



CAVALIER

10MW SOLAR and
4MW BATTERY ENERGY STORAGE SYSTEM PROJECT
12027 Wheelers Pond Rd
Dewitt, VA 23840

By

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For

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June 11, 2021

Dinwiddie County
14010 Boydton Plank Road
Dinwiddie, VA 23841

Re: Special Exception Permit Application to Develop a 10 MW Solar and 4 MW Battery Energy Storage System

Dear Members of the Staff, Planning Commission and County Board:

Glidepath Power Solutions is pleased to present this application to Dinwiddie County to develop and operate a Solar Facility with a Battery Energy Storage System connected to Southside Electrical Cooperative / PJM.

GlidePath is a leading independent developer and owner of advanced energy systems. With over 100MW of commercially operating battery projects, GlidePath is one of the leading energy storage developers and independent power producers in the U.S. Headquartered in Elmhurst, Illinois, GlidePath has experience as both an owner-operator and turnkey developer of renewable energy and storage facilities. Glidepath's nationwide portfolio includes 445 MW of battery storage and renewable energy projects. The company also has a 2.1 GW greenfield development pipeline of battery storage projects across the United States.

GlidePath's expert team has experience across the energy industry, from project development and finance to engineering, technology and operations. GlidePath employs firsthand knowledge of energy markets to identify opportunities that push the industry forward.

It is important to us to be a good corporate citizen and work cooperatively with each local community. This helps us respond to any concerns with conditions that create a successful energy development while supporting the community development objectives.

Thank you for your time and consideration; we look forward to investing in the local community to advance the clean energy economy, increase resiliency, create jobs, reduce greenhouse gas emissions and improve air quality, and help lower regional electricity costs in the long run.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Wallgren".

Mike Wallgren
Director of Development
Glidepath Power Solutions

A handwritten signature in blue ink, appearing to read "Chuck Beisner".

Chuck Beisner
Environmental Permitting Lead
Westwood Professional Services

1. Project Description

1.1 PROJECT BACKGROUND AND OBJECTIVES

The Cavalier Solar Facility and Battery Energy Storage System (BESS) provides power and flexibility to the Southside Electrical Cooperative / PJM electrical grid by creating energy via solar and storing energy produced during periods of oversupply and discharging to the electrical grid during periods of high demand. A battery system can provide instantaneous response, as compared to a slower ramping rate of a traditional gas fired generation resource and can provide this response repeatedly in all hours. Energy storage speed of response serves to reduce the total amount of reserve power needed to manage the grid effectively, providing savings and reliability benefits. By building the proposed project, a clean, reliable resource would be gained to help integrate renewables and reduce dependence on gas-fired generation, the Cavalier Solar and BESS project (“project”) would be part of a sustainable solution to:

- Maintain grid reliability;
- Enable increasing amounts of intermittent renewable energy generating sources to be accessed;
- Reduce greenhouse gas (GHG) and criteria air pollutant emissions from the electricity sector;
- Upgrade aging infrastructure; and
- Support increased and new electricity demand from non-traditional users such as transportation.

1.2 PROJECT LOCATION

The project site is located in on Wilkinson Road approximately 5 miles NW of Dinwiddie, VA.



Project Location Map

1.3 ENVIRONMENTAL SETTING

1.3.1 Surrounding Uses

The project site is located on Wilkinson Road just west of the existing substation. Adjacent to the project area is rural residential and agricultural land uses. The surrounding land uses are described in more detail in Table 1.

Table 1. Surrounding Zoning and Land Uses

Location	Zoning	Adjacent Streets	Description
North	Agricultural (A-2)	Wilkinson Rd.	Woods / Homes
East	Agricultural (A-2)	None	Woods / Homes
South	Agricultural (A-2)	Wheelers Pond Rd.	Woods / Homes
West	Agricultural (A-2)	None	Woods / Homes

1.3.2 Project Site

The project site is located at 12027 Wheelers Pond Rd and consists of 150 acres. PID# 43-9. The site itself is partially flat and open with areas of slopes and woods. There is existing vegetation on 85% of the property lines. There are a few older outbuildings in the south center of the property. The amount of land that will be under panels is 57.8 acres.

Conceptual Site Plan is shown in Attachment A.

1.3.3 Project Site Land Use and Zoning Designations

The project site and the adjacent parcels are all designated Agricultural (A-2) uses in the County's Zoning Plan. Typical uses within this designation include farming, agriculture, residential and municipal uses. The zone also allows for churches, schools, cellular telecommunication facilities, wind energy conversion systems and utilities.

