

EXHIBIT M – CORRESPONDENCE WITH MONTGOMERY COUNTY

Chase Wittich

From:	Mike Plunkett <mikep@montgomerycountyil.gov></mikep@montgomerycountyil.gov>
Sent:	Thursday, March 6, 2025 1:50 PM
То:	Chase Wittich
Subject:	Fwd: AHJ Virtual Meeting

See notes from our independent engineer below. As we discussed, I believe the county will be OK with the bond.

----- Forwarded message ------From: Jeremy Connor <jconnor@hurst-rosche.com> Date: Thu, Mar 6, 2025 at 11:35 AM Subject: RE: AHJ Virtual Meeting To: Mike Plunkett <<u>mikep@montgomerycountyil.gov</u>>

Mike,

The CAB wire management is acceptable internally, I think the Vegetation Screening issues would be a commonsense issue, I would recommend finding ways to get screen from the roadway – driver's eyesight to the sight.

We would recommend that the developer meet the intent of the code and we can work with them as not have 40' trees installed, but the effort to screen will need to be followed/considered.

We have no opinion on the bonding acceptance.

Thanks

Jeremy

Jeremy Connor, PE

Vice President, Operations



217.532.3959 office

618.407.4479 cell

Hillsboro, IL | Marion, IL | East St. Louis, IL | Springfield, IL | Arnold, MO | Neosho, MO | Nashville, TN

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From: Mike Plunkett <<u>mikep@montgomerycountyil.gov</u>> Sent: Wednesday, March 5, 2025 10:32 AM To: Jeremy Connor <<u>jconnor@hurst-rosche.com</u>> Subject: Fwd: AHJ Virtual Meeting

Jeremy:

The following questions are from a solar developer about to submit an application. He asked the following three questions and would appreciate your input.

------ Forwarded message ------From: **Chase Wittich** <<u>chase.wittich@srenergy.com</u>> Date: Tue, Mar 4, 2025 at 3:56 PM Subject: RE: AHJ Virtual Meeting To: Mike Plunkett <<u>mikep@montgomerycountyil.gov</u>> Cc: Alyssa Wojcik <awojcik@eorinc.com>, Pat Conrad <pconrad@eorinc.com>, Bridget Callahan <bcallahan@srenergy.com>

Hey Mike,

Thanks for taking the time to run through the Montgomery County Solar Ordinance with me. Following up here on a few points we discussed.

- Vegetative Screening the project area elevation is lower than the elevation of the road it is adjacent to. In
 the attached site plan, you can see the contour line shows the top of road to be ~573, and the project area
 where the fence will be sits at ~561. From the road you would be looking down into the array. The top of the
 slope is within the IDOT ROW so we would not be able to plant any trees there. Understood this is up to the
 discretion of the County Board but wanted to get your thoughts.
- Underground Power and Communications lines we propose the installation of underground Medium Voltage electric lines running to the equipment pad and then to the utility poles where we tie into the Ameren infrastructure. However, we do propose the use of CAB cable management hangers within the array itself. You can see proposed installation areas within the site plan running through the array. I have attached the brochure for CAB here as well for your team's review.
- Decommissioning Plan/Payment Use of a bond is acceptable if it meets the requirements. I will request a
 draft Bond Form for your team to review.

Thanks,



Chase Wittich Manager, Project Development c: 410-458-6983 chase.wittich@srenergy.com 1000 Wilson Blvd., Suite 2400 Arlington, VA 22209

in X srenergy.com

From: Chase Wittich <<u>chase.wittich@srenergy.com</u>>
Sent: Friday, February 14, 2025 2:06 PM
To: Mike Plunkett <<u>mikep@montgomerycountyil.gov</u>>
Cc: Alyssa Wojcik <<u>awojcik@eorinc.com</u>>; Pat Conrad <<u>pconrad@eorinc.com</u>>; Bridget Callahan
<<u>bcallahan@srenergy.com</u>>
Subject: RE: AHJ Virtual Meeting



EXHIBIT N – CAB WIRE MANAGEMENT BROCHURE

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> CAB[®]'s easy installation simplifies cable management and provides a far more predictable cost than any other cabling system. Patent Protected www.cabproducts.com/patents

Individual hangers are easily attached to messenger wire. No special tools required. Cables are loaded into carrier sections, then hangers are closed and locked in place. Hangers may be re-opened to add cables or perform maintenance. Cables are safely separated to meet NEC.



Standardizing cable management across all projects greatly reduces engineering costs. Patent Protected www.cabproducts.com/patents





CAB[®] Integrated Grounding Saves Time and Resources.

CAB[°] Solar Integrated Grounding simplifies engineering by eliminating the need to run a separate grounding conductor and grounding jumpers to all mid piers. The patented design includes a custom engineered messenger wire, clamps and mid pier brackets.

CAB[®]'s patented award-winning Cable Management with Integrated Grounding can provide both the Equipment Grounding Conductor (EGC) and the Grounding Electrode Conductor (GEC). CAB[®] offers #1, #2, and #3 Equivalent options. Meets NEC, UL and IEEE standards per the HDR Electrical Report. ETL Safety Listed by Intertek to UL 2703.

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William manness

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> - John B. Bianconi, Vice President Bob Biter Electrical Enterprises, Inc.

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EXHIBIT O - MONTGOMERY COUNTY SOLAR ORDINANCE

MONTGOMERY COUNTY

Ordinance for Solar Energy Farm and Solar Garden Installations in Unincorporated Montgomery County, Illinois

Adopted by: Montgomery County

April 10, 2018

First Revision: March 12, 1919 Second Revision: June 13, 2023 Third Revision: February 13, 2024 Fourth Revision: July 9, 2024 **Fifth Revision: August 13, 2024**

Ordinance for Solar Energy Farm and Solar Garden Installations in Unincorporated Montgomery County, Illinois

Amended 8/13/24

ORDINANCE NO.

WHEREAS, the Montgomery County Illinois Planning Commission has recommended to the County Board that said amendment be adopted as follows:

A. SCOPE

This article applies to solar energy farm and garden installations in unincorporated Montgomery County, Illinois, other than those areas surrounding municipal limits governed by municipal ordinance.

