show, Franklin County fluctuated around the statewide average for most of the period. As of December 2024, the year-over-year change in total employment in Franklin County was 1.1 percent as compared to 1.2 percent statewide in Virginia.

[14] Data Source: U.S. Bureau of Labor Statistics.
[15] Data Source: U.S. Bureau of Labor Statistics.

Figure 7: Year-Over-Year Change in Total Employment – December 2019 to December 2024[16]



Employment and Wages by Industry Supersector

To provide a better understanding of the underlying factors motivating the total employment trends depicted in Figures 6 and 7, Figures 8 through 10 provide data on private employment and wages in Franklin County by industry supersector.[17]

Figure 8 provides an indication of the distribution of private sector employment across industry supersectors in Franklin County in 2024. As these data indicate, the county's largest industry sectors that year were Manufacturing (3,224 jobs), followed by Trade, Transportation and Utilities (2,615 jobs), and Education and Health Services (2,125 jobs).

Figure 9 provides a similar ranking for average private sector weekly wages by industry supersector in Franklin County in 2024. As these data show, the highest paying industry sectors that year were Information ($2,522 per week), Financial Activities ($1,337 per week), and Construction ($1,112 per week). To provide a point of reference, the average private sector weekly wage across all industry sectors in Franklin County that year was $901 per week.

[16] Data Source: U.S. Bureau of Labor Statistics.
[17] A "supersector" is the highest level of aggregation in the coding system that the Bureau of Labor Statistics uses to classify industries.

Figure 8: Private Employment by Industry Supersector in Franklin County – 2024[18]

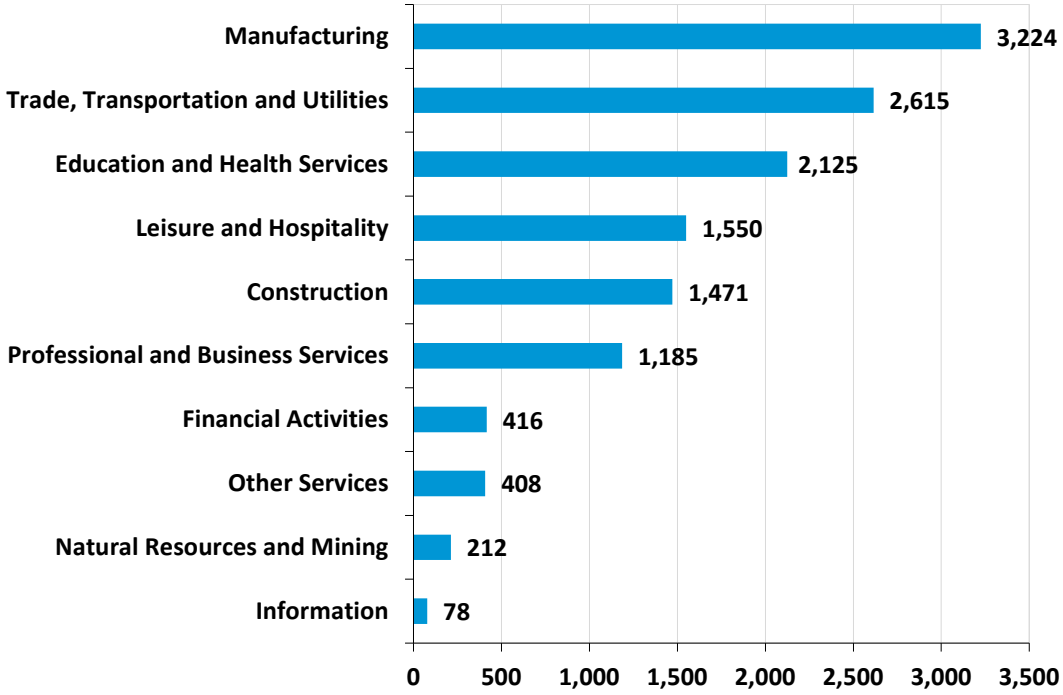
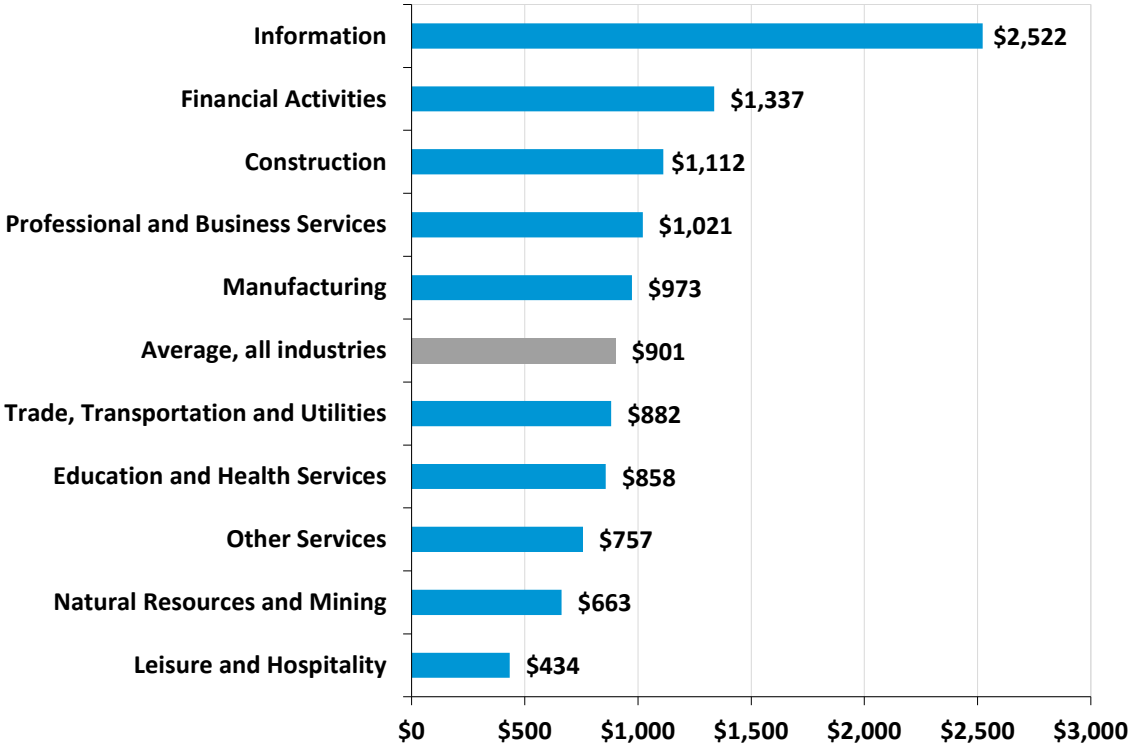


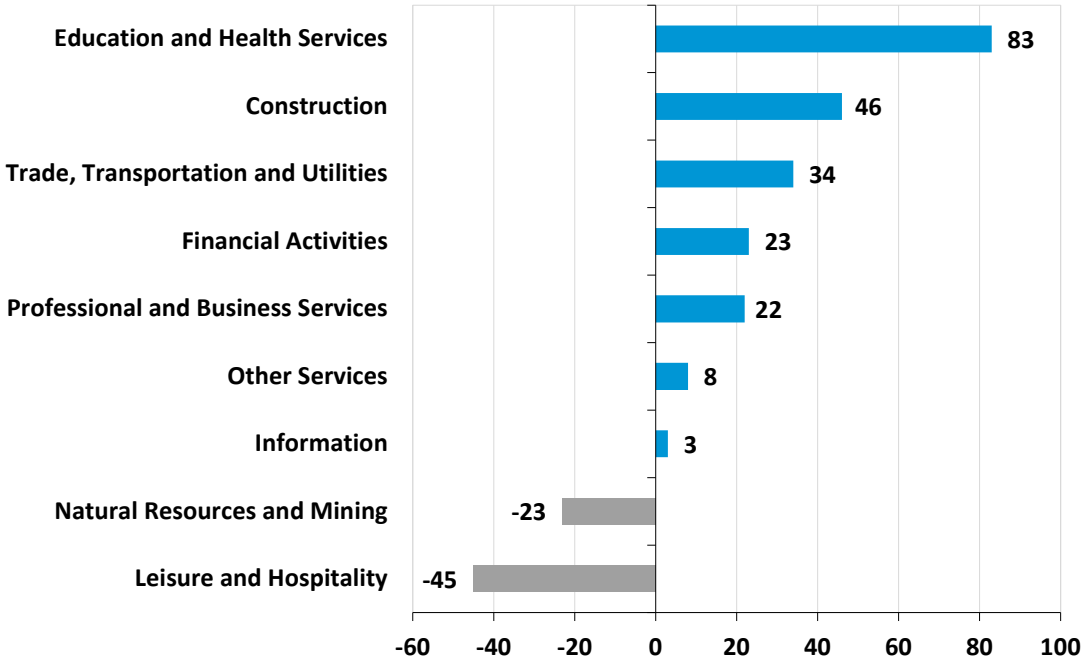
Figure 9: Average Private Weekly Wages by Industry Supersector in Franklin County – 2024[19]



[18] Data Source: U.S. Bureau of Labor Statistics.
[19] Data Source: U.S. Bureau of Labor Statistics.

Figure 10 details the year-over-year change in private sector employment from 2023 to 2024 in Franklin County by industry supersector. Over this period, the largest employment gains occurred in the Education and Health Services (up 83 jobs), Construction (up 46 jobs), and Trade, Transportation and Utilities (up 34 jobs) sectors. The only employment losses occurred in the Leisure and Hospitality (down 23 jobs) and Natural Resources and Mining (down 23 jobs) sectors.

Figure 10: Change in Private Employment by Industry Supersector in Franklin County from 2023 to 2024[20]

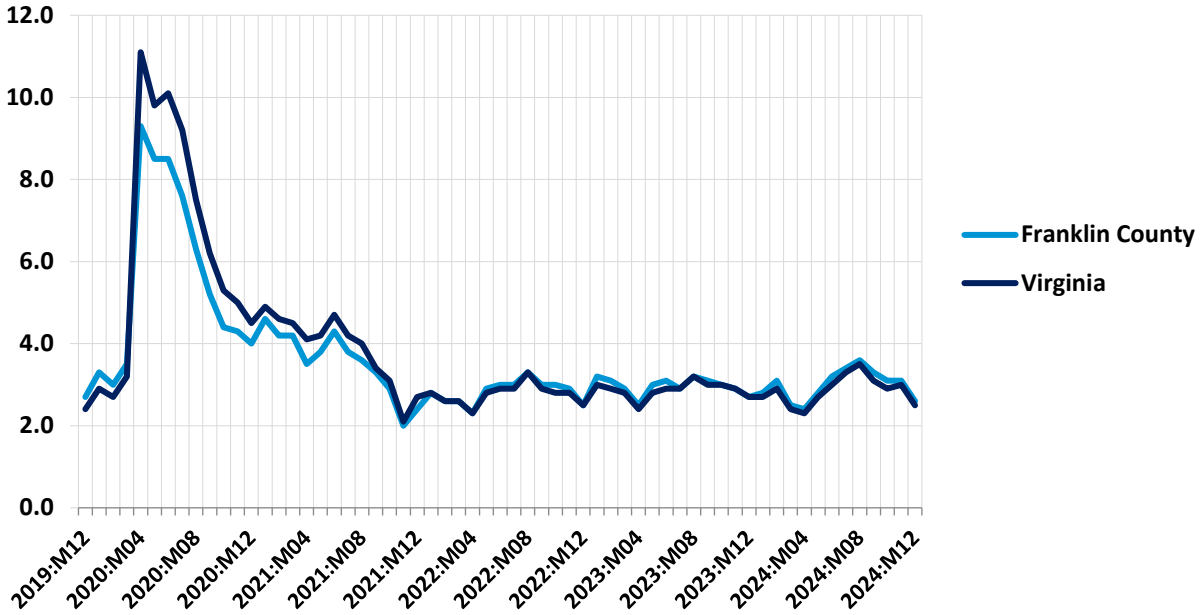


Unemployment

Figure 11 illustrates the trend in Franklin County's unemployment rate over the five-year period from April 2020 through April 2025 and benchmarks those data against the statewide trend for Virginia. As these data show, the county and state experienced high unemployment rates in the beginning of the period as a result of the labor dislocations caused by the COVID-19 pandemic. Unemployment rates in Franklin County tracked slightly above the statewide trend for the latter half of the period. As of April 2025, unemployment stood at 3.5 percent in Franklin County and at 3.3 percent in Virginia.

[20] Data Source: U.S. Bureau of Labor Statistics.

Figure 11: Unemployment Rate – April 2020 to April 2025[21]



[21] Data Source: U.S. Bureau of Labor Statistics.

Economic Impact

This section quantifies the economic and fiscal contribution that the proposed Constitution Solar project would make to Franklin County. The analysis separately evaluates the pulse of economic activity that would occur during the construction phase of the project, as well as the annual economic activity that the project would generate during its ongoing operational phase.

Method

To empirically evaluate the likely local economic impact attributable to the proposed Constitution Solar project, the analysis employs a regional economic impact model called IMPLAN.[22] The IMPLAN model is one of the most commonly used economic impact simulation models in the U.S., and in Virginia is used by UVA's Weldon Cooper Center, the Virginia Department of Planning and Budget, the Virginia Employment Commission, and other state agencies and research institutes. Like all economic impact models, the IMPLAN model uses economic multipliers to quantify economic impact.

Economic multipliers measure the ripple effects that an expenditure generates as it makes its way through the economy. For example, as when the Constitution Solar project purchases goods and services – or when contractors hired by the facility use their salaries and wages to make household purchases – thereby generating income for someone else, which is in turn spent, thereby becoming income for yet someone else, and so on, and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier.

One of the primary advantages of the IMPLAN model is that it uses regional and national production and trade flow data to construct region-specific and industry-specific economic multipliers, which are then further adjusted to reflect anticipated actual spending patterns within the specific geographic study area that is being evaluated. As a result, the economic impact estimates produced by IMPLAN are not generic. They reflect as precisely as possible the economic realities of the specific industry, and the specific study area, being evaluated.

In the analysis that follows, these impact estimates are divided into three categories. First round direct impact measures the direct economic contribution of the entity being evaluated (e.g., own employment, wages paid, goods and services purchased by the Constitution Solar project). Second round indirect and induced impact measures the economic ripple effects of this direct impact in terms of business to business, and household (employee) to business, transactions. Total impact is simply the sum of the preceding two. These categories of impact are then further defined in terms of employment (the jobs that are created), labor income (the wages and benefits associated with those jobs), and economic output (the total amount of economic activity that is created in the economy).

[22] IMPLAN is produced by IMPLAN Group, LLC.

Construction Phase

This portion of the section assesses the economic and fiscal contribution that the pulse of activity associated with construction of Constitution Solar would provide to Franklin County.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- Total capital investment in Constitution Solar is estimated to be approximately $11.7 million.[23]
- Of that total:
    - Engineering, site preparation, and other construction and development costs are estimated to be approximately $7.0 million.[24]
    - Capital equipment costs are estimated to be approximately $4.7 million.[25]
- For ease of explanation, all construction expenditures are assumed to take place during a representative 12-month period.

Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of the economic and fiscal impact on Franklin County. As shown in Table 1, construction of Constitution Solar would directly support approximately: 1) 5 job years, 2) $353,500 in wages and benefits, and 3) $910,800 in economic output to Franklin County.

Taking into account the economic ripple effects that direct investment and the per diem spending of non-local construction workers would generate, the total estimated impact on Franklin County would support approximately: 1) 9 job years, 2) $510,300 in wages and benefits, 3) $1.5 million in economic output, and 4) $82,800 in state and local tax revenue.

[23] Data Source: Constitution Solar, LLC. Investment estimate is subject to change based on final design and vendor contracts.
[24] Data Source: Constitution Solar, LLC. Subject to change based on final design and vendor contracts.
[25] Data Source: Constitution Solar, LLC. Subject to change based on final design and vendor contracts.

Table 1: Estimated Economic and Fiscal Impact on Franklin County from Construction of Constitution Solar[26, 27]

Economic Impact	Employment – Job Years	Wages and Benefits	Output
1st Round Direct Economic Activity	5	$353,500	$910,800
2nd Round Indirect and Induced Economic Activity	4	$156,800	$573,700
Total Economic Activity	**9**	**$510,300**	**$1,484,500**
Fiscal Impact			
State and Local Tax Revenue			**$82,800**

**Totals may not sum due to rounding.*

Ongoing Operations Phase

This portion of the section assesses the annual economic contribution that Constitution Solar would provide to Franklin County during its anticipated 40-year operational phase.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- Constitution Solar would source locally available services and materials for maintenance of the facility.[28]
- Constitution Solar would make confidential lease payments to local landowners.[29]

Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact. As shown in Table 2, annual operation of Constitution Solar would on average directly support approximately: 1) < 1 job, 2) $12,400 in wages and benefits, and 3) $34,700 in economic output to Franklin County.

Taking into account the economic ripple effects that direct impact would generate, the total estimated annually supported impact on Franklin County would be approximately: 1) 1 job, 2) $38,300 in wages and benefits, and 3) $123,700 in economic output.

[26] A job year is equal to one job over one year. It is used to denote employment on construction projects to account for the fact that actual on-site employment may vary over the period.
[27] Construction sector jobs are not necessarily new jobs, but the investments made can also support a job during the construction of the project. Please note, despite the large size of the county's construction sector, it is not possible to know with certainty what proportion of jobs would go to county construction contractors or be filled by county residents.
[28] Data Source: Constitution Solar, LLC.
[29] Data Source: Constitution Solar, LLC.

Table 2: Estimated Annual Economic Impact on Franklin County from the Ongoing Operation of Constitution Solar

Economic Impact	Employment	Wages and Benefits	Output
1st Round Direct Economic Activity	< 1	$12,400	$34,700
2nd Round Indirect and Induced Economic Activity	< 1	$26,000	$88,900
Total Economic Activity	**1**	**$38,300**	**$123,700**

**Totals may not sum due to rounding.*

Fiscal Impact

This section quantifies the direct fiscal contribution that the proposed Constitution Solar project would make to Franklin County. It should be noted at the outset, however, that the analysis that follows only accounts for the direct fiscal impact. It does not take into account any additional tax revenue that would be generated as a result of the indirect economic activity attributable to the ongoing operation of the Constitution Solar project.

The analysis considers two scenarios and a resulting proposed supplemental voluntary payment. Each of these include the additional revenue that Constitution Solar would generate for Franklin County over a 40-year period from the increased property assessments associated with reassessing the site as solar use property. Scenario 1 then describes the additional revenue Constitution Solar would generate for Franklin County from taxes levied on the capital investment in machinery and tools, while Scenario 2 assumes tax revenue generated from the capital investment will be replaced with revenue associated with a locally adopted revenue share ordinance and based on the project's total generation capacity. The supplemental voluntary payment section then summarizes the proposed supplemental voluntary payment to be negotiated between Constitution Solar and Franklin County.[30]

Fiscal Impact Assumptions

The analysis is based on the following assumptions:

- Total capital investment in machinery and tools in Constitution Solar is estimated to be approximately $8.7 million.[31]
- Constitution Solar would be situated on approximately 35 fenced-in acres within an approximate 160-acre tract of leased land.[32]
- The fenced-in area would be removed from the land use program and reassessed at a solar use assessment value of $11,000 per acre.[33]

[30] Data Source: Constitution Solar, LLC. Subject to negotiation between Constitution Solar and Franklin County.
[31] Data Source: Constitution Solar, LLC. Investment estimate is subject to change based on final design and vendor contracts.
[32] Data Source: Constitution Solar, LLC.
[33] Potential future assessment value is an estimate based on experience with comparable solar projects in Virginia and an informal conversation with the Franklin County Commissioner of Revenue's Office.

- The initial interconnection request for Constitution Solar was filed in January 2021.[34]
- Constitution Solar would be independently owned.[35]
- Tax rates remain constant throughout the analysis.
- Constitution Solar's total generation capacity would be 5 MW AC.[36]
- Constitution Solar would become operational in 2026.[37]

Taxation of Real Estate

Table 3 details the increased tax revenue associated with reassessing the fenced-in site as solar use property. The county real estate tax revenue from the project after reassessment is estimated to be approximately $1,700 per year, for a cumulative total of approximately $66,200. Adding the one-time rollback tax of approximately $1,300 increases the total cumulative revenue to approximately $67,500 over the project's anticipated 40-year operational life. In contrast, the property currently generates approximately $120 per year in real estate tax revenue for the county, for a cumulative total of approximately $4,600 over 40 years.[38]

Table 3: Estimated County Revenue Generated by Constitution Solar from Real Estate Taxes over 40 Years

Estimated Increased Appraised Value of Property under Solar Use	$385,000
Franklin County Real Estate Tax Rate (per $100)[39]	$0.43
Annual County Real Estate Tax – Solar Use	$1,700
Cumulative Revenue over 40 Years	**$66,200**
One-time Rollback Taxes[40]	$1,300
Total Cumulative Revenue over 40 Years	**$67,500**

**Totals may not sum due to rounding.*

Scenario 1: Taxation of Capital Investment in Machinery and Tools

Table 4 separately details the additional annual revenue that Constitution Solar would generate for Franklin County over a 40-year period from taxes levied on capital investment. This estimate is calculated as: 1) the taxable portion of capital investments based on the stepdown local tax exemption

[34] Data Source: Constitution Solar, LLC.
[35] Data Source: Constitution Solar, LLC.
[36] Data Source: Constitution Solar, LLC.
[37] Data Source: Constitution Solar, LLC.
[38] Data Source: Derived from Franklin County's GIS.
[39] Data Source: Franklin County's FY24-25 Adopted Budget Book.
[40] Rollback taxes are estimated based on the difference between the land use value assessment tax and the tax on the fair market value for the affected acreage for five complete tax years plus the current year, including simple interest. Does not account for changes in assessment values.

pursuant to Virginia Code §58.1-2606.1, times 2) Franklin County's depreciation guidelines for machinery and tools[41], times 3) Franklin County's real property tax rate of $0.43 per $100 of assessed value pursuant to Virginia Code §58.1-2606.1.

As the data in Table 4 indicate, based on these calculations the estimated additional county revenue from taxation of capital investments in machinery and tools associated with Constitution Solar would be approximately $7,500 in the project's first year of operation, with that figure projected to decrease thereafter as the equipment is depreciated for a cumulative total of approximately $232,300 over the anticipated 40-year operational life of the project.

Table 4: Estimated Franklin County Revenue Generated by Constitution Solar Investment Over 40 Years

Year	Total Capital Investment Subject to Exemption[42]	Depreciated Value of Taxable Capital Investment[43]	Additional Annual County Tax Revenue Solar Investment[44]
1	$8,671,000	$1,734,200	$7,500
2	$8,671,000	$1,560,800	$6,700
3	$8,671,000	$1,387,400	$6,000
4	$8,671,000	$1,213,900	$5,200
5	$8,671,000	$1,040,500	$4,500
6	$8,671,000	$1,300,700	$5,600
7	$8,671,000	$1,040,500	$4,500
8	$8,671,000	$1,040,500	$4,500
9	$8,671,000	$1,040,500	$4,500
10	$8,671,000	$1,040,500	$4,500
11	$8,671,000	$1,387,400	$6,000
12	$8,671,000	$1,387,400	$6,000
13	$8,671,000	$1,387,400	$6,000
14	$8,671,000	$1,387,400	$6,000
15	$8,671,000	$1,387,400	$6,000
16	$8,671,000	$1,387,400	$6,000
17	$8,671,000	$1,387,400	$6,000
18	$8,671,000	$1,387,400	$6,000
19	$8,671,000	$1,387,400	$6,000
20	$8,671,000	$1,387,400	$6,000
21	$8,671,000	$1,387,400	$6,000

[41] Because Constitution Solar would be owned independently and does not meet the definition of an "Electric Supplier" because it is under 25 MW, it would be assessed locally.
[42] Data Source: Constitution Solar, LLC.
[43] Accounts for the stepdown exemption from local property taxes pursuant to Virginia Code §58.1-2606.1 for projects 5 MW or less and approved by a locality after July 1, 2022.
[44] Calculated pursuant to Virginia Code §58.1-2606.1. Constitution Solar would be taxable at a rate not exceeding Franklin County's real property tax rate of $0.43 per $100 of assessed value.

Year	Total Capital Investment Subject to Exemption[42]	Depreciated Value of Taxable Capital Investment[43]	Additional Annual County Tax Revenue Solar Investment[44]
22	$8,671,000	$1,387,400	$6,000
23	$8,671,000	$1,387,400	$6,000
24	$8,671,000	$1,387,400	$6,000
25	$8,671,000	$1,387,400	$6,000
26	$8,671,000	$1,387,400	$6,000
27	$8,671,000	$1,387,400	$6,000
28	$8,671,000	$1,387,400	$6,000
29	$8,671,000	$1,387,400	$6,000
30	$8,671,000	$1,387,400	$6,000
31	$8,671,000	$1,387,400	$6,000
32	$8,671,000	$1,387,400	$6,000
33	$8,671,000	$1,387,400	$6,000
34	$8,671,000	$1,387,400	$6,000
35	$8,671,000	$1,387,400	$6,000
36	$8,671,000	$1,387,400	$6,000
37	$8,671,000	$1,387,400	$6,000
38	$8,671,000	$1,387,400	$6,000
39	$8,671,000	$1,387,400	$6,000
40	$8,671,000	$1,387,400	$6,000
Cumulative Total			**$232,300**

**Totals may not sum due to rounding.*

Scenario 1: Total Fiscal Impact

Table 5 combines the results from the calculations depicted in Tables 3 and 4 to provide an estimate of the cumulative fiscal contribution that Constitution Solar would make to Franklin County over its 40-year anticipated operational life under Scenario 1. As these data indicate that cumulative total is approximately $299,800.

Table 5: Estimated Cumulative County Tax Revenue from Constitution Solar over 40 Years under Scenario 1

County Real Estate Tax	$67,500
County Revenue from Taxation of Capital Investments in Machinery and Tools	$232,300
Total Cumulative Revenue over 40 Years[45]	**$299,800**

**Totals may not sum due to rounding.*

[45] Revenue does not include the value of potential voluntary payments to be negotiated between Constitution Solar and Franklin County.

Scenario 2: Revenue Share Ordinance

The following section describes the additional annual revenue that Constitution Solar would generate for Franklin County assuming the county adopts an energy revenue share ordinance under Virginia Code §58.1-2636. The Virginia Code currently stipulates that a locality may assess an annual revenue share of up to $1,400 per megawatt (MW) alternating current (AC) generation capacity of a solar facility.[46] However, legislation that was passed in the 2021 General Assembly (SB 1201/HB 2006) and went into effect on July 1, 2021, allows a 10 percent escalator to be applied to the $1,400 per MW revenue share every five years, beginning in 2026. Section 58.1-2606.1 stipulates that capital investment associated with the solar project will be exempt from taxation if the county adopts an energy revenue share ordinance.

Table 6 details the revenue generated from a revenue share ordinance including the 10 percent escalator. Based on a total generation capacity of 5 MW AC and an assumed commissioning date in 2026, a revenue share ordinance would generate approximately $440,300 over the anticipated 40-year operational life of the project.

Table 6: Estimated Franklin County Revenue Generated from a Revenue Share Ordinance over 40 Years

Year	MW	Revenue Share per MW with Escalator	Annual County Revenue
1	5	$1,540	$7,700
2	5	$1,540	$7,700
3	5	$1,540	$7,700
4	5	$1,540	$7,700
5	5	$1,540	$7,700
6	5	$1,694	$8,500
7	5	$1,694	$8,500
8	5	$1,694	$8,500
9	5	$1,694	$8,500
10	5	$1,694	$8,500
11	5	$1,863	$9,300
12	5	$1,863	$9,300
13	5	$1,863	$9,300
14	5	$1,863	$9,300
15	5	$1,863	$9,300
16	5	$2,050	$10,200
17	5	$2,050	$10,200
18	5	$2,050	$10,200
19	5	$2,050	$10,200
20	5	$2,050	$10,200
21	5	$2,255	$11,300
22	5	$2,255	$11,300

[46] Pursuant to Virginia Code §58.1-2636.

Year	MW	Revenue Share per MW with Escalator	Annual County Revenue
23	5	$2,255	$11,300
24	5	$2,255	$11,300
25	5	$2,255	$11,300
26	5	$2,480	$12,400
27	5	$2,480	$12,400
28	5	$2,480	$12,400
29	5	$2,480	$12,400
30	5	$2,480	$12,400
31	5	$2,728	$13,600
32	5	$2,728	$13,600
33	5	$2,728	$13,600
34	5	$2,728	$13,600
35	5	$2,728	$13,600
36	5	$3,001	$15,000
37	5	$3,001	$15,000
38	5	$3,001	$15,000
39	5	$3,001	$15,000
40	5	$3,001	$15,000
Cumulative Total			**$440,300**

**Totals may not sum due to rounding.*

Scenario 2: Total Fiscal Impact

Table 7 combines the results from the calculations depicted in Tables 3 and 6 to provide an estimate of the cumulative fiscal contribution that Constitution Solar would make to Franklin County over its 40-year anticipated operational life under Scenario 2. As these data indicate that cumulative total is approximately $507,800.

Table 7: Estimated Cumulative County Revenue from Constitution Solar over 40 Years under Scenario 2

County Real Estate Tax	$67,500
County Revenue from Revenue Share Ordinance	$440,300
Total Cumulative Revenue over 40 Years[47]	**$507,800**

**Totals may not sum due to rounding.*

[47] Revenue does not include the value of potential voluntary payments to be negotiated between Constitution Solar and Franklin County.

Proposed Supplemental Voluntary Payment

This section outlines the additional revenue that the proposed Constitution Solar project would provide to Franklin County through a proposed supplemental voluntary payment. Voluntary payments add significant value to the overall fiscal impact of solar projects to their host localities. The Code of Virginia §15.2-2288.8 stipulates the applicant provides the substantial cash payments outlined in this condition for significant public improvements. The terms and conditions of the payment vary by locality and project.

The supplemental voluntary payment is subject to negotiation between Constitution Solar and Franklin County. The proposed payment condition is based on the assumption that the project would be subject to taxation of the capital investments in machinery and tools. It includes a one-time non-refundable payment of $125,000 to Franklin County, and it also stipulates that in any year in which revenue from a revenue share ordinance would surpass the revenue from taxation of the capital investments, Constitution Solar would pay the difference (supplemental voluntary payment), resulting in a total revenue that is equivalent to the higher value of the two scenarios.[48]

Table 8 details the revenue generated from taxation of capital investments (Table 4) and from a revenue share ordinance (Table 6). Table 8 also shows the estimated supplemental voluntary payment for each year in which the revenue from a revenue share ordinance surpasses the revenue from the taxation scenario and then highlights the estimated total annual revenue that Constitution Solar would provide to Franklin County based on current assumptions.

As the data in Table 8 indicate, in all years of the project's operation, the estimated additional county revenue from the revenue share ordinance associated with the proposed Constitution Solar project would surpass the estimated revenue associated with the taxation of capital investments in machinery and tools, resulting in a proposed supplemental voluntary payment ranging from approximately $240 in year 1 to approximately $9,000 in year 40 of operations. The total estimated annual revenue would increase from approximately $7,700 in year 1 of operations to approximately $15,000 in year 40. Adding the proposed upfront payment of $125,000, the cumulative total associated with the proposed supplemental voluntary payment condition over the anticipated 40-year operational life of the project is estimated to be approximately $565,300.

[48] Data Source: Constitution Solar, LLC.

Table 8: Estimated Franklin County Revenue Generated from the Supplemental Voluntary Payments over 40 Years

Year	Taxation of Capital Investments (Scenario 1)[49]	Revenue Share Ordinance (Scenario 2)[50]	Supplemental Voluntary Payment[51]	Estimated Total Annual Revenue[52]
One-time Payment				$125,000
1	$7,500	$7,700	$240	$7,700
2	$6,700	$7,700	$990	$7,700
3	$6,000	$7,700	$1,700	$7,700
4	$5,200	$7,700	$2,500	$7,700
5	$4,500	$7,700	$3,200	$7,700
6	$5,600	$8,500	$2,900	$8,500
7	$4,500	$8,500	$4,000	$8,500
8	$4,500	$8,500	$4,000	$8,500
9	$4,500	$8,500	$4,000	$8,500
10	$4,500	$8,500	$4,000	$8,500
11	$6,000	$9,300	$3,400	$9,300
12	$6,000	$9,300	$3,400	$9,300
13	$6,000	$9,300	$3,400	$9,300
14	$6,000	$9,300	$3,400	$9,300
15	$6,000	$9,300	$3,400	$9,300
16	$6,000	$10,200	$4,300	$10,200
17	$6,000	$10,200	$4,300	$10,200
18	$6,000	$10,200	$4,300	$10,200
19	$6,000	$10,200	$4,300	$10,200
20	$6,000	$10,200	$4,300	$10,200
21	$6,000	$11,300	$5,300	$11,300
22	$6,000	$11,300	$5,300	$11,300
23	$6,000	$11,300	$5,300	$11,300
24	$6,000	$11,300	$5,300	$11,300
25	$6,000	$11,300	$5,300	$11,300
26	$6,000	$12,400	$6,400	$12,400
27	$6,000	$12,400	$6,400	$12,400
28	$6,000	$12,400	$6,400	$12,400
29	$6,000	$12,400	$6,400	$12,400
30	$6,000	$12,400	$6,400	$12,400
31	$6,000	$13,600	$7,700	$13,600
32	$6,000	$13,600	$7,700	$13,600
33	$6,000	$13,600	$7,700	$13,600

[49] See Table 4.
[50] See Table 6.
[51] Estimated Annual Supplementary Voluntary Payment is calculated as the difference between the estimated annual tax revenue and the revenue share payment.
[52] Estimated Total Annual Payment is calculated as the estimated annual tax revenue plus the estimated supplemental voluntary payment.

Year	Taxation of Capital Investments (Scenario 1)[49]	Revenue Share Ordinance (Scenario 2)[50]	Supplemental Voluntary Payment[51]	Estimated Total Annual Revenue[52]
34	$6,000	$13,600	$7,700	$13,600
35	$6,000	$13,600	$7,700	$13,600
36	$6,000	$15,000	$9,000	$15,000
37	$6,000	$15,000	$9,000	$15,000
38	$6,000	$15,000	$9,000	$15,000
39	$6,000	$15,000	$9,000	$15,000
40	$6,000	$15,000	$9,000	$15,000
Cumulative Total				**$565,300**

**Totals may not sum due to rounding.*

Proposed Supplemental Voluntary Payment: Total Fiscal Impact

Table 9 combines the results from the calculations depicted in Tables 3 and 8 to provide an estimate of the cumulative fiscal contribution that Constitution Solar would make to Franklin County over its 40-year anticipated operational life from the proposed supplemental voluntary payments agreement. As these data indicate that cumulative total is approximately $632,800.

Table 9: Estimated Cumulative County Revenue from Constitution Solar over 40 Years under the Proposed Supplemental Voluntary Payment Condition

County Real Estate Tax	$67,500
County Revenue from Proposed Supplemental Voluntary Payment Condition	$565,300
Total Cumulative Revenue over 40 Years	**$632,800**

**Totals may not sum due to rounding.*

Current Use

This section provides a benchmark for the previous estimates of the economic and fiscal contribution that Constitution Solar would make to Franklin County by estimating the economic and fiscal contribution that the site makes to the county in its current use.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- Constitution Solar would be situated on approximately 35 acres of agricultural land and timber land.[53]

Economic Impact

Applying these inputs in the IMPLAN model results in the following estimates of annual economic impact. As shown in Table 10, in its current use, the proposed project site directly supports approximately: 1) < 1 job, 2) $880 in wages and benefits, and 3) $2,700 in economic output to Franklin County.

Taking into account the economic ripple effects that direct impact generates, on average, the total annually supported impact on Franklin County is approximately: 1) < 1 job, 2) $1,300 in wages and benefits, and 3) $3,800 in economic output.

Table 10: Total Estimated Annual Economic Impact of the Project Site on Franklin County – Current Use[54]

Economic Impact	Employment	Wages and Benefits	Economic Output
1st Round Direct Economic Activity	< 1	$880	$2,700
2nd Round Indirect and Induced Economic Activity	< 1	$430	$1,040
Total Economic Activity	**< 1**	**$1,300**	**$3,800**

**Totals may not sum due to rounding.*

[53] Data Source: Constitution Solar, LLC.
[54] Calculations based data from the U.S. Department of Agriculture and IMPLAN Group, LLC for Virginia and Franklin County.

Fiscal Impact Assumptions

The analysis is based on the following assumptions:

- The current assessment value of the affected acreage is approximately $27,000.[55]

Fiscal Impact

Table 11 details the estimated tax revenue that the proposed project site generates for Franklin County in its current use. As the data in Table 11 indicate, the current county real estate tax revenue from the project site is estimated to be approximately $115 per year, for a cumulative total of approximately $4,600 over 40 years.

Table 11: Estimated County Revenue Generated by the Project Site over 40 Years from Real Estate Taxes – Current Use

Estimated Assessed Value of Property – Current Use	$27,000
Franklin County Current Real Estate Tax Rate (per $100)	$0.43
Estimated Annual County Real Estate Tax – Current Use	$115
Total Cumulative Revenue over 40 Years	**$4,600**

**Totals may not sum due to rounding.*

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

[55] Derived from Franklin County's GIS database.

8.13 Environmental Impact Report

Environmental Impact Review Report

Franklin County, Virginia
Constitution Solar, LLC
Constitution Solar Site
Parcel ID: 1110017401

Bowman Project Number: 100-01-001

July 7, 2025

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Bowman

Contents

Executive Summary

Bowman has conducted an Environmental Impact Review (EIR) for the proposed 5 MWAC, approximately 40-acre Constitution Solar facility in Franklin County, Virginia, on behalf of Consititution Solar, LLC. It is prepared in accordance with § 25-147 of the Franklin County Code of Ordinances (2022). This EIR evaluates both the beneficial and adverse impacts of the project over its operational lifespan. The report concludes that, with the implementation of environmental protection measures and best management practices, the project will not result in significant negative impacts on natural or cultural resources. Instead, the facility is expected to provide positive environmental outcomes, including soil restoration and pollinator habitat enhancement. There will be temporary construction impacts, however, site planning minimizes tree clearing and protects sensitive features such as wetlands, streams, and floodplains.