This proposed project would look to rezone the property to the new County Ordinance Division 18 – Utility Scale Solar Energy District. This would allow for this use to be permitted on the property.

1.3.4 Archaeological, Cultural, and Historic Resources

- As a preliminary review of cultural resources in the Project Area, Westwood examined the Virginia Cultural Resource Information System (V-CRIS) maintained by the Virginia Department of Historic Resources (DHR). An initial inventory of archaeological sites and historic structures was compiled. Mapping of previous surveys was also examined. Additionally, the National Register of Historic Places (NRHP) database was reviewed. The entire Project Area was examined, as well as a one-mile buffer.
- No previously recorded cultural resources are identified in the Project Area.
- No archaeological sites are located within one mile of the Project Area.

- Four inventoried historic resources are recorded within one mile of the Project Area. The closest inventoried historic resource is a house (026-0142) located approximately 0.25 mile west of the Project Area.
- Two historic districts are located within one mile of the Project Area. A property associated with the Rosenwald Schools in Virginia MPD is located approximately 0.42 miles east of the Project Area and the Petersburg National Battlefield is located approximately 0.90 miles northeast of the Project Area.
- No cultural resource surveys have occurred in the Project Area.
- No NHRP listed properties are located within 1 mile of the Project Area.

1.4 PROJECT CHARACTERISTICS

1.4.1 Project Components

The project proposes to construct 10 megawatts (MW) of solar along with 4 MW of battery energy storage.

The solar energy conversion panels will be single axis tracker, which will follow the sun east to west. They will be 10 to 12 feet tall and arranged in arrays as illustrated below. There would be approximately 70,000 solar panels. The panels will be mounted on a steel and aluminum racking structure and average approximately 10 to 12 feet above grade.

The racking system is installed in the ground with pilings (I-beams) that are driven directly into the ground at a depth usually between 6 feet and 8 feet depending on soil conditions. The racking system manufacturer's engineer will provide certification that the design of the foundations and panels are within accepted professional standards, given local soil and climate controls. The equipment is designed to withstand wind up to 90 miles per hour and fifty pounds per square foot of snow.

The panels will be arranged into rows. Each row of solar panels will connect to an inverter. The inverters will be connected by directionally bored underground conduit that is housed inside of housing that will be installed 2 feet below the surface. The conduit will lead to the concrete equipment pad for each inverter. The inverters transform the direct current power generated by the photovoltaic system to alternating current power, which is then connected to the existing Southside Electric Cooperative three phase power distribution line at the point of common coupling. The solar array will be contained within an area protected by a seven-foot chain link fence with barbed wire on top of it. It will not create any noise, dust, fumes, glare, or other disturbances.

The battery energy storage system (BESS) will be comprised of lithium-ion battery modules housed within approximately 8 storage containers. Containers will be approximately 53' long by 8' wide and 10' high. Depending on the BESS manufacturer(s) selected for the project, the number, size and overall configuration of the battery modules could change. Containers will be supported on slabs/spread footings or piles/piers, with the ultimate choice based on final design. Each container will have an exterior HVAC. From the BESS container, low voltage cables will connect to pad mounted switchgear, step up transformer(s) and a power distribution system. An on-site sub-station will be constructed to connect the project to the adjacent Center Star substation. Additionally, stabilized gravel access roads and perimeter fencing will be provided.

The project would be equipped with a state-of-art Battery Management System (BMS) which would monitor cell level voltage, state of health, cell temperature, and cell current in and out. If any of the monitored parameters were above or below pre-determined limits, BMS would shut down and electrically isolate the battery rack from the system, preventing any potential for overheating and risk of thermal runaway.

The detailed list of major equipment is as follows:

- Batteries (LG Chem or Samsung SDI modules assembled and connected in racks)
- Power Conversion System (PCS - i.e., Power Electronics inverters) to convert direct current into alternative current and vice versa. Each PCS is 3 Mega Volt Amp (MVA) power capacity, with noise levels < 79 A-weighted decibels (dBA) measured at 1 meter from the back of the unit.
- HVAC systems to keep battery cores at optimal operating temperature
- BMS to prevent overheating and risk of thermal runaway
- Fire suppression systems in each container (clean agent Novec 1230 in a tank connected to nozzles and designed to flood the entire container during fire event) equipped with early smoke detection, alarms and remote monitoring
- Low and medium voltage electrical switching equipment
- Computer and telecommunications equipment
- Medium-voltage transformers
- Medium-voltage switchgear
- Step-up transformer and associated equipment
- Security lighting and fencing
- Signage

Attachment A, illustrates the proposed layout.