B. PURPOSE

The purpose of this ordinance is to facilitate the construction, installation, operation and decommission of Solar Farms or Solar Gardens (Solar Energy Systems SES) in Montgomery County, Illinois in a manner that promotes economic development and ensures the protection of health, safety, and welfare while also avoiding adverse impacts to important areas such as agricultural lands, endangered species habitats, conservation lands, and other sensitive lands. This ordinance will not impede personal or business solar collector development for the primary use of self-sustaining energy. This ordinance is not intended to replace safety, health or environmental requirements contained in other applicable codes, standards, or ordinances. The provisions of this ordinance shall not nullify any provisions of local, state or federal law.

C. DEFINITIONS

- 1. Active Solar Energy System: A solar energy system whose primary purpose is to harvest energy by transforming solar energy into another form of energy or transferring heat from a collector to another medium using mechanical, electrical, or chemical means.
- 2. *Application:* Request for the Solar Farm or Solar Garden Permit must be submitted on the application form maintained by the County. Application may be modified from time to time by the County in order to provide sufficient information for permitting decisions to be made. (See EXAMPLE in Appendix A.)
- 3. Aviation Protection: For solar units located within five hundred (500') feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHA T) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.
- 4. Building-integrated Solar Energy Systems: An active solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Building-integrated systems include but are not limited to photo voltaic or hot water solar energy systems that are contained within roofing materials, windows, skylights, and awnings.
- 5. *Construction Permit:* Formal approval of the application by the County Board. (See EXAMPLE in Appendix B.)
- 6. *Decommissioning/Deconstruction:* To return the property to its pre-installation state or better as approved in the decommissioning plan.

- 7. *Grid-intertie Solar Energy System:* A photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.
- 8. *Ground-Mount:* A solar energy system mounted on a rack or pole that rests or is attached to the ground. Ground-mount systems can be either accessory or principal uses.
- 9. Maximum height: Solar panel arrays shall be no more than thirty (30') feet in height, not including power lines.
- 10. Off-grid Solar Energy System: A photovoltaic solar energy system in which the circuits energized by the solar energy system are not electrically connected in any way to electric circuits that are served by an electric utility company.
- 11. Operating Permit: After the project is substantially completed, according to approval by the County's designee, an operating permit to produce and sell solar generated power must be issued prior to operation. (See EXAMPLE in Appendix C.)
- 12. Passive Solar Energy System: A solar energy system that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.
- 13. Photovoltaic System: An active solar energy system that converts solar energy directly into electricity.
- 14. Renewable Energy Easement, Solar Energy Easement: An easement that limits the height or location, of both, of permissible development on the burdened land in terms of a structure or vegetation, or both, for the purpose of providing access for the benefited land to sunlight passing over the burdened land.
- 15. Renewable Energy System: A solar energy system. Renewable energy systems do not include passive systems that serve a dual function, such as a greenhouse or window.
- 16. Set-back: Minimum distance from a property line, margins of any public road or high water mark of any lake available for public use, stream banks and drainage ditches from which the Solar Farm or Solar Garden is located. The setback set forth herein shall be measured from the exterior of the fencing and gates, which are required around the perimeter of all Solar Farms.
- 17. Solar Access: Unobstructed access to direct sunlight on a lot or building through the entire year, including access across adjacent parcel air rights, for the purpose of capturing direct sunlight to operate a solar energy system.
- 18. Solar Farm: A commercial facility that converts sunlight into electricity, whether by photovoltaics (PV), concentrating solar thermal devices (CST), or other conversion technology, for the primary purpose of wholesale sales of generated electricity. A Solar Farm is the principal land use for the parcel on which it is located.
- 19. Solar Garden: A commercial solar-electric (photovoltaic) array, of no more than five (5) acres in size, that provides retail electric power (or a financial proxy for retail power) to multiple households or businesses residing in or located off-site from the location of the solar energy system. A county Solar Garden may be either an accessory use, when a part of an existing or a proposed subdivision, or a special use if it is a stand-alone garden.
- 20. Solar Resource: A view of the sun from a specific point on a lot or building that is not obscured by any vegetation, building, or object for a minimum of four (4) hours between the hours of 9:00 AM and 3:00 PM Standard time on all days of the year.
- 21. Solar Collector: A device, structure or a part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.
- 22. Solar Collector SUI/ace: Any part of a solar collector that absorbs solar energy for use in the collector's energy transformation process. Collector surface does not include frames, supports and mounting hardware.

- 23. Solar Daylighting: A device specifically designed to capture and redirect the visible portion of the solar spectrum, while controlling the infrared portion, for use in illuminating interior building spaces in lieu of artificial lighting.
- 24. Solar Energy: Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.
- 25. Solar Energy System: A device, array of devices, or structural design feature, the purpose of which is to provide for generation of electricity, the collection, storage and distribution of solar energy for space heating or cooling, daylight for interior lighting, or water heating.
- 26. Solar Heat Exchanger: A component of a solar energy device that is used to transfer heat from one substance to another, either liquid or gas.
- 27. Solar Hot Air System: An active solar energy system (also referred to as Solar Ail' Heat or Solar Furnace) that includes a solar collector to provide direct supplemental space heating by heating and re-circulating conditioned building ail'. The most efficient performance typically uses a vertically mounted collector on a south-facing wall.
- 28. Solar Hot Water System: A system (also referred to as Solar Thermal) that includes a solar collector and a heat exchanger that heats or preheats water for building heating systems or other hot water needs, including residential domestic hot water and hot water for commercial processes.
- 29. Solar Mounting Devices: Racking, frames, or other devices that allow the mounting of a solar collector onto a roof surface or the ground.
- 30. Solar Storage Unit: A component of a solar energy device that is used to store solar generated electricity or heat for later use.

D. PERMITTING

- 1. No Solar Farm or Solar Garden subject to this Ordinance shall be erected, built, or constructed without a Solar Farm or Solar Garden Development Permit having been issued by the Montgomery County Board. A request for siting approval for a commercial solar energy facility, or modification of an approved siting, shall be approved if the request follows the standards and condition imposed within the law and the conditions imposed under state and federal statutes and regulations.
- 2. Prior to processing any Application for a Solar Farm or Solar Garden, the Applicant must submit a certified check to the County for the non-refundable Application Fee equal to \$2,500 per megawatt (MW) of proposed nameplate capacity, up to a maximum fee of \$250,000. These funds shall be placed in the General Fund. Should the actual costs to the County exceed the submitted Application Fee, the Applicant shall be responsible for those additional costs and shall remit additional funds to the County within 15 days of receipt of a request from the County. No final decisions shall be rendered on an Application if there are Application fees due to the County.
- 3. The County Board shall not approve any permit until a public hearing is held within <u>60</u> days of the application. Notice of the hearing shall be published, by the Montgomery County Clerk's Office, in a newspaper of general circulation in Montgomery County at least once a week for two (2) successive calendar weeks prior to the hearing. The initial notice shall be published the first time not less than ten (10) days or more than twenty-five (25) days before the date fixed for the hearing. In computing such period, the date of publication is not to be included, but the day of the hearing shall be included.
- 4. A Solar Farm or Solar Garden development in the un-incorporated areas of Montgomery County shall be required to obtain permits and provides fees as applicable to Montgomery County.