1.0 Project Overview

The Constitution Solar Site (hereafter "Site") is comprised of an approximately 164-acre area adjacent to U.S. Route 220/Virgil H Goode Highway located in Franklin County, Virginia. The limit of disturbance is approximatey 40 acres. The Site is centrally located at 36.837645° latitude and -79.913664° longitude (**Figure 1**) and has been most recently mapped on the United States Geological Survey (USGS) Basset, VA 7.5-Minute Topographic Quadrangle (**Figure 2**).

Constitution Solar, LLC is planning to develop a new 5 MWAC solar facility at the Site. The development includes approximately 40 acres of photovoltaic solar modules to produce electricity, which will ultimately connect to the existing APCo Utility grid distribution line along Virgil Goode Highway. The solar facility will primarily utilize panels affixed to a single axis tracking system. Site Plans are included in **Appendix A**. The purpose of this development is to provide clean, affordable solar energy to residents and businesses served by APCo.

The proposed solar facility has been designed to minimize environmental impacts through site selection and the integration of best management practices (BMPs). Sensitive areas such as wetlands, streams, and habitats for protected species have been identified and avoided to the extent practicable. Natural vegetative buffers will be preserved around sensitive features to provide additional protection. During construction, BMPs will be implemented to control erosion and sedimentation and manage stormwater. These measures include the installation of stormwater controls in accordance with state and federal guidelines.

The purpose of this Environmental Impact Review (EIR) report is to support Constitution Solar, LLC in the evaluation of the potential impacts on the human environment, beneficial and negative. The information is submitted in accordance with § 25-147 of the Franklin County Code of Ordinances (2022).

2.0 Methodology

This EIR consists of a desktop review and site reconnaissance to address the potential impacts on the human environment, beneficial and negative, of the following over the projected lifespan of the proposed facility. In developing the EIR, the following methods were used:

- The impact analysis for biological resources included a review of publicly available data regarding threatened and endangered species (state and federal) such as Virginia Department of Conservation and Recreation (DCR), Virginia Department of Wildlife Resources (DWR), and the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consulting (IPaC) websites.
- To analyze impacts to pollinators, the Virginia Pollinator-Smart Program best practices was reviewed.
- The impact analysis for water resources, such as Waters of the U.S. (WOTUS), including wetlands, comprised a review of publicly available data such as the National Wetlands

Inventory (NWI) published by USFWS, and the National Hydrography Dataset (NHD) published by USGS. In addition, a wetland delineation was conducted.

- Virginia Department of Environmental Quality (DEQ), the entity responsible for managing and regulating water quality in Viginia, regulations were reviewed in relationship to stormwater.
- The floodplain impact analysis included a review of the Federal Emergency Management Agency's (FEMA) National Floodplains Insurance Program (NFIP) data.
- A list of previously recorded and potential biological and cultural resources is included.
- The impact analysis for cultural resources included a review of archaeological site files from the Virginia DHR, historic aerial photographs and maps.
- Franklin County, Virginia ordinances associated with solar facility developments were reviewed online and via telephone when necessary, and potential impacts are summarized.

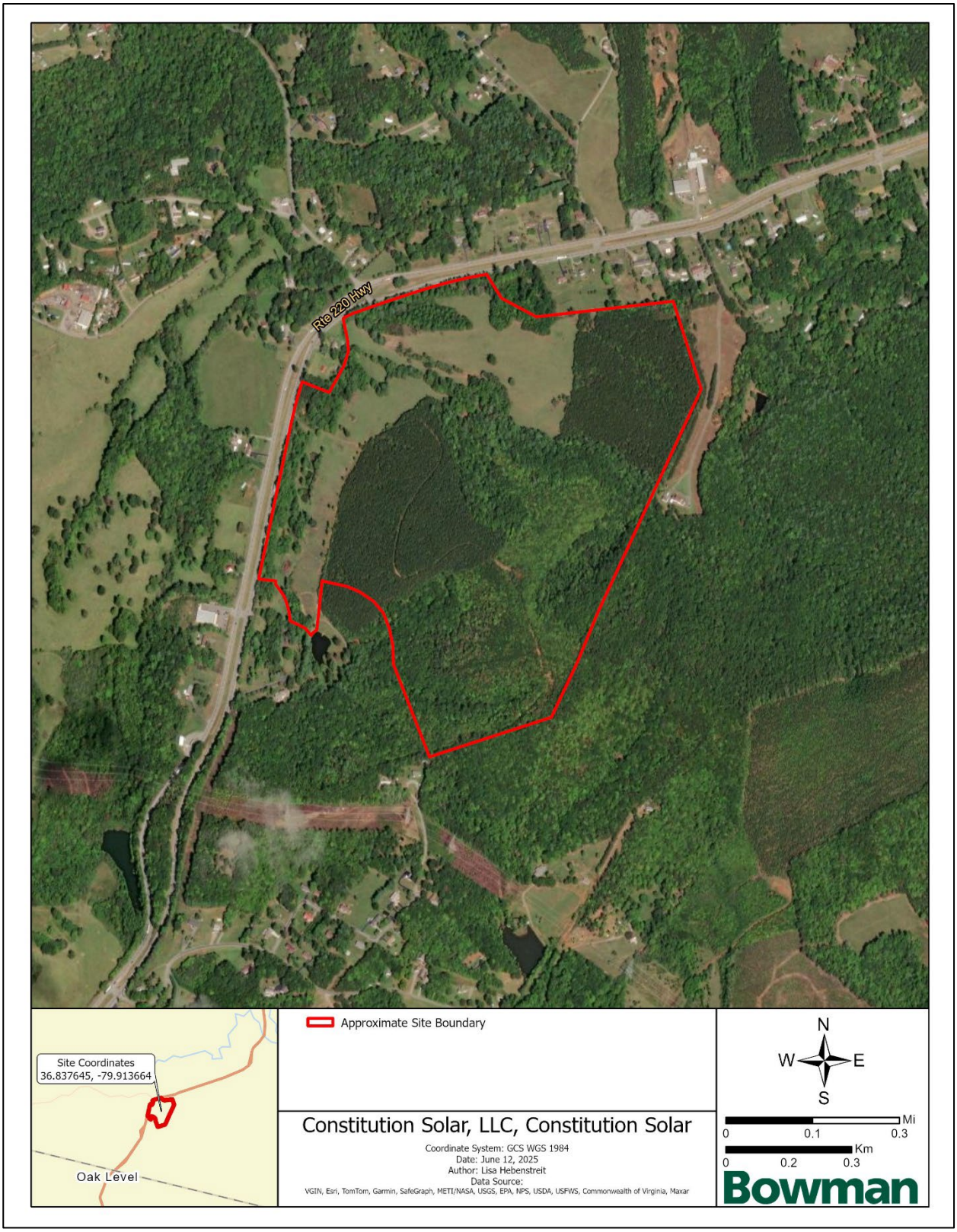

Figure 1. Aerial overview map of the Constitution Solar Site in Franklin County, Virginia.

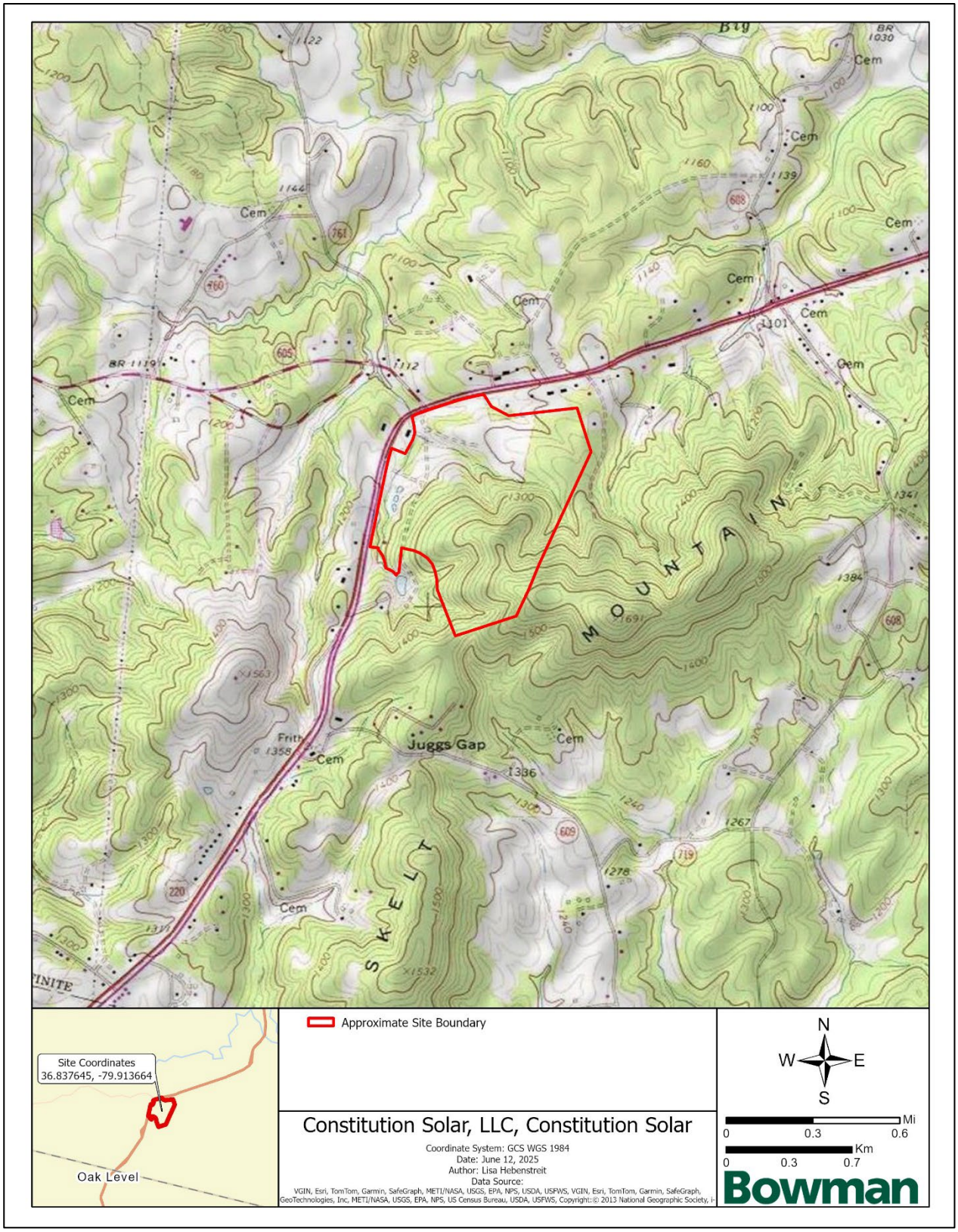

Figure 2. The Constitution Solar Site in Franklin County, Virginia on a portion of the Basset, VA USGS Topographic Quadrangle.

3.0 Environmental Setting

3.1 Federal Regulations

The Farmland Protection Policy Act (FPPA) 1981 is administered by the USDA's Natural Resources Conservation Service (NRCS). The FPPA aims to minimize the conversion of prime, unique, and important farmland to non-agricultural uses during federally funded projects. While it does not prohibit development, it requires agencies to evaluate the impact on farmland and consider alternatives before proceeding. This project is not receiving federal funding. Other federal policies, such as the National Environmental Policy Act (NEPA) and various USDA conservation programs, also support farmland protection by requiring environmental reviews or offering easement incentives.

3.2 State Regulations

The Virginia House Bill 206 (HB206), passed in 2022, states that "a disturbance of (i) more than 10 acres of prime agricultural soils, (ii) more than 50 acres of contiguous forest lands, or (iii) forest lands enrolled in a forestry preservation program is deemed to be a significant adverse impact on natural resources." These types of projects require Permit by Rule (PBR) issued by DEQ Per 9 VAC15-60-130 *small solar energy projects less than or equal to 5 MW or less than or equal to 10 acres*, which requires an Notice of Intent for De Minimus Project approved by DEQ and certifation by the governing body where the project is located.

3.3 Geology and Topography

Topography within the Site undulates and ranges from 2,150 ft above mean sea level (amsl) to 1,590 ft amsl. Stormwater mostly drains northwest towards an unnamed tributary to Big Chestnut Creek. The Site is situated in the Northern Inner Piedmont Level IV ecoregion within the Piedmont Level III ecoregion (Woods, et al., 1999). The Northern Inner Piedmont ecoregion physiography is described as "largely wooded and consists of irregular plains, low rounded hills and ridges, shallow valleys, and scattered monadnocks. It is a transitional area between the mostly mountainous ecoregions of the Appalachians to the west and the lower, more level ecoregions of the coastal plain to the east." Prior to cultivation, the ecoregion was primarily Oak-Hickory-Pine Forest, dominated by hickory (*Carya* spp.), shortleaf pine (*Pinus echinata*), loblolly pine (*Pinus taeda*), white oak (*Quercus alba*) and post oak (*Quercus stellata*). Today, many fields are reverting to this original forest composition (Woods, et al., 1999). There are no caves, sinkholes, or abandoned mines in or within five miles of the Site.

3.4 Soils

Soil information provided by Natural Resources Conservation Service (NRCS) from the Web Soil Survey for Franklin County, Virginia (accessed May 28, 2025) indicates seven soil types exist within the Site (**Figure 3**). Woolwine-Fairview-Westfield complex is the most abundant soil type within the Site. Approximately 96.1% of the Site is somewhat well drained and the remaining 3.9% is well drained. Slopes

range from 2% to 60%. Approximately 3.9% of the Site is considered prime farmland and 27.4% is considered farmland of state significance. These soils and their details are listed in **Table 1**. The Web Soil Survey report for the Site can be found in **Appendix B**.

Table 1. National Resources Conservation Service soils data for the Constitution Solar Site in Franklin County, Virginia.

Map Unit	Map Unit Name	Drainage Class[1]	Hydric[2]	Farmland Classification	Erosion Hazard (Off-Road, Off-Trail)[3]	Acres in Site	Percent of Site
10B	Colescreek-Delanco complex, 2 to 8 percent slopes, rarely flooded	SPD	No	All areas are prime farmland	Moderate	6.4	3.9
22E	Hickoryknob-Rhodhiss-Stott Knob complex, 25 to 60 percent slopes	WD	No	Not prime farmland	Very Severe	34.6	21.1
26C	Littlejoe-Strawfield-Penhook complex, 8 to 15 percent slopes	WD	No	Farmland of statewide importance	Severe	25.6	15.6
26D	Littlejoe-Strawfield-Penhook complex, 15 to 25 percent slopes	WD	No	Farmland of statewide importance	Very Severe	19.3	11.8
40C	Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, stony	WD	No	Not prime farmland	Moderate	43.9	26.8
40D	Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony	WD	No	Not prime farmland	Moderate	24.0	14.6
40E	Woolwine-Fairview-Westfield complex, 25 to 60 percent slopes, stony	WD	No	Not prime farmland	Very Severe	10.2	6.2
					Total	**164.0**	**100**

[1]SPD– Somewhat Poorly Drained; WD – Well Drained

[2] Per the National Hydric Soils List for Franklin County, Virginia, published by the USDA Natural Resources Conservation Service.

[3]The USDA erosion hazard ratings are interpreted as the hazards of soil loss after disturbance activities that expose the soils surface. Rating factors include slope, soil erosion factor k, and an index of rainfall erosivity (R).

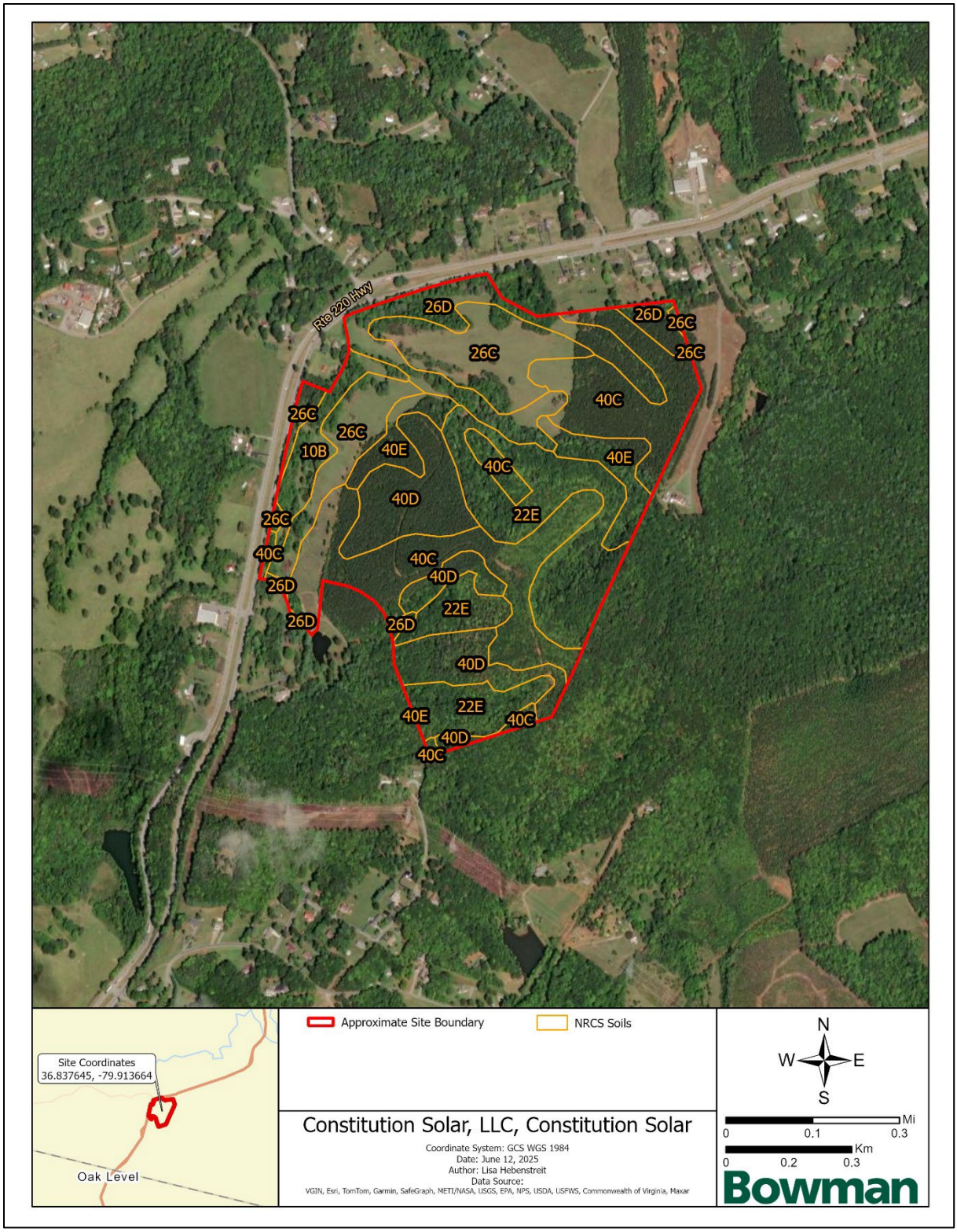

Figure 3. National Resources Conservation Service soils map of the Constitution Solar Site in Franklin County, Virginia.

3.5 Land Use

Land cover type information provided by the Annual National Land Cover Database (NLCD) indicates that approximately 35% of the Site is medium intensity developed, 29% is deciduous forest, 17% is pasture/hay, 14% is mixed forest, and the remainder consists of shrub/scrub, grassland/herbaceous, and low intensity developed (**Figure 4**). NLCD land cover types and total area for the Site is listed in **Table 2**.

Table 2. National Land Cover Database land cover types for the Constitution Solar Site in Franklin County, Virginia.

National Land Cover Database Land Cover Types	Approximate Acres
Developed, Medium Intensity	57.65
Deciduous Forest	47.75
Pasture/Hay	27.53
Mixed Forest	23.67
Shrub/Scrub	27.5
Grassland/Herbaceous	1.78
Developed, Low Intensity	0.75
Total	**164.22**

3.6 Impact Analysis

Construction activities will result in stormwater runoff. Runoff to receiving waters is a potential impact of the Site's development. Implementation of a Stormwater Pollution Prevention Plan (SWPPP) will minimize temporary impacts and reduce sedimentation. Temporary erosion and sediment control devices, as reviewed and approved by Franklin County, will be installed to control offsite migration of sediment from construction activities. These devices include diversion ditches, temporary sediment basins, silt fence, velocity control check dams and wattles. A Stormwater Mangamement (SWM) and Erosion and Sediment Control (ECS) Manager may be on-site for daily inspections and weekly reports throughout Construction, in addition to any other measures that may be required to safely control sedimentation.

Permanent stormwater control devices, reviewed and approved by the VADEQ, will be installed to reduce stormwater runoff rates to pre-development levels, and reduce nitrogen and phosphorous discharge from the site to meet the Commonwealth's rigorous limit standards. These devices may include Infiltration basins, grass swales, dry swales with bioretention treatment media, stormwater retention and detention basins.

Soils within the Site may be temporarily disturbed, however, the Site Plans include planting restorative, local vegetation, including nutrient rich plant blends and pollinator blend, which will ultimately be beneficial to the soils. All solar panels are contained in a solid matrix, are insoluble and are enclosed. Therefore, releases are not a concern. No petroleum products will be disposed of on-site. All construction material will be recycled to the maximum extent possible and what cannot be recycled will be hauled to the landfill.

Site development will result in some tree clearing; however, development is limited in extent and focused on areas already altered by development or pasture. Vegetative buffers and selective clearing will also be utilized to reduce impacts.

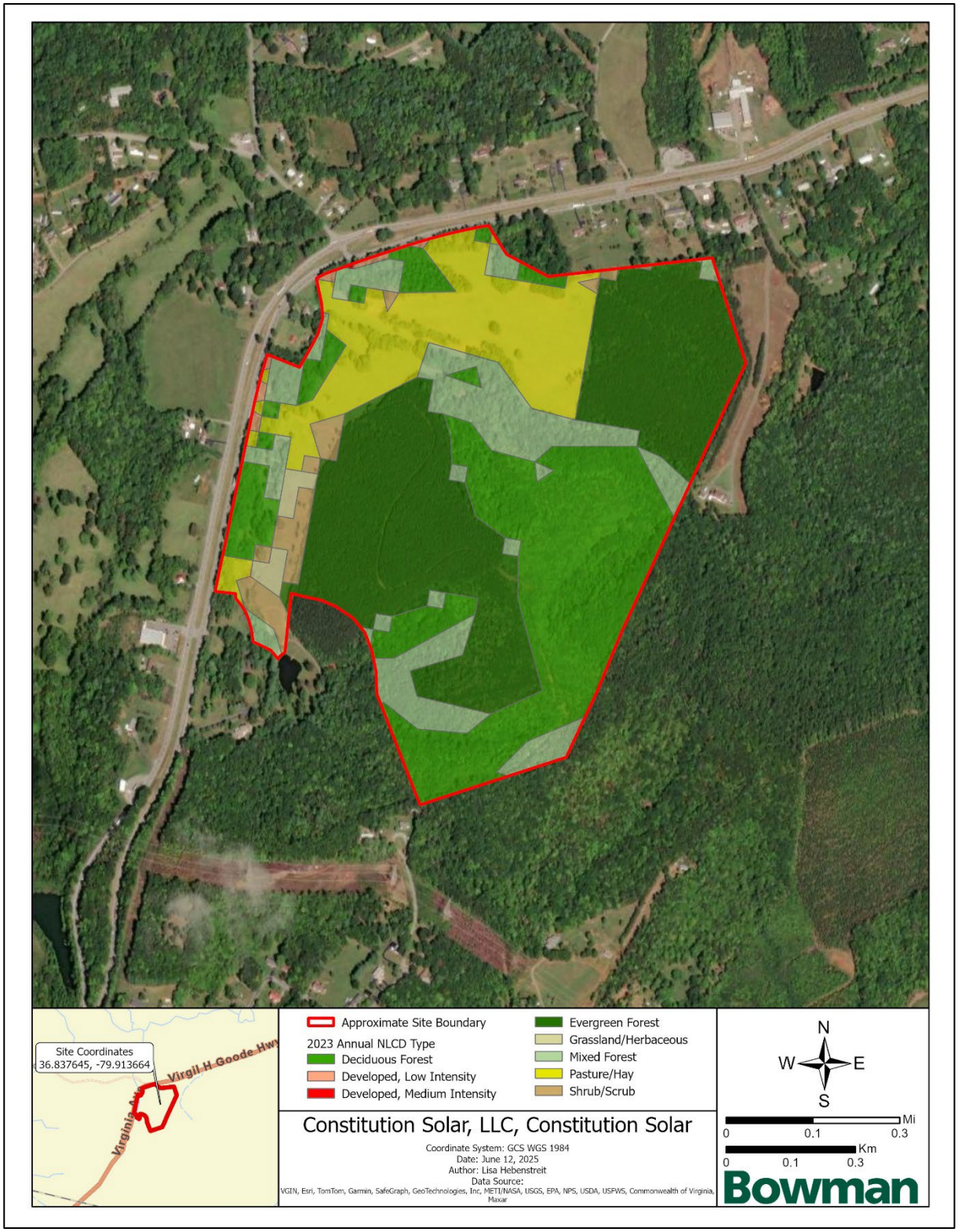

Figure 4. Annual National Land Cover Database land cover types within the Constitution Solar Site in Franklin County, Virginia.

4.0 Air Quality

4.1 Federal Regulations

The U.S. Environmental Protection Agency (EPA) under the Federal Clean Air Act (CAA) of 1990 regulates air pollution. The U.S. EPA develops rules and regulations to preserve and improve air quality and delegates specific responsibilities to state and local agencies. There are six criteria pollutants for air quality standards, known as the National Ambient Air Quality Standards (NAAQS), which include ozone (O_2), particulate monoxide (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead (Pb) with concentration limits.

4.2 State Regulations

The DEQ develops and implements regulations to ensure compliance with both federal and state air quality standards. This includes issuing various types of air emissions permits for the construction and operation of stationary sources of air pollution. The DEQ also oversees air quality monitoring, planning, and enforcement actions to protect human health and the environment.

4.3 Impact Analysis

Impacts such as temporary air pollution emissions and fugitive dust may be a result of construction activities. No large-scale earth moving is proposed, hence, impacts are anticipated to be minimal.

5.0 Threatened and Endangered Species

5.1 Federal Regulations

Endangered Species Act

The USFWS has legislative authority to list and monitor the status of species whose populations are considered imperiled. This federal legislative authority for the protection of threatened and endangered species issues from the Endangered Species Act (ESA) of 1973 and its subsequent amendments. Regulations supporting this act are codified and regularly updated in Sections 17.11 and 17.12 of Title 50 of the Code of Federal Regulations. The federal process stratifies potential candidates based upon the species' biological vulnerability. Species listed as endangered or threatened by the federal government are provided full protection. This protection prohibits the direct "take" of a protected species and includes prohibition of indirect take such as destruction of designated critical habitat. Section 9(a) of the ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Listed plant species are not protected from take, although it is illegal to collect or maliciously harm them on federal land or private land while other laws are being broken, such as trespassing.

The ESA also provides for the conservation of "critical habitat," i.e., the areas of land, water, and air space that an endangered species needs for survival. These areas include sites with food and water, breeding areas, cover or shelter sites, and sufficient habitat to provide for normal population growth and behavior. One of the primary threats to endangered and threatened species is the destruction or modification of essential habitat areas by uncontrolled land and water development. No designated critical habitat for any federally endangered or threatened species occurs within the study area.

The ESA and accompanying regulations provide the necessary authority and incentive for individual states to establish their own regulatory vehicle for the management and protection of threatened and endangered species, as described for Virginia below in **Section 5.2**.

Migratory Bird Treaty Act

All migratory bird species that are native to the U.S. or its territories are protected under the federal Migratory Bird Treaty Act (MBTA), as amended under the Migratory Bird Treaty Reform Act (MBTRA) of 2004 (FR Doc. 05-5127; USFWS 2004). The USFWS also has legislative authority to prohibit, unless permitted by regulations, the kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole. USFWS places restrictions on disturbances of active bird nests. Therefore, clearing of vegetation during the bird breeding season (May 1 – August 15) may be regulated.

The interpretation of the MBTA is dependent upon the U.S. administration's views. The current administration has issued an update in Solicitor Opinion M-37085, which now states that incidental take is not prohibited by the MBTA (United States Department of the Interior, 2025). A federal court ruling in

the case of Natural Resources Defense Council v. U.S. Dep't of the Interior, 478 F. Supp. 3d 469 (S.D.N.Y. 2020) (NRDC v. USEPA, 2022) previously ruled the opinion was illegal and maintained that incidental take was a violation of the MBTA.

Bald and Golden Eagle Protection Act

The Bald Eagle (*Haliaeetus leucocephalus*) and Golden Eagle (*Aquila chrysaetos*) are protected by the Bald and Golden Eagle Protection Act of 1940 (BGEPA). This law prohibits the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any Bald or Golden Eagle, alive or dead, including any part, nest or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. (16 U.S.C. 668c; 50 CFR 22.3). The 1972 amendments increased civil penalties for violating provisions of the BGEPA to a maximum fine of $5,000 or one-year imprisonment with $10,000 or not more than two years in prison for a second conviction. Felony convictions carry a maximum fine of $250,000 or two years of imprisonment. The fine amounts double for an organization.

5.2 State Regulations

Virginia board adopts the Federal Endangered and Threatened Species List, Endangered Species Act of December 28, 1973 (16 USC §§ 1531 – 1543), as amended as of December 28, 2022, and declared all species listed thereon to be endangered or threatened species in the Commonwealth. Pursuant to subdivision 12 of § 29.1-103 of the Code of Virginia, the director of the department is hereby delegated authority to propose adoption of modifications and amendments to the Federal Endangered and Threatened Species List in accordance with the procedures of §§ 29.1 – 501 and 29.1 – 502 of the Code of Virginia. In addition, species that are declared endangered or threatened in this Commonwealth and are afforded protection provided by Article 6 (§ 29.1 – 563 et seq.) of Chapter 5 of Title 29.1 of the Code of Virginia. It shall be unlawful to take, transport, process, sell, or offer sale within the Commonwealth any threatened or endangered species of fish or wildlife except as authorized by law (LIS Virginia Law, 2023). Take of a state-listed species can result in a Class 1 misdemeanor. There is no incidental take permitting process in the State of Virginia.

5.3 Site Assessment

A Desktop Review of wildlife and other natural resources was conducted on October 14, 2021, by Colliers Engineering & Design (**Appendix C**), which includes coordination with the Virginia Department of Conservation and Recreation (dated October 13, 2021) stating that natural heritage resources have not been documented within the Site, including a 100-foot buffer. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. In addition, the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

The forested areas of the Site are mainly found in the eastern and southern portions, featuring a mix of tree species such as oak, beech, red maple, pine, sycamore, river birch, and sweetgum that form the

dominant canopy. The western and northern sections consist mostly of pastureland, along with several unnamed tributaries that flow into Big Chestnut Creek. The Site is bordered to the south by residential homes, a pond, and additional forested land; to the east by more homes and forests; and to the north and west by State Route 220, residential areas, pastures, and farmland.

The Virginia Fish and Wildlife Information Service (VaFWIS) Initial Project Assessment (IPA) report identifies a total of 12 species of concern: two federally listed as endangered, two federally listed as threatened, one proposed federally listed, five listed as state-endangered, six listed as state-threatened, and one species of collection concern (Virginia Department of Wildlife Resources, 2025). The VaFWIS IPA list is included in **Appendix C.**

The USFWS IPaC report lists one federally proposed threatened species as having potential to occur at the Site. Additionally, it lists four migratory birds including Chimney Swift (*Chaetura pelagica*), Eastern Whi-poor-will (*Antrostomus vociferus*), Eastern Warbler (*Setophaga discolor*), and Wood Thrush (*Hylocichla mustelina*). The USFWS IPaC official report for the Site is included in **Appendix C** (U.S. Fish and Wildlife Service, 2025). The species on the IPA list are not identified by the IPaC report as having potential to occur at the Site.

Table 3 summarizes the federally listed, state-listed, and species of collection concern relevant to the Site's development, along with their habitat requirements and the potential presence of suitable habitat on the Site.

Table 3. Federally and state-listed species with the potential to occur in Franklin County, Virginia.

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Habitat Description[3]	Potential Habitat Present[4]
Birds					
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA/ MBTA	N/A	Breeding habitat most commonly includes areas close to (within 4 km) coastal areas, bays, rivers, lakes, reservoirs, or other bodies of water that reflect the general availability of primary food sources including fish, waterfowl, or seabirds. Nests usually are in tall trees or on pinnacles or cliffs near water. Tree species used for nesting vary regionally and may include pine, spruce, fir, cottonwood, poplar, willow, sycamore, oak, beech, or others.	No
Chimney Swift	*Chaetura pelagica*	MBTA	N/A	Inhabits rural and urban environments having both an abundance of flying arthropods and suitable roosting/nesting sites. Nests principally in chimneys, but also on the interior walls of a variety of other anthropogenic structures including silos, barns, outhouses, uninhabited houses, boathouses, wells, and cisterns (Bent, 1940). Natural nest sites include the interior of hollow tree trunks and branches, Pileated Woodpecker cavities and rock shelters (Bent, 1940; Fisher, 1958; Hofslund, 1958). Trees in which nests have been found include American Beech (*Fagus grandifolia*), Yellow Birch (Betula Lutea), Silver Maple (Acer saccharinum), Sycamore (*Platanus occidentalis*), Bald Cypress (*Taxodium distichum*), and Water Tupelo ([*Nyssa aquatica*] Blodgett and Zammuto, 1979; Fischer, 1958; Hofslund, 1958; Mumford and Keller, 1984; Stevenson and Anderson, 1994). Due to the prevalence of nesting structures in areas populated by humans, often occurs at higher densities in anthropogenic environments than natural ones (i.e., forests; Beissinger and Osborne, 1982). Migrating flocks roost overnight principally in chimneys, but also in hollow trees or, rarely, even exposed on tree trunks (Bent, 1940; Spendelow, 1985).	**Yes**

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Habitat Description[3]	Potential Habitat Present[4]
Eastern Whip-poor-will	*Antrostomus vociferus*	MBTA	N/A	Forest and open woodland, from lowland moist and deciduous forest to montane forest and pine-oak association (AOU, 1983). In open woodlands with well-spaced trees and a low canopy. Uncommon in mature forest; prefers even-aged successional habitats from regeneration to pole-stage stands (Bushman and Therres, 1988). Rests on ground or on branch, in thicket at forest edge, in hedgerow or gallery forest (Stiles and Skutch, 1989). Lays eggs on ground in open site under trees or under bush, usually on a bed of dead leaves (Harrison, 1978) at woods edge or in open woodland.	**Yes**
Golden Eagle	*Aquila chrysaetos*	BGEPA/ MBTA	N/A	Golden eagles generally inhabit open and semi-open country such as prairies, sagebrush, arctic and alpine tundra, savannah or sparse woodland, and barren areas, especially in hilly or mountainous regions, in areas with sufficient mammalian prey base and near suitable nesting sites. Nests are most often on rock ledges of cliffs but sometimes in large trees (e.g., oak or eucalytus in California, white pine in eastern North America), on steep hillsides, or on the ground. Nesting cliffs may face any direction and may be close to or distant from water.	No
Loggerhead Shrike	*Lanius ludovicianus*	N/A	ST	Open country with scattered trees and shrubs, savanna, desert scrub (southwestern U.S.), and, occasionally, open woodland; often perches on poles, wires or fenceposts (Tropical to Temperate zones) (AOU, 1983). Suitable hunting perches are an important part of the habitat (Yosef and Grubb, 1994). In the upper Midwest, Brooks (1988) found that nestling growth rate, nesting success, and fledgling success were positively correlated with percentage of home range coverage in grassland. In Virginia, pairs nesting in active pastures produced twice as many young as did those in other habitats (Luukkonen 1987).	**Yes**

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Habitat Description[3]	Potential Habitat Present[4]
Migrant Loggerhead Shrike	*Lanius ludovicianus migrans*	N/A	ST	Habitat requirements are the same as Loggerhead Shrike (*Lanius ludovicianus*), listed above.	**Yes**
Peregrine Falcon	*Falco peregrinus*	N/A	ST	Various open situations from tundra, moorlands, steppe, and seacoasts, especially where there are suitable nesting cliffs, to mountains, open forested regions, and human population centers (AOU, 1983). When not breeding, occurs in areas where prey concentrate, including farmlands, marshes, lakeshores, river mouths, tidal flats, dunes and beaches, broad river valleys, cities, and airports. Often nests on ledge or hole on face of rocky cliff or crag. Riverbanks, tundra mounds, open bogs, large stick nests of other species, tree hollows, and man-made structures (e.g., ledges of city buildings) are used locally (Cade, 1982). Nests typically are situated on ledges of vertical rocky cliffs, commonly with a sheltering overhang (Palmer, 1988; Campbell et al., 1990).	No
Prairie Warbler	*Setophaga discolor*	MBTA	N/A	Brushy second growth, dry scrub, low pine-juniper, mangroves, pine barrens, burned-over areas, sproutlands. Small patches of habitat may be suitable for breeding.	No
Wood Thrush	*Hylocichla mustelina*	MBTA	N/A	Deciduous or mixed forests with a dense tree canopy and a well-developed deciduous understory, especially where moist (Bertin, 1977; Roth, 1987; Roth et al., 1996). Bottomlands and other rich hardwood forests are prime habitats. Also frequents pine forests with a deciduous understory and well-wooded residential areas (Hamel et al., 1982). Thickets and early successional woodland generally do not provide suitable habitat (Bertin, 1977. Nests usually are placed in a crotch or are saddled on a branch of a shrub, sapling, or large tree,	**Yes**
Fish					
Orangefin Madtom	*Noturus gilberti*	N/A	ST	Habitat includes swift riffles with small cobble substratum; this madtom occupies interstitial spaces among cobbles; generally, it is not in areas with	**Yes**