1.4.2 Utilities and Stormwater

The facility would not include restroom facilities; thus, no septic system or sewer connection would be required. No groundwater will be used for any purposes during construction or operation phases of the project. Limited water required during the construction phase would be trucked in as necessary.

Stormwater drainage facilities would be constructed in compliance with Stormwater Pollution Prevention Plan (SWPPP) which is still being developed. In addition, the project would implement Stormwater Best Management Practices (BMPs) during construction, including erosion/sediment control and materials/waste management.

1.4.3 Parking

The project would include parking spaces for part-time staff who would perform routine maintenance activities on a periodic (monthly) basis.

1.4.4 Access Roads

The width of the project access road from Wilkinson Road would total 24 feet, including a three-point hammerhead turnaround at the northern end of the facility. The 24-foot wide driveway heads south through the center of the facility and terminates with a 40-foot radius cul-de-sac at the southern end of the facility. Roadway surface materials would consist of asphalt concrete (AC)/aggregate base (AB).

1.4.5 Landscaping/Open Space

New landscaping would be included where necessary to fill in the existing vegetation and would be designed to screen the proposed project facilities from North along Wilkinson Road and South along Wheelers Pond Road. Landscape design would be in compliance with the Zoning Code including requirements and minimum distances between trees. See the included Landscape Plan. Technicians would travel to the site approximately once per month to provide contracted maintenance services, including landscaping.

The project would be in compliance with all county Design Guidelines, including landscaping and color scheme requirements, per consultation with Dinwiddie County.

1.4.6 Project Operations

The system is currently planning to start commercial operations in 2024 and has a planned useful life of 30 years. Glidepath Power Solutions would be the system owner and operator. The system would be remotely operated by Glidepath personnel. The long-term operational workforce would entail contracted maintenance staff who would maintain the facilities and landscaping on a periodic basis over the project life. The project would require a four-person crew for maintenance visits once a month on average. The crew would normally consist of one operator, one contracted field engineer, and two mechanical or electrical technicians. The project would be primarily operated remotely by Glidepath personnel; thus, no restroom or office facilities are proposed.

Planned maintenance would typically be developed and scheduled a few months in advance. Typical maintenance intervals for major project components include:

- Fire protection system – twice a year
- HVAC – twice a year
- Battery core – once a year
- Relay protection – once in two years
- Project performance testing – once a year

The project is designed with multiple automatic and manual power-down/safety mechanisms. Electrical and fire systems are designed to open breakers automatically during fault conditions. Each container fire protection system would have a signal that would trigger container power-down during fire, electrical fault, overheating, etc. The entire project power-down would occur automatically during electrical fault conditions (e.g., high-voltage, high-frequency, ground fault etc.). In addition, the project would be equipped with breakers that could be opened manually to power-down different equipment or the project as a whole. The manual power-down could be done by local personnel or remote operator.

The project is designed to be in operation for 30 years. After completion of 30 years of operations, most of the project's electrical equipment (panels, breakers, transformers and inverters) would be removed and recycled. Project batteries would be returned to the battery manufacturer for recycling. Equipment foundations and pads would be demolished and removed.

1.5 PHASING AND CONSTRUCTION

The project would be constructed in a single phase. Once the construction of the project begins the duration would be approximately 12 months. Construction would occur Monday through Friday, between

the hours of 7 AM and 7 PM. Between 17 and 52 workers would be on-site at any given time each week during construction, which would decrease to 14 or less during the last quarter of construction.

Construction activities would include foundation/concrete work, building construction, electrical/HVAC/fire protection installation, battery rack installation, battery/inverter/controls installation, and grading. Recycling, reduction, and reuse of materials would be incorporated whenever feasible. Construction equipment to be used would include a scraper, excavators, dump trucks, a drum roller, forklifts, a crane, pump trucks, concrete trucks, man lifts, and a boom truck. Low emission construction vehicles and equipment (at least Tier 3 or better) fitted with diesel particulate filters (DPF) would be utilized. Temporary construction staging/laydown/storage areas would be contained within the project site boundary.

1.6 PROJECT DESIGN FEATURES AND BMPS

The proposed facility has been designed to avoid sensitive resources. The facility has been sited within the project parcel to avoid any wetlands to the maximum extent feasible. In addition, the existing driveway would be widened and reutilized to minimize any additional impacts associated with necessary access requirements.