- 5. The County Board may provide for a final site inspection before the facility is authorized to become operational.
- 6. An emergency contact name and phone number must be posted at the point of access on all solar developments.
- 7. The permit holder will allow the County, or its Authorized Agent, access to the property within 30 days of an inspection request by the County. In the event of an emergency, the County, or its Authorized Agent, has the right to access the premises.
- 8. The County will schedule yearly inspections with the developer. The County Board Chair, or Authorized Agent, will perform the inspection at no cost to the developer.
- 9. The provisions of this Ordinance shall be administered and enforced by personnel of the Montgomery County Board or their authorized agents.
- 10. Application(s) for Solar Farm or Solar Garden Development Permits shall be accompanied by:
 - a. plans for the Solar Farm or Solar Garden in duplicate drawn to scale,
 - i. showing the actual dimensions and shape of the parcel or parcels of land upon which the Solar Farm or Solar Garden is to be erected, built or constructed,
 - ii. the size and locations of any road(s), lake(s), pond(s), or streams touching on said parcel or parcels of land,
 - iii. the location and dimensions of the proposed Solar Farm or Solar Garden,
 - iv. the fencing and gates required to be around the exterior perimeter of the same,
 - v. the storm water pollution and prevention plan,
 - vi. the decommissioning plan,
 - b. An Ecological Compliance Assessment Tool (EcoCAT) Sign off.
- 11. Application shall comply with the standards established by this Ordinance.
- 12. All copies of the plan must be submitted, signed and sealed by a professional engineer, licensed in the State of Illinois.
- 13. The County Board shall require an independent engineer, chosen by the County Board, to review plans at the petitioner's expense. Findings by the independent engineering firm are to be submitted to the County Coordinating Office.
- 14. The Montgomery County Assessor's Office shall maintain a record of all Solar Farm or Solar Garden Development Permits and copies shall be furnished upon request to any interested person.
- 15. Any order, requirement, decision or determination of the Montgomery County Board and/or Authorized Agent adverse to the interest of an applicant for a Solar Farm or Solar Garden Development Permit shall be provided to the applicant in writing by certified mail, return receipt requested.
- 16. The failure to obtain any required Solar Farm or Solar Garden Development Permit shall be a Violation of this Ordinance. Further, Solar Farm or Solar Garden Development Permits shall be issued on the basis of applications approved by the Montgomery County Board and shall authorize only the use, arrangement, and construction applied for and approved. Any use, arrangement or construction not in compliance with that authorized shall be a violation of this Ordinance.

E. COMPLIANCE

- 1. Approved Solar Components: Electric solar energy system components must have a UL listing or approved equivalent and solar hot water systems must have an SRCC rating.
- 2. Compliance with Building Code: All active solar energy systems shall meet approval of county building code officials, consistent with the International Building Code; and solar thermal systems shall comply with HV AC-related requirements of the Energy Code. Any

county building codes in existence at the time of application will apply and take precedence where applicable.

- 3. Compliance with State Electric Code: All photovoltaic systems shall comply with the National Electric Code.
- 4. Compliance with State Plumbing Code: Solar thermal systems shall comply with applicable Illinois State Plumbing Code requirements.
- 5. Compliance with State Energy Code: All photovoltaic systems and Solar thermal systems shall comply with the Illinois State Energy Code.
- 6. Compliance with State Drainage Laws: All Solar Energy Systems shall comply with applicable State Drainage Laws.
- 7. Utility Notification: All grid-intertie solar energy systems shall comply with the interconnection requirements of the electric utility. Off-grid systems are exempt from this requirement.
- 8. Agricultural Protection: Solar Farms must comply with the Agricultural Impact Mitigation Act (AIMA) statute (505 ILCS 147).
- 9. Endangered Species and Wetlands: Solar Farm developer(s) shall be required to initiate a natural resource review consultation with the IDNR (Illinois Department of Natural Resources) through the department's online, EcoCAT (Ecological Compliance Assessment Tool) program. Areas reviewed through this process will be reviewed for endangered species and wetlands. The cost of the EcoCA T consultation will be borne by the developer(s)
- 10. Storm water and NPDES (National Pollutant Discharge Elimination System): Solar farms are subject to the State of Illinois Storm Water Management regulations, erosion and sediment control provisions if adopted and NPDES permit requirements

F. PRINCIPLE USES

- 1. Solar Gardens: Montgomery County permits the development of unincorporated county Solar Gardens, subject to the following standards and requirements:
 - a. Gardens Permitted. Community systems are permitted in all unincorporated districts where buildings are permitted.
 - b. Ground-Mount Gardens Special Use. Ground-mount community solar energy systems must be less than five (5) acres in total size. Ground-mount solar developments covering more than five (5) acres shall be considered solar farms.
 - c. Interconnection. An interconnection agreement must be completed with the electric utility in whose service territory the system is located.
 - d. Dimensional Standards:
 - i. All Solar Garden related structures in newly platted subdivisions must comply with setback, height, and coverage limitations for the subdivision in which the system is located. The setback from property lines will be ten (10) feet minimum unless otherwise specified in the subdivision ordinance.
 - ii. All Solar Garden related structures in existing platted subdivisions must comply with setback, height, and coverage limitations for the district in which the system is located.
 - e. Aviation Protection. For Solar Gardens located within five hundred (500') feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.