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Habitat Description[3]	Potential Habitat Present[4]
				large amounts of sand and silt (Simonson and Neves, 1992). Riffles and runs of medium to large, cool to warm, usually clear streams, lives under large gravel, rubble and probably boulders and other cover. Medium-sized, moderate gradient, montane and upper Piedmont streams; the largest populations are in streams that usually are clear (Burkhead and Jenkins, 1991). Eggs presumably are laid under loose rubble.	
Roanoke Logperch	*Percina rex*	FE[5]	SE	Habitat includes gravel and boulder runs of small to medium rivers (Page and Burr, 2011). Typically, this species occurs in warm, usually clear, small to medium rivers of moderate or somewhat low gradient; in riffles, runs, and pools with sandy to boulder-strewn bottoms. Rarely it has been found in impoundments. It inhabits streams that are mainly sandy or silty and may occur only in gravelly or rocky areas (Burkhead and Jenkins, 1991). USFWS (2024) recognized 10 discrete populations: Pigg, Otter, Middle Roanoke, Upper Smith, Middle Smith, Lower Smith, Lower Mayo, Middle Dan, and Nottoway rivers, and Goose Creek.	No
Insect					
Monarch Butterfly	*Danaus plexippus*	PT	N/A	The species is dependent upon milkweed (*Asclepias spp*.), which have declined due to habitat loss and fragmentation, as well as pesticides. A field visit would be required to determine presence or absence of milkweed.	**Yes**
Mammals					
Little Brown Bat	*Myotis lucifugus*	N/A	SE	This species will roost in caves, buildings, rocks and trees, under bridges, in mines and in tunnels. They hibernate mostly in caves, mine shafts and abandoned tunnels. They may dwell in man-made structures.	**Yes**
Northern Long-eared Bat	*Myotis septentrionalis*	FE[5]	SE	This species inhabits forested regions, and will forage mainly on hillsides, and ridge forests rather than riparian and flood-plain forests. They frequent areas under the forest canopy just above shrub level. The males occur in caves in the spring and summer, but the females shun caves and roost under tree bark.	**Yes**

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Habitat Description[3]	Potential Habitat Present[4]
Tricolored Bat	*Perimyotis subflavus*	PE[5]	SE	Associated with forested landscapes, where they forage near trees (including forest perimeters) and along waterways (Fujita and Kunz, 1984). In many areas, most foraging occurs in riparian areas (e.g., Ellis et al. 2002, Ford et al. 2005, Menzel et al., 2005). Maternity and other summer roosts probably are mainly in dead or live tree foliage (including attached lichen clumps such as Usnea and "Spanish moss") (Carter and Menzel, 2007, Poissant et al., 2010); caves, mines, and rock crevices may be used as night roosts between foraging forays (Barbour and Davis, 1969). Maternity colonies also may utilize human-made structures (buildings, bridges; e.g., Ferrara and Leberg, 2005) or tree cavities; sometimes these are in open sites that would not be tolerated by most other bats (Barbour and Davis, 1969). Hibernation sites often are in caves (e.g., Briggler and Prather, 2003), mines, or cavelike tunnels (e.g., Slider and Kurta, 2011), also box culverts under highways, especially those near forest (Texas; Sandel et al., 2001).	**Yes**
Reptiles					
Bog Turtle	*Clemmys muhlenbergii*	FT[5]	SE	Inhabit slow, shallow, muck-bottomed rivulets of sphagnum bogs, calcareous fens, marshy/sedge-tussock meadows, spring seeps, wet cow pastures, and shrub swamps; the habitat usually contains an abundance of sedges or mossy cover. The turtles depend on a mosaic of microhabitats for foraging, nesting, basking, hibernation, and shelter (USFWS, 2000). "Unfragmented riparian systems that are sufficiently dynamic to allow the natural creation of open habitat are needed to compensate for ecological succession" (USFWS, 2000). Beaver, deer, and cattle may be instrumental in maintaining the essential open-canopy wetlands (USFWS, 2000).	No
Clams					
Atlantic Pigtoe	*Fusconaia masoni*	FT[5]	ST	This is considered to be a species of relatively fast waters with high quality riverine/large creek habitat. It is typically found in headwaters or rural watersheds. The preferred habitat of the Atlantic pigtoe is coarse sand and gravel at the downstream edge of riffles. It is less common in sand, cobble and	No

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Habitat Description[3]	Potential Habitat Present[4]
				mixtures of sand, silt and detritus (Bogan and Alderman, 2004). The Atlantic pigtoe requires fast flowing, well oxygenated streams and is restricted to fairly pristine habitats. Adams et al. (1990) state that *Fusconaia masoni* prefers yielding substrates of sands or gravel below riffles.	
James Spinymussel	*Parvaspina collina*	FE[5]	SE	This species lives in a variety of environments ranging from large rivers to shallow streams with slow to moderate current and relatively hard water on sand and mixed sand and gravel substrates (Boss and Clench, 1967). The distribution of this species is defined as occurring in five 'sub-drainages' (Hove and Neves, 1991; 1994), mostly in Virginia but extending slightly into West Virginia mostly in the upper watershed of the James River (Lipford, 1989) as well as the Dan and Mayo River drainages of the Roanoke River basin (Dan River) in North Carolina in Rockingham and Stokes Cos. (LeGrand et al., 2006; Savidge and Wood, 2001) plus the Tar River although originally thought to be in error (Boss and Clench, 1967; Bogan, 2002; Savidge and Wood, 2001; Johnson, 2006).	No

[1] BGEPA – Bald and Golden Eagle Protection Act; MBTA – Migratory Bird Treaty Act; FE – Federally Endangered; FT – Federally Threatened; PE – Proposed Endangered; PT – Proposed Threatened; N/A – Not Applicable

[3]SE – State Endangered; ST – State Threatened; N/A – Not Applicable

[3] Habitat descriptions should be considered quoted from NatureServe https://explorer.natureserve.org/; Virginia Department of Wildlife Resources. 2023. Wildlife Information. https://dwr.virginia.gov/wildlife/information/; or https://ecos.fws.gov/ecp/

[4]Habitat potential is solely based on desktop review.

[5]Federally listed species identified on the VaFWIS IPA but not listed on the IPaC Official Species List

Federally and State-listed Threatened, Endangered, Proposed, and Candidate Species

Of the 12 federally, state-listed, or proposed with potential to occur in Franklin County, Virginia, seven federally and/or state-listed or proposed listed species have potential habitat at the Site. Potential impacts to federally listed species, state listed species, and migratory birds protected by the MBTA and BEGEPA are addressed below.

Loggerhead Shrike and Migrant Loggerhead Shrike

The Loggerhead Shrike (*Lanius ludovicianus*) and Migrant Loggerhead Shrike (*Lanius ludovicianus migrans* are state-endangered species facing threats such use of pesticides, breeding habitat loss, and human disturbance. These species occur mainly in open habitats including grassland and pasture habitat with shrubs for nesting and perching. Based on desktop, there is a potential suitable habitat for these birds within the Site due to the large amount of pasture, grassland, and scrub shrub land cover within the Site. According to the Cornell Lab of Ornithology ebird Range Map (2025), the nearest observation for Loggerhead shrike species is approximately 14 miles northwest of the Site, thus, these species are unlikely to occur on-site and the project is not anticipated to cause negative impacts.

Orangefin Madtom

Orangefin madtom (*Noturus gilberti*) is a state-threatened species facing threats such as channelization, siltation, pollution, and impoundments. This species is only found in the upper Roanoke River watershed in clear, small rivers with swift riffles and cobble substrate. This species is considered rare and it is unlikely to occur on-site, however, there are eight streams with relatively permanent flow located in the Site. There are no stream alterations proposed for this project, thus no impacts are anticipated.

Monarch Butterfly

Monarch butterflies (*Danaus plexippus*) are threatened by habitat loss due to development, agriculture, and logging, increased fire intensity and fire suppression in prairies, as well as directly by pesticides and indirectly by herbicides through loss of its host plants, and climate change, including increased droughts and temperature extremes (USFWS, 2024). Monarchs occur in a wide range of open habitats and have potential to occur on the Site. This project will potentially benefit the monarch butterfly by planting pollinator friendly plants and creating foraging habitat.

Tricolored Bat

The tricolored bat (*Perimyotis subflavus*) is a federally proposed endangered species and is one of the smallest bats native to North America. The once common species is wide ranging across the eastern and central United States and portions of southern Canada, Mexico, and Central America. During the winter, tricolored bats are found in caves and mines. During the spring, summer, and fall, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves. DWR's Little Brown Bat and Tri-colored Bat Winter Habitat and Roosts tool is temporarily offline for updates, so hibernacula data for the species is unavailable (accessed June 10, 2025). However, a desktop evaluation determined that 29%

of the Site consists of deciduous forest, which may contain suitable trees for this species to roost in. These findings indicate habitat potential for this species to occur at the Site. However, this species is not listed on the IPaC, hence, it's occurrence at the Site is unlikely. As a precaution measure, tree clearing will be restricted between April 1 to November 15. If clearing cannot be avoided during those dates coordination with the USFWS VA Field Office will be completed. No impacts to tricolored bats are anticipated as a result of this project.

Little Brown Bat

The little brown bat (*Myotis lucifugus*) is a state-endangered species in which populations have dramatically reduced from disease and insecticides. This species will roost in caves, buildings, rocks and trees, under bridges, in mines and in tunnels. They hibernate mostly in caves, mine shafts and abandoned tunnels and may dwell in man-made structures (Virginia Department of Wildlife Resources, 2024c). This is one of the most abundant insectivorous bats in Virginia. They are found in all forested regions and water is an important component of the foraging habitat. Virginia DWR's Little Brown Bat and Tri-colored Bat Winter Habitat and Roosts tool is temporarily offline for updates, so hibernacula data for the species is unavailable (accessed June 10, 2025). However, a desktop evaluation determined that 29% of the Site consists of deciduous forest, which may contain suitable trees for this species to roost in. These findings indicate a potential for habitat to occur at the Site. However, according to the Virginia DCR Natural Heritage Program *Element Occurences of Virginia Map* (2021), the likelihood of a rare, threatened, or endangered occurrence in Franklin County is *very low*. As a precaution measure, tree clearing will be restricted between April 1 to November 15. If clearing cannot be avoided during those dates coordination with the USFWS VA Field Office will be completed. Thus it is unlikely the little brown bat will be impacted as a result of this project.

Northern Long-Eared Bat

The northern long-eared bat (*Myotis septentrionalis*), or NLEB, is a federally endangered and state-threatened species and is one of the species of bats most impacted by the disease white-nose syndrome. Winter habitat for the NLEB occurs in caves and mines (hibernacula) of various sizes with constant temperatures, high humidity, and a lack of air currents. Within hibernacula, NLEBs are typically found in small crevices or cracks, often with only the nose and ears visible. During the summer, NLEBs roost underneath bark or in cavities/crevices of both live and dead trees. These bats appear to be flexible in selecting summer roosts, choosing trees based on their suitability to retain bark or provide cavities or crevices, and with a minimum diameter at breast height (DBH) of 3 inches. Given its broad description of habitat requirements, suitable summer habitat is present within the Site. Additionally, Virginia DWR's Northern Long-Eared Bat Regulatory Buffer Interactive Tool is temporarily offline for updates, so hibernacula data for the species is unavailable (accessed June 10, 2025). This desktop evaluation has found habitat that may contain trees suitable for the species to roost. These findings indicate habitat potential for this species at the Site. However, this species is not listed on the IPaC, hence, it's occurrence at the Site is unlikely. As a precaution measure, tree clearing will be restricted between April 1 to November 15. If clearing cannot be avoided during those dates coordination with the USFWS VA Field

Office will be completed. No impacts to northern-longeared bats are anticipated as a result of this project.

Atlantic Pigtoe

Atlantic Pigtoe (*Fusconaia masoni*) is a federal-threatened and state-threatened species facing threats such as siltation, pollution, and impoundments. This species requires fast flowing, well oxygenated streams and is restricted to fairly pristine habitats; only found in high quality riverine/large creek habitat. It is typically found in headwaters or rural watersheds. The preferred habitat of the Atlantic pigtoe is coarse sand and gravel at the downstream edge of riffles. There are no stream alterations proposed for this project, thus no impacts are anticipated.

Migratory Birds

The USFWS IPaC report lists seven birds of conservation concern (BCC) with potential to occur at the Site. Additionally, there is potential for nesting migratory birds protected under the MBTA to occur at the Site. To reduce impacts on migratory birds, vegetation clearing will occur outside of April 1 through September 1, the primary migratory bird nesting season. If this is not feasible, a biologist will survey the Site for active migratory bird nests immediately prior to clearing (within 48 hours). If an active nest is identified, a buffer will be implemented and cutting will be postponed until the nest is inactive. These measures will ensure that the project will not negatively impact migratory birds.

Bald and Golden Eagles

Bald Eagles nest in large trees (20 to 60 m in height) capable of supporting the weight of a nest, which can be almost two tons (Buehler, 2020). Golden Eagles typically nest in cliff faces or trees (Katzner, et al., 2020). The Site is located outside of the Golden Eagle nesting range; however, it is within the Bald Eagle's year-round range. There may be trees on-site large enough to support nests, but the site is not near any large bodies of water. There is little potential for Bald Eagles to nest or forage within the Site and no impacts are anticipated.

5.3 Impact Analysis

No species are confirmed present, but the habitat present on-site indicates a potential for occurrence. The desktop assessment identified potential habitat on-site for the Loggerhead Shrike, Migrant Loggerhead Shrike, little brown bat, northern long-eared bat, tricolored bat, orangefin madtom, and Atlantic pigtoe. Grassland, shrub, and pasture habitats may support nesting or foraging for shrikes and some migratory birds, while the site's deciduous forest could provide summer roosting habitat for bats. Additionally, several perennial streams potentially provide aquatic habitat for sensitive mussel and fish species.

However, the desktop review indicates that there is low probability for rare, threatened, and endangered species to occur on-site. The Site has been frequently disturbed throughout the years, indicating a significant potential for habitat degradation. The project does not propose any in-stream work or stream alterations and no impacts to aquatic species are anticipated as a result of this project. In addition, a

concurrence letter, dated October 13, 2021, from the DCR confirms that the proposed site "will not affect any documented state-listed plants or insects." No significant adverse effects are anticipated to threatened or endangered species.

6.0 Pollinators

6.1 State Regulations

Virginia Code § 3.2-108.1 requires the Department of Agriculture and Consumer Services (VDACS) to develop and maintain the Virginia Pollinator Protection Strategy. The Strategy promotes the health of all pollinator species, while also supporting the state's agriculture and apiary industries. The Strategy is a collaborative effort among VDACS, Department of Conservation and Recreation (VDCR), the Department of Wildlife Resources, and DEQ. The Pollinator-Smart Program, developed by DCR and DEQ, is used to implement the strategy.

6.2 County Regulations

The Franklin County Zoning Ordinance § 25-147 – Utility-Scale Solar Generation Facility regulates solar facilities. Special Use Permits under this ordinance require planted vegetation to be pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers following Virginia Pollinator-Smart Program best practices (VCDR, 2025).

6.3 Site Assessment

A desktop solar site pollinator habitat assessment concluded that there are a variety of habitat types to potentially support pollinators, such as grassland/herbaceous, pasture/hay, scrub shrub, and riparian habitats within the Site. However, portions of the project appear to be frequently disturbed or cultivated. The surrounding land cover is dominated by pasture/hay and deciduous forest. Surrounding land uses include pasture, agriculture, residential, roadways, and undeveloped, all of which can provide pollinator habitat.

6.4 Impact Analysis

As per Virginia Pollinator-Smart Program best practices, the Site Plans include a a detailed landscaping plan that incorporates a vegetative buffer and vegetation planting throughout the fenced area, and identifies native pollinator-friendly and wildlife-friendly plants. Plant species include but are not limited to, eastern red cedar (Juniperus virginiana), Techny Arborvitae (*Thuja occidentalis* 'Techny'), Appalachian snow dogwood (*Cornus florida),* American hophornbeam (*Ostrya virginiana*), oakleaf hydrangea (*Hydrangea quercifolia*), inkberry holly (*Ilex glabra),* Virginia sweetspire (*Itea virginica*), and northern bayberry (*Myrica pensylvanica*). As a result, the Site will benefit pollinator habitat and have an positive impact on the surrounding agriculture.

7.0 Wetlands and Waters of the U.S.

7.1 Federal Regulations

The U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (33 USC 1344) regulates the discharge of dredged and fill material into WOTUS, including wetlands. WOTUS are defined under 33 CFR Section 328.3. The USACE authorizes general activities by issuing nationwide permits (NWP). NWPs are utilized when activities have minimal impacts to WOTUS. Definitions for NWP requirements are regulated by 33 CFR Section 330. NWPs were renewed on February 25, 2022, and are valid until March 14, 2026. In addition, USACE submitted a proposal that became effective March 15, 2021, to update several NWPs including a permit for electric utility lines and telecommunications activities (NWP 57), which could apply to the Site.

7.2 State Regulations

The VDEQ administers the Virginia Water Protection (VWP) permit program and associated compliance program through the regulation of impacts to surface waters, including (but not limited to) land clearing, filling, excavating, and draining. The VWP permit program follows state regulations and federal guidelines under the CWA Section 401. State law requires that a VWP permit be obtained before disturbing a wetland or stream by means of a regulated activity (filling, excavating, etc.). Applications are made through the Joint Permit Application process, which covers both federal and state review. The definition of State Waters is broader than those defined as WOTUS under federal jurisdiction. The VDEQ regulates point source stormwater discharges associated with construction activities to surface waters under the Virginia Stormwater Management Program (VSMP). Local governments may also act as partners in the VSMP program.

7.3 Site Assessment

The Site is located with the Upper Roanoke watershed (Hydrologic Unit Code [HUC] – 8 03010101). The Roanoke River Basin spans parts of Virginia and North Carolina and ultimately drains into the Albemarle Sound in North Carolina.

A wetland delineation was conducted by Colliers Engineering & Design (CED) on August 25, 2021. The delineation resulted in potentially jurisdictional features including: six wetlands, three ponds, and eight streams. A total of 0.622 acres of palustrine forested (PFO) wetland, 0.112 acres of palustrine emergent (PEM) wetland, 0.411 of palustrine unconsolidated bottom (PUB) pond, 5,657 linear feet of perennial stream, and 1,451 linear feet of intermittent stream were delineated (**Table 4**). The report is included as **Appendix D**.

Table 4. Potentially jurisdictional aquatic features delineated with the Site in Franklin County, Virginia.

Feature ID	Cowardin Classification/Flow Regime[1]	Acres within Site	Linear FT within Site
Wetland-1	PFO	0.24	-
Wetland-2	PFO	0.25	-
Wetland-3	PEM	0.04	-
Wetland-4	PEM	0.07	-
Wetland-5	PFO	0.02	-
Wetland-6	PFO	0.11	-
Pond-1	PUB	0.002	-
Pond-2	PUB	0.09	-
Pond-3	PUB	0.32	-
Stream-1	Perennial	-	1,921
Stream-2	Intermittent	-	369
Stream-3	Perennial	-	233
Stream-4	Perennial/Intermittent	-	132/135
Stream-5	Perennial	-	2,496
Stream-6	Perennial	-	1,108
Stream-7	Intermittent	-	609
Stream-8	Intermittent	-	105
Total Acres of Wetland		**0.73**	**-**
Total Acres of Pond		**0.41**	**-**
Total Feet of Stream		**-**	**7,108**

[1]*PFO – Palustrine Forested; PEM – Palustrine Emergent; PUB – Palustrine Unconsolidated Bottom*

7.4 Impact Analysis

All aquatic features will be avoided, and no impacts are anticipated as demonstrated on the Site Plans included in **Appendix A**.

The Site is subject to DEQ regulations for stormwater discharge to adjacent surface waters under VPDES, and the project will require the development and posting of a Stormwater Pollution Prevention Plan (SWPPP) as more than one acre of disturbance is expected. Additionally, if the disturbance is greater than five acres, a NOI will need to be filed with DEQ in accordance with the VPDES Construction General Permit (CGP).

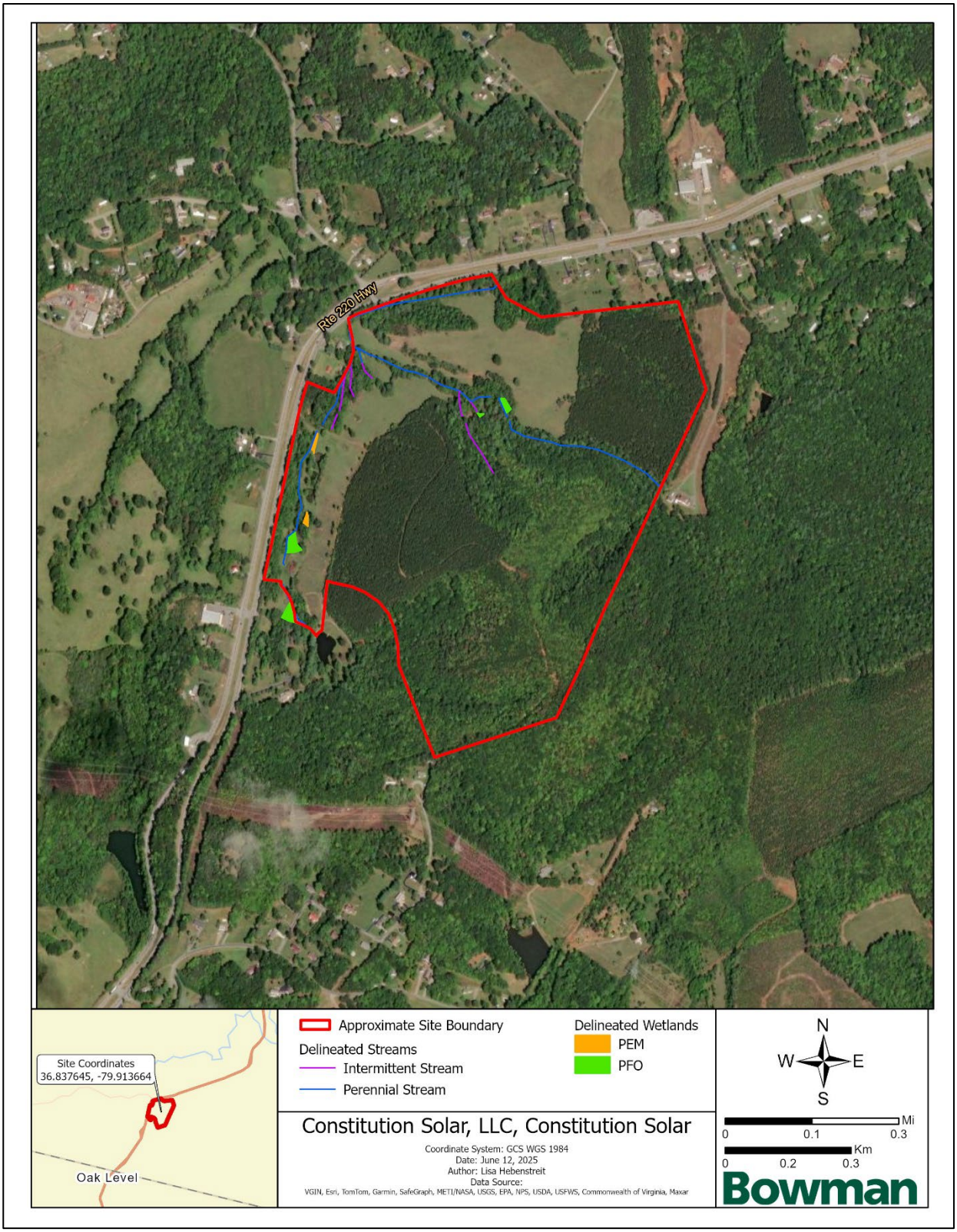

Figure 5. Delineated aquatic features mapped within the Constitution Solar Site in Franklin County, Virginia.

8.0 Floodplains

8.1 Federal Regulations

Executive Order 11988

Federal agencies are regulated under Executive Order (EO) 11988 (Floodplain Management).[1] This EO requires that federal agencies reasonably avoid adverse impacts associated with modifying floodplains and to determine if there were reasonable alternatives that would not require floodplain development.

National Flood Insurance Program and Flood Hazard Zones

The National Flood Insurance Program (NFIP) was established in 1968 by the National Flood Insurance Act (NFIA).[1] The NFIP allows property owners in participating communities to purchase flood insurance. It also requires participating state and local governments to adopt and enforce floodplain management ordinances that reduce future flood damages. These ordinances must *meet or exceed federal standards in order to receive future federal financial assistance*. The NFIP requires participating communities to restrict development in areas prone to flooding and require that construction of new or substantially improved buildings will minimize or prevent flood damage.[2] The NFIP regulatory standards are minimum requirements for floodplain management.[3] Any state or community can adopt more comprehensive and restrictive floodplain management regulations to protect life and property from flooding. Within Virginia, the Virginia Department of Conservation and Recreation (DCR) is tasked as a state agency responsible for coordinating the NFIP.[5]

8.2 State Regulations

The Virginia DCR manages the Floodplain Management Program and assists local floodplain administrators with review of floodplain ordinances, permit processes, flood maps, and mitigation projects. In addition to identifying strategies to prevent flooding and mitigating future damages, the Virginia DCR serves as the NFIP State Coordinator acting as a liaison between the federal NFIP and local communities.[5]

8.3 Site Assessment

FEMA's National Flood Hazard Layer (NFHL) shows the Site is located within FIRM Panel 51067C0500C. The Site occurs within Flood Zone X, an area of minimal flood hazard (**Appendix E**).

8.4 Impact Analysis

The Site is not located in a FEMA floodplain; hence, no impacts are anticipated.

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[1] CFR, *Floodplain Management and Protection of Wetlands Title 44 Part 9,* Washington D.C.: U.S. Government Publishing Office, 2003.
[1] Office of General Council, "All-Hazard Authorities of Federal Emergency Management Agency," August 1997.
[2] FEMA, "Unit 2: The National Flood Insurance Program," 2007, https://www.fema.gov/pdf/floodplain/nfip_sg_unit_2.pdf.
[3] CFR, "Criteria for Land Management and Use Title 44 Part 60," Washington D.C.: U.S. Publishing Office, 2002.
[5] "Virginia's Floodplain Management Plan." Accessed May 28, 2025. https://www.dcr.virginia.gov/dam-safety-and-floodplains/fpelemnz

9.0 Cultural Resources

9.1 Federal Regulations

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C § 306108) requires Federal agencies, or those they fund or permit, to consider the effects of their actions on the properties that may be eligible for listing or are listed in the National Register of Historic Places (NRHP). The Section 106 process generally requires four steps: 1) establishment of an area of potential effect (APE) and initiating the process through early coordination with the State Historic Preservation Office (SHPO) and other interested parties, 2) identification of cultural resources that are listed in or eligible for listing in the NRHP, 3) assessment of the effects the project will have on eligible or listed properties, and 4) resolution of adverse effects in consultation with the SHPO. In Virginia, the function of the SHPO is performed by the Department of Historic Resources (DHR). Background research regarding the presence of recorded eligible or listed historical and archeological resources is summarized in this section and serves to identify significant resources for the purpose of NEPA Section 101 (b)(4) should development use federal funds or require federal approval/permits. This project does not trigger a federal nexus and will not require federal approval.

9.2 State Regulations

Projects under the ownership or control of the State of Virginia fall under the purview of the DHR to review any action that has the potential to have an effect on archaeological or historic resources within the public domain of the State of Virginia. In the event an archaeological survey is necessary on lands controlled by the State of Virginia, the DHR will issue a permit that stipulates conditions under which survey, discovery, excavation, demolition, restoration, or scientific investigations can occur on state lands. It is therefore unlawful for any person to knowingly disturb, by themselves or through an agent, any archaeological site on state lands.

In addition to conducting cultural resource investigations on state lands, all projects whether conducted under the purview of the SHPO/DHR or not, are subject to compliance with Virginia Administrative Code § 57-36 and § 57-38.1. Under these codes dealing with Abandoned or Previously Unidentified Cemeteries, it is unlawful to intentionally disturb, excavate, or remove human graves or grave materials without consultation with the DHR. Removal may be performed only following consultation, the "good-faith effort" to notify descendants, and issuance of burial permit.

9.3 Site Assessment

This section of the EIR report follows the procedures outlined in the Guidelines for Archaeological Investigations in the State of Virginia as well as the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37). This information is intended to: 1) locate previously identified archaeological or historic architectural resources within or in close proximity to the project area; 2) assess whether additional archaeological investigations would be required within the APE, in compliance with Section 106 of NHPA of 1966, as amended (54 U.S.C § 306108); 3) identify the potential

for unrecorded architectural resources over 50 years of age; 4) identify cemeteries or other relevant cultural potentially affected by the project; and 5) provide recommendations concerning the need for conducting subsequent cultural resource studies.

For management purposes, the project's initial APE is established as 0.5-mile from the boundaries of the undertaking, which would encompass any potential direct or indirect effects to cultural resources. Direct effects are generally interpreted to be those that would have a direct physical impact on cultural resources but may include causative impacts to the integrity of a specific property (e.g. visual impacts). Indirect effects are those that may contribute to the degradation of a particular resource at an unforeseen time through project implementation (e.g. erosion).

Bowman completed a Desktop Review dated June 18, 2025, which reviewed archaeological site files from the DHR, historic aerial photographs and maps. The results of this Desktop Review and recommendations for further work are below. The Desktop Review Report is included in **Appendix F**.

9.4 Previously Recorded Cultural Resources

Examination of the Virginia Cultural Resource Information System (VCRIS) showed that there are no previously recorded archeological sites or cemeteries located within the project area. Additionally, no previous cultural resource surveys have been conducted within or adjacent to the project; however, one cultural resource survey extends into the southwestern and southeastern portion of the APE (DHR Report Number: GS-025). One cemetery is recorded within 0.5 miles of the subject property, the Starkey Cemetery (DHR ID: 033-5024). No other cemeteries are listed or recorded within the project area.

The nearest recorded archeological site is located approximately 0.6 miles southwest of the project. The site, 44FR0301, is a precontact lithic artifact scatter. The site was identified in 2002 by the URS Corporation in association with a pipeline installation. The site was likely a temporary camp surrounding a massive oak tree in a shallow swale at the base of a small tributary of Canton Creek. The site was recommended not eligible for listing to the NRHP and no effects to the resource are anticipated by the project. No archaeological sites were reported within 0.5 miles of the current undertaking.

A total of six (6) architectural resources (structures) have been recorded within 0.5 miles of the project area. These resources represent a range of domestic dwellings. All six properties have not been evaluated for NRHP eligibility. Additionally, although not eligible for the NRHP, one cemetery (Starkey Cemetery) is located 0.5 miles southwest of the project boundaries. Additional information concerning historic resources in the project vicinity are found below in **Table 5**.

Table 5. Previously Recorded Cultural Resources within 0.5-miles of the Site.

DHR_ID	Property Name(s)	NRHP Eligibility Status	Primary Resource Type
033-5018	House, 2407 Virgil H Goode Highway	Not Evaluated	Single Dwelling
033-5020	House, Triangle Lane	Not Evaluated	Single Dwelling
033-5024	Starkey Cemetery, Country Ridge Road	Not Evaluated	Cemetery
033-5026	House, Route 220	Not Evaluated	Single Dwelling
033-5030	House, Route 220	Not Evaluated	Single Dwelling
033-5639	Dove Valley Farm and Stables, 11918 Henry Road (Route 605)	Not Evaluated	Single Dwelling

9.5 Historical Map Review and Archaeological Probability

An examination of historic aerial photographs and USGS topographic maps helps establish the development or continuity within the project area over time. The earliest historic map depicting the project APE is the 1925 Rocky Mount, Virginia (1:48000) USGS map. Beginning with the 1953 Greensboro, North Carolina USGS (1:250000) map, Route 220 is visible running north to south in the western portion the project area. The project area and surroundings are shown largely in their current state as depicted on the 1984 Danville, Virginia USGS (1:100000) map with no structures shown within the project boundaries. The topographic maps are included in the Desktop Report as **Appendix F**. Based on google earth imagery, the project area appears largely unchanged since 1995, with limited development adjacent to it.

9.6 Impact Analysis

Based on the collective data (historic maps, soil/environmental data, DHR data), a cultural resource inventory and assessment may be requested by the SHPO should federal or state coordination are required. However, there is no federal nexus for this project and federal and state coordination are not anticipated for this project.

Due to the lack of structures within the project area in the historic aerials and topographic maps and the continued pastoral use of the western portion of the project area closest to the water sources, leads to a low probability of cultural resources in the area. Lack of NRHP eligible or listed properties within 0.5 miles of the project area furthers this indication. Impacts to cultural resources are not anticipated as a result of this project.

If during construction or earthmoving, human remains or signs of human burial are encountered, construction activities will be stopped at once and local law enforcement, the coroner, and DHR will be contacted immediately. All human remains and burials in the state of Virginia are legally protected and subject to compliance with various statutes and codes (Virginia Administrative Code § 57-36 and § 57-38.1.

10.0 Economic Assessment

10.1 Noise

The Site is designed to comply with Franklin County's Noise Ordinance (Chapter 12, Article III), which prohibits unreasonably loud, disturbing, or unnecessary noise that interferes with the comfort, peace, or health of nearby residents, particularly during nighttime hours. Operational equipment will be selected to ensure noise levels remain within acceptable thresholds and are unlikely to be audible beyond the Site's boundary.

Given the rural setting, setbacks, and planned vegetative buffers, the project is not anticipated to result in noise impacts that would violate the ordinance or disrupt adjacent land uses. Should any concerns arise, the project operator will implement standard complaint response procedures and mitigation measures as needed to maintain compliance.

9.2 Property Values

A review of existing parcels adjacent to and near the proposed solar facility indicates no evidence that the project will diminish neighboring property values. Adjoining properties are illustrated on **Figure 6**. The project will create a diversified revenue stream for landowners who are reliant on the agricultural industry.

10.3 Opportunities Forgone

The Franklin County Zoning Ordinance is being applied, although the Site is outside of zoning limits. The proposed Constitution Solar Site will remove approximately approximately 40 acres of rural land from potential agricultural or residential use for the lifespan of the Site's operations. The parcel has potential to support agricultural or rural residential development; however, existing land use is primarily pasture and there are no known active development plans in place at the time of this report.

The Site's design supports soil integrity by incorporating nutrient-rich plant blends and native vegetation, while avoiding permanent impervious surfaces such as concrete, thereby preserving the land's potential for agricultural use after decommissioning. Due to required setbacks, landscape buffering, and minimal daily operational activity, the project is not anticipated to impede surrounding property owners from continuing agricultural or residential activities. Additionally, the facility may offer economic benefits, including long-term lease income to participating landowners and potential compatibility with managed pollinator habitat.

10.4 Visual

The Site will utilize a simple pile-driven post and racking structure, which does not require concrete foundations, helping to reduce permanent alterations. Solar panels will be mounted in a low-profile configuration, typically no taller than mature corn stalks (approximately 8–10 feet), allowing the array to blend more naturally with the rural and agricultural surroundings. The project will utilize only panels that

employ anti-glare technology, antireflective coatings, and other available mitigation techniques, all that meet or exceed industry standards, to reduce glint and glare. In addition, a vegetative screening plan will be implemented using native plantings along property boundaries, especially in areas adjacent to residential uses or public roads. These measures are intended to preserve rural character, reduce glare, and ensure compatibility with neighboring properties.

10.5 Impact Analysis

The proposed Site is designed to minimize community impacts and benefit local economy. Noise levels will comply with Franklin County's ordinance implementing setbacks and vegetative buffers. A review of nearby parcels indicates no evidence the project will negatively impact adjacent property values. This Site will temporarily remove approximately approximately 40 acres from potential agricultural or residential use; however, the land currently supports pasture and there are no known future development plans for the Site. The design avoids permanent impervious surfaces, supports soil health through native plantings, and allows for future agricultural reuse. Visually, the project will utilize low-profile and non-reflective panels with anti-glare technology and native vegetative screening to minimize visibility from nearby residences and roads.

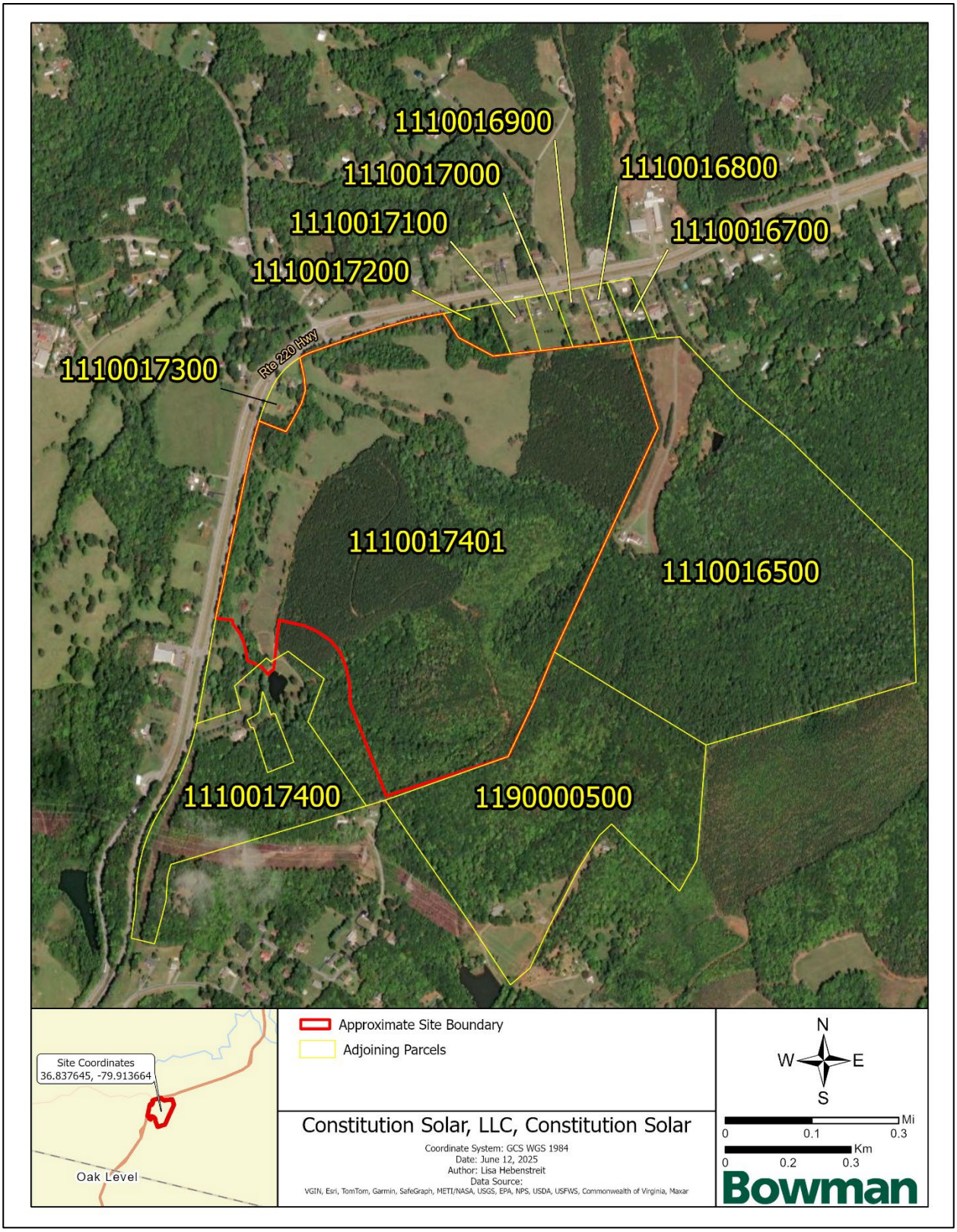

Figure 6. Adjoining Parcels to the Constitution Solar Site in Franklin County, Virginia.