The proposed development would conform to the natural topography of the site to the maximum extent practicable. Battery storage containers and inverters/transformers would be placed on individual concrete equipment pads to allow for incorporation of the elevation change of the natural topography. The majority of the proposed facility would consist of permeable gravel infill. Stormwater best management practices would be implemented.

1.7 PERMITS AND APPROVALS

The proposed project would require permits and approvals from the Township and other agencies prior to construction. These permits and approvals are described below and may change as the project entitlement process proceeds.

Dinwiddie County

- Special Exception Permit (SEP)
- Grading Permit
- Building Permit
- Electrical Permit

1.8 DECOMMISSIONING

Introduction

The Decommission Plan (the “Plan”) describes anticipated activities and process for decommissioning of the proposed facility following its useful life. The purpose of decommissioning is to restore the Property to a clean, safe and usable condition for continued use by the landowner.

Decommissioning consists of the removal of above-ground and below-ground facility components, management of excess materials and waste as well as the restoration of Project lands, as applicable. Activities are expected to take between 8-10 weeks but no longer than four-months.

Potential negative environmental effects from decommissioning of the facility will be mitigated through use of erosion and sediment control measures, limiting the use of heavy machinery (where possible), and maintaining a buffer from natural features. These control measures, as well as other mitigation measures used during construction will be re-implemented during the decommissioning phase and until the site is stabilized.

Future consultation will occur with the municipality prior to decommissioning to discuss preferences and commitments to restore the Project to its pre-construction condition or a similar state. All decommissioning and restoration activities will adhere to the requirements set forth by Occupational Health and Safety Administration (OSHA) and will be in accordance with all applicable federal, state and local permitting requirements. As with the construction phase, an onsite manager responsible for safety will be present on-site (generally the contractor's project manager) while decommissioning activities are taking place.

The decommissioning plan is based on current procedures and experience. These procedures may be subject to revision based on new experiences and requirements over time. At the time of decommissioning, various options and procedures will be re-evaluated to ensure that decommissioning is safe and beneficial to the environment.

Equipment Removal

A significant amount of the components of the Project will include recyclable or re-saleable components, including copper, aluminum, galvanized steel, and modules. Due to their resale monetary value, these components will be dismantled and disassembled rather than being demolished and disposed of.

Following coordination with the local utility company regarding timing and required procedures for disconnecting the Facility from the utility, all electrical connections to the system will be disconnected and all connections will be tested locally to confirm that no electric current is running through them before proceeding. All electrical connections to the panels will be cut at the panel and then removed from their framework by cutting or dismantling the connections to the supports. Inverters, transformers, and switchgear will be lifted, secured onto flat beds, and transported off-site for processing.

Modules will be detached from the racking system and stacked for removal. However, in the event of a total fracture, the interior materials are silicon-based and may not be considered hazardous. Disposal of these materials at a landfill will be permissible.

The metal piling systems used to secure the PV system in the ground will be removed entirely and if full removal is not possible, then terminated at a depth greater than four-feet from grade or at bedrock whichever is shallower. The piling materials will be collected and recycled. Additionally, all associated metal mounting structures along with the metal perimeter fencing and gates will be removed and either reused or sent for recycling.

Grade slabs will be broken, removed, and disposed of off-site or recycled. Unless requested by the landowner for the access road to remain, materials from road construction will be removed, shipped off-site for either re-use or disposal. If necessary, the former road bed will be backfilled and graded with material native to the region to blend it with the immediately adjacent and existing topography.

Aboveground utility poles owned by the Project will be completely removed and disposed of off-site in accordance with utility best practices. Overhead wires will be removed from the area of the solar modules

and terminated at the point of interconnection. Underground wiring at depths of less than four-feet will be removed and recycled.

Prior to final demobilization, a final walkthrough of the Project area and the Property is completed to police for and ensure all debris is collected and removed.

Site Restoration

Those areas disturbed during decommissioning activities will be graded as necessary to ensure a uniform slope for proper storm water management, prevent the ponding of waters and address any rutting or other depressions caused by removal equipment. The disturbed areas will then be seeded either by hand or via hydro seeding to reestablish vegetation compatible with the Property and region. It is anticipated that a seed mix native to the area will be used by the decommissioning contractor, unless the landowner instructs that they will begin using the property for agricultural purposes and will reestablish the area with agricultural vegetation.

Permitting & Approvals

Prior to the initiation of decommissioning activities, local code will be reviewed for applicability with decommissioning activities. The municipality will be consulted to confirm and applications made for appropriate permits and approvals, if any. At a minimum, it is anticipated that a new storm water pollution prevention plan (SWPPP) will be required along with a building permit. It is assumed that neither a new or revised site plan nor special use permit would be necessary because decommissioning activities are associated with the originally issued approvals.