- f. Glare: All solar energy systems shall minimize glare from affecting adjacent or nearby properties. Measures to minimize glare include selective placement of the system, screening on the north side of the solar array, modifying the orientation of the system, reducing use of the reflector system, or other remedies that limit glare.
- g. Other Standards. Ground-mount systems must comply with all required standards for structures in which the system is located. All Solar Gardens shall also be in compliance with all applicable local, state and federal regulatory codes, including the International Building Code, as amended; and the National Electric Code, as amended. Health Department requirements for wells and septic systems must be met.
- 2. Solar Farms: Ground-mount solar energy, designed for providing energy to off-site uses or export to the wholesale market, are permitted under the following standards:
 - a. Ground Cover and Buffer Areas. Ground-mount systems shall be maintained. Top soils shall not be removed during development, unless part of a remediation effort. Soils shall be planted to and maintained in perennial vegetation to prevent erosion, manage run off and build soil, subject to the Illinois Noxious Weed Law (505 ILCS 100). Due to potential county liability under the Illinois Endangered Species Protection Act (520 ILCS IO/II(b)) it is required that any crops planted be in compliance with all federal and state laws protecting endangered species. This will also include pollinators such as bees. Foundations, gravel or compacted soils are considered impervious. Ground-mount systems shall be exempt from impervious surface calculations if the soil under the collector is not compacted and maintained in vegetation, including any access or service roads. A managed vegetative buffer shall be present and maintained at all times around the perimeter of the exterior of the fencing and gate(s) which are required around the perimeter of all Solar Farm(s) and the setback area.
 - b. Foundations. A qualified engineer shall certify that the foundation and design of the solar panels racking and support is within accepted professional standards, given local soil and climate conditions.
 - c. Other Standards and Codes. All solar farms shall be in compliance with all applicable local, state and federal regulatory codes, including the International Building Code, as amended; and the National Electric Code, as amended.
 - d. Power and Communication Lines. Power and communication lines running between banks of solar panels and to nearby electric substations or interconnections with buildings shall be buried underground according to the National Electric Code. Exemptions may be granted by Montgomery County in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines, or distance makes undergrounding infeasible, at the discretion of the County Board or designated representative.
 - e. Site Plan Required. A detailed site plan for both existing and proposed conditions must be submitted, showing location of all solar arrays, other structures, property lines, rightsof-way, service roads, floodplains, wetlands and other protected natural resources, topography, electric equipment, and all other characteristics requested by Montgomery County.
 - f. Setbacks. Projects including multiple, adjoining properties as part of the project plan, need not adhere to this setback at point of connection between the adjoining properties. Solar panels will be kept at least one hundred and fifty (150') feet from a residence. Owners may sign a waiver stating they have agreed to allow the land owner and developer to set closer setbacks than this section. This waver must specifically state terms of the agreement and the County must receive a certified copy from the residence owner.

- i. Every Solar Farm shall be setback at least fifty (50') feet from all property lines of the parcel land upon which the Solar Farm is located or to be located.
- ii. Every Solar Farm shall be setback at least fifty (50') feet from the right-of- way of any public road.
- iii. Every Solar Farm shall be setback at least one hundred and fifty (150') from the nearest point of the outside wall of any occupied community building or dwelling
- iv. All setbacks set forth herein shall be measured from the exterior of the fencing and gates which are required around the perimeter of all Solar Farms.
- g. Aviation Protection. For solar farms located within five hundred (500') feet of an airport or within approach zones of an airport, the applicant must complete and provide the results of the Solar Glare Hazard Analysis Tool (SGHAT) for the Airport Traffic Control Tower cab and final approach paths, consistent with the Interim Policy, FAA Review of Solar Energy Projects on Federally Obligated Airports, or most recent version adopted by the FAA.
- h. Glare: All solar energy systems shall minimize glare from affecting adjacent or nearby properties. Measures to minimize glare include selective placement of the system, screening on the north side of the solar array, modifying the orientation of the system, reducing use of the reflector system, or other remedies that limit glare.
- i. Safety Fencing.
 - i. All Solar Farms shall be fenced around the exterior of the Solar Farm with a fence at least six (6') feet in height but less than twenty-five (25') feet.
 - ii. All fencing shall be constructed so as to substantially lessen the likelihood of entry into a Solar Farm by unauthorized individuals.
 - iii. The fencing shall be maintained in serviceable condition. Failure to maintain the fencing required hereunder shall constitute a violation of this ordinance.
 - iv. 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 properly decommissioned.
- j. Gates and Locks.
 - i. All gates to the fences of all Solar Farms shall be at least six (6') feet in height.
 - ii. All gates to the fences of all Solar Farms shall be equipped with locks and shall be remained locked at all times except for those times when the owner and/or operator, or their respective agents is/are using the gate for ingress and/or egress or is/are otherwise present and monitoring the Solar Farm.
 - iii. All gates to the fences of all Solar Farms shall be constructed so as to substantially lessen the likelihood of entry into a Solar Farm by unauthorized individuals.
 - iv. The gates required hereunder shall be maintained in serviceable condition. Failure to maintain the gates required hereunder shall constitute a violation of this ordinance.
 - v. The gate and lock requirements specified hereunder 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 properly decommissioned.

G. DECOMISSIONING

- 1. Decommissioning applies to both Solar Farms and Solar Gardens.
- 2. The Solar Farm or Solar Garden developer or property owner shall include a decommissioning plan consistent with those included in the Department of Agriculture's standard wind farm agricultural impact mitigation agreement, template 81818, or

standard solar agricultural impact mitigation agreement, version 8.19.19, as applicable and in effect on December 31, 2022. The amount of any decommissioning payment shall be limited to the cost identified in the decommissioning or deconstruction plan, as required by those agricultural impact mitigation agreements.

H. LEGAL PROVISION

- 1. Amendments: The Montgomery County Board may periodically amend the terms of this ordinance.
- 2. Penalties for Violations: After the effective date of this ordinance, any persons who, being the owner or agent of the owner of any land, or project developer, located within the territorial jurisdiction of this ordinance, thereafter proceeds with development of a solar farm or solar garden prior to being approved under the terms of this ordinance shall be fined. Further, violators of this ordinance shall be subject to fine of \$1,000 for the first violation and \$500 for each additional month the violation is not corrected. The County Coordinating office will be notified of any violations and the County Chair will enforce penalties.
- 3. After the effective date of this ordinance, no proposed Solar Farm or Solar Garden, as defined in this ordinance and within Montgomery County's jurisdiction, shall proceed with construction until it has been submitted to and approved by the Montgomery County Board and/or Designee in accordance with the provisions of this Ordinance.