11.0 Conclusions

Bowman has completed an Environmental Impact Review for development of a solar facility at the Constitution Solar Site in Franklin County, Virginia for Constitution Solar, LLC. This EIR has been prepared in accordance with the Franklin County, VA., Code of Ordinances § 25-147 (2022). The purpose of the EIR is to evaluate the potential impacts on the human environment, beneficial and negative, over the projected lifespan of the proposed facility. The proposed Site is an approximately 40 acre, 5 MW solar facility. The purpose of this development is to provide clean, affordable solar energy to residents and businesses served by APCo. The flowing environmental impacts were determined:

- The project will benefit the soils by planting restorative, local vegetation, including nutrient rich plant blends, which will increase future farm production on the Site.
- To reduce the sediment impact to receiving waters during construction, temporary erosion and sediment control devices will be installed. Post-construction stormwater control devices will also be installed to reduce stormwater runoff rate to pre-development levels.
- Site development will result some land cover alterations due to tree clearing; however, development is mainly limited in extent and focused on areas already altered by development or pasture. Vegetative buffers and selective clearing will also be utilized to reduce disturbance.
- Impacts such as temporary air pollution emissions and fugitive dust may be a result of construction activities. No large-scale earth moving is proposed, hence, impacts to air quality are anticipated to be non-significant.
- Based on the low probability of rare, threatened, and endangered species to occur on-site, no significant adverse effects are anticipated. As a precaution measure to ensure no bats are impacted, tree clearing will be restricted between April 1 to November 15. If clearing cannot be avoided during those dates coordination with the USFWS VA Field Office will be completed.
- Site Plans include a carefully selected vegetation and a detailed landscaping plan, which identifies native pollinator-friendly and wildlife-friendly plants. The Site will benefit local pollinator populations.
- All wetlands and streams will be avoided, and no impacts are anticipated to aquatic features. In addition, the Site development is implementing a SWPPP during construction, which will reduce the chances of sedimentation and pollution runoff.
- The Site is not located in a floodplain; hence, no impacts are anticipated.
- There is a low probability of cultural resources in the project area. No impacts to known cultural resources are expected.
- The Site is designed to minimize community impacts and benefit local economy. Local ordinances will be followed, and the project has potential to diversify the revenue stream for agricultural properties.

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Appendix A: Site Plans

151 Stagecoach Trail Suite 130, San Marcos, Texas 78666
P: 512.327.1180 | TBPE Firm No. 14309 | TBPLS Firm No. 101206-00
bowman.com

UTILITY LEGEND	
ID	DESCRIPTION
1	CUSTOMER RISER POLE W/FUSED CUTOUTS
2	CUSTOMER METER
3	CUSTOMER RECLOSER
4	CUSTOMER LOADBREAK
5	UTILITY LOADBREAK
6	UTILITY METER
7	POI

NOTES:

1. INTERNAL ROAD RADII ARE 30'.
2. ROAD WIDTHS ARE 20'.
3. FRANKLIN COUNTY HAS ADOPTED THE VIRGINIA STATEWIDE FIRE PREVENTION CODE. THE PROPOSED ACCESS ROADS AND TURNAROUNDS COMPLY WITH SECTION D103.1 OF THE VIRGINIA STATEWIDE FIRE PREVENTION CODE.
4. SOLAR MODULES SETBACKS:
   A. 150' FROM PROPERTY LINES AND PUBLIC ROADS.
   B. 100' FROM WETLANDS AND PONDS.
   C. 300' FROM RESIDENTIAL STRUCTURES.
4. MINIMUM DISTANCE FROM PROPOSED ROAD TO ARRAYS = 10'
5. DIMENSIONS OF MODULE = 7.82 FT (L) x 4.28 FT (W).
6. SITE SUMMARY:
   NORTHERN FENCED AREA = 23.78 AC
   NORTHERN FENCE LENGTH = 5158.84 LF
   SOUTHERN FENCED AREA = 8.32 AC
   SOUTHERN FENCE LENGTH = 3310.93 LF
7. MODULE QTY: 9,240 (6560 KW DC)
8. INVERTER QTY: 31 (5000 KW AC)
9. RACKING: SINGLE AXIS TRACKER GROUND MOUNT

CONCEPT LAYOUT LEGEND

- PROPERTY BOUNDARY
- RIGHT-OF-WAY
- ADJOINING PROPERTY LINE
- STREAMLINE (PER ALTA)
- STREAMLINE (PER WETLANDS SHAPEFILE)
- 100' WETLAND SETBACK
- EXISTING EASEMENT
- EXISTING FENCE
- TREE LINE
- EXISTING TRAIL
- EXISTING ROAD
- EXISTING WETLANDS
- EXISTING ≥ 30' LANDSCAPE BUFFER
- PROPOSED 30' LANDSCAPE BUFFER
- PROPOSED SWM POND SURFACE

A — LANDS N/F KIMBERLY A. SURBER (D.B. 1171, PG. 2941) PARCEL ID 1110017200

B — LANDS N/F MADGE BRYANT & DEBORAH BRYANT KNIGHT (D.B. 1044, PG. 55) PARCEL ID 1110017100

C — LANDS N/F JOHNNIE W. & WENDY C. SMITH (D.B. 1119, PG. 143) (P.B. 472, PG. 1079) PARCEL ID 1110017000

D — LANDS N/F DEBORAH K. YOUNG, VICKY LYNN HOLLAND & JAMES GREGORY CHITWOOD (D.B. 356, PG. 887) PARCEL ID 1110016900

E — LANDS N/F RANDY & PAULA D. HARMON (D.B. 587, PG. 481) PARCEL ID 1110016800

POINT OF BEGINNING
4,470'± TO FORK MOUNTAIN ROAD
VIRGIL H. GOODE HIGHWAY U.S. STATE ROUTE 220 (VAR. WIDTH R/W)
LANDS N/F DIRVIE D. HALL PARCEL ID 1110016700 D.B. 181, PG. 444
LANDS N/F DENISE YARID PARCEL ID 1110017300 D.B. 111, PG. 407 P.B. 666, PG. 1279
PERMANENT EASEMENT (D.B. 397, PG. 1808)
LANDS N/F VIRGIL GOODE JR. & MADDEN ELIZABETH GOODE (D.B. 460, PG. 1791) (P.B. 2, PG. 8) PARCEL ID# 1110017401 7,318,988.7± SQ. FT. OR 168.021± ACRES
LANDS N/F MICHAEL R. SCHMIDT & DEBRA L. MASON PARCEL ID 1110016500 D.B. 856, PG. 128
LANDS N/F ELVA P. GUZMAN PARCEL ID 1110017400 D.B. 100, PG. 19 P.B. 2, PG. 8
LANDS N/F MICHAEL D. CAMPBELL D.B. 1047, PG. 1556 D.B. 1047, PG. 1559
LANDS N/F LANE & TAMMY KAUFHOLZ PARCEL ID 1190000401 D.B. 556, PG. 1012

SWM POND; CENTRAL INVERTER; 120' PRESERVED BUFFER; 150' ARRAY SETBACK; 300' SETBACK FROM BUILDING; 20' ACCESS ROAD; R30'; R50'; 387.17'; 308.92'; 527.8'; 572.56'; 613.62'; 640.25'; 455.84'; 704.48'; 992.00'; 466.14' N68°12'58"W; 705.56' N14°13'36"W; 937.22' S73°34'46"W; 462.07' S25°47'00"W; S16°55'54"E; N85°27'39"E 993.94'; N27°31'39"E 1310.05'; APPROX. EDGE OF WOODS (TYP.); APPROX. CENTERLINE OF STREAM (TYP.); CAPPED ROD(S) (TYP.); EXISTING WELL; DIRT TRAIL; WOODS; POND; PIPE(F); UTILITY POLE #789-13; OHE

0 150' 300'
GRAPHIC SCALE
1" = 150'

NAD 83-VCS (SOUTH ZONE)
N

SHEET	DATE :	JOB No.	DESIGN	DRAWN	CHKD
C1.0	June 25, 2025	100692-01-001	MG	MG	TW

PROJECT MILESTONE SUMMARY

NO.	DATE	DESCRIPTION

CONCEPT LAYOUT

CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC

SNOW CREEK MAGISTERIAL DISTRICT — FRANKLIN COUNTY, VA

Bowman
947 Myers St | Ste B
Richmond, VA 23230
Phone: (804) 616-3240
Fax: (804) 270-2008
www.bowman.com

Appendix B: Soil Report

151 Stagecoach Trail Suite 130, San Marcos, Texas 78666
P: 512.327.1180 | TBPE Firm No. 14309 | TBPLS Firm No. 101206-00
bowman.com

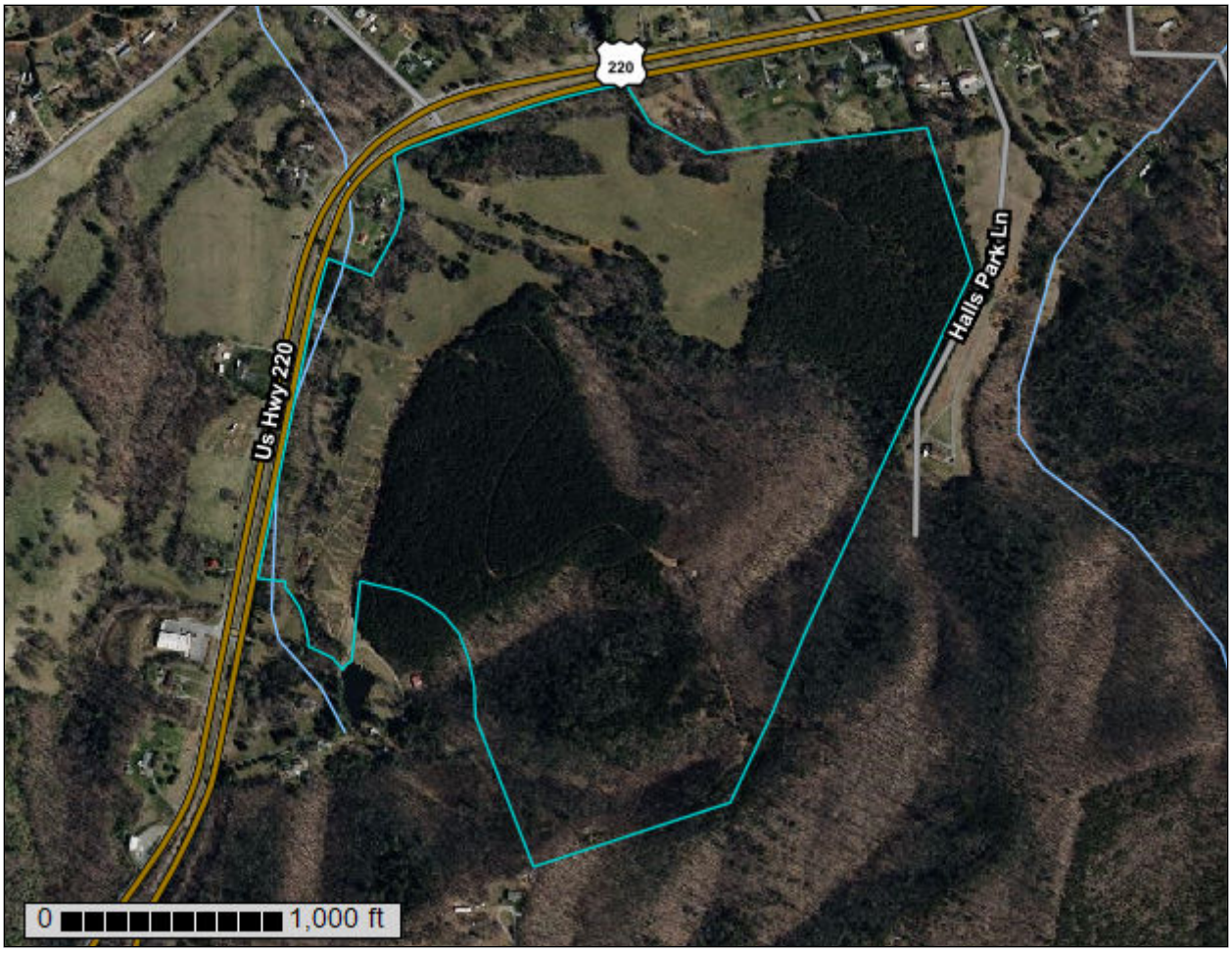
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Franklin County, Virginia



May 27, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:7,630 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Virginia
Survey Area Data: Version 23, Aug 28, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 2, 2022—Jun 18, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
10B	Colescreek-Delanco complex, 2 to 8 percent slopes, rarely flooded	6.4	3.9%
22E	Hickoryknob-Rhodhiss-Stott Knob complex, 25 to 60 percent slopes	34.6	21.1%
26C	Littlejoe-Strawfield-Penhook complex, 8 to 15 percent slopes	25.6	15.6%
26D	Littlejoe-Strawfield-Penhook complex, 15 to 25 percent slopes	19.3	11.8%
40C	Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, stony	43.9	26.8%
40D	Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony	24.0	14.6%
40E	Woolwine-Fairview-Westfield complex, 25 to 60 percent slopes, stony	10.2	6.2%
Totals for Area of Interest		**164.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different

management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Franklin County, Virginia

10B—Colescreek-Delanco complex, 2 to 8 percent slopes, rarely flooded

Map Unit Setting

National map unit symbol: mjkp
Elevation: 700 to 1,300 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 150 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Colescreek and similar soils: 50 percent
Delanco and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colescreek

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium from metamorphic and igneous materials

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 56 inches: clay loam
H3 - 56 to 80 inches: sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 30 to 42 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F136XY160VA - Mesic temperature regime, high terraces, very rare inundation
Hydric soil rating: No

Description of Delanco

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread

Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium from metamorphic and igneous materials

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 37 inches: clay loam
H3 - 37 to 57 inches: loamy sand
H4 - 57 to 80 inches: gravelly sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C
Ecological site: F136XY150VA - Mesic temperature regime, low terraces and drains, rare inundation
Hydric soil rating: No

22E—Hickoryknob-Rhodhiss-Stott Knob complex, 25 to 60 percent slopes

Map Unit Setting

National map unit symbol: mjlx
Elevation: 700 to 1,300 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Hickoryknob and similar soils: 45 percent
Rhodhiss and similar soils: 25 percent
Stott knob and similar soils: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hickoryknob

Setting

Landform: Hillslopes

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H2 - 0 to 4 inches: loam
H3 - 4 to 23 inches: channery clay loam
H4 - 23 to 36 inches: bedrock
H5 - 36 to 80 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock; 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F136XY380VA - Mesic temperature regime, acidic high hills and isolated ridges, depth restriction, dry
Hydric soil rating: No

Description of Rhodhiss

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 5 inches: loam
H2 - 5 to 38 inches: clay loam
H3 - 38 to 80 inches: sandy loam

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

Description of Stott Knob

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H2 - 0 to 4 inches: loam
H3 - 4 to 19 inches: clay loam
H4 - 19 to 31 inches: gravelly loam
H5 - 31 to 38 inches: extremely parachannery loam
H6 - 38 to 80 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F136XY330VA - Mesic temperature regime, acidic upland forest, depth restriction, dry-moist
Hydric soil rating: No

26C—Littlejoe-Strawfield-Penhook complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: mjmg
Elevation: 700 to 1,300 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Littlejoe and similar soils: 40 percent
Strawfield and similar soils: 30 percent
Penhook and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Littlejoe

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum from phyllite and schist

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 45 inches: clay
H3 - 45 to 59 inches: bedrock
H4 - 59 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 80 inches to lithic bedrock; 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

Description of Strawfield

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum from phyllite and schist

Typical profile

H1 - 0 to 2 inches: clay loam
H2 - 2 to 9 inches: clay loam
H3 - 9 to 22 inches: clay
H4 - 22 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F136XY380VA - Mesic temperature regime, acidic high hills and isolated ridges, depth restriction, dry
Hydric soil rating: No

Description of Penhook

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum from phyllite and schist

Typical profile

H2 - 0 to 6 inches: loam
H3 - 6 to 43 inches: clay
H4 - 43 to 63 inches: loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

26D—Littlejoe-Strawfield-Penhook complex, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: mjmh
Elevation: 700 to 1,300 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Littlejoe and similar soils: 40 percent
Strawfield and similar soils: 30 percent
Penhook and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Littlejoe

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from phyllite and schist

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 45 inches: clay
H3 - 45 to 59 inches: bedrock
H4 - 59 to 80 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 40 to 80 inches to lithic bedrock; 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

Description of Strawfield

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from phyllite and schist

Typical profile

H1 - 0 to 2 inches: clay loam
H2 - 2 to 9 inches: clay loam
H3 - 9 to 22 inches: clay
H4 - 22 to 80 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5e
Hydrologic Soil Group: C
Ecological site: F136XY380VA - Mesic temperature regime, acidic high hills and isolated ridges, depth restriction, dry
Hydric soil rating: No

Description of Penhook

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from phyllite and schist

Typical profile

H2 - 0 to 6 inches: loam
H3 - 6 to 43 inches: clay
H4 - 43 to 63 inches: loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

40C—Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, stony

Map Unit Setting

National map unit symbol: mjnw
Elevation: 700 to 1,300 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Woolwine and similar soils: 50 percent

Fairview and similar soils: 30 percent
Westfield and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woolwine

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 2 inches: loam
H2 - 2 to 28 inches: clay
H3 - 28 to 42 inches: bedrock
H4 - 42 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Ecological site: F136XY330VA - Mesic temperature regime, acidic upland forest, depth restriction, dry-moist
Hydric soil rating: No

Description of Fairview

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 23 inches: clay

H3 - 23 to 29 inches: clay loam
H4 - 29 to 80 inches: fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

Description of Westfield

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 35 inches: clay
H3 - 35 to 40 inches: loam
H4 - 40 to 48 inches: fine sandy loam
H5 - 48 to 71 inches: bedrock
H6 - 71 to 81 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock; 60 to 80 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

40D—Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony

Map Unit Setting

National map unit symbol: mjny
Elevation: 700 to 1,300 feet
Mean annual precipitation: 40 to 48 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Woolwine and similar soils: 55 percent
Fairview and similar soils: 25 percent
Westfield and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woolwine

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 2 inches: loam
H2 - 2 to 28 inches: clay
H3 - 28 to 42 inches: bedrock
H4 - 42 to 80 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Well drained

Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F136XY330VA - Mesic temperature regime, acidic upland forest, depth restriction, dry-moist
Hydric soil rating: No

Description of Fairview

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 23 inches: clay
H3 - 23 to 29 inches: clay loam
H4 - 29 to 80 inches: fine sandy loam

Properties and qualities

Slope: 15 to 25 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

Description of Westfield

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 35 inches: clay
H3 - 35 to 40 inches: loam
H4 - 40 to 48 inches: fine sandy loam
H5 - 48 to 71 inches: bedrock
H6 - 71 to 81 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock; 60 to 80 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

40E—Woolwine-Fairview-Westfield complex, 25 to 60 percent slopes, stony

Map Unit Setting

National map unit symbol: mjp0
Elevation: 700 to 1,300 feet
Mean annual precipitation: 40 to 48 inches

Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Woolwine and similar soils: 45 percent
Fairview and similar soils: 25 percent
Westfield and similar soils: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woolwine

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 2 inches: loam
H2 - 2 to 28 inches: clay
H3 - 28 to 42 inches: bedrock
H4 - 42 to 80 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F136XY330VA - Mesic temperature regime, acidic upland forest, depth restriction, dry-moist
Hydric soil rating: No

Description of Fairview

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 23 inches: clay
H3 - 23 to 29 inches: clay loam
H4 - 29 to 80 inches: fine sandy loam

Properties and qualities

Slope: 25 to 60 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

Description of Westfield

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum from mica schist, mica gneiss, metagrawacke, and high grade metamorphic rocks

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 35 inches: clay
H3 - 35 to 40 inches: loam
H4 - 40 to 48 inches: fine sandy loam
H5 - 48 to 71 inches: bedrock
H6 - 71 to 81 inches: bedrock

Properties and qualities

Slope: 25 to 60 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock; 60 to 80 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F136XY320VA - Mesic temperature regime, acidic upland forest, moist
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

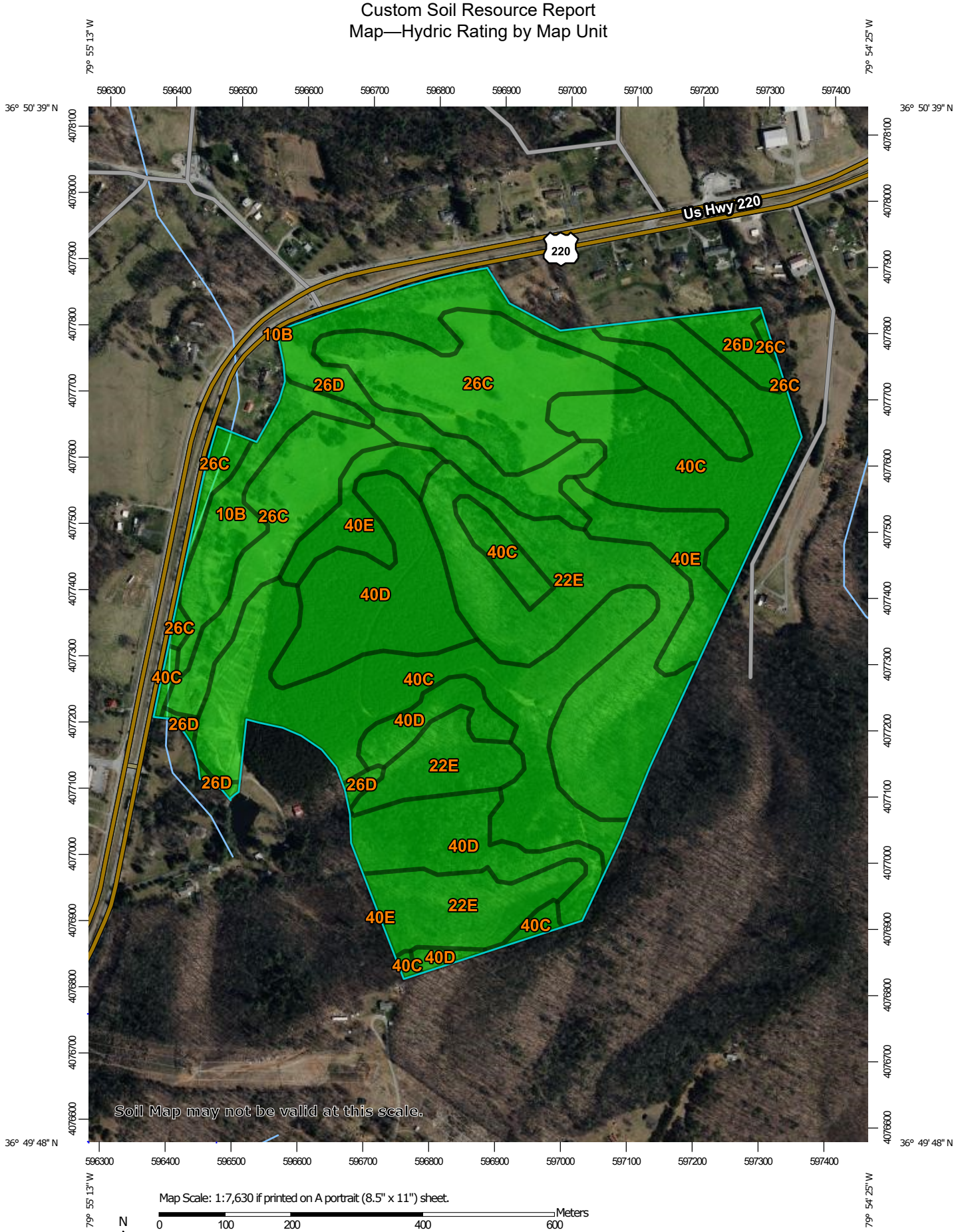
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit



Map Scale: 1:7,630 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Virginia
Survey Area Data: Version 23, Aug 28, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 2, 2022—Jun 18, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
10B	Colescreek-Delanco complex, 2 to 8 percent slopes, rarely flooded	0	6.4	3.9%
22E	Hickoryknob-Rhodhiss-Stott Knob complex, 25 to 60 percent slopes	0	34.6	21.1%
26C	Littlejoe-Strawfield-Penhook complex, 8 to 15 percent slopes	0	25.6	15.6%
26D	Littlejoe-Strawfield-Penhook complex, 15 to 25 percent slopes	0	19.3	11.8%
40C	Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, stony	0	43.9	26.8%
40D	Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony	0	24.0	14.6%
40E	Woolwine-Fairview-Westfield complex, 25 to 60 percent slopes, stony	0	10.2	6.2%
Totals for Area of Interest			**164.0**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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Appendix C: Threatened and Endangered Species Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694

In Reply Refer To: 06/20/2025 20:44:13 UTC
Project Code: 2025-0109327
Project Name: Constitution Solar

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

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

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

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

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

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

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

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Project Code in the header of this

letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

OFFICIAL SPECIES LIST

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

This species list is provided by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

PROJECT SUMMARY

Project Code: 2025-0109327
Project Name: Constitution Solar
Project Type: Power Gen - Solar
Project Description: Constitution Solar LLC (Constitution Solar) is planning to develop a new 5 MWAC solar facility at the Site. The development includes approximately 35 acres of photovoltaic solar modules to produce electricity, which will ultimately connect to the existing APCo Utility grid distribution line along Virgil Goode Highway. The solar facility will primarily utilize panels affixed to a single-axis tracking system. The purpose of this development is to provide clean, affordable solar energy to surrounding residents and businesses.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.8372232,-79.91417483387298,14z

Counties: Franklin County, Virginia

ENDANGERED SPECIES ACT SPECIES

There is a total of 1 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

---

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

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

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

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

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Lisa Hebenstreit
Address: 151 S. Stagecoach Trail
City: San Marcos
State: TX
Zip: 78666
Email lisa.hebenstreit@bowman.com
Phone: 6187955737

Colliers Engineering & Design

Threatened & Endangered Species Desktop Review

Constitution Solar Project

Colliers Engineering & Design Project Number: 21001074A

October 14, 2021

Prepared for:

Tim Baker, VP of Development
North Carolina Renewable Energy
Rocky Mount Mill Suite 2004
1151 Falls Road
Rocky Mount, NC 27804

Prepared by:

Colliers Engineering & Design, Inc. (DBA Maser Consulting)
2000 Regency Parkway
Suite 295
Cary, NC 27518
Main: 919-439-6082
Colliersengineering.com

Colliers Engineering & Design

Table of Contents

APPENDICES

EXECUTIVE SUMMARY

The Constitution Solar Project is a small energy project consisting of the construction of a 5.00-megawatt photovoltaic (PV) power system. The Constitution Solar Project is located southeast of the intersection of Virgil H Goode Highway (State Route 220) and Henry Road within Franklin County, Virginia and is further described as Franklin County Parcel Identification Number 1110017401 (hereinafter described as "Subject Property"). The Subject Property is located at latitudinal coordinates 36.837320 N and longitudinal coordinates -79.914693 W. The Subject Property drains northwest towards Big Chestnut Creek. The forested areas are located primarily within the eastern and southern sections and are comprised of a mixture of oak, beech, red maple, pine, sycamore, river birch and sweetgum species that dominate the canopy layer. Pasture land is located within the western and northern sections of the Subject Property, in addition to several unnamed tributaries to Big Chestnut Creek.

According to Virginia Code 9VAC15-60-130 (B), a small solar energy project with either a rated capacity greater than 0.5-megawatts and less than or equal to 5-megawatts or a disturbance zone greater than 2-acres and less than or equal to 10-acres is required to notify the Virginia Department of Environmental Quality (VDEQ) and submit a certification by the governing body of the locality or localities where the project is located that the project complies with all applicable land use ordinances.

Environmental due diligence research was conducted for the proposed project. A Desktop Review of wildlife and other natural resources was conducted and the information that was gathered is provided in this document. Information from the Virginia Department of Game and Inland Fisheries (VDGIF) Virginia Fish and Wildlife Information Service web-based application was gathered for wildlife and is provided in **Appendix C**. Located in **Appendix D** is information gathered from the Virginia Department of Conservation and Recreation - Natural Heritage Program (VDCR-NHP) for other natural resources.

1.0 INTRODUCTION

1.1 PURPOSE OF DOCUMENT

According to Virginia Code 9VAC15-60-130 (B), a small solar energy project with either a rated capacity greater than 0.5-megawatts and less than or equal to 5-megawatts or a disturbance zone greater than 2-acres and less than or equal to 10-acres is required to notify the Virginia Department of Environmental Quality (VDEQ) and submit a certification by the governing body of the locality or localities where the project is located that the project complies with all applicable land use ordinances.

This Desktop Review document provides the information gathered regarding wildlife and other natural resources as part of environmental due diligence for the proposed project.

1.2 PROJECT DESCRIPTION

The Constitution Solar Project is a small energy project consisting of the construction of a 5.00-megawatt photovoltaic (PV) power system. The site plan, dated January 14, 2021, is included in **Appendix A**.

1.3 PROJECT LOCATION

The Constitution Solar Project is located southeast of the intersection of Virgil H Goode Highway (State Route 220) and Henry Road within Franklin County, Virginia and is further described as Franklin County Parcel Identification Number 1110017401 (hereinafter described as "Subject Property"). The Subject Property is located at latitudinal coordinates 36.837320 N and longitudinal coordinates -79.914693 W. The Subject Property is located approximately 10-miles north west of Martinsville, Virginia and lies along State Route 220. The Subject Property appears on the Bassett, Virginia Quadrangle USGS Map (Figure 1. Project Location Map, **Appendix B**) and is depicted as undeveloped property which contains approximately 60% forested areas and 40% undeveloped areas. The USGS also depicts unnamed tributaries located within western and norther sections.

1.4 EXISTING CONDITIONS AND VICINITY CHARACTERISTICS

The Subject Property is located within the Upper Roanoke River Basin (8 Digit HUC Code 03010101), within the Big Chestnut Creek sub-watershed. Access to the Subject Property can be achieved through a private entrance that intersects State Route 220 located at latitudinal coordinates 36.833490 N and longitudinal coordinates -79.919757 W. The Subject Property drains northwest towards Big Chestnut Creek. The Subject Property does not contain a floodway and a floodplain according to FEMA Floodplain Panel Map 51067C0500C. The forested areas are located primarily within the eastern and southern sections and are comprised of a mixture of oak, beech, red maple, pine, sycamore, river birch and sweetgum species that dominate the canopy layer. Pasture land is located within the western and northern sections of the Subject Property, in addition to several unnamed tributaries to Big Chestnut Creek. The Subject Property is bordered to the south by residential homes, a pond, and forested areas, to the east by residential homes and forested areas, and to the north and west by State Route 220, residential homes, pastures and agricultural fields. There are unnamed tributaries located within the Subject Property that eventually drain to Big Chestnut Creek.

2.0 DESKTOP REVIEW

The following wildlife and other natural resources information was gathered as part of the desktop review.

2.1 WILDLIFE

A wildlife report and accompanying maps were generated from the Virginia Department of Game and Inland Fisheries (VDGIF) Virginia Fish and Wildlife Information Service web-based application. Information was gathered for the following: (a) known wildlife species and habitat features on the proposed project site and within 2-miles of the boundary of the proposed project site, and (b) known or potential sea turtle nesting beaches located within 0.5-mile of the disturbance zone.

Tables 1 through 2, below, were generated from the VDGIF Virginia Fish and Wildlife Information Service web-based application. The wildlife report and accompanying maps are included in **Appendix C** (VDGIF Report and Maps).

Table 1. Wildlife Species on the Site or Within 2-mile Radius

Status*	Tier**	Common Name	Scientific Name	Confirmed
FESE	Ia	Spinymussel, James	Parvaspina collina	
FESE	IIa	Logperch, Roanoke	Percina rex	
FTSE	Ia	Turtle, bog (=Muhlenberg)	Clemmys muhlenbergii	
FTST	Ia.	Bat, northern long-eared	Myotis septentrionalis	
SE	Ia.	Bat, little brown	Myotis lucifugus	
SE	Ia.	Bat, tri-colored	Perimyotis subflavus	
ST	Ia.	Falcon, peregrine	Falco peregrinus	
ST	Ia.	Shrike, loggerhead	Lanius ludovicianus	
FPST	Ia.	Pigtoe, Atlantic	Fusconaia masoni	
ST	IIb.	Madtom, orangefin	Noturus gilberti	
ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans	
CC	Iva.	Rattlesnake, timber	Crotalus horridus	
	Ia.	Bass, Roanoke	Ambloplites cavifrons	
	Ib.	Darter, ashy	Etheostoma cinereum	
	IIa.	Logperch, blotchside	Percina burtoni	
	IIa.	Duck, American black	Anas rubripes	

	IIa.	Night-heron, yellow-crowned	Nyctanassa violacea violacea	
	IIa.	Warbler, cerulean	Setophaga cerulea	
	IIa.	Woodcock, American	Scolopax minor	
	IIb.	Cuckoo, black-billed	Coccyzus erythropthalmus	
	IIb.	Rail, king	Rallus elegans	

Notes:
* FE = Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed;
FC = Federal Candidate; CC=Collection Concern
** Tier = not a legal status, Tier levels defined in Virginia Wildlife Action Plan (WAP)
I = VA Wildlife Action Plan - Tier I - Critical Conservation Need;
II = VA Wildlife Action Plan - Tier II - Very High Conservation Need;
III = VA Wildlife Action Plan - Tier III - High Conservation Need;
IV = VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Wildlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Table 2. Habitat Predicted for Aquatic Wildlife Action Plan Tier I & Tier II Species

Stream Name	Highest TE	Status	Tier	Common Name	Scientific Name
Big Chestnut Creek (30101011)	FESE	ST	IIb	Madtom, orangefin	*Noturus gilberti*
			Ia	Bass, Roanoke	*Ambloplites cavifrons*
		FESE	IIa	Logperch, Roanoke	*Percina rex*
Grassy Fork (30101031)				Madtom, spotted-margin	*Noturus insignis ssp 1*
tributary (30101011)	FESE	ST	IIb	Madtom, orangefin	*Noturus gilberti*
			Ia	Bass, Roanoke	*Ambloplites cavifrons*
		FESE	IIa	Logperch, Roanoke	*Percina rex*
tributary (30101011)	FESE	ST	IIb	Madtom, orangefin	*Noturus gilberti*
			Ia	Bass, Roanoke	*Ambloplites cavifrons*
		FESE	IIa	Logperch, Roanoke	*Percina rex*

Notes:
* FE = Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed;
FC = Federal Candidate; CC=Collection Concern
** Tier = not a legal status, Tier levels defined in Virginia Wildlife Action Plan (WAP)
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Virginia Wildlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

2.2 Other Natural Resources

An information request was submitted to Virginia Department of Conservation and Recreation - Natural Heritage Program (VDCR-NHP) for natural resource and state threatened and endangered species. In a letter dated October 13, 2021, VDCR-NHP responded that according to the information currently in the Biotics Data System, natural heritage resources have not been documented within the submitted project boundary including a 100-ft buffer. In addition, the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources (VDCR-NHP Information, **Appendix D**).

3.0 SUMMARY

The Constitution Solar Project is a small energy project consisting of the construction of a 5.00-megawatt photovoltaic (PV) power system. The Subject Property that contains the Constitution Solar Project is located southeast of the intersection of Virgil H Goode Highway (State Route 220) and Henry Road within Franklin County, Virginia. The Subject Property is undeveloped and contains approximately 60% forested areas and 40% undeveloped areas that are used for pasture land. There are several unnamed tributaries to Big Chestnut Creek located within the western and northern sections of the Subject Property.

Environmental due diligence research was conducted for the proposed project. A Desktop Review of wildlife and other natural resources was conducted and the information that was gathered is provided in this document. Information from the VDGIF Virginia Fish and Wildlife Information Service web-based application was gathered for wildlife and is provided in **Appendix C**. Located in **Appendix D** is information gathered from the VDCRNHP for other natural resources.

4.0 REFERENCES

Coastal GEMS application, 2010, Virginia Department of Environmental Quality. Available at the following Internet address: http://www.deq.virginia.gov/coastal/coastalgems.html.

The Virginia Landmarks Register, Virginia Department of Historic Resources, 2801 Kensington Avenue, Richmond, Virginia. Available at the following Internet address: http://www.dhr.virginia.gov/registers/register.htm.

The Natural Communities of Virginia, Classification of Ecological Community Groups, Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia. Available at the following Internet address: http://www.dcr.virginia.gov/natural_heritage/ncintro.shtml.