Throughout the decommissioning process, the municipality will be provided with regular updates and notice upon completing the restoration activities.

Form of Assurance

A Decommissioning Agreement (“Agreement”), will be established for the project entered into by the Operator/Owner of the project and the county. The Agreement will result in the Operator/Owner securing a bond as assurance. The bond will begin with and maintained for the duration term established in the Agreement. The bond will be maintained and updated according to the Agreement and remain in place through the completion of decommissioning activities at the Project. The amount and term of the bond will be established and agreed upon by both parties.

Use of Assurance

In the event that the Operator/Owner fails to undertake decommissioning activities within the established period of the Agreement, the county shall have the right to undertake decommissioning activities and make a claim against the decommissioning assurance. In such circumstances, the county shall have such access to the Property as may be necessary to allow its qualified contractors to conduct decommissioning activities.

1.9 Virginia Code Section 15.2-2232

Virginia Code Section 15.2-2232

The purpose is to determine whether the general or approximate location, character and extent of the proposed public utility facility is substantially in accord with the County’s Comprehensive Plan.

Existing Conditions and Zoning

The project area is located entirely in the General Agricultural (A-2) zone. The parcel has been primarily used for agricultural and timber uses production. The project will be rezoned to SEV which will allow for the project to be approved via Conditional Use Permit under the new Solar Ordinance. The project will meet all of the requirements set forth in the solar ordinance.

Adjacent Surrounding Uses

The area around the project location is all zoned A-2 and include residences, agricultural and forestry uses, and a sub-station.

Comprehensive Plan

The Comprehensive Plan was updated in February of 2014. Because of the timing the Comprehensive Plan does not specifically address solar generating facilities. The plan describes the general trends and future preferences for development while maintaining the rural character of the county.

Chapter X – Future Land Use

There are 14 noted points under B. Special Planning Considerations that the Comprehensive Plan points to for future Land Use. This project does not impede or impair any of the areas of concern.

Chapter XI – Policies, Goals and Objectives

There are 8 Policies with various goals and Objectives for each. The project is unique as that it can be removed at the end of its lifecycle and the land returned to its current state. As such, the project does not impede or impair any of the Policies, Goals and Objectives of the Comprehensive Plan.

The project as stated above meets all requirements of the new solar ordinance, does not impair or impede any concerns listed above and as such is compliant with the current Comprehensive Plan.

2.0 UTILITY SCALE SOLAR ENERGY DISTRICT (SE)

The Sec. 22-234.52 - Project Description. - Included

A narrative identifying the applicant, owner and operator, and describing the proposed solar energy project, including an overview of the project and its location; approximate rated capacity of the solar energy project; the approximate number, representative types and expected footprint of solar equipment to be constructed; and a description of ancillary facilities if applicable. It is required for the applicant to meet with planning staff a minimum of 30 days before submitting an application.

Sec. 22-234.53 - Site Plan. – Attached

The site plan shall conform to the preparation and submittal requirements of the Dinwiddie County Code, including supplemental plans and submissions, and shall include the following information:

1. Property lines and setbacks.
2. Existing and proposed buildings and structures, including preliminary locations of the proposed solar equipment.
3. Existing and proposed access roads, drives, turnout locations, and parking.
4. Location of substations, electrical cabling from the solar systems to the substations, ancillary equipment, building, and structures, including those within any applicable setbacks.
5. Fencing.
6. Community Impact Assessment.

Additional information may be required, as determined by the planning director, such as a historic resource impact analysis, an environmental resource impact analysis, a traffic impact analysis, a scaled elevation view and other supporting drawings, photographs of the proposed site, photo or other realistic simulations or modeling of the proposed solar energy project from potentially sensitive locations as deemed necessary by the planning director to assess the visual impact of the project, landscaping and screening plan, coverage map, and additional information that may be necessary for a technical review of the proposal.

Technical review/fees. Applications for utility scale solar energy projects may require a technical review that will be conducted by a consultant selected by the county. Any fees associated with performance of this review will be paid by the applicant.

Sec. 22-234.54 – Community Impact Assessment.