Appendix A: EXAMPLE Solar Application

Appendix B: EXAMPLE Construction Permit

Appendix C: EXAMPLE Operating Permit

NOW, THEREFORE BE IT ORDAINED that the Montgomery County Board hereby adopts said Solar Farm or Solar Garden Ordinance.

BE IT FURTHER ORDAINED that the effective date is immediately upon adoption.

Passed and Adopted, this _____day of _____, A.D. 2024, by the County Board of Montgomery County.

_____Attest: _____

Doug Donaldson, Chairman

Sandy Leitheiser, County Clerk

MONTGOMERY COUNTY PETITION / APPLICATION / REQUEST PROCESS for a Solar Farm or Solar Garden Permit

APPENDIX A: Solar Application (Montgomery County Board Admin, 8-12 weeks)

- 1. Applicant completes and submits (APPENDIX A) application with supporting docs and fees.
- 2. County Board Administration accepts the application as "Properly Filed."
- 3. County Board Administration schedules public hearing within 60 days of accepting application.
 - a. County Board Admin notifies applicant, schedules public notices, publishes on website.
 - b. Applicant notifies required property owners.
- 4. County Board Administration forwards application to independent engineer for review.
 - a. Engineer Review to focus on Environmental and Safety Concerns NEPA process
 - b. EcoCat submittal Cultural/Biological Clearances
 - c. Wetlands Mapper Clearance
 - d. Parcel Identification –Location to be provided to determine offset concerns/impacts to adjacent property owners
 - e. Identify Topographical concerns Drainage, Streams, Clearing, Access points (Sight Distance Concerns)
 - f. Road Use Agreements (County or Township)
 - g. Decommission Bonding Agreements
- 5. County Board Development & Personnel Committee conducts Public Hearing.
 - a. County Board Admin schedules verbatim recording.
- 6. County Board Development & Personnel Committee makes recommendation to County Board.
 - a. Recommendation may include Findings of Fact and Permit Conditions.
- 7. County Board makes decision within 30 days of Public Hearing conclusion.

APPENDIX B: Construction/Improvement Permit (Supervisor of Assessments, 6-8 weeks)

- 1. Applicant completes Solar Site survey per statute 35 ILCS 200/10-740.
- 2. Engineer Review of Construction Documents
 - a. Adherence to the Solar Ordinance
 - b. Sealed licensed Documents by an Illinois PE
 - c. Approval Recommendation of review to County Board
- County GIS Department completes parcel split and assigns new parcel numbers.
 a. Applicant is responsible for Plat Act Fee
- 4. Applicant records new lease with updated parcel number, site address, legal description and completed, signed Plat Act Affidavit with County Recorder.
- 5. Applicant files Structural Improvement Permit (APPENDIX B) with Supervisor of Assessments.
- 6. Supervisor of Assessments mails approved permit to applicant.

APPENDIX C: Operating Permit (Supervisor of Assessments, 2-4 weeks)

- 1. Applicant completes application (APPENDIX C) and submits to Supervisor of Assessments.
- 2. County Independent Engineer reviews site operation with inspections to ensure adherence to approved construction documents.
- 3. Supervisor of Assessments issues Operating Permit.
- 4. Applicant displays Operating Permit on site.

APPENDIX A

MONTGOMERY COUNTY PETITION / APPLICATION / REQUEST For a Solar Farm or Solar Garden Construction Permit

It is the responsibility of petitioners or requesters of actions placed before the Montgomery County Board to provide specific information and supporting data regarding proposed actions/projects in sufficient detail that will allow a decision to be made or a final course of action chosen. The Board shall not accept a petition or request as properly filed that is not sufficiently detailed, is missing information required by Ordinance, or does not provide sufficient sealed and signed professional studies, reports, and construction documents to support the request or petition based on the reasoned judgment of the Board. The Board is not responsible to make corrections or revise requests/petitions. Incomplete Applications will be returned.

Certain requests, such as a petition / application for a Solar Farm or Solar Garden Construction Permit, require the Board to conduct a Public Hearing on the matter. No Hearings will be scheduled until such time that petitions/requests have been "Accepted as Properly Filed." Similarly, Petitions/Requests shall not be placed on a Board meeting agenda until such time that the petition/request has been "Accepted as Properly Filed" by the Board.

The Date on which the Petition / Application / Request is "Accepted as Properly Filed" constitutes the Legal Beginning Date of any such Construction for all purposes of defining whether a project has been initiated or was is progress in Montgomery County, Illinois.

This petition/application/request for a Solar Farm or Solar Garden Construction Permit shall be completed in its entirety and submitted to the Montgomery County Board, #1 Courthouse Square, Hillsboro, IL, 62049. Once the petition / application for a Solar Farm or Solar Garden Construction Permit is Accepted as Properly Filed by the Board, the application for a Solar Garden or Solar Farm will be reviewed by an independent engineer, appointed by the County at the Petitioners expense, to determine the impact of the use on public utilities, traffic volume and circulation, impact on near-by properties, compliance with Ordinances and laws, and other lawful factors as may be determined reasonable by the Board based on the individual Petition/Application. The Board, following a Public Hearing, prepares its Findings of Facts and may then take action regarding issuance of a Construction Permit.

Notice of the Public Hearing

The County Board shall hold a Public hearing within sixty (60) days of receiving reviewed information from the independent engineer. At the hearing, any interested party may appear and testify, either in person or by duly authorized agent or attorney. Notice indicating the time, date, place, and the nature of the proposed Solar Farm or Solar Garden Construction Application, shall be given, according to Para. D3 of the Ordinance, before the hearing by:

- 1. First class mail to the applicant, and to all parties whose property would be directly affected by the proposed use; and
- 2. Publication in a newspaper of general circulation within this County; and
- 3. Publication on a state-wide web site.

The Petitioner / Applicant / Requestor is responsible to mail the notices to the last known property tax bill address by PIN number, and submit a Post Office certificate of mailing record to the County but only after receiving the approved text of the Notice from the County. This is at the Petitioner's / Applicant's / Requestor's sole expense.

Properly completed Applications for a Solar Farm or Solar Garden Construction, complete with supporting documentation, are to be submitted to the County Board with sufficient lead time for review based on the complexity of the individual request.

All petitioners, or their representative, must attend the County Board meeting(s) considering their request. If there is no representation the application may be removed from the agenda and rescheduled.

The Montgomery County Board shall make a decision within 30 days of the Public Hearing.

If you have any questions, please contact the Montgomery County Coordinating office at 217-532-9577.