United States Geologic Survey, Bassett, Virginia Quadrangle, 7.5 Minute Series (Topographic), 2019.

Virginia's Comprehensive Wildlife Conservation Strategy, 2005 (referred to as the Virginia Wildlife Action Plan), Virginia Department of Game and Inland Fisheries, 4010 West Broad Street, Richmond, Virginia. Available at the following Internet address: http://www.bewildvirginia.org/wildlifeplan/.

Virginia Fish and Wildlife Information Service 2010, Virginia Department of Game and Inland
Fisheries. Available at the following Internet address: http://www.vafwis.org/fwis/. Virginia Natural Landscape Assessment, Virginia Department of Conservation and Recreation. Available at the following Internet address: for detailed information on ecological cores go to http://www.dcr.virginia.gov/natural_heritage/vclnavnla.shtm.

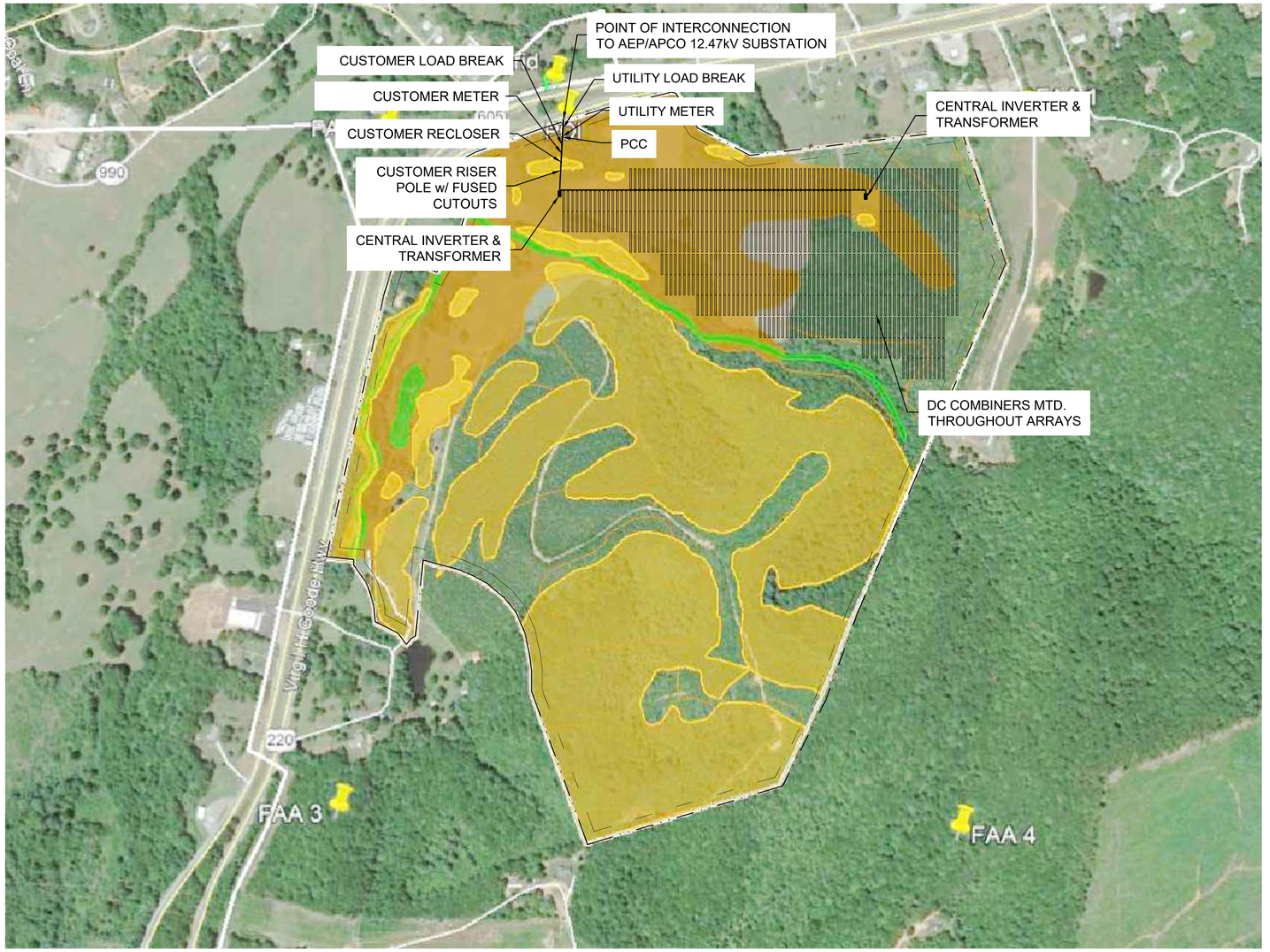
Constitution Solar LLC, Site Plan, Arc Design, Salem County Office, 409 North Main Street, Elmer, New Jersey, 08318, January 14, 2021.

Colliers Engineering & Design

APPENDIX A
SITE PLAN

LOCATION MAP:

SITE PLAN/LAYOUT IS REPRESENTATIVE FOR INTERCONNECTION APPROVAL ONLY. NOT FOR CONSTRUCTION.



0 300 600 1200

1" = 300'

PROJECT DATA

SOLAR ARRAY:	
PANEL:	15,002 TRINA TSM-DE18M(II) 500W 577 STRINGS OF 26 MODULES
RACKING:	GROUND MOUNTED SINGLE AXIS TRACKER
INVERTER:	(1) POWER ELECTRONICS HEMK FS3190K CENTRAL INVERTER (1) POWER ELECTRONICS HEMK FS2125K CENTRAL INVERTER
SYSTEM RATING:	7,501,000 WATTS DC STC 5,000,000 WATTS AC MAXIMUM

CONSTITUTION SOLAR LLC

7.50 MW DC / 5.0 MW AC

PV Power System

ARC DESIGN
SALEM COUNTY OFFICE
409 NORTH MAIN STREET
ELMER, NJ 08318
(856) 712-2166 FAX: (856) 358-1511

PROPOSED PHOTOVOLTAIC ARRAY

NORTH CAROLINA RENEWABLE ENERGY, LLC.

CONSTITUTION SOLAR, LLC

1778 VIRGIL GOODE HWY
OAK LEVEL, VA 24055

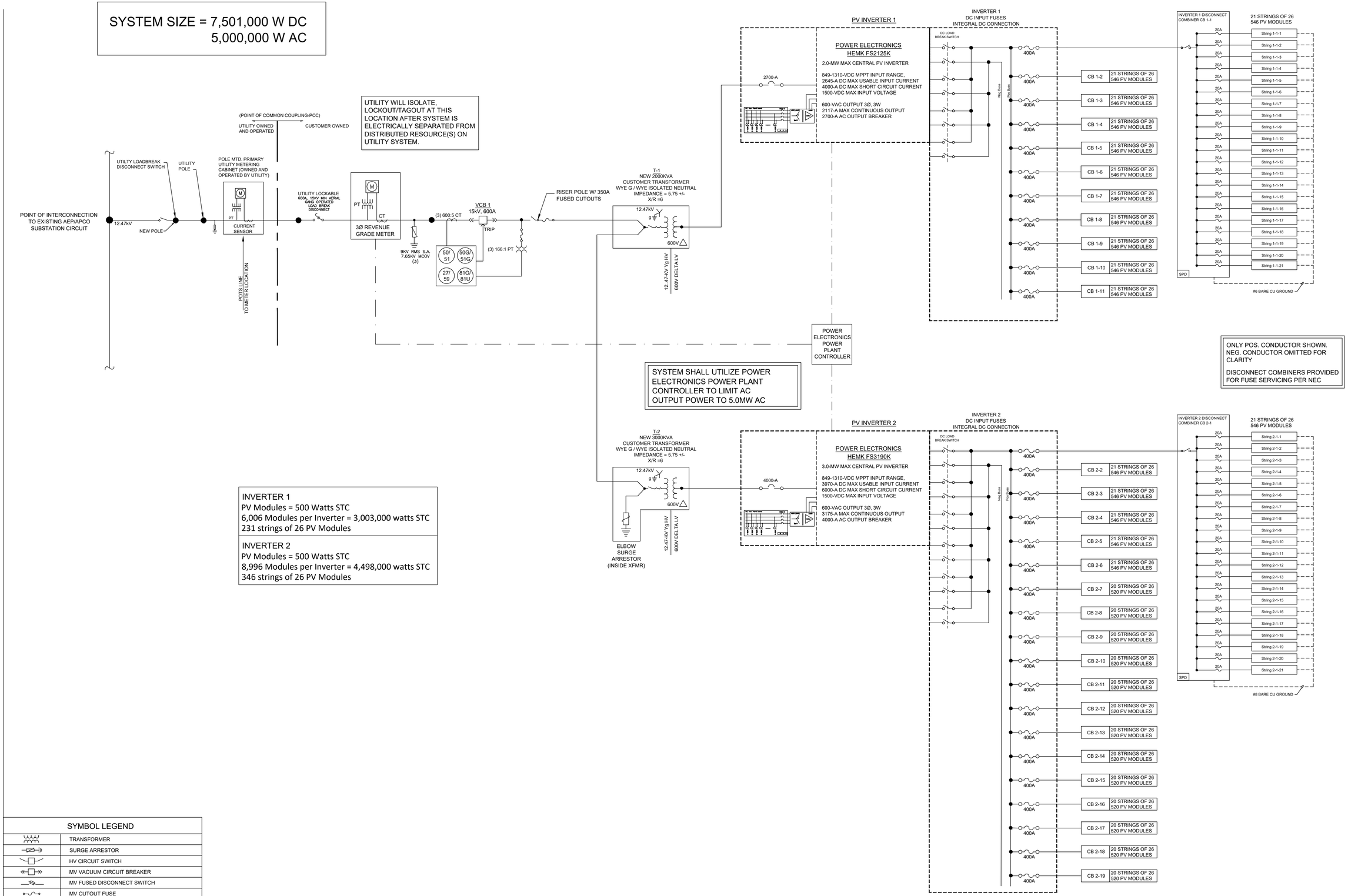
JAMES A. CLANCY
COMMONWEALTH OF VIRGINIA
VA. PROF. LICENSE #0402012464

REVISIONS	
DATE	COMMENT
02-02-21	XFORMER WINDINGS
02-05-21	MOVE RECLOSER
06-29-21	POI CHANGE

JOB #	
DRWN	RCA
CHKD	JAC
SCALE	AS NOTED
DATE	01-14-2021

C-1

SYSTEM SIZE = 7,501,000 W DC
5,000,000 W AC



ONLY POS. CONDUCTOR SHOWN. NEG. CONDUCTOR OMITTED FOR CLARITY

DISCONNECT COMBINERS PROVIDED FOR FUSE SERVICING PER NEC

INVERTER 1 PV Modules = 500 Watts STC 6,006 Modules per Inverter = 3,003,000 watts STC 231 strings of 26 PV Modules
INVERTER 2 PV Modules = 500 Watts STC 8,996 Modules per Inverter = 4,498,000 watts STC 346 strings of 26 PV Modules

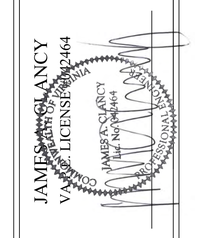
SYMBOL LEGEND	
	TRANSFORMER
	SURGE ARRESTOR
	HV CIRCUIT SWITCH
	MV VACUUM CIRCUIT BREAKER
	MV FUSED DISCONNECT SWITCH
	MV CUTOUT FUSE
	MV CABLE SEPARATOR
	INVERTER BRIDGE
	PHOTOVOLTAIC MODULE

ARC DESIGN
SALEM COUNTY OFFICE
409 NORTH MAIN STREET
ELMER, NJ 08318
(856) 712-2166 FAX: (856) 358-1511

PROPOSED PHOTOVOLTAIC ARRAY

NORTH CAROLINA RENEWABLE ENERGY, LLC.
CONSTITUTION SOLAR, LLC
1778 VIRGIL GOODE HWY
OAK LEVEL, VA 24055

JAMES C. CLANCY
VA LICENSE NO. 022464



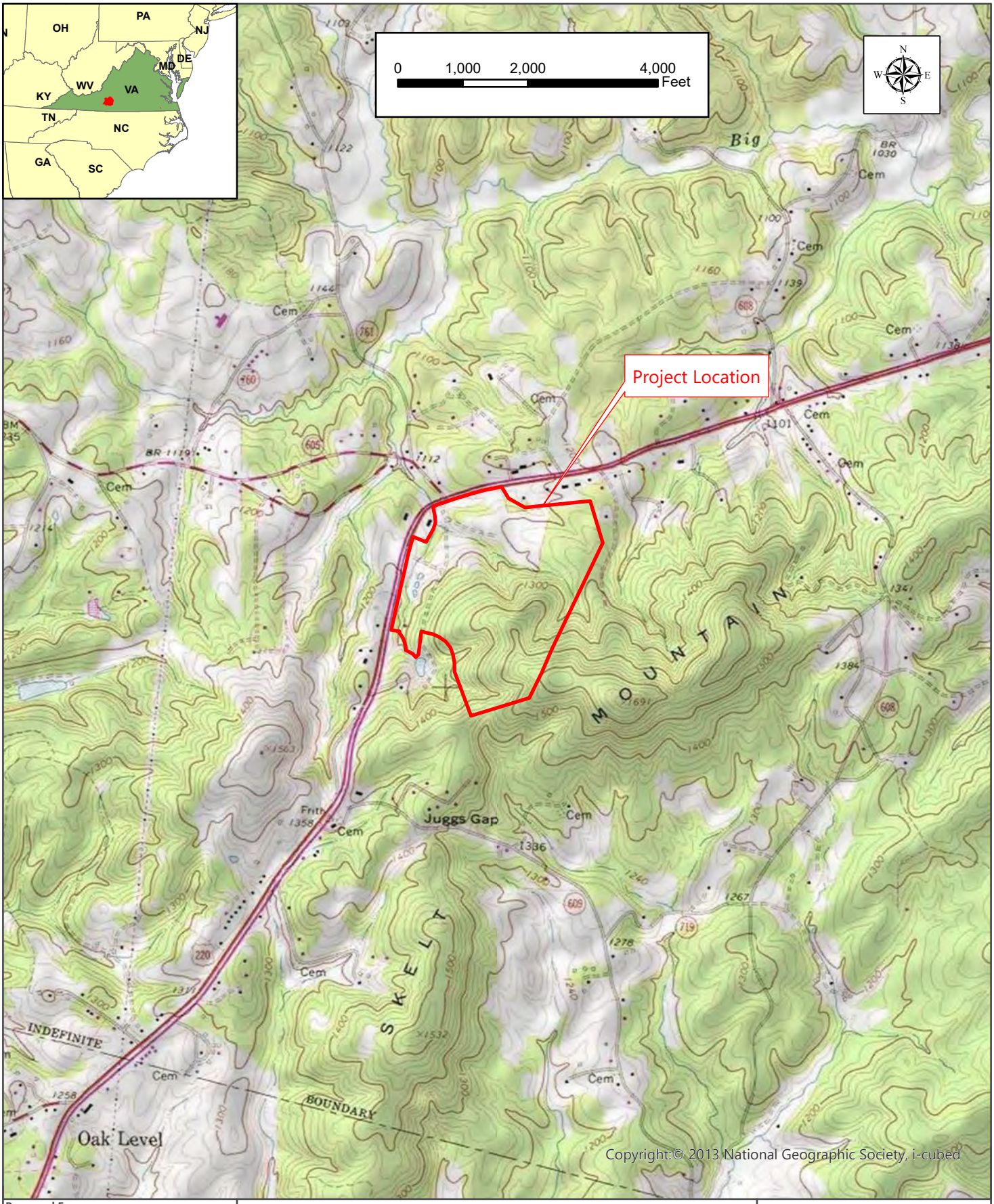
REVISIONS	
DATE	COMMENT
02-02-21	XFORMER WINDINGS
02-05-21	MOVE RECLOSER
06-29-21	POI CHANGE

JOB #	
DRWN	RCA
CHKD	JAC
SCALE	AS NOTED
DATE	01-14-2021

E-1

Colliers Engineering & Design

APPENDIX B
PROJECT LOCATION MAP



Prepared For:

North Carolina Renewable Energy
1135 Kildaire Farm Road
Cary, NC 27511

Prepared By:

Raleigh Office
2000 Regency Parkway Ste 295
Cary, NC 27518
T: 919.439.8461
www.colliersengineering.com
Colliers Engineering & Design

Project Location Map

Franklin County, Virginia

Constitution Solar Project

Date:	Project #:	Drawn By:
8/18/2021	21001074A	AAP

Figure 1

Site Boundary

Colliers
Engineering
& Design

APPENDIX C
VDGIF REPORT AND MAPS

Options
Species Information
By Name
By Land Management
References
Geographic Search
By Map
By Coordinates
By Place Name
Database Search
Help
Logout
Show This Page as Printer Friendly

VaFWIS Initial Project Assessment Report Compiled on 9/9/2021, 3:42:55 PM

Known or likely to occur within a **2 mile radius around point 36.8373200 -79.9146928** in **067 Franklin County, 089 Henry County, VA**

View Map of Site Location

460 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 21) (21 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
060017	FESE	Ia	Spinymussel, James	Parvaspina collina		BOVA
010214	FESE	IIa	Logperch, Roanoke	Percina rex		BOVA,Habitat
030061	FTSE	Ia	Turtle, bog (= Muhlenberg)	Clemmys muhlenbergii		BOVA
050022	FTST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050027	SE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
040096	ST	Ia	Falcon, peregrine	Falco peregrinus		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
060173	FPST	Ia	Pigtoe, Atlantic	Fusconaia masoni		BOVA
010127	ST	IIb	Madtom, orangefin	Noturus gilberti		BOVA,Habitat
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
030012	CC	IVa	Rattlesnake, timber	Crotalus horridus		BOVA
010174		Ia	Bass, Roanoke	Ambloplites cavifrons		BOVA,Habitat
010343		Ib	Darter, ashy	Etheostoma cinereum		BOVA
010341		IIa	Logperch, blotchside	Percina burtoni		BOVA
040052		IIa	Duck, American black	Anas rubripes		BOVA
040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA
040140		IIa	Woodcock, American	Scolopax minor		BOVA
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA

To view **All 460 species** View 460

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

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

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (3 Reaches) View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species					View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name				
Big Chestnut Creek (30101011)	FESE	010127	ST	IIb	Madtom, orangefin	Noturus gilberti	Yes
		010174		Ia	Bass, Roanoke	Ambloplites cavifrons	
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
Grassy Fork (30101031)		010432			Madtom, spotted-margin	Noturus insignis ssp 1	Yes
tributary (30101011)	FESE	010127	ST	IIb	Madtom, orangefin	Noturus gilberti	Yes
		010174		Ia	Bass, Roanoke	Ambloplites cavifrons	
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
tributary (30101011)	FESE	010127	ST	IIb	Madtom, orangefin	Noturus gilberti	Yes
		010174		Ia	Bass, Roanoke	Ambloplites cavifrons	
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 9/9/2021, 3:42:55 PM I1127374.0 report=IPA searchType= R dist= 3218 poi= 36.8373200 -79.9146928
PixelSize=64; Anadromous=0.019672; BECAR=0.018301; Bats=0.018299; Buffer=0.067567; County=0.060331; Impediments=0.017843; Init=0.094242; PublicLands=0.026694; SppObs=0.226178; TEWaters=0.023955; TierReaches=0.058269; TierTerrestrial=0.092555; Total=0.886837; Tracking_BOVA=0.2023; Trout=0.024905

Site Location

36,50,14.3 -79,54,52.8 is **the Search Point**

Show Position Rings
(•) Yes ( ) No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
(•) Yes ( ) No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

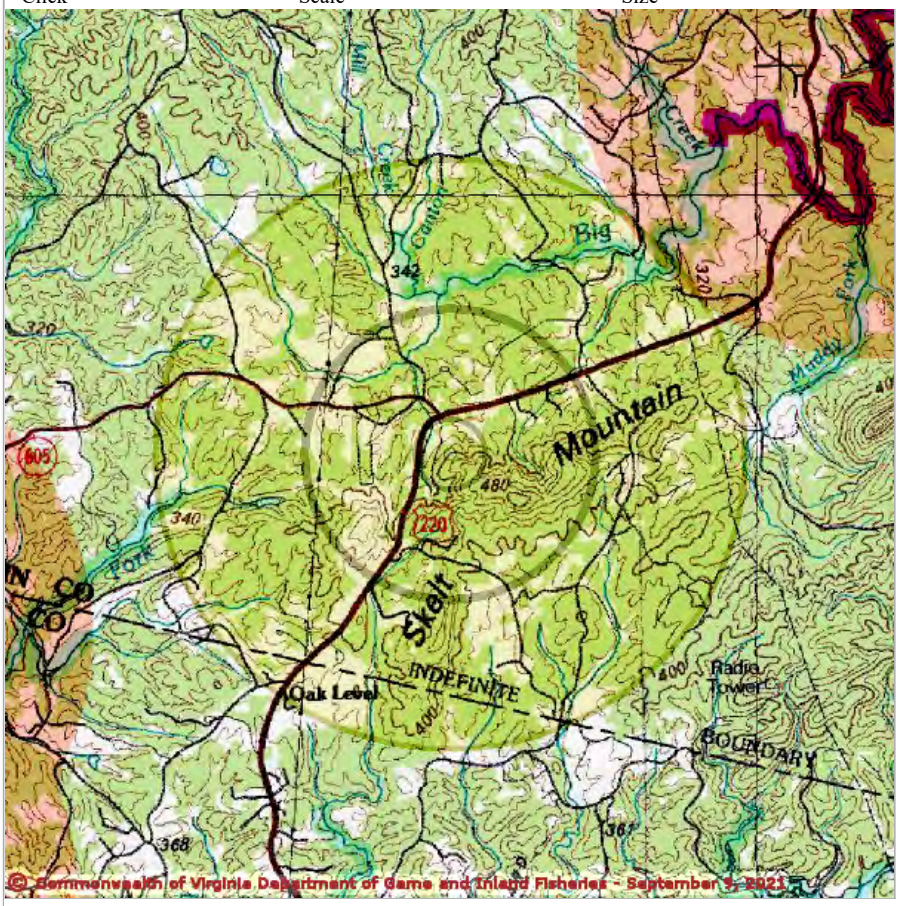
Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

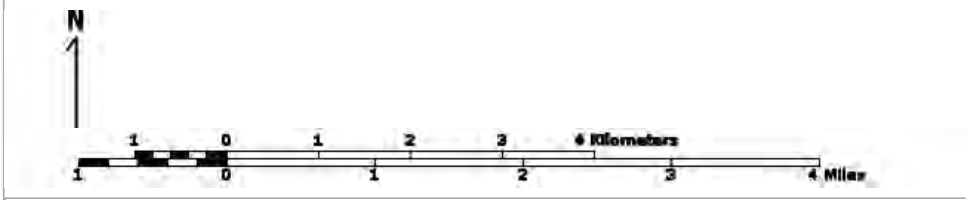
Map Overlay Legend

Virginia Fish and Wildlife Information Service

Refresh Browser Page

Map Click: Pan Id M | Map Scale: In Zoom Out | Screen Size: Small Size Big | Help





Point of Search 36,50,14.3 -79,54,52.8
Map Location 36,50,14.3 -79,54,52.8

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

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 591973 and top 4082176. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2021-09-09 15:47:10 (qa/qc March 21, 2016 12:20 - tn=1127374.0 dist=3218 I)
$poi=36.8373200 -79.9146928

Habitat Predicted for WAP Tier I and II Species

36,50,14.3 -79,54,52.8 is **the Search Point**

Show Position Rings
(•) Yes ( ) No
4 miles and 1 mile at the **Search Point**

Show Search Area
(•) Yes ( ) No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, TierReaches

Map Overlay Legend

Predicted Habitat WAP Tier I & II
Aquatic
Terrestrial

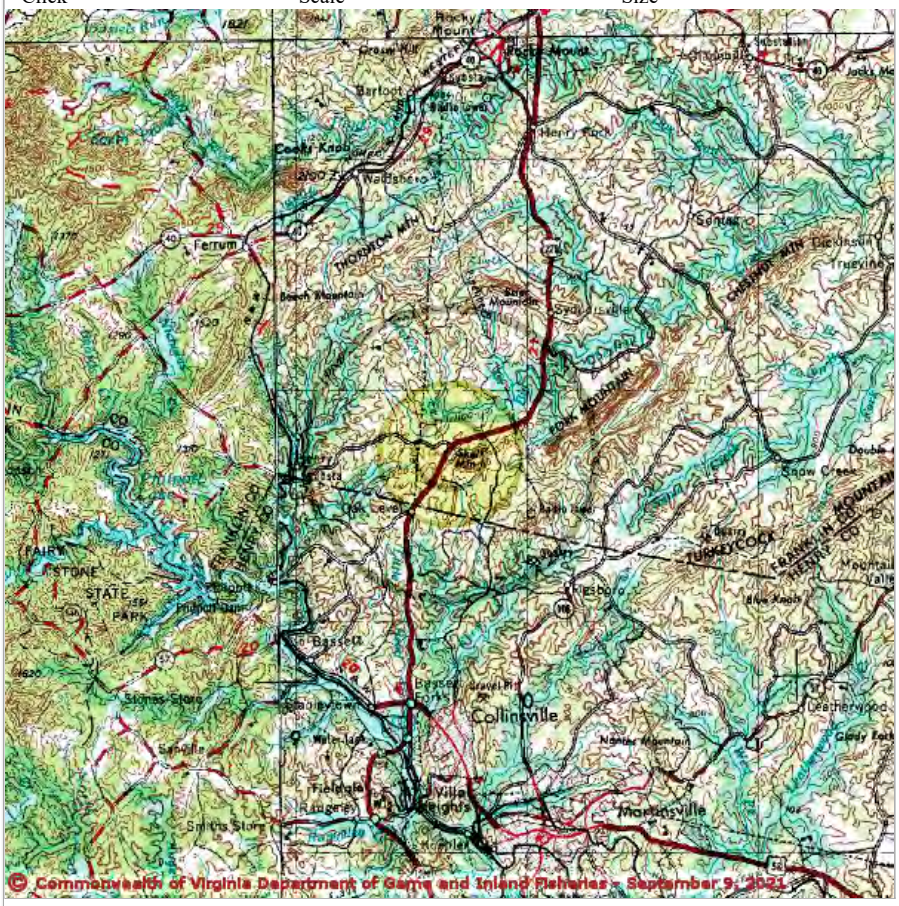
Position Rings 4 miles and 1 mile at the Search Point

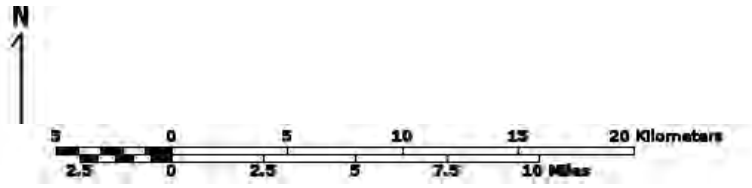
2 mile radius Search Area

Virginia Fish and Wildlife Information Service

Refresh Browser Page

Map Click Pan Id M Map Scale In Zoom Out Screen Size Small Size Big Help





Point of Search 36,50,14.3 -79,54,52.8
Map Location 36,50,14.3 -79,54,52.8

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

Base Map source: USGS 1:250,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 577573 and top 4096576. Pixel size is 64 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 38400 meters east to west by 38400 meters north to south for a total of 1474.5 square kilometers. The map display represents 126005 feet east to west by 126005 feet north to south for a total of 569.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2021-09-09 15:48:39 (qa/qc March 21, 2016 12:20 - tn=1127374.0 dist=3218 I)
$poi=36.8373200 -79.9146928

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Engineering
& Design

APPENDIX D
VDCR-NHP INFORMATION

Ann Jennings
Secretary of Natural and Historic Resources and Chief Resilience Officer

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Nathan Burrell
Deputy Director of Government and Community Relations

Darryl M. Glover
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Thomas L. Smith
Deputy Director of Operations

October 13, 2021

Tanner Dickson
Colliers Engineering & Design
5275 Parway Plaza Blvd, Suite 100
Charlotte, NC 28217

Re: 21001074A, Constitution Solar Project

Dear Mr. Dickson:

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 the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. In addition, the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

DCR recommends the development of an invasive species management plan for the project and the planting of Virginia native pollinator plant species that bloom throughout the spring and summer, to maximize benefits to native pollinators. DCR recommends planting these species in at least the buffer areas of the planned facility, and optimally including other areas within the project site. For screening zones outside the perimeter fencing, DCR recommends native species appropriate for the region be used. 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/home/showpublisheddocument?id=2466. 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).

Furthermore, the proposed project will fragment an Ecological Core **(C4)** as identified in the Virginia Natural Landscape Assessment (https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection. Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: http://vanhde.org/content/map.

Ecological Cores are areas of 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).

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 (April 13, 2022) has passed before it is utilized.

A fee of $90.00 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 http://vafwis.org/fwis/ or contact Amy Martin at 804-367-2211 or amy.martin@dwr.virginia.gov.

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

Sincerely,

S. René Hypes
Natural Heritage Project Review Coordinator

Cc: Mary Major- DEQ
Christopher Whitlow- Franklin County Administrator

Colliers Engineering & Design

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Infrastructure • Geotechnical/Environmental • Telecommunications • Utilities/Energy

Appendix D: Wetland Delineation Report

Colliers Engineering & Design

Wetland Delineation Report

Constitution Solar Project

Colliers Engineering & Design Project Number: 21001074A

September 10, 2021

Prepared for:

Jim Bernard, Permitting Manager
North Carolina Renewable Energy
1151 Falls Road
Rocky Mount, NC 27804

Prepared by:

Colliers Engineering & Design, Inc. (DBA Maser Consulting)
2000 Regency Parkway
Suite 295
Cary, NC 27518
Main: 919-439-6082
Colliersengineering.com

Colliers Engineering & Design

Table of Contents

APPENDICES

Colliers Engineering & Design

EXECUTIVE SUMMARY

On behalf of North Carolina Renewable Energy (NCRE), Colliers Engineering & Design (CED) conducted field delineations for the Constitution Solar Project located southeast of the intersection of Virgil H Goode Highway (State Route 220) and Henry Road within Franklin County, Virginia and is further described as Franklin County Parcel Identification Number 1110017401 (hereinafter described as "Subject Property"). The Subject Property is located at latitudinal coordinates 36.837320 N and longitudinal coordinates -79.914693 W. The Subject Property is located approximately 10-miles north west of Martinsville, Virginia and lies along State Route 220. Access to the Subject Property can be achieved through a private entrance that intersects State Route 220 located at latitudinal coordinates 36.833490 N and longitudinal coordinates -79.919757 W.

The Subject Property is approximately 160 acres in size and was investigated to identify potential jurisdictional Waters of the U.S. (WOTUS) and wetlands subject to Federal or State regulatory jurisdiction. The delineation methodologies developed by the USACE and the USEPA, as described in the *1987 Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0*) and the 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 (Environmental Laboratory, 1987; USACE 2012; USACE 2005) were utilized during our investigation. Although the Subject Property is located within the Virginia, regulatory agencies within Virginia recognize the methodology outlined in the North Carolina Division of Water Resources (NC DWR) Methodology for Identification of Intermittent and Perennial Stream and Their Origins (Version 4.11); and therefore, surface waters were delineated based upon this methodology. The location and size of jurisdictional areas delineated are shown on the attached Figure 6 Waters of the U.S. Delineation Map.

Based on the field investigations, Six (6) wetland features, three (3) pond features, and eight (8) stream features were delineated within the Subject Property by CED from August 23rd through August 25th, 2021. A total of 0.622 acres of palustrine forested (PFO) wetland, 0.112 acres of palustrine emergent (PEM) wetland, 0.411 of palustrine unconsolidated bottom (PUB – pond), 5,657 linear feet of perennial (R3) stream, and 1,451 linear feet of intermittent (R4) stream were delineated. It is CED's professional opinion that Wetland Features "1" through "8", Pond Features "1" through "3", and Stream Features "1" through "8" are considered jurisdictional WOTUS since they drain into Big Chestnut Creek which eventually drains to the Roanoke River. The location and size of jurisdictional areas delineated are shown on Figure 5. Wetland Determination Map (**Appendix A**).

1.0 PROJECT INFORMATION

Project Name	Constitution Solar Project
Project Location	Intersection of Virgil H Goode Highway (State Route 220) and Henry Road
Municipality	Franklin County
County	Franklin
State	Virginia
Latitude/Longitude	36.837320 N / -79.914693 W
Subject Property Size	+/- 160 acres
U.S.G.S. Quadrangle	Bassett, Virginia
Potential Jurisdictional Waters of the U.S. (WOTUS) and wetlands	See Aquatic Resource Summary Table
River Basin (HUC) & sub-watershed	Upper Roanoke River Basin: 8 Digit HUC Code 03010101 Sub-watershed(s): Big Chestnut Creek sub-watershed
Nearest Stream	Big Chestnut Creek located to the north.
Navigable Water Nexus	Wetland, pond, and stream features delineated on the Subject Property would be considered jurisdictional WOTUS and wetlands since these features drain towards Big Chestnut Creek which eventually drain to the Roanoke River.
Isolated Wetlands/Waters Present (Yes/No)	No

2.0 INTRODUCTION

On behalf of North Carolina Renewable Energy (NCRE), Colliers Engineering & Design (CED) conducted field delineations for the Constitution Solar Project located southeast of the intersection of Virgil H Goode Highway (State Route 220) and Henry Road within Franklin County, Virginia and is further described as Franklin County Parcel Identification Number 1110017401 (hereinafter described as "Subject Property"). The Subject Property is located at latitudinal coordinates 36.837320 N and longitudinal coordinates -79.914693 W. The Subject Property is located approximately 10-miles north west of Martinsville, Virginia and lies along State Route 220. Access to the Subject Property can be achieved through a private entrance that intersects State Route 220 located at latitudinal coordinates 36.833490 N and longitudinal coordinates -79.919757 W. The Subject Property is bordered to the south by residential homes, a pond, and forested areas, to the east by residential homes and forested areas, and to the north and west by State Route 220, residential homes, pastures and agricultural fields. There are unnamed tributaries located within the Subject Property that eventually drain to Big Chestnut Creek.

The Subject Property was investigated to identify potential jurisdictional Waters of the U.S. (WOTUS) and wetlands subject to Federal or State regulatory jurisdiction. According to the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA) regulations described in Section 404 of the Clean Water Act (33 CFR Section 328.3 and 40 CFR Section 230.3) respectively, wetlands are "...areas that are inundated or saturated with surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

3.0 PROPERTY DESCRIPTION

The Subject Property is located within the Upper Roanoke River Basin (8 Digit HUC Code 03010101), within the Big Chestnut Creek sub-watershed. Access to the Subject Property can be achieved through a private entrance that intersects State Route 220 located at latitudinal coordinates 36.833490 N and longitudinal coordinates -79.919757 W. The central, western, and southern section of the Subject Property drains northwest towards Big Chestnut Creek. The Subject Property does not contain a floodway and a floodplain according to FEMA Floodplain Panel Map 51067C0500C. The Subject Property contains approximately 60% forested and 40% pasture land habitat communities. The forested areas are located primarily within the eastern and southern sections and are comprised of a mixture of oak, beech, red maple, pine, sycamore, river birch and sweetgum species that dominate the canopy layer. Pasture land is located within the western and northern sections of the Subject Property, in addition to several unnamed tributaries to Big Chestnut Creek.

4.0 BACKGROUND INFORMATION

Prior to on-site field investigations, several publicly available sources of information were reviewed to determine the likelihood of wetlands and surface waters occurring within Subject Property. These mapping resources generally include, but are not limited to, the United States Geological Survey (USGS) maps (Figure 1. Project Location Map, **Appendix A**), the U.S. Department of Agriculture - Natural Resource Conservation Service (NRCS) soils database (Figure 2. Soil Series Map, **Appendix A**), National Hydrography Dataset (NHD), and the U.S. Fish & Wildlife Service National Wetlands Inventory (NWI) database (Figure 3. National Wetlands Inventory Map, **Appendix A**).

4.1 U.S. Geological Survey Map

The Subject Property appears on the Bassett, Virginia Quadrangle USGS Maps (Figure 1. Project Location Map, **Appendix A**) and is depicted as undeveloped property which contains approximately 60% forested areas and 40% undeveloped areas. The USGS also depicts unnamed tributaries located within western and norther sections. Residential, forested, and undeveloped areas are located within the vicinity of the Subject Property to the north, south, and west. The USGS map depicts the Subject Property located east of State Route 220. Elevations at the Subject Property range from 1400 to 1100 feet above mean sea level (MSL) based on the USGS map.

4.2 Soil Survey

The NRCS Web Soil Survey depicts the following nine (9) map units within the Subject Property and provides a description of the properties and qualities of each soil:

- Clifford fine sandy loam, 8 to 15 percent slopes (7C) – Moderately well drained, with a depth to water table more than 80 inches.
- Colescreek-Delanco complex, 2 to 8 percent slopes, rarely flooded (10B) – Moderately well drained, medium runoff, with a depth to water table about 30 to 40 inches.
- Hickoryknob-Rhodhiss-Stott Knob, 8 to 15 percent slopes (22C) – Well drained, high runoff, with a depth to water table more than 80 inches.
- Hickoryknob-Rhodhiss-Stott Knob, 25 to 60 percent slopes (22E) – Well drained, high runoff, with a depth to water table more than 80 inches.
- Littlejoe-Strawfield-Penhook complex, 8 to 15 percent slopes (26C) – Well drained, medium runoff, with a depth to water table more than 80 inches.
- Littlejoe-Strawfield-Penhook complex, 15 to 25 percent slopes (26D) – Well drained, high runoff, depth to water table more than 80 inches.
- Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, stony (40C) – Well drained, high runoff, depth to water table more than 80 inches.
- Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony (40D) – Well drained, high runoff, depth to water table more than 80 inches.
- Woolwine-Fairview-Westfield complex, 25 to 60 percent slopes, stony (40E) Well drained, high runoff, depth to water table more than 80 inches.

Of the nine (9) map unit soils, none are listed as being hydric.