An assessment of the impact on the immediate vicinity of the proposed solar project as well as the greater Dinwiddie County community shall be prepared and submitted to the county with zoning map amendment request and/or site plan approval request. The report shall be prepared by a professional acting within his or her competency, shall be presented in written form and shall analyze in specific terms the probable impact of the project on the vicinity and community over time. Specific attention, as may be appropriate to the individual proposal, should be given but not be limited to the following elements:

1. Anticipated direct revenues to the county from real estate and personal property taxes.
2. An assessment of employment opportunities to be created by the proposed development.
3. An assessment of the short and long term economic impact of the proposed development.
4. If the development is replacing an existing enterprise, including agriculture and forestry, an assessment of the impact the current enterprise has on the local economy and how the local economy will be impacted by the loss of the existing enterprise.
5. Fire, rescue, and law enforcement requirements as compared to existing capacities and facilities.
6. Water, sewer and stormwater management needs as compared to existing capacities and facilities to address:
 - Adequacy of existing utilities, water, sewer, public services and public facilities in the vicinity of the development.
 - Public and private improvements both offsite and onsite that are proposed for construction and a cost estimate for providing these improvements.
7. Other public and quasi-public facility and service impacts including refuse collection and disposal systems intended to serve the development.
8. Socioeconomic changes and impacts to result from the proposed development.
9. The costs in both capital and operating funds of providing services to the proposed development.
10. What efforts, if any, are proposed to mitigate the service demands or costs to the county.

The planning director may waive certain elements of the community impact assessment where the nature of the proposed development makes such elements inapplicable.

Sec. 22-234.55 - Approved Solar Components. – Will comply

Electric solar farm components must have a UL listing or equivalent and must be designed with anti-reflective coating(s).

Building and electrical plans for the solar farm shall be submitted to the Building Official for review and approval to ensure compliance with all applicable building and electrical codes.

Sec. 22-234.56 - Documentation of right to use property. – Attached

Documentation shall include proof of control over the land or possession of the right to use the land in the manner requested. The applicant may redact sensitive financial or confidential information.

Sec. 22-234.57 - Liability Insurance. – Will comply

The applicant shall provide proof of adequate liability insurance for a solar energy project prior to the issuance of a building permit.

Sec. 22-234.58 - Criteria for Solar Energy Projects.

All solar energy projects shall comply with the following requirements: - **Understood**

1. The site shall comply with the following general standards:
 - All floodplains, wetlands, and steep slopes shall be protected from clearing, grading, filling, or construction, except as may be approved by the planning director for essential infrastructure.
 - The layout shall be designed to preserve and maintain existing tree lines between fields, pastures, meadows and mature woodlands.
 - The layout shall be designed to minimize development on open fields and pastures, and building sites shall be preferably located on the least productive agricultural lands that do not contain prime farmland soils or soils of statewide importance.
 - Existing views from public thoroughfares shall be preserved.
 - The layout shall be designed to avoid important historic, archaeological or cultural sites and viewsheds.

2. All solar energy projects located in an agricultural field or pasture, shall meet the following additional criteria:
 - That the property has not been in the Agricultural Use Value program pursuant to Section 58.1-3230 and 58.1-3231 of the Code of Virginia during the past five years, or if the property has been in such a program, all penalties and interest payments that may be due to the County have been paid by the owner/applicant.
 - The layout shall meet at least one of the following criteria:
 - i A majority of the land area does not contain prime farmland soils or soils of statewide importance; or
 - ii That land of equal area and quality has been or will be cleared and placed in use on the same farm prior to issuance of an occupancy permit; or
 - iii That no reasonable alternatives exist for placement of a solar energy project on the property in question, either because of physical conditions of the property or the size and dimensions of the property.

In the event the planning director denies an application based upon any of the criteria above, the applicant may appeal the decision to the Board of Zoning Appeals in accordance with the procedures of an administrative appeal as described in Section 22-40 of this code. - **Understood**

Sec. 22-234.59 – Visual Impact – Understood

The applicant shall demonstrate through project siting and proposed mitigation, if necessary, that the solar project minimizes impacts on the visual character of features including but not limited to a scenic

landscape, State scenic river, State rural historic district, scenic vista, or scenic corridor as identified in the comprehensive plan, schools, churches and structures with documented historic significance.

Sec. 22-234.60 – Signage. – Will comply

Warning signage shall be placed on solar equipment to the extent appropriate. Solar equipment shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the solar energy project. All signs, flags, streamers or similar items, both temporary and permanent, are prohibited on solar equipment except as follows: (a) manufacturer's or installer's identification; (b) appropriate warning signs and placards; (c) signs that may be required by a federal agency; (d) signs that provide a 24-hour emergency contact phone number and warn of any danger. Educational signs providing information about the project and benefits of renewable energy may be allowed as provided in the local sign ordinance.