SECTION BELOW TO BE FILLED OUT BY COUNTY OFFICIAL:

Date first Received by the Office of The Montgomery County Board:

Date(s) County Board Date Returned application for more information (if applicable):

Date County Board requested revisions were received (if applicable):								
Date accepted by County Bo	ard as properly f	iled:						
Filing fee:	Filing fee: Date paid: Check number:							
Date(s) published and where published:								
Date notices sent: Public hearing date:								
County Board determination:								

APPLICANT & PROPERTY OWNER INFORMATION (Print or Type):

Applicant/Petitioner information:	
Company Name:	
Contact Name and Title:	
Phone number:	
Mailing address for all official correspondence un case all correspondence and contact will be made with	lless a Legal Representative is designated in which ith that Legal Representative:
	Zip:
Property Owner Name(s):	
Phone number:	
Mailing address:	Zip:
Designated Legal Representative (licensed to practice la	aw in the State of IL) of Applicant (if any)
Name:	Phone:
Address:	Zip:
Designated Contact Person <i>(if different from Applicant)</i> clarifications, and coordinator for all actions regar behalf of the Petitioner in regard to this Petition <i>Representative has been designated in which case all contact</i>), to whom all phone calls, requests for information, rding this Petition, who has the authority to act on n/Application/Request. <i>This does not apply if a Legal</i> <i>will be made through that Legal Representative.</i>
Nomo	Dhamay

Name:	Phone:
Address:	Zip:

PROPERTY INFORMATION:

Note: If additional space is needed, please attach additional sheets to the application and reference attachment description in application.

- 1. Location of the proposed use or structure, and its relationship to existing adjacent uses or structures:
- 2. Legal Description and Acreage:

- 3. Area and dimensions of the site for the proposed structure(s) or uses.
- 4. Present Use of property:
- 5. Present Land Classification:
- 6. Proposed Land Use Activity / Nature of the Proposed Use, including type of activity, manner of operation, number of occupants or employees, and similar matters:

- 7. Height, setbacks, and property lines of the proposed uses and/or structure(s).
- 8. Location and number of proposed parking/loading spaces by type of vehicles, to include Weight Classifications and size of access drives/ways.
- 9. Existing and proposed screening, lighting (including intensity) landscaping, erosion control, and drainage) features on the site, including the parking areas.

10. Disclosure of any potential environmental issues and methods for dealing with them.

11.	Disc phor	closure of any activities requiring outside agency permits and the names, addresses, and ne numbers of the agency points of contact and how those requirements are being met.
12.	Indi	cate the suitability of the property in question for Construction:
13.	Adj	acent Land Use:
	A.]	North:
	B. 3	South:
	C .]	East:
	D.	West:
15. Sh	ould	this Use be valid only for a specific time period? Yes No
If Yes,	wha	t length of time?
16. Do a separ	oes tł <i>cate s</i>	he proposed Permit meet the following standards? Yes No (If not, attack sheet explaining why.)
	A.	Will the proposed design, location and manner of operation of the proposed Solar Garden or Solar Farm adequately protect the public health, safety and welfare, and the physical environment?
	B.	Will the proposed Solar Garden or Solar Farm have a negative impact on the value of neighboring property?
	C.	Will the proposed Solar Garden or Solar Farm have a negative impact on public utilities and on traffic circulation?
	D.	Will the proposed Solar Garden or Solar Farm have an impact on the facilities near the proposed Solar Garden or Solar Farm, such as schools or hospitals or airports that require special protection?

ATTACHMENTS REQUIRED:

- 1. At the time the application is filed, a non-refundable fee is to be paid by the applicant. The application fee \$2,500 per megawatt (MW) of proposed nameplate capacity, up to a maximum fee of \$250,000.
- 2. For entities governed by governing boards, a copy of the Board Resolution or Board Meeting Minutes authorizing the governing board's approval to carry out the requested project and to authorize the submission to Montgomery County by a designated entity officer of the required specific requests / applications / petitions is required to be submitted.
- 3. An area map and site plan from a certified Illinois licensed Engineer.
- 4. List of the names, current property tax addresses and property tax PIN numbers of property owners located within two-hundred feet and fifty (250') of the property.
- 5. A Decommissioning plan including:
 - A. Process details and cost estimate of decommission.
 - B. Anticipated life expectancy of the Solar Farm.
 - C. Method of insuring funds will be available for decommissioning and restoration of the project site to its original, natural condition prior to the solar farm construction.
 - 1. This includes a proposed schedule of payments to be deposited into an escrow account, on a minimum of a yearly basis, held by Montgomery County as assurance for available decommissioning funds.
 - D. The cost estimate of decommissioning will be reviewed every five (5) years, by the County's chosen Independent Engineer, and revised if necessary, at the Developers expense. The review and revised plan shall be sent to the Montgomery County Coordinating Office for Board review. If necessary, provisions will be made to the escrow account balance for the decommissioning of the Solar Garden or Solar Farm.

CERTIFICATION OF A SOLAR GARDEN OR SOLAR FARM PERMIT PETITION / APPLICATION / REQUEST

I/We the undersigned, agree that the information herein and attached is true. I/We, the undersigned, do hereby permit officials and/or consultants of Montgomery County, to enter the property described herein to complete a thorough review of this application.

Address:

Parcel ID #
______Applicant's Printed/Typed Name: _______
Signature: ______ Date: ______
Property Owner's Printed/Typed Name: ______
Signature: ______ Date: ______

Applicant's Legal or other Representative's Printed/Typed Name (*if applicable*):

Signature:

Date:

STATEMENT OF CONFORMANCE:

I/We, the undersigned, in making a Petition/ Application / Request to Montgomery County for approval of a Solar Farm or Solar Garden Construction Permit described in this application have reviewed the laws and regulations of Montgomery County to the extent that they are applicable to this proposal and understand that: I/We, the undersigned have no reasonable expectation of approval of this request until such time that a Solar Farm or Solar Garden Construction Permit is actually issued by the Montgomery County and have been so notified of issuance in writing. I/We hereby acknowledge, attest to, and accept the following as conditions of obtaining a Solar Farm or Solar Garden Construction Permit in Montgomery County, Illinois.