5.0 WETLAND & SURFACE WATER DELINEATION METHODOGY

The wetland delineation methodologies developed by the USACE and the USEPA, as described in the 1987 Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont 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 (Environmental Laboratory, 1987; USACE 2012; USACE 2005), were utilized during our investigation. These methodologies generally involve the review of three parameters (vegetation, soils, hydrology) when making a wetland or non-wetland determination. Although the Subject Property is located within the Virginia, regulatory agencies within Virginia recognize the methodology outlined in the North Carolina Division of Water Resources (NC DWR) Methodology for Identification of Intermittent and Perennial Stream and Their Origins (Version 4.11); and therefore, surface waters were delineated based upon this methodology.

The Subject Property was walked, community types were characterized, and wetland and surface water boundaries were flagged. Sample stations were established along the boundaries to examine vegetation, soils, and hydrology. Using this data, boundaries were established based on changes in vegetation, soils, hydrology, and surface water characteristics.

6.0 WETLAND AND SURFACE WATER DELINEATION RESULTS

6.1 WETLAND AND SURFACE WATER SUMMARY

On-site field investigations of the Subject Property were conducted by CED from August 23rd through August 25th, 2021. The on-site delineation did verify the presence of wetlands and surface waters within Subject Property. A summary of the aquatic resources identified within the Subject Property is provided below in Table 1: Aquatic Resource Summary. The location and size of the aquatic resources delineated are shown on Figure 5. Wetland Delineation Map (**Appendix A**).

Table 1: Aquatic Resource Area Summary Table

Aquatic Resource	PFO Area (AC)	PEM Area (AC)	Aquatic Resource	PUB Area (AC)	Aquatic Resource	R3 Length (LF)	R4 Length (LF)
Wetland 1	0.243		Pond 1	0.002	Stream 1	1,921	
Wetland 2	0.249		Pond 2	0.094	Stream 2		369
Wetland 3		0.043	Pond 3	0.315	Stream 3		233
Wetland 4		0.069			Stream 4	132	135
Wetland 5	0.016				Stream 5	2,496	
Wetland 6	0.114				Stream 6	1,108	
					Stream 7		609
					Stream 8		105
Total Wetlands by Class (AC)	0.622	0.112	Total Pond (AC)	0.411	Total Stream by Class (LF)	5,657	1,451
Total Wetlands (AC)	0.734				Total Stream (LF)	7108	

Note 1: Cowardin Classification; PFO = palustrine forested wetland; PEM = palustrine emergent wetland; PUB = palustrine unconsolidated bottom (pond), R3 = perennial stream, R4 = intermittent stream

6.2 VEGETATION

Representative plant species within the wetland areas include the following: sweetgum (Liquidambar styraciflua), red maple (Acer rubrum), river birch (Betula nigra), sycamore (Platanus occidentalis), ironwood (Carpinus caroliniana), spicebush (Lindera benzoin), jewelweed (Impatiens capensis), rough bedstraw (Galium asprellum), Nepalese browntop (Microstegium vimineum), common greenbrier (Smilax rotundifolia), and common rush (Juncus effusus).

Representative plant species within the upland areas include the following: sweetgum, loblolly pine (Pinus tadea), tulip poplar (Liriodendron tulipifera), red maple, American beech (Fagus grandifolia), Christmas fern (Polystichum acrostichoides), Virginia creeper (Parthenocissus quinquefolia), ironwood, common greenbrier, and fan clubmoss (Diphasiastrum digitatum).

6.3 SOILS

Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil (USDA 2003). The soils in the wetland areas were variable, but for the most part, exhibited low chroma matrices with redoximorphic features. Soils within the wetland areas on-site exhibit low chroma matrix colors and concentrations that are characteristic of reducing anaerobic conditions associated within the formation of hydric soils. Wetland soils were typically very dark gray (10YR 4/1), , gray (10YR 6/1), light gray (10YR 7/1), brown (7.5YR 4/2), reddish gray (2.5YR 6/1), pale red (2.5YR 6/2) within the upper 16 inches. Jurisdictional soils were generally underlain dark gray (10YR 4/1), brown (7.5YR 4/2), and reddish gray (2.5YR 6/1) down to 16 inches. Redox concentrations greater than 3% were observed between 0 and 16 inches below soil surface and are typically gray (10YR 6/1) and dark gray (10YR 4/1). Soils within jurisdictional areas meet the F3 Depleted Matrix hydric soil indicator. Textures within the jurisdictional areas include sandy loam, sandy clay, and clay loam. The upland soils within each area varied from very dark grayish brown (10YR 3/2), dark brown (10YR 3/3), and yellowish brown (10YR 5/6),) within the upper 16 inches. Soil textures include sandy loam, sandy clay loam, and clay loam.

6.4 HYDROLOGY

On-site field investigations of the Subject Property were conducted by CED from August 23rd through August 25th, 2021. The USACE Antecedent Precipitation Tool (APT) was utilized for the Subject Property and is provided **Appendix C**. Based the USACE APT tool, the on-site field investigations were conducted in "Normal" precipitation conditions with a 30-day rolling total.

The delineated wetlands exhibited primary and secondary indicators of wetland hydrology. Positive indicators of wetland hydrology on the property included the following: surface water (A1), high water table (A2), saturation (A3), water marks (B1), water-stained leaves (B9), and oxidized rhizospheres on living roots (C3). Secondary indicators include drainage patterns (B10), and the FAC-neutral test (D5). Indicators of wetland hydrology are largely absent in upland areas.

7.0 WETLAND DELINEATION CONCLUSION

Six (6) wetland features, three (3) pond features, and eight (8) stream features were delineated within the Subject Property by CED from August 23rd through August 25th, 2021. A total of 0.622 acres of palustrine forested (PFO) wetland, 0.112 acres of palustrine emergent (PEM) wetland, 0.411 of palustrine unconsolidated bottom (PUB – pond), 5,657 linear feet of perennial (R3) stream, and 1,451 linear feet of intermittent (R4) stream were delineated. Field investigations were conducted in accordance with the manuals, methodologies, and regulatory guidance procedures as stated in Section 5.0 Wetland and Surface Water Delineation Methodology.

It is CED's professional opinion that Wetland Features "1" through "8", Pond Features "1" through "3", and Stream Features "1" through "8" are considered jurisdictional WOTUS since they drain into Big Chestnut Creek. These stream, pond, and wetland features be considered jurisdictional WOTUS since they connect and/or are directly connected to Big Chestnut Creek which eventually drains to the Roanoke River. The location and size of jurisdictional areas delineated are shown on Figure 5. Wetland Determination Map (**Appendix A**).

8.0 REFERENCE

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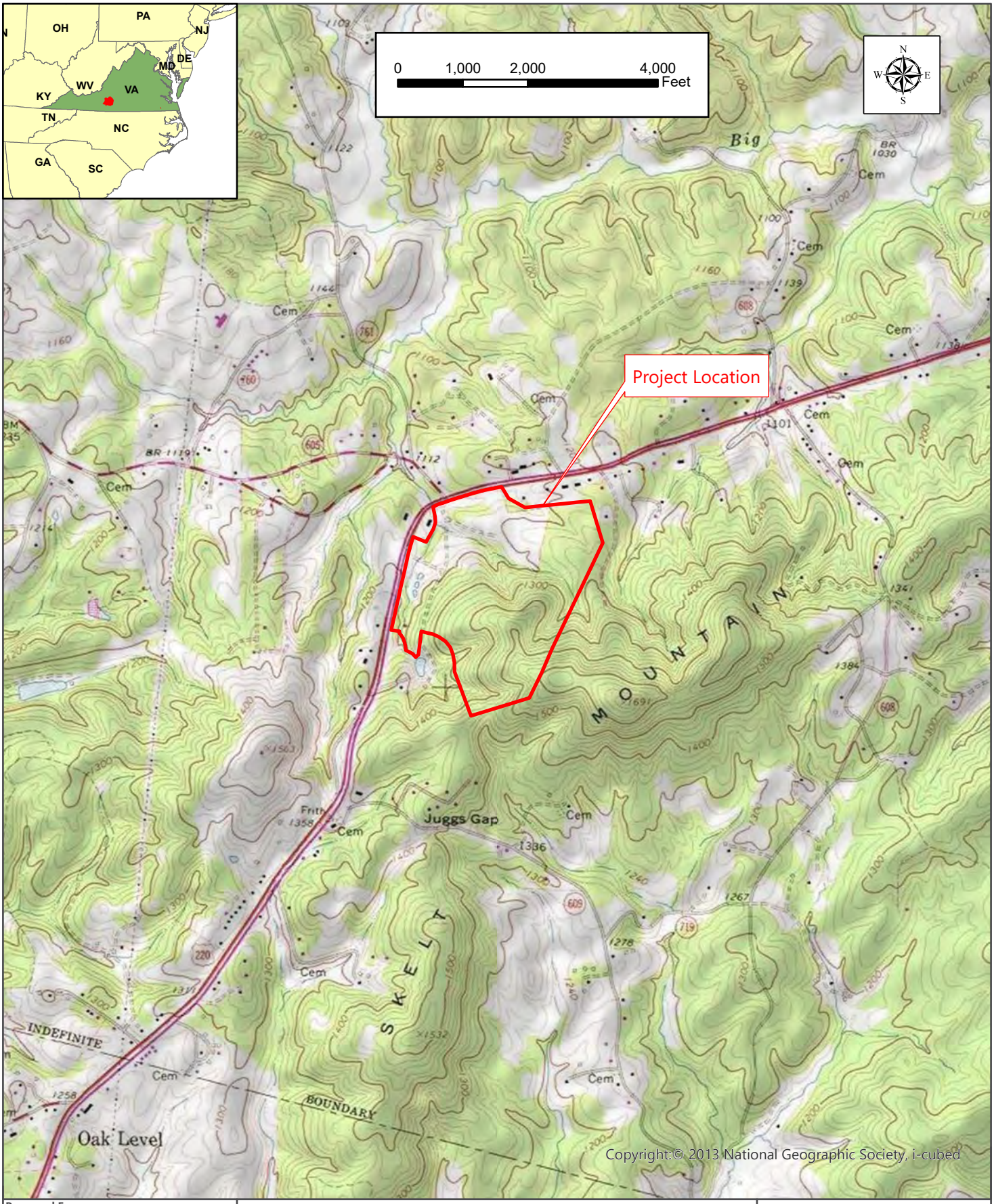
APPENDIX A
FIGURES



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Project Location Map

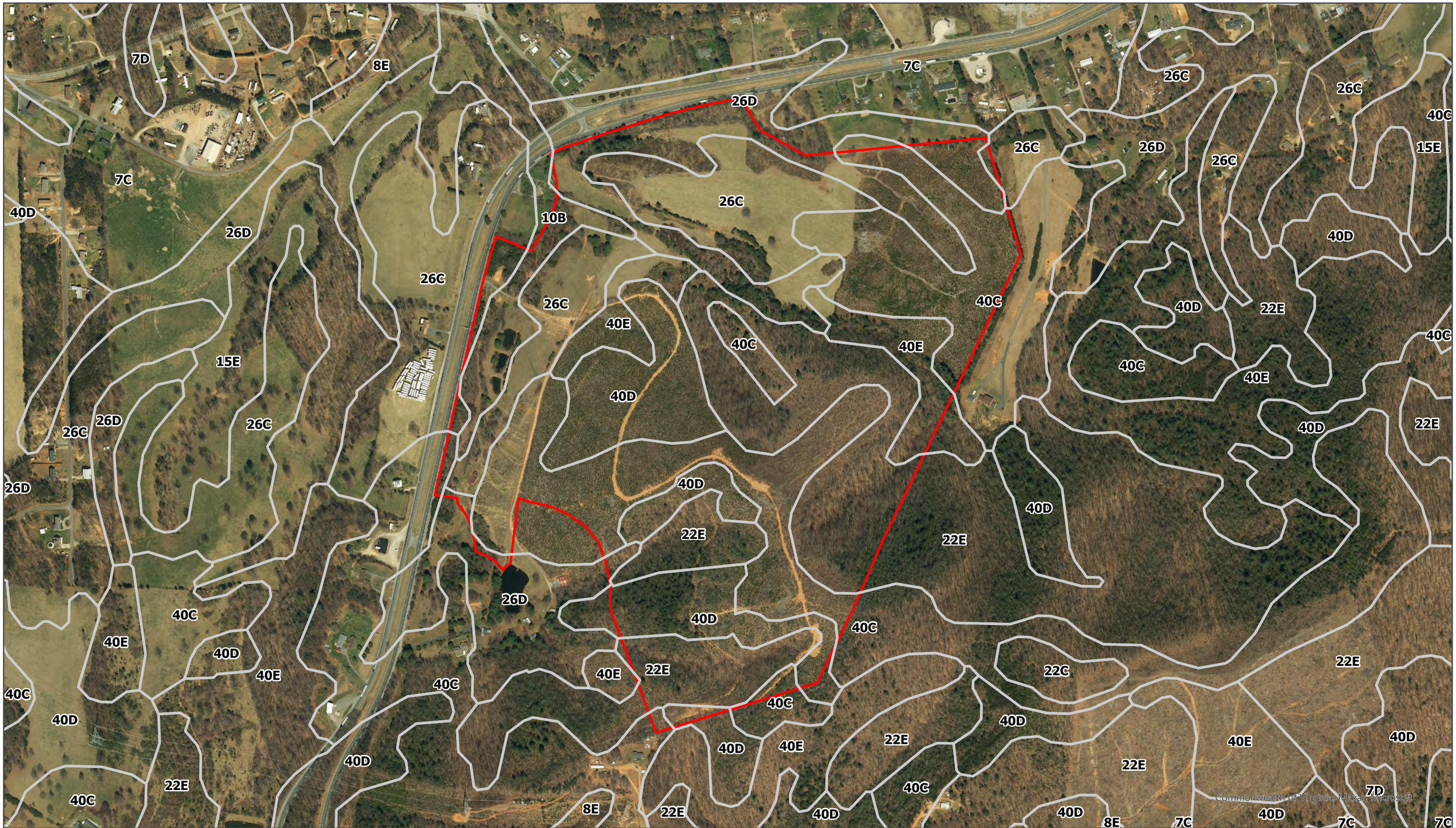
Franklin County, Virginia

Constitution Solar Project

Date:	Project #:	Drawn By:
8/18/2021	21001074A	AAP

Figure 1

Site Boundary



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Site Boundary
Soils

Soil Series Map

Constitution Solar Project
Franklin County, Virginia

Date:	MC Project #:	Drawn By:
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0 250 500 1,000 Feet

N W E S

Figure 2

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Stream
Waterbody
Wetland
Site Boundary

National Wetlands Inventory Map

Constitution Solar Project
Franklin County, Virginia

Date:	MC Project #:	Drawn By:
8/24/2021	21001074A	AAP

0 250 500 1,000 Feet

N W E S

Figure 3

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Stream
100 Year Flood Zone
Site Boundary

Floodway and Floodplain Map

Constitution Solar Project
Franklin County, Virginia

Date:	MC Project #:	Drawn By:
8/24/2021	21001074A	AAP

0 250 500 1,000 Feet

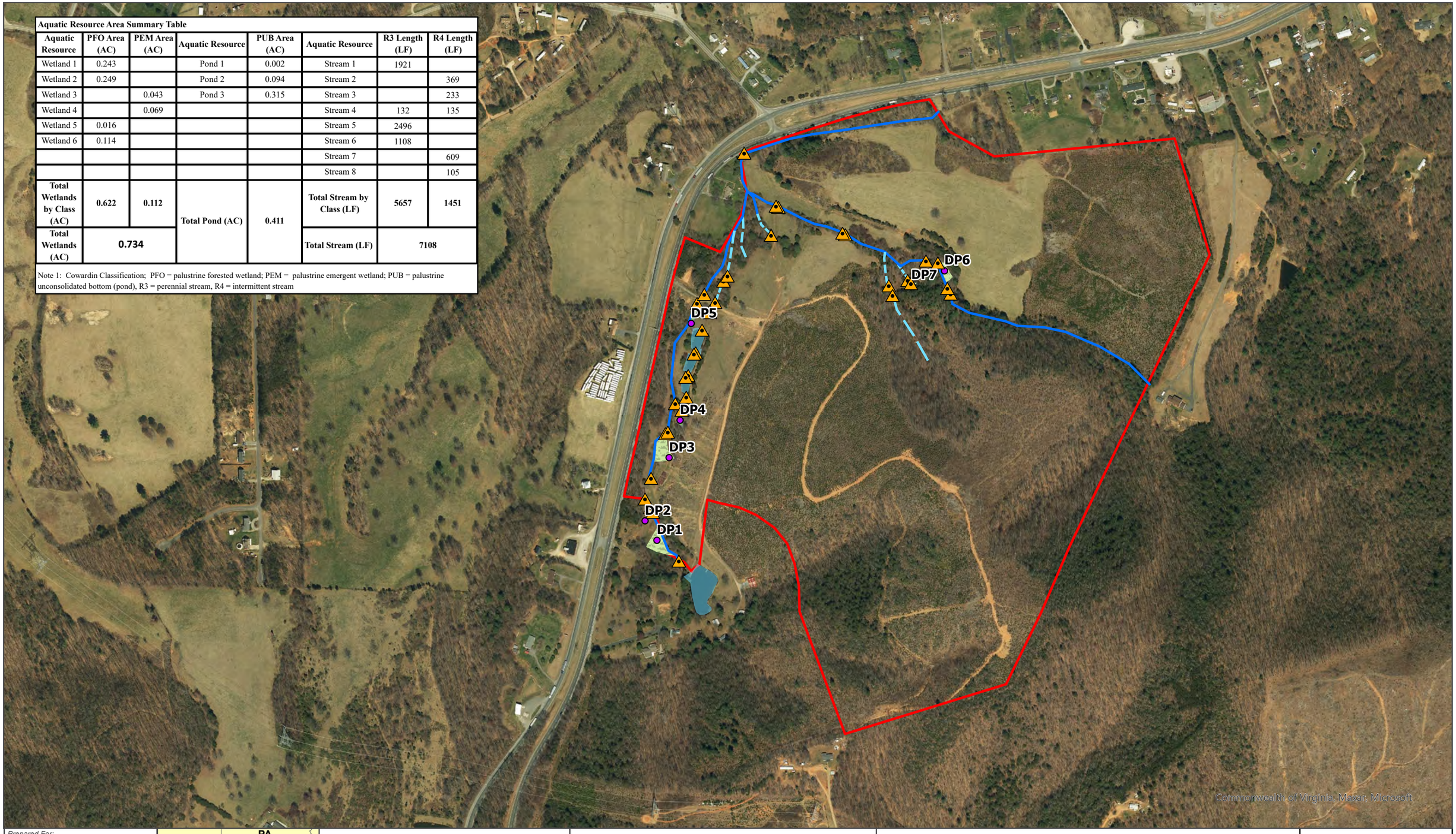
N W E S

Figure 4

Aquatic Resource Area Summary Table

Aquatic Resource	PFO Area (AC)	PEM Area (AC)	Aquatic Resource	PUB Area (AC)	Aquatic Resource	R3 Length (LF)	R4 Length (LF)
Wetland 1	0.243		Pond 1	0.002	Stream 1	1921	
Wetland 2	0.249		Pond 2	0.094	Stream 2		369
Wetland 3		0.043	Pond 3	0.315	Stream 3		233
Wetland 4		0.069			Stream 4	132	135
Wetland 5	0.016				Stream 5	2496	
Wetland 6	0.114				Stream 6	1108	
					Stream 7		609
					Stream 8		105
Total Wetlands by Class (AC)	**0.622**	**0.112**	**Total Pond (AC)**	**0.411**	**Total Stream by Class (LF)**	**5657**	**1451**
Total Wetlands (AC)	**0.734**				**Total Stream (LF)**	**7108**	

Note 1: Cowardin Classification; PFO = palustrine forested wetland; PEM = palustrine emergent wetland; PUB = palustrine unconsolidated bottom (pond), R3 = perennial stream, R4 = intermittent stream



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- Culvert
- Data Point
- Wetland (PEM)
- Wetland (PFO)
- Pond
- Intermittent Stream
- Perennial Stream
- Site Boundary

Wetland Delineation Map

Constitution Solar Project
Franklin County, Virginia

Date:	MC Project #:	Drawn By:
9/3/2021	21001074A	AAP

0 250 500 1,000 Feet

N W E S

Figure 5

Aquatic Resource Area Summary Table

Aquatic Resource	PFO Area (AC)	PEM Area (AC)	Aquatic Resource	PUB Area (AC)	Aquatic Resource	R3 Length (LF)	R4 Length (LF)
Wetland 1	0.243		Pond 1	0.002	Stream 1	1921	
Wetland 2	0.249		Pond 2	0.094	Stream 2		369
Wetland 3		0.043	Pond 3	0.315	Stream 3		233
Wetland 4		0.069			Stream 4	132	135
Wetland 5	0.016				Stream 5	2496	
Wetland 6	0.114				Stream 6	1108	
					Stream 7		609
					Stream 8		105
Total Wetlands by Class (AC)	**0.622**	**0.112**	**Total Pond (AC)**	**0.411**	**Total Stream by Class (LF)**	**5657**	**1451**
Total Wetlands (AC)	**0.734**				**Total Stream (LF)**	**7108**	

Note 1: Cowardin Classification; PFO = palustrine forested wetland; PEM = palustrine emergent wetland; PUB = palustrine unconsolidated bottom (pond), R3 = perennial stream, R4 = intermittent stream

Pond 2; +/- 0.094 AC

DP4

Potential Waters of the US; Wetland 3; PEM +/-0.043 AC

Potential Waters of the US; Wetland 2; PFO +/-0.249 AC

DP3

Potential Non-Wetland Waters of the US; Perennial Stream 1; +/-1921 FT

DP2

DP1

Potential Waters of the US; Wetland 1; PFO +/-0.243 AC

Pond 1; +/- 0.002 AC

Commonwealth of Virginia, Maxar, Microsoft

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Culvert
Data Point
Wetland (PEM)
Wetland (PFO)
Pond
Intermittent Stream
Perennial Stream
Site Boundary

Wetland Delineation Map

Constitution Solar Project
Franklin County, Virginia

Date:	MC Project #:	Drawn By:
9/3/2021	21001074A	AAP

0 75 150 300 Feet

N W E S

Figure 5A

Aquatic Resource Area Summary Table

Aquatic Resource	PFO Area (AC)	PEM Area (AC)	Aquatic Resource	PUB Area (AC)	Aquatic Resource	R3 Length (LF)	R4 Length (LF)
Wetland 1	0.243		Pond 1	0.002	Stream 1	1921	
Wetland 2	0.249		Pond 2	0.094	Stream 2		369
Wetland 3		0.043	Pond 3	0.315	Stream 3		233
Wetland 4		0.069			Stream 4	132	135
Wetland 5	0.016				Stream 5	2496	
Wetland 6	0.114				Stream 6	1108	
					Stream 7		609
					Stream 8		105
Total Wetlands by Class (AC)	**0.622**	**0.112**	**Total Pond (AC)**	**0.411**	**Total Stream by Class (LF)**	**5657**	**1451**
Total Wetlands (AC)	**0.734**				**Total Stream (LF)**	**7108**	

Note 1: Cowardin Classification; PFO = palustrine forested wetland; PEM = palustrine emergent wetland; PUB = palustrine unconsolidated bottom (pond), R3 = perennial stream, R4 = intermittent stream

Potential Non-Wetland Waters of the US; Perennial Stream 6; +/-1108 FT

Potential Non-Wetland Waters of the US; Perennial Stream 4; +/-132 FT

Potential Non-Wetland Waters of the US; Intermittent Stream 4; +/-135 FT

Potential Non-Wetland Waters of the US; Intermittent Stream 8; +/-105 FT

Potential Waters of the US; Wetland 5; PFO +/-0.016 AC

Potential Waters of the US; Wetland 6; PFO +/-0.114 AC

Potential Waters of the US; Wetland 4; PEM +/-0.043 AC

Potential Non-Wetland Waters of the US; Perennial Stream 5; +/-2496 FT

Potential Non-Wetland Waters of the US; Intermittent Stream 3; +/-233 FT

Pond 3; +/- 0.315 AC

Potential Non-Wetland Waters of the US; Intermittent Stream 2; +/-369 FT

Potential Non-Wetland Waters of the US; Intermittent Stream 7; +/-609 FT

DP5 DP6 DP7

Commonwealth of Virginia, Maxar, Microsoft

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Culvert
Data Point
Wetland (PEM)
Wetland (PFO)
Pond
Intermittent Stream
Perennial Stream
Site Boundary

Wetland Delineation Map

Constitution Solar Project
Franklin County, Virginia

Date:	MC Project #:	Drawn By:
9/3/2021	21001074A	AAP

0 125 250 500 Feet

N W E S

Figure 5B

Colliers Engineering & Design

APPENDIX B
DATA FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Constitution Solar Project City/County: Franklin Sampling Date: 8/25/21
Applicant/Owner: North Carolina Renewable Energy State: VA Sampling Point: DP1
Investigator(s): GHB Section, Township, Range:
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): >1
Subregion (LRR or MLRA): LRR P Lat: 36.834815 Long: -79.918475 Datum: NAD 83
Soil Map Unit Name: Littlejoe-Strawfield-Penhook complex (26D) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)
Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]
Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:
According to the USACE Antecedent Precipitation Tool, normal circumstances exist

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [✓] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [✓] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [✓] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): 0
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 10

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Plantanus occidentalis	15	Yes	FACW
2. Acer rubrum	15	Yes	FAC
3.			
4.			
5.			
6.			
	30 = Total Cover		

50% of total cover: 15 20% of total cover: 6

Sapling Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: 20% of total cover:

Shrub Stratum (Plot size: 15)			
1. Liquidambar styraciflua	3	Yes	FAC
2. Acer rubrum	3	Yes	FAC
3.			
4.			
5.			
6.			
	6 = Total Cover		

50% of total cover: 3 20% of total cover: 2

Herb Stratum (Plot size: 5)			
1. Juncus effusus	30	Yes	FACW
2. Euthamia caroliniana	15	Yes	FAC
3. Andropogon glomeratus	25	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		

50% of total cover: 38 20% of total cover: 15

Woody Vine Stratum (Plot size: 30)			
1. Smilax rotundifolia	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		

50% of total cover: 3 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	100					SC	
4-8	10YR 6/1	100					SC	
8-16	10YR 7/1	90	10YR 7/6	10	C	M	SC	streaks of 10YR 7/6

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Constitution Solar Project City/County: Franklin Sampling Date: 8/25/21
Applicant/Owner: North Carolina Renewable Energy State: VA Sampling Point: DP2
Investigator(s): GHB Section, Township, Range:
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): convex Slope (%): >1
Subregion (LRR or MLRA): LRR P Lat: 36.835495 Long: -79.918770 Datum: NAD 83
Soil Map Unit Name: Littlejoe-Strawfield-Penhook complex (26D) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)
Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]
Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [ ] No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]	
Wetland Hydrology Present?	Yes [ ]	No [✓]	

Remarks:
According to the USACE Antecedent Precipitation Tool, normal circumstances exist

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): _____
Water Table Present?	Yes [ ]	No [✓]	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes [ ]	No [✓]	Depth (inches): _____

Wetland Hydrology Present? Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus rubra	10	YES	FACU
2. Acer rubrum	10	YES	FAC
3.			
4.			
5.			
6.			
	20 = Total Cover		

50% of total cover: 10 20% of total cover: 4

Sapling Stratum (Plot size: 15)			
1. Acer rubrum	10	YES	FAC
2. Liriodendron tulipifera	10	YES	FACU
3.			
4.			
5.			
6.			
	20 = Total Cover		

50% of total cover: 10 20% of total cover: 4

Shrub Stratum (Plot size: 15)			
1. Liquidambar styraciflua	3	Yes	FAC
2. Acer rubrum	3	Yes	FAC
3.			
4.			
5.			
6.			
	6 = Total Cover		

50% of total cover: 3 20% of total cover: 2

Herb Stratum (Plot size: 5)			
1. Juncus effusus	30	Yes	FACW
2. Euthamia caroliniana	15	Yes	FAC
3. Andropogon glomeratus	25	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		

50% of total cover: 38 20% of total cover: 15

Woody Vine Stratum (Plot size: 30)			
1. Smilax rotundifolia	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		

50% of total cover: 3 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					SC	
5-16	7.5YR 5/4	100					SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☑

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Constitution Solar Project City/County: Franklin Sampling Date: 8/25/21
Applicant/Owner: North Carolina Renewable Energy State: VA Sampling Point: DP3
Investigator(s): GHB Section, Township, Range:
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): >1
Subregion (LRR or MLRA): LRR P Lat: 36.834815 Long: -79.918475 Datum: NAD 83
Soil Map Unit Name: Littlejoe-Strawfield-Penhook complex (26D) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)
Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]
Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:
According to the USACE Antecedent Precipitation Tool, normal circumstances exist

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [✓] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [✓] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [✓] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes [ ] No [✓] Depth (inches): 0
Water Table Present? Yes [✓] No [ ] Depth (inches): 12
Saturation Present? (includes capillary fringe) Yes [✓] No [ ] Depth (inches): 10

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Plantanus occidentalis	15	Yes	FACW
2. Acer rubrum	15	Yes	FAC
3.			
4.			
5.			
6.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		

Sapling Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: 15)			
1. Liquidambar styraciflua	3	Yes	FAC
2. Acer rubrum	3	Yes	FAC
3.			
4.			
5.			
6.			
	6 = Total Cover		
50% of total cover: 3	20% of total cover: 2		

Herb Stratum (Plot size: 5)			
1. Juncus effusus	30	Yes	FACW
2. Euthamia caroliniana	15	Yes	FAC
3. Andropogon glomeratus	25	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 38	20% of total cover: 15		

Woody Vine Stratum (Plot size: 30)			
1. Smilax rotundifolia	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 3	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	100					SC	
4-8	10YR 6/1	100					SC	
8-16	10YR 7/1	90	10YR 7/6	10	C	M	SC	streaks of 10YR 7/6

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Constitution Solar Project City/County: Franklin Sampling Date: 8/25/21
Applicant/Owner: North Carolina Renewable Energy State: VA Sampling Point: DP4
Investigator(s): GHBr Section, Township, Range: Brookneal
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): >1
Subregion (LRR or MLRA): LRR P Lat: 36.836842 Long: -79.918021 Datum: NAD 83
Soil Map Unit Name: Littlejoe-Strawfield-Penhook complex (26C) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ☐
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ☐	**Is the Sampled Area within a Wetland?** Yes ✓ No ☐
Hydric Soil Present?	Yes ✓	No ☐	
Wetland Hydrology Present?	Yes ✓	No ☐	

Remarks:
According to the USACE Antecedent Precipitation Tool, normal circumstances exist

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐	No ✓	Depth (inches): 0
Water Table Present?	Yes ✓	No ☐	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✓	No ☐	Depth (inches): 9

Wetland Hydrology Present? Yes ✓ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5)			
1. Juncus effusus	5	Yes	FACW
2. Euthamia caroliniana	5	Yes	FAC
3. Andropogon glomeratus	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		

50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 4/2	100					SC	
1-6	10YR 6/2	80	10YR 7/6	20	C	M	SC	
6-16	10YR 7/1	90	10YR 7/6	10	C	M	SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Constitution Solar Project City/County: Franklin Sampling Date: 8/25/21
Applicant/Owner: North Carolina Renewable Energy State: VA Sampling Point: DP5
Investigator(s): GHBr Section, Township, Range: Brookneal
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): >1
Subregion (LRR or MLRA): LRR P Lat: 36.838563 Long: -79.917928 Datum: NAD 83
Soil Map Unit Name: Littlejoe-Strawfield-Penhook complex (26C) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)
Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]
Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:
According to the USACE Antecedent Precipitation Tool, normal circumstances exist

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [✓] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [✓] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [✓] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes [ ] No [✓] Depth (inches): 0
Water Table Present? Yes [✓] No [ ] Depth (inches): 15
Saturation Present? (includes capillary fringe) Yes [✓] No [ ] Depth (inches): 12

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5)			
1. Juncus effusus	5	Yes	FACW
2. Microstegium vimineum	5	Yes	FAC
3. Lindera benzoin	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		

50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum (Plot size: 30)			
1. Campsis radicans	5	YES	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		

50% of total cover: 2.5 20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 4/2	100					SC	
1-4	10YR 6/2	80	10YR 7/6	20	C	M	SC	
4-16	10YR 7/1	90	10YR 7/6	10	C	M	SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Constitution Solar Project City/County: Franklin Sampling Date: 8/25/21
Applicant/Owner: North Carolina Renewable Energy State: VA Sampling Point: DP6
Investigator(s): GHB Section, Township, Range:
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): >1
Subregion (LRR or MLRA): LRR P Lat: 36.839451 Long: -79.913037 Datum: NAD 83
Soil Map Unit Name: Littlejoe-Strawfield-Penhook complex (26C) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☑	No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐
Hydric Soil Present?	Yes ☑	No ☐	
Wetland Hydrology Present?	Yes ☑	No ☐	

Remarks:
According to the USACE Antecedent Precipitation Tool, normal circumstances exist

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☑ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐	No ☑	Depth (inches):
Water Table Present?	Yes ☑	No ☐	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ☑	No ☐	Depth (inches): 5

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Standing water within 10 feet of data point.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Beltua nigra	30	Yes	FACW
2. Platanus occidentalis	20	Yes	FACW
3. Liquidambar styraciflua	20	Yes	FAC
4.			
5.			
6.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Sapling Stratum (Plot size: 15)			
1. Acer rubrum	20	Yes	FAC
2. Beltua nigra	15	Yes	FACW
3. Platanus occidentalis	10	Yes	FACW
4.			
5.			
6.			
	45 = Total Cover		
50% of total cover: 23	20% of total cover: 9		

Shrub Stratum (Plot size: 15)			
1. Lindera benzoin	3	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	3 = Total Cover		
50% of total cover: 1.5	20% of total cover: 0.6		

Herb Stratum (Plot size: 5)			
1. Impatiens capensis	5	Yes	FACW
2. Galium asperllum	5	Yes	FAC
3. Microstegium vimineum	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 8	20% of total cover: 8		

Woody Vine Stratum (Plot size: 30)			
1. Smilax rotundifolia	5	Yes	FAC
2. Toxicodendron radicans	5	YES	FAC
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 12 (A)

Total Number of Dominant Species Across All Strata: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	80	10YR 6/6	20			SC	
8-16	10YR 5/2	80	10YR 6/6	20			SC	streaks of 10YR 7/6

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Constitution Solar Project City/County: Franklin Sampling Date: 8/25/21
Applicant/Owner: North Carolina Renewable Energy State: VA Sampling Point: DP7
Investigator(s): GHB Section, Township, Range:
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): >1
Subregion (LRR or MLRA): LRR P Lat: 36.839045 Long: -79.913468 Datum: NAD 83
Soil Map Unit Name: Littlejoe-Strawfield-Penhook complex (26D) NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)
Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]
Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:
According to the USACE Antecedent Precipitation Tool, normal circumstances exist

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [✓] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [✓] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [✓] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches):
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 4

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Standing water within 5 feet of data point.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP7

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Beltua nigra	30	Yes	FACW
2. Platanus occidentalis	20	Yes	FACW
3. Liquidambar styraciflua	20	Yes	FAC
4.			
5.			
6.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Sapling Stratum (Plot size: 15)			
1. Acer rubrum	10	Yes	FAC
2. Beltua nigra	10	Yes	FACW
3. Platanus occidentalis	10	Yes	FACW
4.			
5.			
6.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		

Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size: 5)			
1. Impatiens capensis	5	Yes	FACW
2. Carex abscondita	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Woody Vine Stratum (Plot size: 30)			
1. Toxicodendron radicans	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	80	10YR 6/6	20			SC	
4-16	10YR 5/2	80	10YR 6/6	20			SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Stream 1

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** Constitution Solar Project	**Latitude:** 36.835286
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.918402
Total Points: 42.5 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral Intermittent (Perennial)	**Other** Bassett, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 25.5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	(3)
4. Particle size of stream substrate	0	1	2	(3)
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	1	2	(3)
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	0	1	2	(3)
9. Grade control	0	0.5	1	(1.5)
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = (3)	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 10)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	(2)	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	0	0.5	(1)	1.5
25. Algae	0	0.5	(1)	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Stream 2

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** Constitution Solar Project	**Latitude:** 36.838919
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.917391
Total Points: 22 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** Bassett, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	0	0.5	(1)	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Stream 3

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** Constitution Solar Project	**Latitude:** 36.839544
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.917058
Total Points: 24 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** Bassett, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	0	0.5	(1)	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Stream 4 - Intermittent

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** Constitution Solar Project	**Latitude:** 36.839887
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.916484
Total Points: 26 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** Bassett, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 13.5)

	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)

12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	0	1	(2)	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)

18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Stream 4 - Perennial

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** ConstitutionSolar Project	**Latitude:** 36.840287
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.916843
Total Points: 35 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral Intermittent (Perennial)	**Other** Brookneal, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 19.5)

	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	(2)	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	0.5	1	(1.5)
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = (3)	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)

12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 9)

18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	(2)	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	0	0.5	(1)	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Stream 5

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** Constitution Solar Project	**Latitude:** 36.83844
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.911781
Total Points: 35.5 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral Intermittent (Perennial)	**Other** Bassett, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 22)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	(3)
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = (3)	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 7.5)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Stream 6

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** Constitution Solar Project	**Latitude:** 36.841650
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.914863
Total Points: 38.5 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral Intermittent (Perennial)	**Other** Bassett, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 23)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	(3)
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = (3)	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 8)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	0	(0.5)	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Stream 7

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** Constitution Solar Project	**Latitude:** 36.837887
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.913587
Total Points: 26 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** Bassett, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 13.5)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	1	(2)	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	0	1	(2)	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Stream 8

NC DWQ Stream Identification Form Version 4.11

Date: 8/25/21	**Project/Site:** Constitution Solar Project	**Latitude:** 36.839176
Evaluator: GHB	**County:** Franklin	**Longitude:** -79.914211
Total Points: 23.5 *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30**	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** Bassett, VA *e.g. Quad Name:*

A. Geomorphology (Subtotal = 11)	Absent	Weak	Moderate	Strong
1[a] Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	0	(1)	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)				
12. Presence of Baseflow	0	(1)	2	3
13. Iron oxidizing bacteria	0	1	(2)	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = (0)			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

APPENDIX C
USACE ANTECEDENT PRECIPITATION TOOL

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Coordinates	36.833490, -79.919757
Observation Date	2021-08-23
Elevation (ft)	1289.81
Drought Index (PDSI)	Mild wetness (2021-07)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-08-23	2.900787	5.552362	5.22441	Normal	2	3	6
2021-07-24	3.029134	4.522047	4.452756	Normal	2	2	4
2021-06-24	2.806299	5.713386	2.976378	Normal	2	1	2
Result							Normal Conditions - 12

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
ROCKY MT	36.9769, -79.8961	1314.961	9.995	25.151	4.749	10585	90
ROCKY MOUNT 8.5 S	36.874, -79.889	1073.163	3.275	216.647	2.183	2	0
FERRUM 1.9 SSW	36.9029, -80.0304	1298.885	7.772	9.075	3.568	37	0
FERRUM 2.7 SW	36.8981, -80.0521	1270.013	8.57	19.797	4.026	5	0
PHILPOTT DAM 2	36.7764, -80.0272	1123.032	7.134	166.778	4.4	666	0
ROCKY MOUNT 3.6 W	36.989, -79.9545	1301.837	10.915	12.027	5.043	34	0
MARTINSVILLE FLTR PLT	36.7047, -79.8653	779.856	9.395	509.954	9.019	24	0

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Civil/Site • Traffic/Transportation • Governmental • Survey/Geospatial
Infrastructure • Geotechnical/Environmental • Telecommunications • Utilities/Energy

Appendix E: FIRMETTE

National Flood Hazard Layer FIRMette

79°54'13"W 36°49'41"N

79°53'35"W 36°49'12"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/15/2025 at 2:25 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix F: Cultural Resources Desktop Review Report

Bowman

July 1, 2025

Brennan McKone
Inovateus Solar, LLC
19890 State Line Rd.
South Bend, Indiana 46637

RE: Cultural Resources Desktop Review and Assessment, Constitution Solar, Franklin County, Virginia

Mr. McKone:

On behalf of Constitution Solar, LLC (Constitution Solar), Bowman Consulting (Bowman) conducted a desktop cultural resource review and assessment for the proposed Constitution Solar Facility in Franklin County, Virginia (Figures 1 and 2). This review and assessment are provided for the purpose of due diligence scoping and does not represent a comprehensive cultural resource survey should the project require review by the Virginia State Historic Preservation Office (SHPO), Department of Historic Resources (DHR).