Sec. 22-234.61– Noise. – Understood and will comply

Noise requirements for solar energy projects shall be no more stringent than noise requirements for other types of development in a commercial zoning category.

Sec. 22-234.62 – Setbacks. – Understood and will comply

All aspects and components of a solar farm shall meet the minimum zoning setbacks for the most restrictive zoning district of the properties surrounding the project or as required by conditional use permit requirements for buffering.

Sec. 22-234.63 – Security. – Understood and will comply

All solar farms shall be fenced at a minimum around the exterior of the solar collector areas with a fence which shall be at least 6 feet in height. The planning director may require fencing to be placed on the solar energy farm in a manner as to allow wildlife corridors through and around the project site. All fencing shall be constructed so as to substantially lessen the likelihood of entry into a solar farm by unauthorized individuals.

The fencing required hereunder shall be maintained in good condition. Failure to maintain the fencing required hereunder shall constitute a violation of this ordinance.

The fencing requirements specified hereunder shall continue notwithstanding the fact that a solar farm is no longer operational and/or falls into disuse unless and until the solar farm is dismantled and removed from the parcel or parcels of land upon which it was constructed.

Sec. 22-234.64 – Height. – Understood and will comply

The maximum height for all solar collector equipment shall be eighteen (18) feet.

Sec. 22-234.65 – Buffers and Landscaping. – Understood and see attached Landscape Plan

A continuous vegetative buffer shall be present and maintained at all times around the perimeter of the exterior of the fencing and gates which are required around the perimeter of the solar farms. The continuous vegetative buffer shall not block reasonable access to a solar farm.

The vegetative buffer shall be composed of trees or shrubs of a type which at planting shall be a minimum of 4 feet in height and which shall be maintained at maturity at a height of not less than 6 feet in height and shield the project site from surrounding properties during all seasons.

The trees or shrubs shall be spaced no more than ten feet apart (from the base of tree or shrub to the base of tree or shrub). The vegetative buffer shall be carefully planted and shall be maintained in good condition. Failure to maintain the vegetative buffer shall constitute a violation of this ordinance.

The vegetative buffer requirements specified here shall continue notwithstanding the fact that a solar farm is no longer operational and/or falls into disuse unless and until such solar farm is dismantled and removed from the parcel or parcels of land upon which it was constructed.

Sec. 22-234.66 – Transmission Lines. – Understood

Any new electrical transmission lines associated with a solar farm may be located either above or below ground in a manner to be least intrusive to surrounding properties.

Sec. 22-234.67 – Ground Water Monitoring. – Understood and will comply

Ground water monitoring to assess the level of groundwater contamination shall take place prior to, and upon completion of construction of the project throughout the area of the solar farm. Ground water monitoring shall take place every five (5) years of the operation of the project, and upon completion of decommissioning. Results from said monitoring shall be delivered to the Dinwiddie County Planning Department.

Sec. 22-234.68 – Decommissioning. – Understood and will comply, see 1.8.

The owner or operator of a solar farm shall completely decommission the solar farm within twelve (12) months if the solar farm ceases to generate electricity for a continuous period of twelve (12) months. This period may be extended by the Board of Supervisors if the owner or operator provides evidence that the failure to generate electricity is due to circumstances beyond the owner's or operator's reasonable control and the solar farm has not been abandoned.

If a solar energy project has been determined to be unsafe or a nuisance by the Dinwiddie County Building Official, the solar energy project shall be required to be repaired or removed by the owner or operator to meet federal, state, and local safety standards, or be removed by the owner or operator within the time period allowed by the Dinwiddie County Building Official. If the owner or operator fails to remove or repair unsafe solar energy project, Dinwiddie County may pursue a legal action to have the project removed at the owner's or operator's expense.

Decommissioning shall include the removal of all solar collectors, cabling, electrical components, fencing, and any other associated equipment, facilities and structures to a depth of at least 36 inches. Disturbed earth shall be graded and re-seeded.