- **NO** building, construction, alteration, or use may be started prior to the issuance of a Solar Farm or Solar Garden Construction Permit.
- All building construction and all site construction must conform to the plans and specifications approved by the Montgomery County Board. No deviation from or revision to an approved plan may take place without the prior written approval of the Montgomery County Board.
- Any Permit, once issued, is non-transferrable to any other legal entity without the express prior written approval of the Montgomery County Board.
- That ALL actions associated with this Permit process shall be taken, processed, and interpreted under the Laws of the State of Illinois and Montgomery County and any legal remedies sought by any party in connection with this Solar Farm or Solar Garden Construction Permit shall be brought forth in the Courts of Montgomery County, Illinois for adjudication.
- That if the applicant is an Agent representing the actual owners of multiple properties, or is a lessor, that the Agent has in their possession signed documentation that the actual property owners are aware of their legal responsibilities to be personally liable for the costs associated with Decommissioning if said lessor or Agent fails for any reason to meet this requirement of the Solar Farm or Solar Garden Construction Permit.

Applicant's Printed/Typed Name:

Signature:

Date: _____

Applicant's Legal Representative Printed/Typed Name Signature and Date (If applicable):

Signature:

Date:

NOTE: It is the responsibility of the Applicant to notify the Montgomery County Coordinating Office at each stage of work completed once the Permit is issued. **Email:** <u>cbadmins@montgomerycountyil.gov</u> Phone: 217-532-9577

Address: Montgomery County Coordinator #1 Courthouse Square – Room 202 Hillsboro, IL 62049



APPENDIX B

APPENDIX C

MONTGOMERY COUNTY SOLAR OPERATING PERMIT

Upon completing construction of the facility, the Applicant/Petitioner must inform the Assessor's office and request an Operating Permit, prior to any production or sale of solar generated power.

All developers in unincorporated areas of Montgomery County shall be required to post an on-site, laminated, Solar Garden or Solar Farm Operating Permit at the front entrance of the construction area, visible to County employees. Failure to file a Solar Garden or Farm Operating Permit, prior to production or sale of generated solar power, shall constitute an offense punishable by a fine up to \$500.00 each day in which work proceeds and each day following completion of the structure shall constitute a separate offense, **TO BE ENFORCED BY THE COUNTY BOARD CHAIR**.

Date:		Approved		Disapproved
Operating Permit Number				
Signature:		Title:		
DO NOT WRITE ABOVE THIS LINE				
Property Information:				
Address: Legal Description:	City:		State: <u>IL</u>	<u>_</u> Zip:
Company Name:		Project Nam		
Contact Name and Title:				
Mailing Address:				
Phone Number:	Em	ail:		
Land Owner Name(s) <i>if different from C</i>	Company N	lame:		
Mailing Address:				
Phone Number:	Email:			
Condi In applying for and obtaining a Solar Garden or Applicant agrees to comply with the laws, rules Montgomery County Solar Energy Farm and Sol revocation for failure to comply with laws, rules, re	tions of Pe Solar Farm (s and regula lar Garden In gulations and	Prmit: Operating Permit f tions set forth by istallations Ordinar fines.	from Montgome the State of nce. The pern	ery County, the Illinois and the nit is subject to



EXHIBIT P – GEOTECHNICAL REPORT

Geotechnical Investigation Report - Final

Proposed Solar Array - Montgomery Ellinger Solar Array 4343 IL-16 Litchfield, Illinois

Project Number: 25-0137-151

Date Submitted: May 20, 2025

Prepared for: Summit Ridge Energy, LLC 1000 Wilson Boulevard, #2400 Arlington, Virginia 22209 Attn: Brian Flood





Geotechnical Investigation Report - Final

Proposed Solar Array - Montgomery-Ellinger Solar Array 4343 IL-16 Litchfield, Illinois

> Prepared For: Summit Ridge Energy LLC 1000 Wilson Boulevard, #2400 Arlington, Virginia 22209 Attn: Brian Flood

> > Project Number: 25-0137-151

Date Submitted: May 20, 2025

Kevin Gosiewski Project Geologist Report Author

Alex Barlan, P.E. Sr. Geotechnical Engineer Report Author / Reviewer





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- Appendix A: Soil Boring Logs
- Appendix B: Laboratory Testing Results
- Appendix C: Soil Classification System



1.0 INTRODUCTION

Pioneer Engineering & Environmental Services, LLC (Pioneer) was contracted by Summit Ridge Energy LLC to conduct a geotechnical investigation for the construction of the proposed Montgomery-Ellinger Solar Array to be located near the address of 4343 IL-16 in Litchfield, Illinois. The investigation was performed in general accordance with Pioneer Proposal No. 21553 dated December 20, 2024.

As requested by the Client, the scope of the investigation included drilling, sampling, and laboratory testing of soil at nine soil borings (Borings B-1 through B-9) in order to provide a geotechnical engineering evaluation of the subsurface materials. The information provided in this report should be evaluated by and the structural site improvements should be designed by a licensed structural engineer and/or architect.

1.1 Project Background

The proposed facility is a 31.4-acre (approximate) irregular-shaped parcel located east of the address of 4343 IL-16 in Litchfield, Illinois. The Project Site is located approximately 2.5 miles east of downtown Litchfield, Illinois. The Site is bounded by agricultural farmland mixed with wooded areas in all directions. The Site is relatively flat with approximate Elevations from 560 feet to 562 feet.

Current plans include constructing a Solar Array within the Site. A series of solar panels will cover the majority of the site. The panels are expected to be supported by a grid of steel H piles that are driven or vibrated into the earth. Slab-on-grade equipment pads will be constructed for support of transformers and electrical switchgear. A paved access road will provide support vehicle access from the adjacent public road. Unpaved access roads will be provided within the site.

1.2 Geologic Setting

The surficial geology of the Site consists of a surface cover of Parkland/Roxana Silt Loess over Wisconsin-age fluvial deposits of the Cahokia Alluvium. The Loess, which is characterized as wind-blown Silt and Clay containing little to no coarse sand or gravel, potentially extends up to depths of 5 feet below existing grade. The underlying Cahokia Alluvium is considered fluvial deposits in flood plains and channels of modern rivers and streams. The alluvium consists of mostly poorly sorted sand, silt, or clay containing local deposits of sandy gravel.

Available geologic maps indicate that the underlying bedrock consists of Limestone of the Bond Formation belonging to the Pennsylvanian Age. Bedrock was not encountered in the borings, but is expected to be encountered between 30 and 40 feet below existing grade.