The following report provides a review of known previously recorded cultural resources (e.g. archaeological sites, cemeteries, or historic architecture) and an assessment of the potential for encountering undocumented resources within the project area. Should the project require review by the SHPO, due to federal or state permitting requirements, this report serves as the initial step in identifying potential risks to assist Constitution Solar in its scoping process.

Environmental Setting

Physical Setting

The subject property is located at an unnumbered address adjacent to U.S. Route 220/Virgil H Goode Highway located in Franklin County, Virginia, approximately 3 miles northeast of the census designated place, Oak Level in northern Henry County, Virginia. The subject property is approximately 164-acres consisting of Franklin County Property ID: 30516 (Parcel ID: 1110017401).

The subject property primarily consists of pine plantation and deciduous forest along the steep elevation of the Skelt Mountain within the eastern portion, and pasture along the western portion.

The subject property boundaries and the surrounding area are shown in Figures 1 and 2. It is centrally located at 36.837645° latitude and -79.913664° longitude and has most recently been mapped on the United States Geological Survey (USGS) Bassett, VA 7.5-Minute Topographic Quadrangle.

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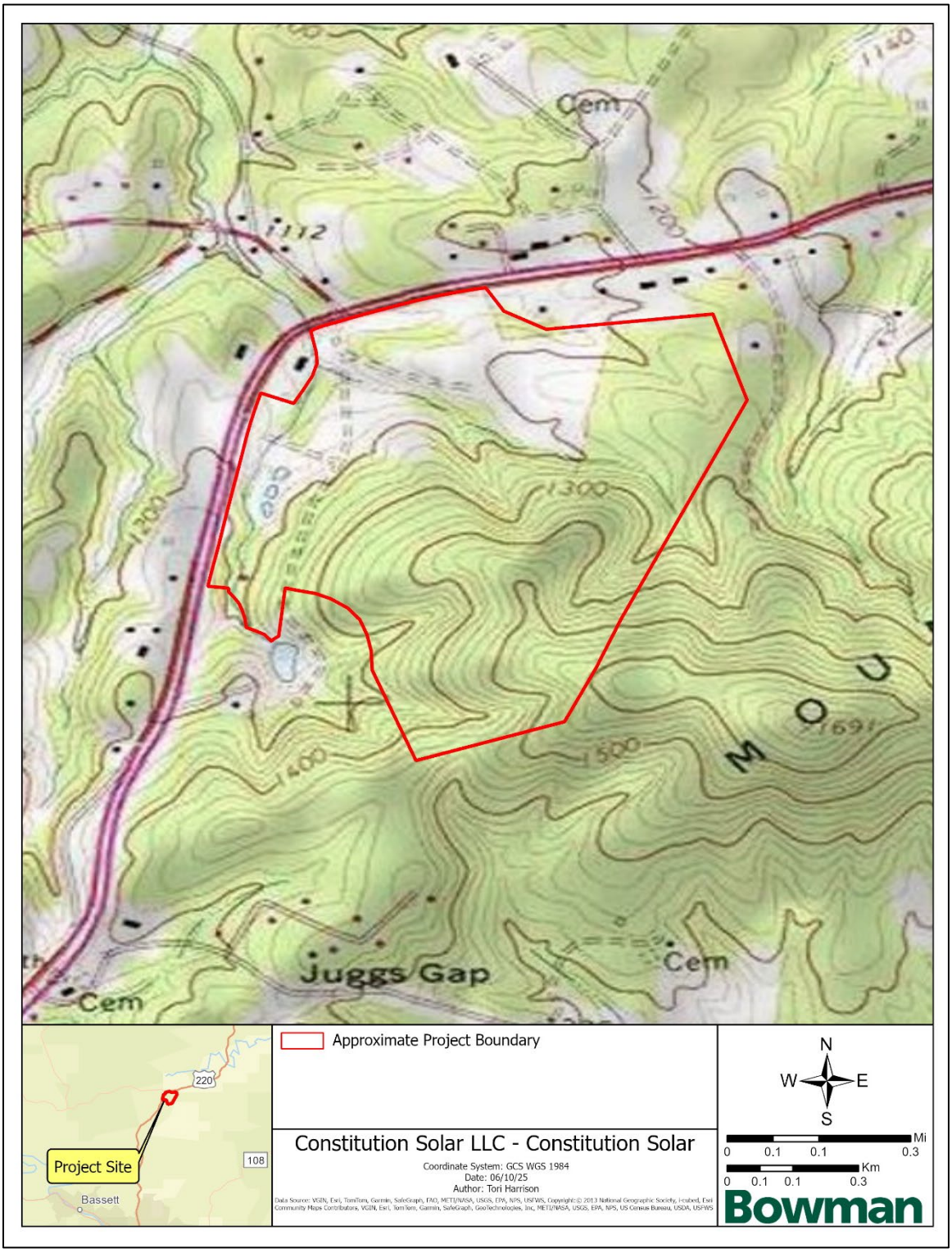

Figure 1. Project Location Map, Bassett, Virginia USGS Topo, 1:24000.

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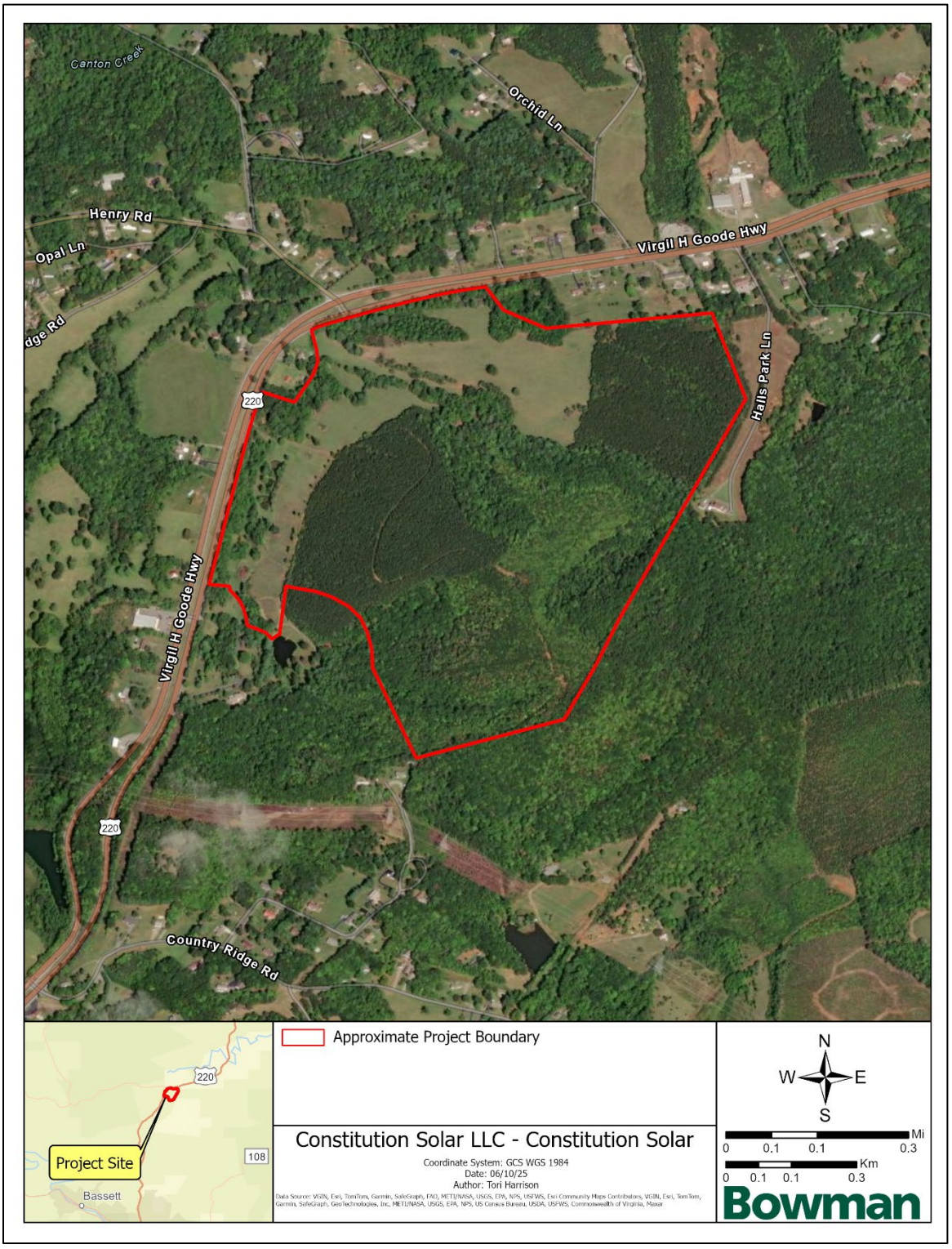

Figure 2. Project Area, Current Conditions, Aerial Photography.

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Geology and Hydrology

The subject property is situated in the Northern Inner Piedmont Level IV ecoregion within the Piedmont Level III ecoregion. The ecoregion's physiography is described as "largely wooded and consists of irregular plains, low rounded hills and ridges, shallow valleys, and scattered monadnocks" (Woods, et al., 1999).

Subject property elevation ranges from 2,150 ft above mean sea level (amsl) to 1,590 ft amsl. Surface water from the subject property generally flows northwest toward an unnamed tributary to Big Chestnut Creek. Intermittent streams extend from the northern portion of the subject property to the southeast with several perennial streams branching off throughout the northwest portion. Data from the U.S. Fish and Wildlife Service shows several freshwater pond and riverine features within approximately 0.25 miles of the subject property.

Soils

Soil constitutes the surrounding matrix in which archaeological material is often recovered. Understanding its formation processes, its typical composition and its potential disturbances can aid archaeologists in evaluating their assemblages as well as necessary sampling strategies. According to the existing USDA Web Soil Survey for Franklin County (June 10, 2025), the following soil types are mapped on the subject property (Table 1). The Woolwine-Fairview-Westfield complex comprises the majority of the subject property soils.

Table 1. Soil Types within the Project Area

Map Unit Symbol	Map Unit Name	Drainage Class	Acres in AOI	Percent of AOI
10B	Colescreek-Delanco complex, 2 to 8 percent slopes, rarely flooded	Somewhat Poorly Drained	6.4	3.9%
22E	Hickoryknob-Rhodhiss-Stott Knob complex, 25 to 60 percent slopes	Well Drained	34.6	21.1%
26C	Littlejoe-Strawfield-Penhook complex, 8 to 15 percent slopes	Well Drained	25.6	15.6%
26D	Littlejoe-Strawfield-Penhook complex, 15 to 25 percent slopes	Well Drained	19.3	11.8%

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Map Unit Symbol	Map Unit Name	Drainage Class	Acres in AOI	Percent of AOI
40C	Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, stony	Well Drained	43.9	26.8%
40D	Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony	Well Drained	24.0	14.6%
40E	Woolwine-Fairview-Westfield complex, 25 to 60 percent slopes, stony	Well Drained	10.2	6.2%
Subtotals for Soil Survey Area			**164**	**100.0%**

Regulatory and Compliance Framework

Federal Regulations

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C § 306108) requires Federal agencies, or those they fund or permit, to consider the effects of their actions on the properties that may be eligible for listing or are listed in the National Register of Historic Places (NRHP). The Section 106 process generally requires four steps: 1) establishment of an area of potential effect (APE) and initiating the process through early coordination with the SHPO and other interested parties, 2) identification of cultural resources that are listed in or eligible for listing in the NRHP, 3) assessment of the effects the project will have on eligible or listed properties, and 4) resolution of adverse effects in consultation with the SHPO. In Virginia, this role is performed by the DHR, which oversees the management of historic resources, both archaeological and architectural. Background research regarding the presence of recorded historical and archaeological resources is summarized in this section and serves to identify significant resources for the purpose of NEPA Section 101 (b)(4) development of federal funds or requirement of federal approval/permits.

State Requirements

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Projects under the ownership or control of the State of Virginia fall under the purview of the DHR to review any action that has the potential to have an effect on archaeological or historic resources within the public domain of the State of Virginia. In the event an archaeological survey is necessary on lands controlled by the State of Virginia, the DHR will issue a permit that stipulates conditions under which survey, discovery, excavation, demolition, restoration, or scientific investigations can occur on state lands. It is therefore unlawful for any person to knowingly disturb, by themselves or through an agent, any archaeological site on state lands.

In addition to conducting cultural resource surveys on state lands, all projects whether conducted under the purview of the SHPO/DHR or not, are subject to compliance with Virginia Administrative Code § 57-36 and § 57-38.1. Under these codes dealing with Abandoned or Previously Unidentified Cemeteries, it is unlawful to intentionally disturb, excavate, or remove human graves or grave materials without consultation with the DHR. Removal may be performed only following consultation, the "good-faith effort" to notify descendants, and issuance of burial permit.

Cultural Resource Assessment

This section of the desktop report follows the procedures outlined in the Guidelines for Archaeological Investigations in the State of Virginia as well as the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37). This information is intended to: 1) locate previously identified archaeological or historic architectural resources within or in close proximity to the project area; 2) assess whether additional archaeological investigations would be required within the APE, in compliance with Section 106 of NHPA of 1966, as amended (54 U.S.C § 306108); 3) identify the potential for unrecorded architectural resources over 50 years of age; 4) identify cemeteries or other relevant cultural potentially affected by the project; and 5) provide recommendations concerning the need for conducting subsequent cultural resource studies.

For management purposes, the project's initial APE is established as 0.5 miles from the boundaries of the undertaking, which would encompass any potential direct or indirect effects to cultural resources. Direct effects are generally interpreted to be those that would have a direct physical impact to cultural resources but may include causative impacts to the integrity of a specific property (e.g., visual impacts). Indirect effects are those that may contribute to the degradation of a particular resource at an unforeseen time through project implementation (e.g., erosion). This report reviewed the Virginia Cultural Resources Information System (VCRIS), historic aerial photographs and maps, and archaeological survey data from the DHR for the project APE. The results of these resource searches and recommendations for further work are below.

<u>Previously Recorded Cultural Resources</u>

Examination of VCRIS showed that there are no previously recorded archeological sites or cemeteries located within the project area. Additionally, no previous cultural resource surveys have been conducted within or adjacent to the project; however, one cultural resource survey extends into the southwestern and

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southeastern portion of the APE (DHR Report Number: GS-025). One cemetery is recorded within 0.5 miles of the subject property, the Starkey Cemetery (DHR ID: 033-5024). No other cemeteries are listed or recorded within the project area.

The nearest recorded archeological site is located approximately 0.6 miles southwest of the project. The site, 44FR0301, is a precontact lithic artifact scatter. The site was identified in 2002 by the URS Corporation in association with a pipeline installation. The site was likely a temporary camp surrounding a massive oak tree in a shallow swale at the base of a small tributary of Canton Creek. The site was recommended not eligible for listing to the NRHP and no effects to the resource are anticipated by the project. No archaeological sites were reported within 0.5 miles of the current undertaking.

A total of three (3) architectural resources (structures) have been recorded within 0.5 miles of the project area (Figure 3). These resources represent a range of domestic dwellings. All three properties have not been evaluated for NRHP eligibility. Additionally, although not eligible for the NRHP, one cemetery (Starkey Cemetery) is located 0.5 miles southwest of the project boundaries. Additional information concerning historic resources in the project vicinity is found below in Table 2.

Table 2. Previously Recorded Architectural Resources, within 0.5 miles of the project area.

DHR_ID	Property Name(s)	NRHP Eligibility Status	Primary Resource Type
033-5018	House, 2407 Virgil H Goode Highway	Not Evaluated	Single Dwelling
033-5026	House, Route 220	Not Evaluated	Single Dwelling
033-5030	House, Route 220	Not Evaluated	Single Dwelling

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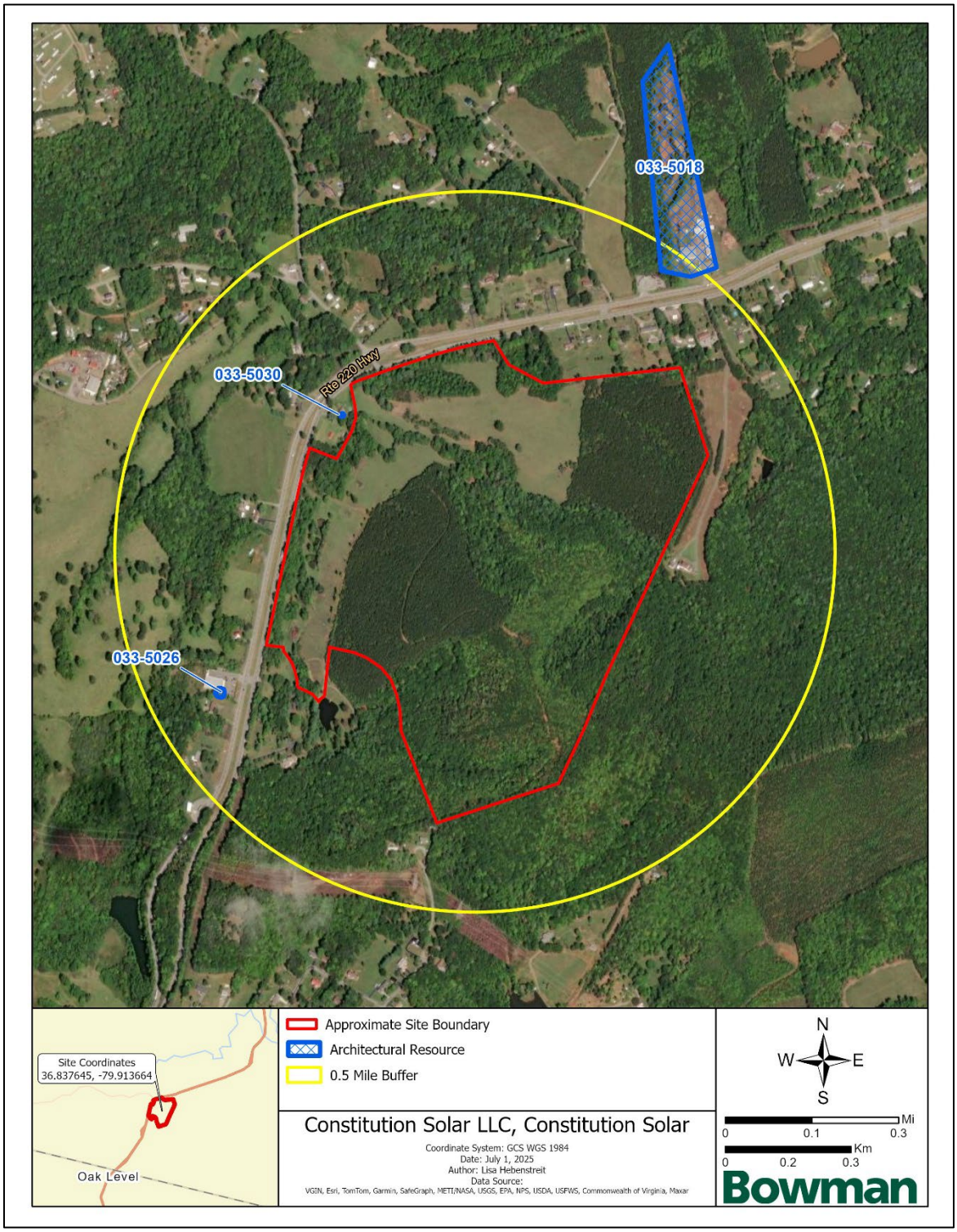

Figure 3. Constitution Solar Project Area, Cultural Resources within 0.5 miles.

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Historical Map Review and Archaeological Probability

An examination of historic aerial photographs and USGS topographic maps helps establish the development or continuity within the project area over time. The earliest historic map depicting the project APE is the 1925 Rocky Mount, Virginia (1:48000) USGS map (Figure 4). Beginning with the 1953 Greensboro, North Carolina USGS (1:250000) map, Route 220 is visible running north to south in the western portion of the project area (Figure 5). The project area and surroundings are shown largely in their current state as depicted on the 1984 Danville, Virginia USGS (1:100000) map with no structures shown within the project boundaries (Figure 6). Based on google earth imagery, the project area appears largely unchanged since 1995, with limited development adjacent to it.

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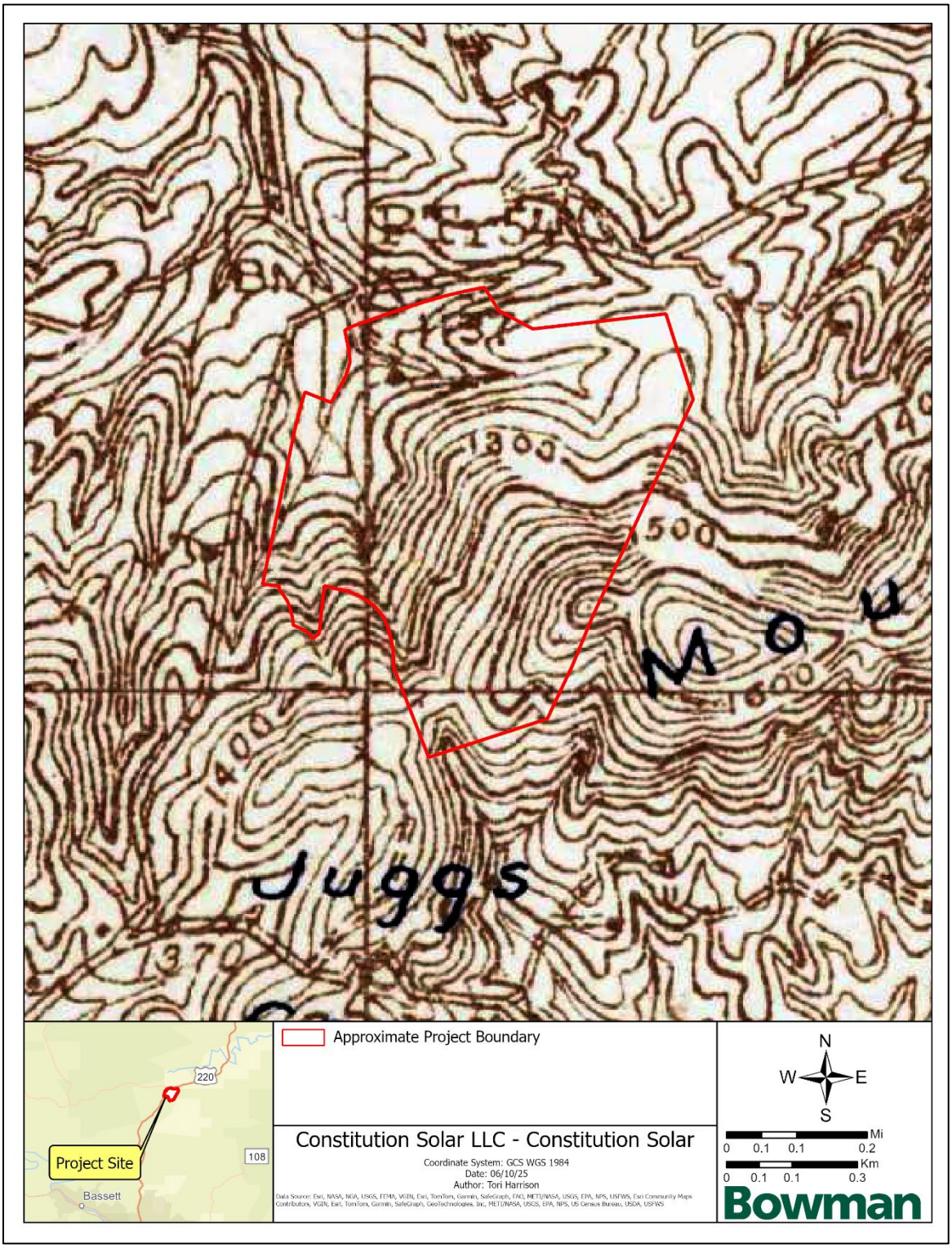

Figure 4. The Constitution Solar Project Area, 1925 Rocky Mount, Virginia USGS (1:48000) Map.

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Figure 5. The Constitution Solar Project Area, 1953 Greensboro, North Carolina USGS (1:250000) Map.

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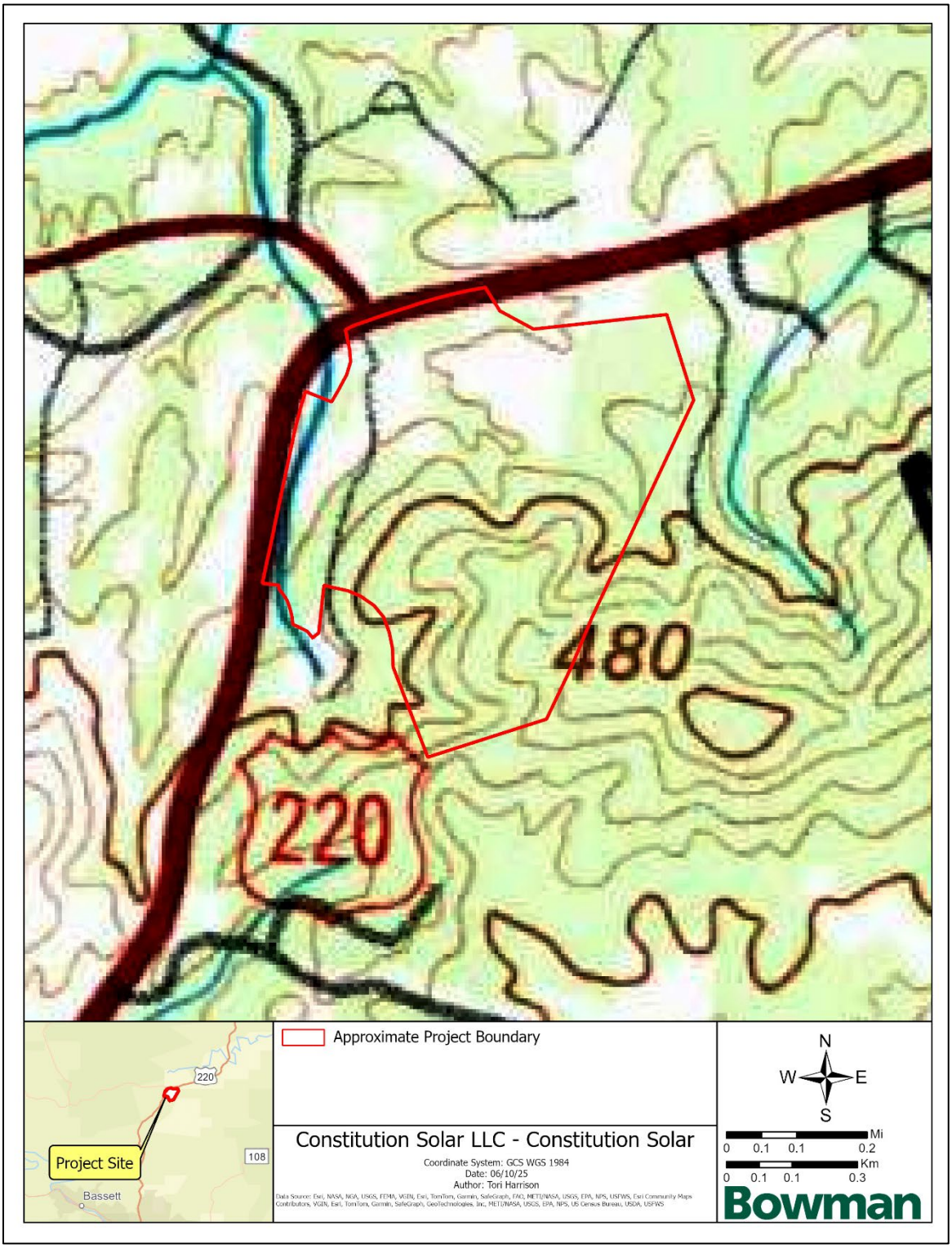

Figure 6. The Constitution Solar Project Area, 1984 Danville, Virginia USGS (1:100000) Map.

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No statewide model exists for Virginia concerning archaeological probability. In a general sense, archaeological probability may be assessed based on landform, soils, level of prior disturbance, distance to water, and previously recorded sites in the vicinity. An examination of the entire project area indicates a moderate probability for precontact archaeological remains. While a majority of the project area contains well drained soils, the steep slopes of Skelt Mountain that encompass most of the eastern portion of the project area and lack of cultural resources identified adjacent make the potential of precontact sites moderate to low. Potential for historic period sites increases along the northern, southern, and western portion of the project area, along Route 220, where the three historic resources were reported (see Table 2).

Summary and Recommendations

As part of the due diligence process for the Constitution Solar Project, Bowman conducted a review of known cultural resources within the project's APE. This review yielded information concerning previously recorded resources in the vicinity and provides the basis for an assessment concerning potential unrecorded resources in the project area. Overall, the potential for undocumented historic resources within the project area is moderate. Based on these collective data (historic maps, soil/environmental data, DHR data), a cultural resource inventory and assessment may be requested by the SHPO should federal or state coordination be required.

Regulations that protect cultural resources apply differently depending on the jurisdiction associated with a project. If the developer is using federal funds or is required to obtain a federal permit, then compliance with Section 106 of the National Historic Preservation Act would apply. In all these regulatory situations an archaeological survey of the area of direct effects will likely be required to conclusively assess the effects to historic properties. Outside of these regulatory requirements, there are state laws that apply if human burials are discovered. An archaeological survey will limit this risk if burials occur on the property, but in lieu of this if a burial were inadvertently discovered during project development, all activity within the immediate vicinity of the find should cease and that the Virginia DHR be promptly notified.

Sincerely,

Tori Harrison, RPA
Cultural Resource Lead – Assistant Project Manager

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References

United States Department of Agriculture (2023) Web Soil Survey. Electronic Document, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, accessed June 10, 2025.

Woods, A.J., Omernik, J.M., Brown, D.D. (1999). Level III and IV Ecoregions of Delaware, Maryland, Pennsylvania, Virginia, and West Virginia. U.S. Environmental Protection Agency: National Health and Environmental Effects Research Laboratory, Corvallis, OR.

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8.14 Landscape Plan

LANDSCAPING LEGEND

- PROPOSED LANDSCAPE BUFFER
- EXISTING 120' VEGETATIVE BUFFER TO BE RETAINED WITHIN 150' SOLAR ARRAY SETBACK
- PANEL ZONE - SOLAR FARM MIX
- OPEN AREA - SOLAR POLLINATOR BUFFER
- EXISTING WETLANDS
- PROPERTY BOUNDARY
- PROPOSED LIMITS OF DISTURBANCE
- EXISTING STREAM
- EXISTING TREE LINE
- PROPOSED PERIMETER SECURITY FENCE
- PROPOSED SOLAR ARRAY SETBACK (150')
- STREAM SETBACK

NOTE:
ANY EXISTING VEGETATION AND/OR WOODED AREAS LOCATED WITHIN THE LIMITS OF DISTURBANCE FOR PROPOSED SOLAR ARRAY AND ASSOCIATED IMPROVEMENTS SHALL BE CLEARED PRIOR TO CONSTRUCTION.