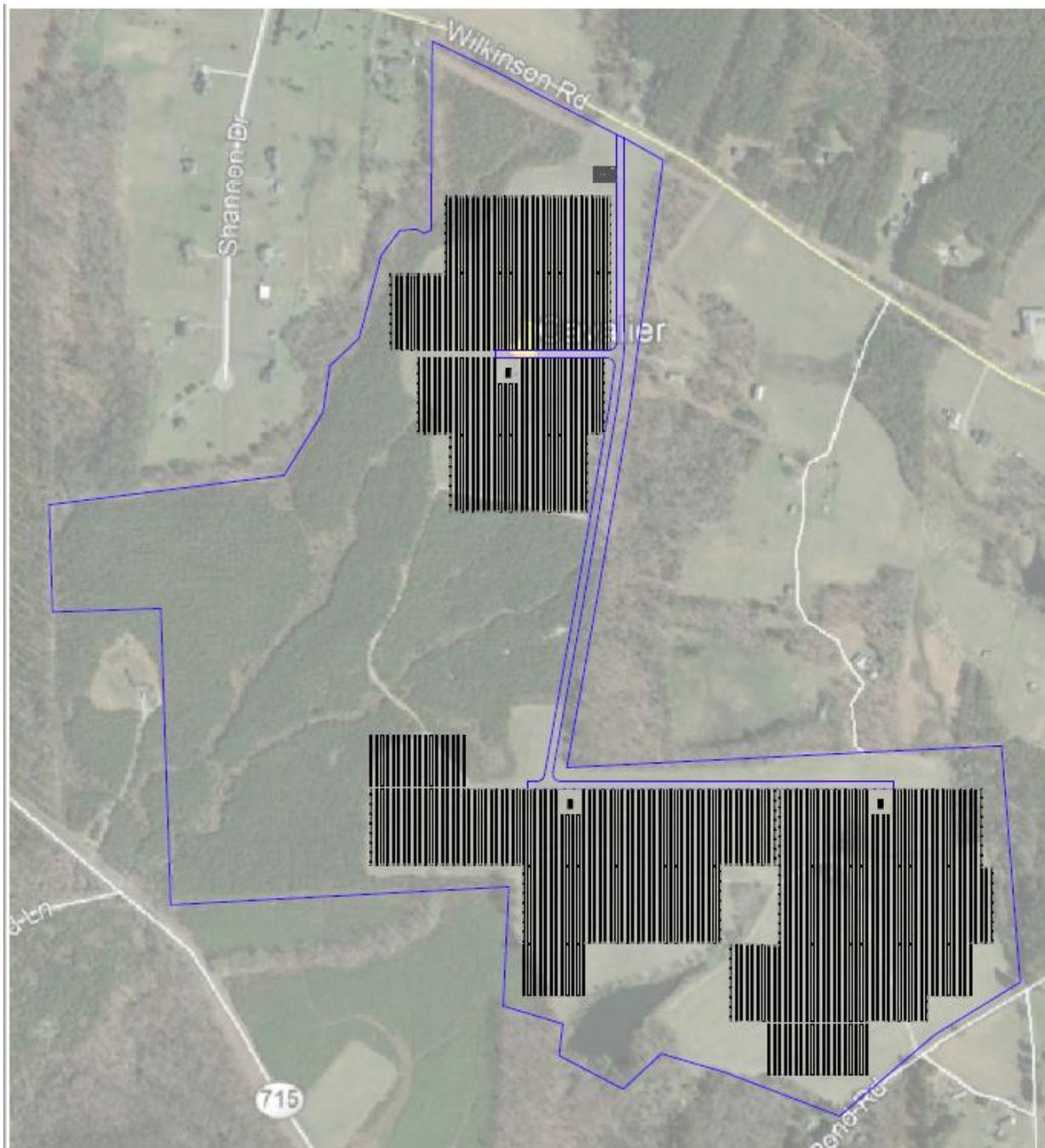
To ensure the full completion of decommissioning requirements, and/or to facilitate the mitigation and abatement of public nuisances or health hazards caused by debris or hazardous materials occurring in the event of partial or complete destruction of any solar farm by natural or man-made causes, Dinwiddie County requires the placement of a surety/performance bond or certified check meeting certain terms

and in certain amounts as determined by the Dinwiddie County Planning Department to ensure that such decommissioning or removal is completed expeditiously, and at no cost to the landowner.

2.1 Conditions of approval

- 1. The applicant will provide a detailed Decommissioning Plan with Financial Assurance as part of the Building Permit Application.**
- 2. The applicant will provide a detailed Traffic Management Plan including any comments and required permits from VDOT as part of the Building Permit Application.**
- 3. A Stormwater Management and Erosion Control Plan shall be submitted for administrative review as part of the Building Permit Application.**
- 4. The project will be in compliance with all State and Federal registrations, permits, licensing, and regulations.**

Attachment A – Site Plan



Attachment B – Photos



Typical Solar Arrays



Appearance of Typical Solar Panel Arrays in a Field

Typical Battery Storage