0 200 400
GRAPHIC SCALE
1"=200'

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Richmond, VA 23230

DRAFT

OVERALL LANDSCAPE PLAN
CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC
FRANKLIN COUNTY, VA
SNOW CREEK MAGISTERIAL DISTRICT

PROJECT MILESTONE SUMMARY

NO.	DESCRIPTION	DATE

DESIGN	DRAWN	CHKD
MG	MG	TW

JOB No. 100692-01-001
DATE : July 1, 2025
SHEET L1.00

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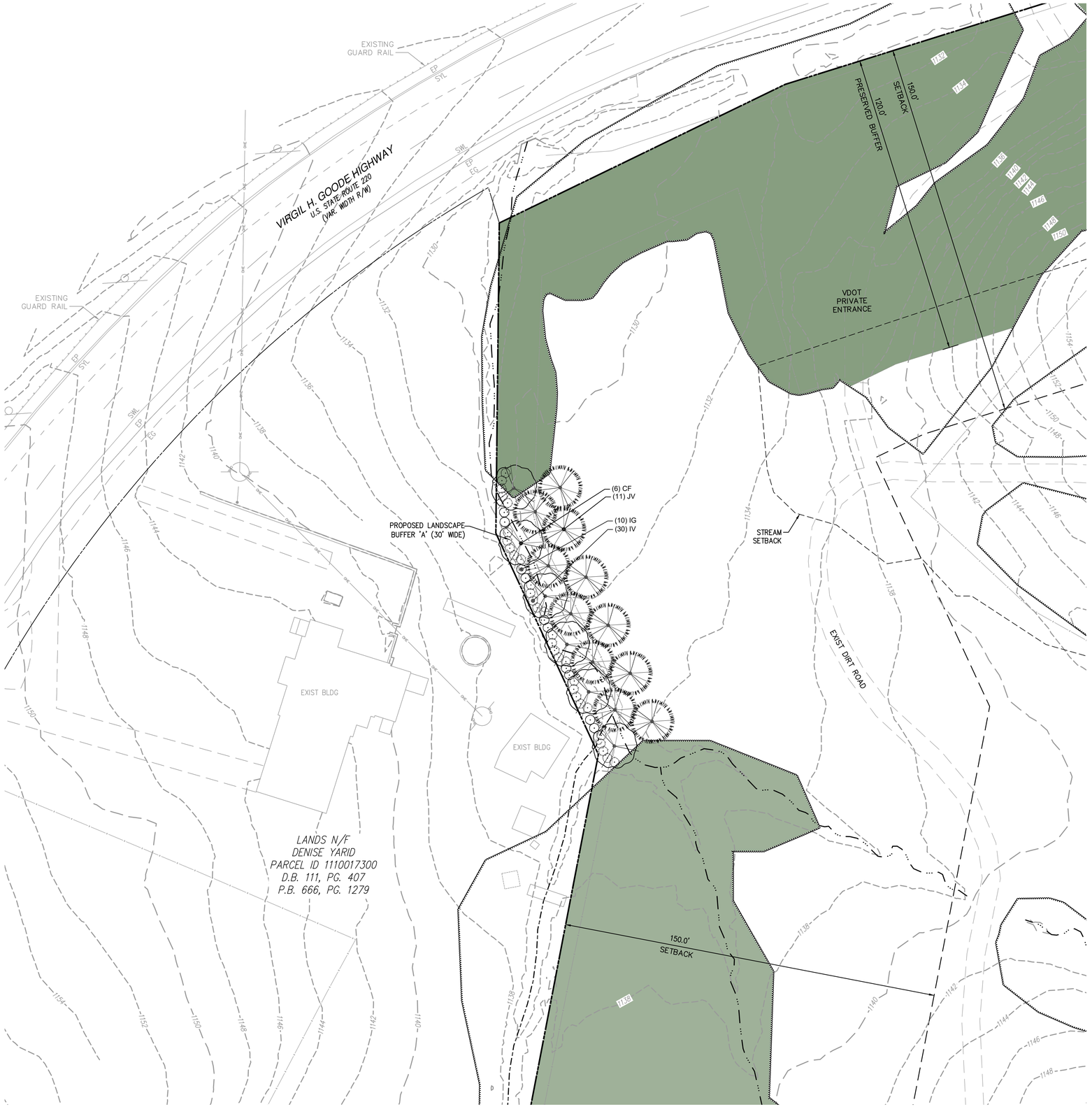

LANDSCAPING LEGEND

- PROPERTY BOUNDARY
- EXISTING TREE LINE
- EXISTING CONTOUR (1132)
- EXISTING FENCE
- OVERHEAD ELECTRIC (OHE)
- EXISTING STREAM
- STREAM SETBACK
- EXISTING DIRT ROAD
- PERIMETER SECURITY FENCE
- PROPOSED LIMITS OF DISTURBANCE (LOD)
- VDOT PRIVATE ENTRANCE AND ACCESS ROAD
- PROPOSED SOLAR ARRAY SETBACK (150')
- EP — EXISTING EDGE OF PAVEMENT
- EG — EXISTING EDGE OF GRAVEL
- SWL — EXISTING ROAD MARKINGS (SINGLE WHITE LINE)
- SYL — EXISTING ROAD MARKINGS (SINGLE YELLOW LINE)

SITE BUFFER PLANTING LEGEND

SYMBOL	CODE	BOTANICAL / COMMON NAME
EVERGREEN TREES		
	JV	JUNIPERUS VIRGINIANA EASTERN REDCEDAR
	TO	THUJA OCCIDENTALIS 'TECHNY' TECHNY ARBORVITAE
ORNAMENTAL TREES		
	CF	CORNUS FLORIDA 'APPALACHIAN SNOW' APPALACHIAN SNOW DOGWOOD
	OV	OSTRYA VIRGINIANA AMERICAN HOPHORNBEAM
EVERGREEN & DECIDUOUS SHRUBS		
	HQ	HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA
	IG	ILEX GLABRA INKBERRY HOLLY
	IV	ITEA VIRGINICA VIRGINIA SWEETSPIRE
	MP	MYRICA PENSYLVANICA NORTHERN BAYBERRY

0 20 40
GRAPHIC SCALE
1"=20'

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DETAILED LANDSCAPE BUFFER 'A'
CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC

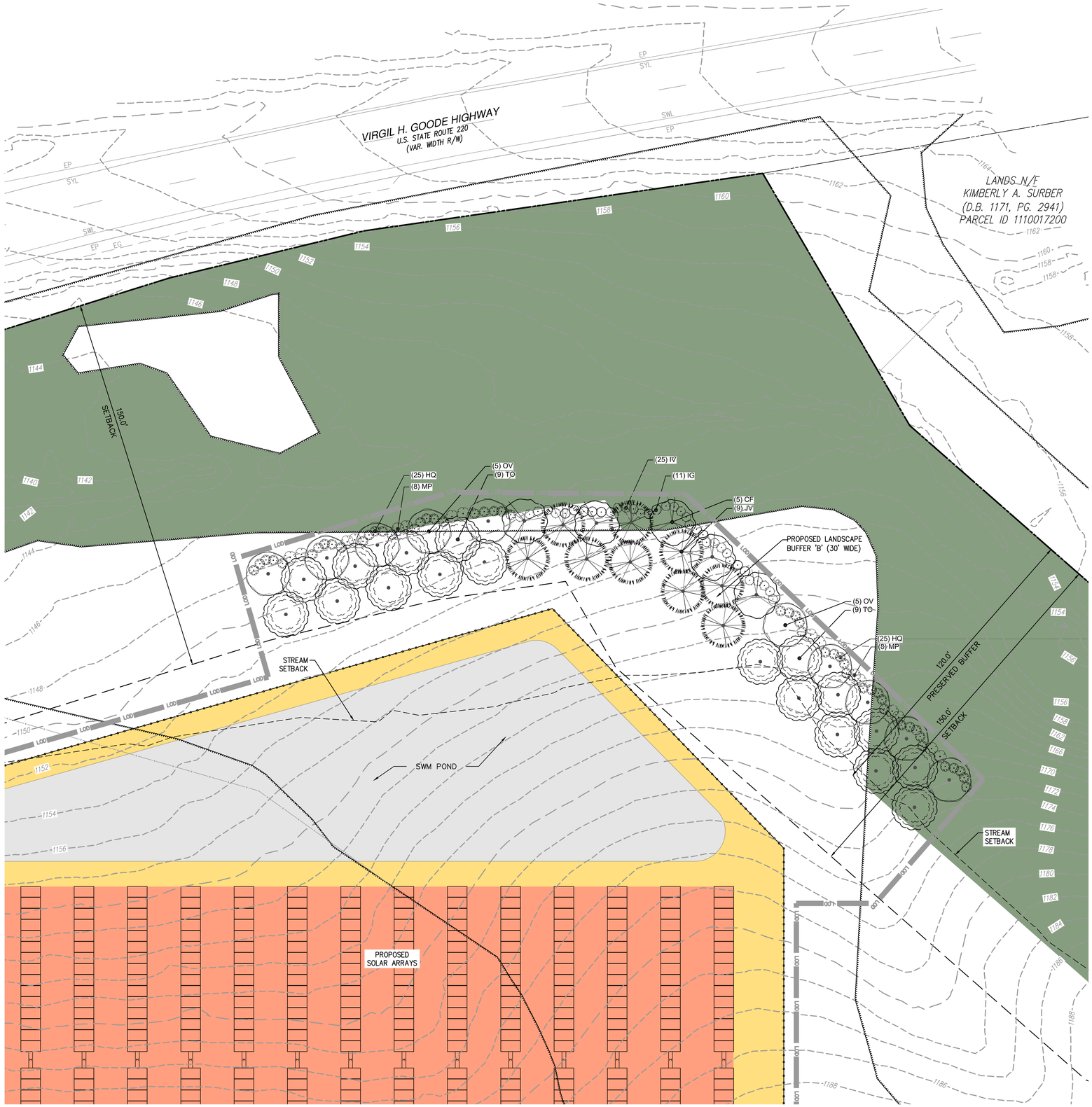
FRANKLIN COUNTY, VA
SNOW CREEK MAGISTERIAL DISTRICT

PROJECT MILESTONE SUMMARY

NO.	DESCRIPTION	DATE

DESIGN	DRAWN	CHKD
MG	MG	TW

JOB No. 100692-01-001
DATE : July 1, 2025
SHEET L1.10



LANDSCAPING LEGEND

- PROPERTY BOUNDARY
- EXISTING TREE LINE
- 1132 EXISTING CONTOUR
- EXISTING FENCE
- OHE OVERHEAD ELECTRIC
- EXISTING STREAM
- STREAM SETBACK
- EXISTING DIRT ROAD
- PERIMETER SECURITY FENCE
- LOD PROPOSED LIMITS OF DISTURBANCE
- VDOT PRIVATE ENTRANCE AND ACCESS ROAD
- PROPOSED SOLAR ARRAY SETBACK (150')
- EP EXISTING EDGE OF PAVEMENT
- EG EXISTING EDGE OF GRAVEL
- SWL EXISTING ROAD MARKINGS (SINGLE WHITE LINE)
- SYL EXISTING ROAD MARKINGS (SINGLE YELLOW LINE)

SITE BUFFER PLANTING LEGEND

SYMBOL	CODE	BOTANICAL / COMMON NAME
EVERGREEN TREES		
	JV	JUNIPERUS VIRGINIANA EASTERN REDCEDAR
	TO	THUJA OCCIDENTALIS 'TECHNY' TECHNY ARBORVITAE
ORNAMENTAL TREES		
	CF	CORNUS FLORIDA 'APPALACHIAN SNOW' APPALACHIAN SNOW DOGWOOD
	OV	OSTRYA VIRGINIANA AMERICAN HOPHORNBEAM
EVERGREEN & DECIDUOUS SHRUBS		
	HQ	HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA
	IG	ILEX GLABRA INKBERRY HOLLY
	IV	ITEA VIRGINICA VIRGINIA SWEETSPIRE
	MP	MYRICA PENSYLVANICA NORTHERN BAYBERRY

0 20 40
GRAPHIC SCALE
1"=20'

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DETAILED LANDSCAPE BUFFER 'B'
CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC
FRANKLIN COUNTY, VA
SNOW CREEK MAGISTERIAL DISTRICT

NO.	DATE	PROJECT MILESTONE SUMMARY DESCRIPTION

DESIGN	DRAWN	CHKD
MG	MG	TW

JOB No. 100692-01-001
DATE : July 1, 2025
SHEET L1.20

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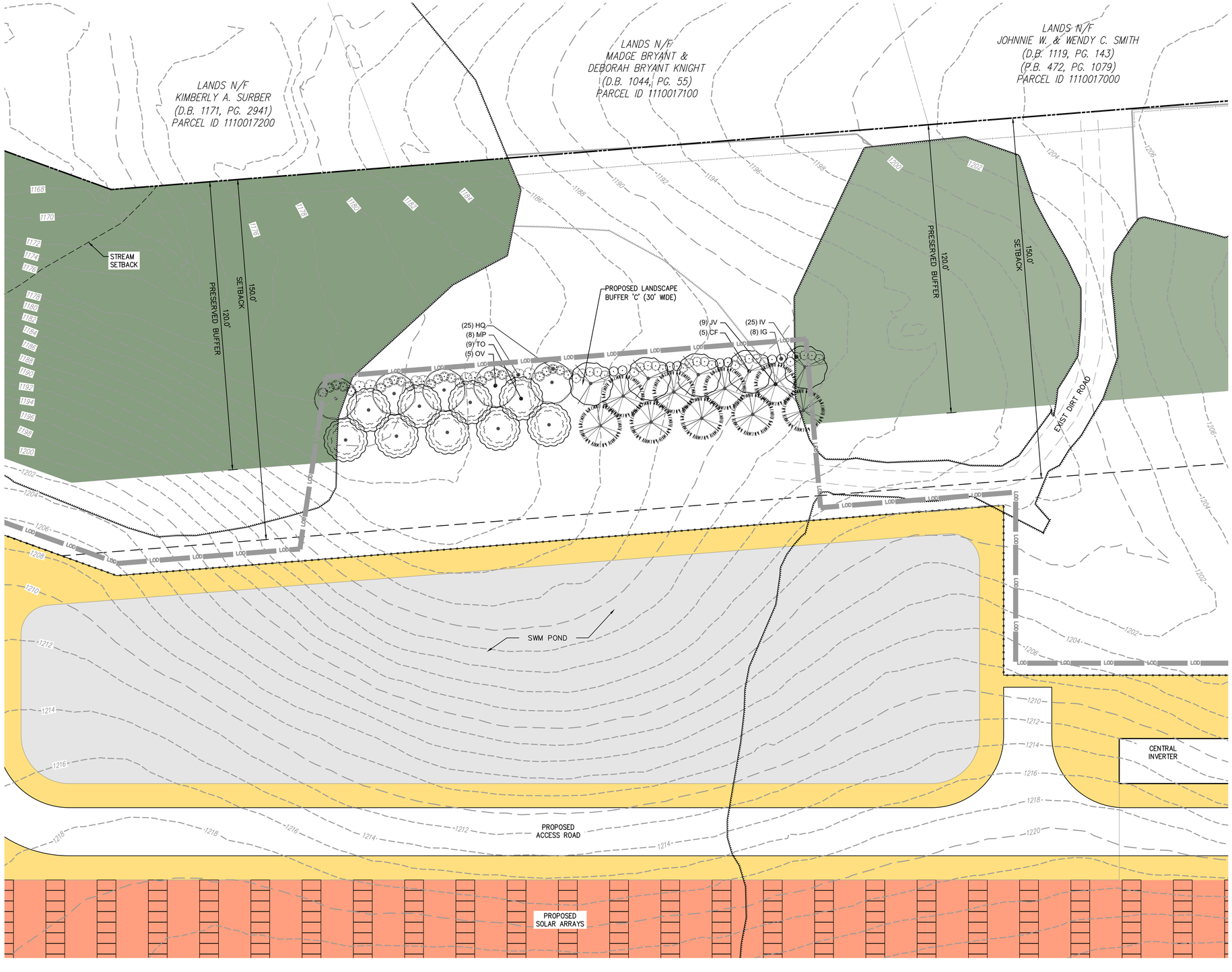

LANDSCAPING LEGEND

- PROPERTY BOUNDARY
- EXISTING TREE LINE
- 1132 EXISTING CONTOUR
- EXISTING FENCE
- OHE OHE OVERHEAD ELECTRIC
- EXISTING STREAM
- STREAM SETBACK
- EXISTING DIRT ROAD
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- LOD PROPOSED LIMITS OF DISTURBANCE
- VDOT PRIVATE ENTRANCE AND ACCESS ROAD
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- EP EXISTING EDGE OF PAVEMENT
- EG EXISTING EDGE OF GRAVEL
- SWL EXISTING ROAD MARKINGS (SINGLE WHITE LINE)
- SYL EXISTING ROAD MARKINGS (SINGLE YELLOW LINE)

SITE BUFFER PLANTING LEGEND

SYMBOL	CODE	BOTANICAL / COMMON NAME
EVERGREEN TREES		
	JV	JUNIPERUS VIRGINIANA EASTERN REDCEDAR
	TO	THUJA OCCIDENTALIS 'TECHNY' TECHNY ARBORVITAE
ORNAMENTAL TREES		
	CF	CORNUS FLORIDA 'APPALACHIAN SNOW' APPALACHIAN SNOW DOGWOOD
	OV	OSTRYA VIRGINIANA AMERICAN HOPHORNBEAM
EVERGREEN & DECIDUOUS SHRUBS		
	HQ	HYDRANGEA QUERCIFOLIA OAKLEAF HYDRANGEA
	IG	ILEX GLABRA INKBERRY HOLLY
	IV	ITEA VIRGINICA VIRGINIA SWEETSPIRE
	MP	MYRICA PENSYLVANICA NORTHERN BAYBERRY

0 20 40
GRAPHIC SCALE
1"=20'

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DETAILED LANDSCAPE BUFFER 'C'
CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC
FRANKLIN COUNTY, VA
SNOW CREEK MAGISTERIAL DISTRICT

PROJECT MILESTONE SUMMARY

NO.	DESCRIPTION	DATE

DESIGN	DRAWN	CHKD
MG	MG	TW

JOB No. 100692-01-001
DATE : July 1, 2025
SHEET L1.30

INSTALLATION PROCESS/ SITE PREPARATION

1. USE INTEGRATED VEGETATION MANAGEMENT (IVM) TECHNIQUES TO REMOVE AGGRESSIVE COMPETITORS, NOXIOUS WEEDS, AND INVASIVE SPECIES FROM THE SITE.

2. SOIL AMENDMENTS ARE NOT RECOMMENDED UNLESS THE SITE HAS SOIL FERTILITY CONDITIONS IN EXTREME RANGES

   2.1. FOR EXTREME SOIL CONDITIONS (E.G., EXCESSIVELY LOW OR HIGH PH, HIGH SOLUBLE SALTS, HEAVY METALS, ETC.), IMPLEMENT A SOIL AMENDMENT OR REMEDIATION TECHNIQUE TO ATTENUATE THE PROBLEM

3. REMEDIATE COMPACTED SOILS BY TILLING

   3.1. LIGHTLY COMPACTED SOILS SHOULD BE TILLED TO A DEPTH OF 3-4 INCHES. RECOMMENDED EQUIPMENT INCLUDES A ROTOTILLER OR NOTCHED COULTER DISK PLOW WITH ADJUSTABLE GANG ANGLES, TYPICALLY TWO PASSES (FIGURE 4-2). CARE SHOULD BE TAKEN IN THE PANEL ZONE TO ENSURE THAT ALL BURIED CABLES ARE MARKED BEFOREHAND.

   3.2. SEVERELY COMPACTED SOILS SHOULD BE TILLED TO A DEPTH OF 6-8 INCHES. TILLING SEVERELY COMPACTED SOILS TYPICALLY REQUIRES A CHISEL PLOW TO BREAK UP THE SOIL, FOLLOWED BY A SINGLE PASS WITH A DISK PLOW TO BREAK UP LARGER FRAGMENTS.

4. FRIABLE SOILS ARE CONSIDERED IDEAL FOR PLANT ROOT DEVELOPMENT. HOWEVER, FOR PLANTING NATIVE SEED, THERE IS SUCH A THING AS OVERLY-FRIABLE SOILS – I.E., SOILS THAT ARE SO EASILY CRUMBLED THAT THEY CREATE ISSUES WITH SEED PLACEMENT AND REDUCE THE POTENTIAL FOR GOOD SOIL-SEED CONTACT.

   4.1. OVERLY-FRIABLE SOILS MAY REQUIRE ROLLING PRIOR TO SEEDING TO IMPROVE THE SUBSTRATE CONDITION FOR POSITIVE SEED-SOIL CONTACT.

SEEDING PROCESS

1. IN MOST CIRCUMSTANCES, A COVER CROP WILL BE NECESSARY TO ESTABLISH AN HERBACEOUS COMMUNITY FOR E&S COMPLIANCE IN ADVANCE OF A NATIVE POLLINATOR-SMART SEED APPLICATION.

   1.1. NATIVE COVER CROP SPECIES ARE PREFERRED, BUT IN SOME CASES A NON-NATIVE SPECIES MAY BE REQUIRED DUE TO DIFFICULT PLANTING SCENARIOS OR TIME-OF-YEAR REQUIREMENTS.

2. FOR PERMANENT SEEDING, NOVEMBER TO MAY IS THE RECOMMENDED PLANTING WINDOW, WITH DORMANT SEASON PLANTING PREFERRED DUE TO THE BENEFITS OF IN SITU COLD STRATIFICATION.

   2.1. PERMANENT SEED MAY BE APPLIED SEPARATE FROM THE COVER CROP (IF USED) OR WITH THE COVER CROP DEPENDING ON TIME OF YEAR.

3. SEED DRILL IS THE RECOMMENDED APPLICATION METHOD.

   3.1. CALIBRATION OF THE DRILL DEPTH IS IMPORTANT, WITH A MAXIMUM RECOMMENDED PLANTING DEPTH OF ¼ INCH.

   3.2. CALIBRATION OF THE DRILL APPLICATION RATE IS ALSO IMPORTANT – HERE IT IS BEST TO SET THE APPLICATION RATE IN ACCORDANCE WITH THE SEEDING SPECIFICATIONS, BUT ALSO TO ENSURE THAT THE DRILL IS EXECUTING WITH GOOD SOIL SEED CONTACT.

4. BROADCAST METHODS MAY BE USED BUT ARE NOT PREFERRED OVER DRILL SEEDING .

   4.1. LIGHT ROLLING SHOULD BE USED WITH BROADCASTING TO ENSURE SOIL-SEED CONTACT.

5. HYDROSEEDING (I.E., SEED IN LIQUID SLURRY WITH A SURFACTANT DESIGN TO "STICK" THE SEED TO THE SOIL) IS A TECHNIQUE THAT IS USED QUITE FREQUENTLY IN THE INDUSTRY, BUT IT IS NOT RECOMMENDED FOR NATIVE SEED APPLICATIONS DUE TO THE POTENTIAL FOR POOR SEED-TO-SOIL CONTACT.

RE-SEEDING PROCESS

1. RE-SEEDING MAY BE NEEDED IN AREAS WHERE THE ORIGINAL SEED APPLICATION WAS UNSUCCESSFUL OR RESULTED IN LOW GERMINATION.

   1.1. THE DETERMINATION OF WHETHER TO RE-APPLY SEED IN SPECIFIED AREAS ON-SITE SHOULD BE PART OF THE APPROVED VEGETATION MANAGEMENT PLAN FOR THE SITE, WITH A CLEARLY DEFINED THRESHOLD FOR THE DECISION.

   1.2. RE-SEEDING MAY BE APPLIED BY BROADCAST OR DRILL SEEDING.

ESTABLISHMENT & MAINTENANCE

1. YEAR 1 – EXPECT TO MOW VEGETATION TO A HEIGHT OF APPROXIMATELY 10 INCHES AT LEAST TWICE AND POSSIBLY THREE TIMES.

2. YEAR 2 – SAME AS YEAR 1.

3. YEAR 3 – MOWING SHOULD ONLY BE NEEDED OUTSIDE OF THE GROWING SEASON TO CONTROL WOODY VOLUNTEERS, WITH THE BLADE SET HIGH ENOUGH TO PREVENT SCALPING OF NATIVE SPECIES.

4. MECHANICAL MEANS SHOULD BE USED TO ENSURE PROPER MOWING HEIGHTS (E.G., GAUGE CHAINS, DEPTH GAUGE).

5. AT ANY POINT SPOT SPRAYING OR MECHANICAL REMOVAL OF INVASIVE OR OTHERWISE UNDESIRABLE VEGETATION (E.G., TREE SAPLINGS) MAY BE NEEDED TO MEET THE IVM GOALS EXPLAINED BELOW.

INTEGRATED VEGETATION MANAGEMENT (IVM)

1. AVOID SOIL AMENDMENTS THAT WILL INCREASE NUTRIENT AVAILABILITY, SUCH AS FERTILIZER OR ORGANIC AMENDMENTS, WHICH WILL FAVOR AGGRESSIVE OR WEEDY PLANTS AND INCREASE THE RISK OF INVASION.

2. CONDUCT MID-SEASON SITE INSPECTIONS TO DETERMINE THE POTENTIAL MANAGEMENT NEEDS OVER THE LATTER PORTION OF THE GROWING SEASON. A MID-SEASON SITE INSPECTION SHOULD INCLUDE MAPPING OF "TROUBLE SPOTS" WHERE UNDESIRABLE SPECIES MAY HAVE COLONIZED. THESE SPOTS CAN BE MONITORED LATER IN THE SEASON TO DETERMINE IF THE POPULATIONS ARE EXPANDING AND WOULD THEREFORE MERIT HERBICIDE TREATMENT OR MECHANICAL REMOVAL.

3. SCHEDULE MID- AND LATE-SEASON MOBILIZATIONS TO TREAT UNDESIRABLE SPECIES. IN VIRGINIA, HERBICIDE APPLICATIONS WILL NEED TO BE PERFORMED BY A PROFESSIONAL CONTRACTOR WITH A PESTICIDE APPLICATOR LICENSE, AND ANY PRODUCT CHOSEN FOR THIS PURPOSE SHOULD BE RATED AS SAFE FOR USE NEAR WATERBODIES.

4. OVERSEEDING WITH NATIVE SPECIES MAY BE BENEFICIAL AS A FOLLOW-UP TO TARGETED TREATMENT OF UNDESIRABLE PLANTS.

5. MOWING TO REDUCE ABOVEGROUND BIOMASS WILL BE PRUDENT DURING THE FIRST FEW YEARS OF VEGETATION ESTABLISHMENT. UNLIKE TRADITIONAL TURF-TYPE LANDSCAPES THAT REQUIRE MOWING ON A FREQUENT BASIS THROUGHOUT THE GROWING SEASON, AN IVM APPROACH WOULD BE TO SCHEDULE MOWING ONLY DURING THE DORMANT-SEASON OR OCCASIONALLY AT STRATEGIC TIMES DURING THE GROWING SEASON AS DETERMINED BY A QUALIFIED PROFESSIONAL

SITE BUFFER PLANTING SCHEDULE

CODE	BOTANICAL / COMMON NAME	CAL/ HT MIN.	ROOT COND.	QTY
EVERGREEN TREES				
JV	JUNIPERUS VIRGINIANA / EASTERN REDCEDAR	6` HT.	B&B	38
TO	THUJA OCCIDENTALIS 'TECHNY' / TECHNY ARBORVITAE	6` HT.	B&B	36
	SUBTOTAL:			74
ORNAMENTAL TREES				
CF	CORNUS FLORIDA 'APPALACHIAN SNOW' / APPALACHIAN SNOW DOGWOOD	6` HT.	B&B	21
OV	OSTRYA VIRGINIANA / AMERICAN HOPHORNBEAM	6` HT.	B&B	20
	SUBTOTAL:			41

CODE	BOTANICAL / COMMON NAME	CONT. SIZE MIN.	HT MIN.	QTY
EVERGREEN & DECIDUOUS SHRUBS				
HQ	HYDRANGEA QUERCIFOLIA / OAKLEAF HYDRANGEA	5 GAL.	24-36" MIN.	100
IG	ILEX GLABRA / INKBERRY HOLLY	---		37
IV	ITEA VIRGINICA / VIRGINIA SWEETSPIRE	5 GAL.	24-36" MIN.	105
MP	MYRICA PENSYLVANICA / NORTHERN BAYBERRY	5 GAL.	24-36" MIN.	32
	SUBTOTAL:			274

ERNST SEEDS

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: February 18, 2025

VA Solar Pollinator Buffer Mix - ERNMX-620

	Botanical Name	Common Name	Price/Lb
36.40 %	*Schizachyrium scoparium, 'Camper'*	Little Bluestem, 'Camper'	13.54
36.30 %	*Bouteloua curtipendula, Butte*	Sideoats Grama, Butte	28.53
4.00 %	*Chamaecrista fasciculata, PA Ecotype*	Partridge Pea, PA Ecotype	12.00
4.00 %	*Coreopsis lanceolata*	Lanceleaf Coreopsis	28.80
4.00 %	*Echinacea purpurea*	Purple Coneflower	43.20
3.30 %	*Rudbeckia hirta*	Blackeyed Susan	31.20
2.30 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	33.60
2.00 %	*Asclepias tuberosa, PA Ecotype*	Butterfly Milkweed, PA Ecotype	432.00
1.10 %	*Penstemon digitalis, PA Ecotype*	Tall White Beardtongue, PA Ecotype	168.00
1.00 %	*Lespedeza capitata, RI Ecotype*	Roundhead Lespedeza, RI Ecotype	115.20
1.00 %	*Liatris spicata*	Marsh Blazing Star	252.00
0.80 %	*Zizia aurea*	Golden Alexanders	72.00
0.70 %	*Senna hebecarpa, VA & WV Ecotype*	Wild Senna, VA & WV Ecotype	28.80
0.60 %	*Monarda fistulosa, Fort Indiantown Gap-PA Ecotype*	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	96.00
0.50 %	*Aster laevis, NY Ecotype*	Smooth Blue Aster, NY Ecotype	336.00
0.50 %	*Aster novae-angliae*	New England Aster	360.00
0.50 %	*Eupatorium coelestinum, VA Ecotype*	Mistflower, VA Ecotype	480.00
0.30 %	*Baptisia australis, Southern WV Ecotype*	Blue False Indigo, Southern WV Ecotype	96.00
0.20 %	*Penstemon hirsutus*	Hairy Beardtongue	480.00
0.20 %	*Pycnanthemum tenuifolium*	Narrowleaf Mountainmint	240.00
0.10 %	*Rudbeckia fulgida var. fulgida, Northern VA Ecotype*	Orange Coneflower, Northern VA Ecotype	504.00
0.10 %	*Solidago juncea, PA Ecotype*	Early Goldenrod, PA Ecotype	336.00
0.10 %	*Veronicastrum virginicum, PA Ecotype*	Culver's Root, PA Ecotype	768.00
100.00 %		**Mix Price/Lb Bulk:**	**$45.18**

Seeding Rate: Seed at 20 lbs/acre with 30 lbs/acre of a cover crop. For a cover crop use either grain oats (1 Jan to 31 Jul), brown top millet (10 lbs/acre; 1 May to 31 Aug) or grain rye (1 Aug to 31 Dec).

Grasses & Grass-like Species - Herbaceous Perennial; Herbaceous Flowering Species - Herbaceous Perennial; Pollinator Favorites; Solar Sites

OR APPROVED EQUAL

TOTAL AREA = ±878,760 S.F. (20.17 Ac.)

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
for current pricing when placing orders.

ERNST SEEDS

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: February 18, 2025

VA Solar Pollinator 3' Mix - ERNMX-622

	Botanical Name	Common Name	Price/Lb
91.00 %	*Bouteloua gracilis, Bad River*	Blue Grama, Bad River	43.77
4.00 %	*Asclepias tuberosa, PA Ecotype*	Butterfly Milkweed, PA Ecotype	432.00
2.50 %	*Chamaecrista nictitans, NC Ecotype*	Sensitive Pea, NC Ecotype	57.60
2.00 %	*Chamaecrista fasciculata, PA Ecotype*	Partridge Pea, PA Ecotype	12.00
0.50 %	*Penstemon hirsutus*	Hairy Beardtongue	480.00
100.00 %		**Mix Price/Lb Bulk:**	**$61.19**

Seeding Rate: Seed at 8 lbs/acre with 30 lbs/acre of a cover crop. For a cover crop use either grain oats (1 Jan to 31 Jul), brown top millet (10 lbs/acre; 1 May to 31 Aug) or grain rye (1 Aug to 31 Dec).

Grasses & Grass-like Species - Herbaceous Perennial; Herbaceous Flowering Species - Herbaceous Perennial; Pollinator Favorites; Solar Sites

OR APPROVED EQUAL

TOTAL AREA = ±291,203 S.F. (6.68 Ac.)

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
for current pricing when placing orders.

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www.bowman.com
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Phone: (804) 616-3240
Fax: (804) 270-2008
947 Myers St | Ste B
Richmond, VA 23220

DRAFT

LANDSCAPE NOTES
CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC
FRANKLIN COUNTY, VA
SNOW CREEK MAGISTERIAL DISTRICT

NO.	DATE	DESCRIPTION
		PROJECT MILLESTONE SUMMARY

DESIGN	DRAWN	CHKD
MG	MG	TW

JOB No. 100692-01-001
DATE : July 1, 2025
SHEET L2.00

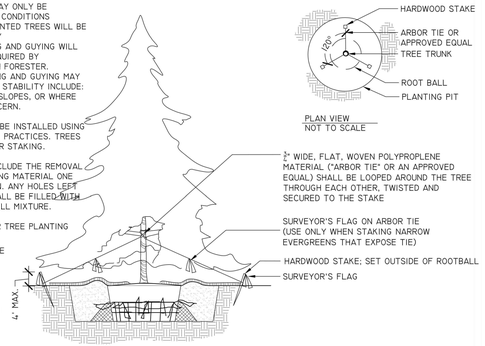
NOTES
1. STAKING AND GUYING MAY ONLY BE IMPLEMENTED WHERE SITE CONDITIONS WARRANT THEIR USE. PLANTED TREES WILL BE ASSESSED INDIVIDUALLY BY URBAN FORESTER. STAKING AND GUYING WILL BE INSTALLED ONLY IF REQUIRED BY URBAN FORESTER. CONDITIONS WHERE STAKING AND GUYING MAY BE NECESSARY TO ENSURE STABILITY INCLUDE: WINDY LOCATIONS, STEEP SLOPES, OR WHERE VANDALISM MAY BE A CONCERN.

2. STAKES OR GUYS WILL BE INSTALLED USING ACCEPTED ARBORICULTURE PRACTICES. TREES SHALL STAND PLUMB AFTER STAKING.

3. INSTALLATION WILL INCLUDE THE REMOVAL OF ALL STAKING AND GUYING MATERIAL ONE YEAR AFTER INSTALLATION. ANY HOLES LEFT BY REMOVING STAKING SHALL BE FILLED WITH APPROVED TOPSOIL/BACKFILL MIXTURE.

4. REFER TO DETAILS FOR TREE PLANTING INFORMATION.

5. CONTRACTOR SHALL USE GALVANIZED EYESCREW & TURNBUCKLE INSTEAD OF ARBOR TIE ONLY FOR TREES OF SIGNIFICANT SIZE AS DIRECTED BY URBAN FORESTER.



EVERGREEN TREE STAKING
NOT TO SCALE

ELEVATION
329300.7 (2016) (02930.7)

NOTES
1. STAKING AND GUYING MAY ONLY BE IMPLEMENTED WHERE SITE CONDITIONS WARRANT THEIR USE. PLANTED TREES WILL BE ASSESSED INDIVIDUALLY BY URBAN FORESTER. STAKING AND GUYING WILL BE INSTALLED ONLY IF REQUIRED BY URBAN FORESTER. CONDITIONS WHERE STAKING AND GUYING MAY BE NECESSARY TO ENSURE STABILITY INCLUDE: WINDY LOCATIONS, STEEP SLOPES, OR WHERE VANDALISM MAY BE A CONCERN.

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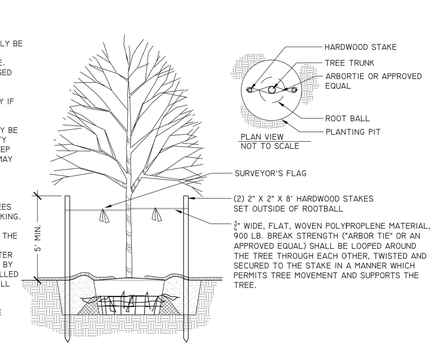
4. REFER TO DETAILS FOR TREE PLANTING INFORMATION.



DECIDUOUS TREE STAKING
NOT TO SCALE

ELEVATION
329300.6 (2016) (02930.6)

NOTES
1. AT PLANTING PRUNE ONLY BROKEN OR DEAD BRANCHES PER ANSI 300 STANDARD.

2. PLANTING PIT/TRENCH SHALL BE DUG DEEP ENOUGH TO ALLOW AT LEAST 1/8TH OF ROOT BALL TO SET ABOVE EXISTING GRADE.

3. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS. ORIENT BEST FACE OF PLANT TO BE THE MOST VISIBLE.

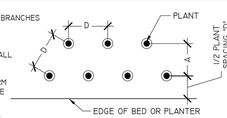
4. GROUND COVERS AND PERENNIALS SHALL BE INSTALLED WITH TRIANGULAR SPACING. REFER TO CHART.

4. UNLESS OTHERWISE DIRECTED BY PROJECT SPECIFICATIONS OR URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL (COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE URBAN FORESTER; PEAT MOSS SHALL NOT BE USED).

5. CONTRACTOR SHALL REMOVE EXCESS SOIL & DEBRIS FROM SITE.

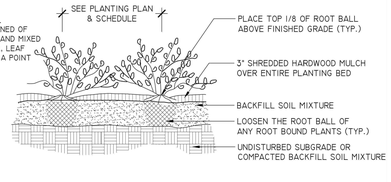
6. DO NOT PLACE MULCH IN CONTACT WITH STEM OF PLANTS.

ALL PLANTS MUST BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.



PLANT SPACING "D" O.C.	ROW "A" O.C.	PLANTS PER S.F.
6"	5"	4.00
8"	7"	2.25
9"	8"	1.77
12"	10"	1.00
15"	13"	0.77
18"	16"	0.44

TRIANGULAR SPACING PLAN & CHART
NOT TO SCALE



GROUND COVERS & PERENNIAL PLANTING
NOT TO SCALE

ELEVATION
329300.10 (2019)

NOTES
1. AT PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS PER ANSI STANDARD A300. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS.

2. CONTRACTOR SHALL MAXIMIZE EXCAVATED AREA FOR TREE PIT WITHOUT ADVERSELY IMPACTING ADJACENT SITE FEATURES.

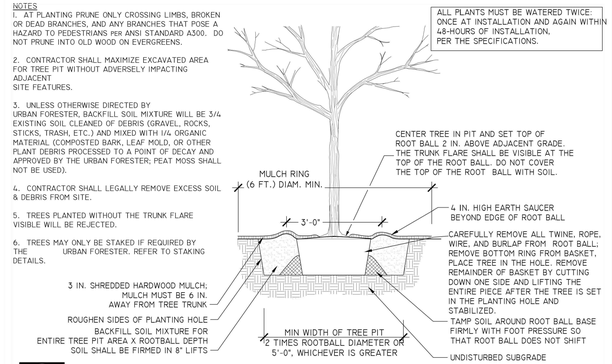
3. UNLESS OTHERWISE DIRECTED BY URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL (COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE URBAN FORESTER; PEAT MOSS SHALL NOT BE USED).

4. CONTRACTOR SHALL LEGALLY REMOVE EXCESS SOIL & DEBRIS FROM SITE.

5. TREES PLANTED WITHOUT THE TRUNK FLARE VISIBLE WILL BE REJECTED.

6. TREES MAY ONLY BE STAKED IF REQUIRED BY THE URBAN FORESTER. REFER TO STAKING DETAILS.

ALL PLANTS MUST BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION.
PER THE SPECIFICATIONS.



TREE PLANTING DETAIL
NOT TO SCALE

FOR OPEN PLANTING AREAS FREE OF PAVING OR GRATES
329300.1 (2021)

NOTES
1. AT PLANTING PRUNE ONLY BROKEN OR DEAD BRANCHES PER ANSI 300 STANDARD.

2. PLANTING PIT/TRENCH SHALL BE DUG DEEP ENOUGH TO ALLOW AT LEAST 1/8TH OF ROOT BALL TO SET ABOVE EXISTING GRADE.

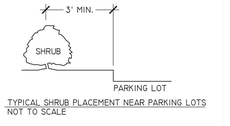
3. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS IN THE CENTER OF THE PLANTING PIT. ORIENT BEST FACE OF PLANT TO BE THE MOST VISIBLE.

4. UNLESS OTHERWISE DIRECTED BY COUNTY URBAN FORESTER, BACKFILL SOIL MIXTURE WILL BE 3/4 EXISTING SOIL CLEANED OF DEBRIS (GRAVEL, ROCKS, STICKS, TRASH, ETC.) AND MIXED WITH 1/4 ORGANIC MATERIAL(COMPOSTED BARK, LEAF MOLD, OR OTHER PLANT DEBRIS PROCESSED TO A POINT OF DECAY AND APPROVED BY THE COUNTY URBAN FORESTER. PEAT MOSS MAY NOT BE USED).

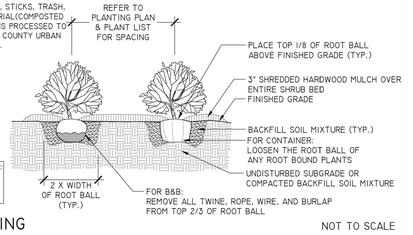
5. CONTRACTOR SHALL REMOVE EXCESS SOIL & DEBRIS FROM SITE.

6. DO NOT PLACE MULCH IN CONTACT WITH STEM OF SHRUBS

ALL PLANTS MUST BE WATERED TWICE: ONCE AT INSTALLATION AND AGAIN WITHIN 48-HOURS OF INSTALLATION, PER THE SPECIFICATIONS.



TYPICAL SHRUB PLACEMENT NEAR PARKING LOTS
NOT TO SCALE



SHRUB PLANTING
NOT TO SCALE

ELEVATION
329300.8 (2019)

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Richmond, VA 23220

DRAFT

LANDSCAPE DETAILS
CONSTITUTION SOLAR
INOVATEUS SOLAR, LLC
SNOW CREEK MAGISTERIAL DISTRICT
FRANKLIN COUNTY, VA

NO.	DATE	DESCRIPTION
		PROJECT MILESTONE SUMMARY

DESIGN	DRAWN	CHKD
MG	MG	TW

JOB No. 100692-01-001
DATE : July 1, 2025
SHEET L2.10