The Site is not located within a part of Illinois that has been historically active with coal mining activities. A review of the ISGS (Illinois State Geological Survey) Coal Industry Map (2013) and Directory of Coal Mines in Illinois online database indicates that the closest mine is located approximately 1.5 miles west of the Site within the town limits of Litchfield. Also reviewed were ISGS maps detailing Karst Topography in Illinois. Based on these maps, the Site is located over 30 miles of the nearest mapped area, therefore is



not located within a known karst-susceptible region. Overall, based on the review of available ISGS maps and databases, the Site is not located over a former or active coal mine or within a karst-susceptible area.

1.3 Project Overview and Objectives

The purpose of this study was to:

- Explore the subsurface conditions across the Site including the type, extent and engineering characteristics of the in-situ soils and groundwater conditions.
- Provide recommendations for the design of the foundation.
- Provide recommendations for placement and compaction of backfill.



2.0 EXPLORATION PROCEDURES

2.1 Soil Boring Sampling

Nine soil borings (B-1 to B-9) were performed at the locations as shown on the attached Boring Location Diagram, Figure 1. The borings were located in the field using a Trimble R1 hand-held GPS device. GPS latitude and longitude coordinates for each boring were obtained from the Google Earth website. The surface elevation of each boring was interpolated from Google Earth Pro Satellite Images.

The field work was performed on April 11 and 12, 2025. All borings were performed using a trackmounted Geoprobe 3126GT drill rig and the borings were advanced to a depth of 20 feet below the existing surface elevation using 3 ¼-inch diameter Hollow Stem Augers (HSAs) at the boring locations.

Representative soil samples were obtained using the split barrel sampling procedure in accordance with ASTM Standard D 1586, "Method for Penetration Test and Split Barrel Sampling of Soils". In the split barrel sampling procedure, a 140-pound hammer falls 30 inches and drives a two-inch (outer diameter) split barrel sampler 18 inches into the soil. The number of blows required to drive the barrel sampler the final 12 inches is the Standard Penetration Resistance (SPT N-value) for that interval. This test result indicates the soil's relative density and comparative consistency, and provides a basis for estimating the relative strength and compressibility of soil. Samples were obtained at 2.5-foot intervals to a depth of 15 feet and at 5-foot intervals thereafter to boring termination.

The soil samples obtained from each interval were logged in the field according to their predominant geological characteristics. These field logs were used to prepare the Boring Logs which are included in the Appendix of this report. Representative soil from each sample was delivered to Pioneer's laboratory for further examination and testing. Upon completion of the drilling, the boreholes were backfilled with auger cuttings to the existing ground surface.

2.2 Laboratory Testing

The soil samples were analyzed for physical parameters including natural moisture content and unconfined compressive strength. The soil samples, which were not altered by laboratory testing, will be retained for approximately 30 days from the date of this report and then discarded.

A natural moisture content test was conducted for each sampling interval and/or stratum in accordance with ASTM Standard D 2216. Additional estimated unconfined compressive strength values for cohesive soil samples were obtained by using a spring-loaded pocket penetrometer and/or Rimac machine. After completion of the laboratory testing, an experienced soil engineer visually classified each soil sample in accordance with the Unified Soil Classification System (ASTM Standards D 2487 and D 2488). A brief description of the Unified Soil Classification System has been included in Appendix C of this report.



3.0 RESULTS OF EXPLORATION

3.1 Subsurface Conditions

The following generalized soil profile was encountered in the borings.

- <u>Black Silty Clay Topsoil.</u> The surface cover at the site consists of an approximate 1-foot layer of Black Silty Clay Topsoil. The Topsoil possesses moisture contents ranging from 24.4 to 33.3 percent.
- <u>Tough to Very Tough Gray and Brown Silty Clay</u>. In all borings, the topsoil is underlain by a layer of tough to very tough Gray and Brown Silty Clay soils extending to depths of 13 to 17 feet below grade with exception of Boring B-7 where the Silty Clay extends to a depth of 8 feet below grade. This deposit possesses unconfined compressive strengths between 1.1 and 3.6 tons per square foot (tsf) and moisture contents from 11.5 to 30.2 percent.
- (Exception Boring B-7) Loose Brown Clayey Sand and Sand. In Boring B-7, the Silty Clay is underlain by loose Brown Clayey Sand with trace amounts of silt extending to a depth of 10.5 feet underlain by loose Brown Sand with trace amounts of clay extending to a depth of 13 feet below grade. These layers possess Standard Penetration Test (SPT) N-values of 4 and 5 blows per foot (bpf) and moisture contents of 18.3 to 19.5 percent.
- <u>Tough to Hard Dark Gray Silty Clay</u>. In all borings except B-4, tough to hard Dark Gray Silty Clay is encountered between depths of 13 feet and the boring termination depth of 20 feet below grade. This deposit possesses unconfined compressive strengths ranging from 1.3 to 4.5 tsf and moisture contents between 18.3 to 27.4 percent with an exception of 12.4 percent in Boring B-8 at a depth of 18.5 to 20 feet.
- <u>Very Dense Dark Gray Silt</u>. In Borings B-3, B-5 through B-7, and B-9, very dense Dark Gray Silt is encountered at depths of 17 and 18 feet and extend to the boring termination depth of 20 feet below existing surface grade. This deposit possesses SPT N-values of 50 to 73 blows while only advancing 3 to 8 inches. On the samples recovered, the moisture contents ranged from 11.9 to 13.0 percent.

The subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in the Appendix should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratifications, penetration resistance, locations of the samples and laboratory test data. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratification represents the approximate boundary between subsurface materials and the actual transition may be gradual.



3.2 Groundwater Observations

Groundwater was encountered in Borings B-1, B-2, B-4, B-5, and B-9 at depths of 14 and 19 feet below existing grade. Groundwater was not encountered in any of the remaining borings during drilling operations. Based on the coloration change from Brown and Gray to Gray, the long-term groundwater level is estimated to be at an approximate depth of 13 feet below the existing surface grade. Seasonal and yearly fluctuations in the water table can be expected due to variations in precipitation, evaporation, and surface runoff. Also, it is likely that pockets of perched groundwater may occur after precipitation events.

3.3 Outside Laboratory Test Results

The results of the outside laboratory testing are presented below in the following tables and are included in Appendix B.

Location/	Sample Depth USCS		Passing #200	Liquid	Plastic	Plasticity	Thermal Resistivity (°C-cm/W)	
No.	(ft)	Symbol	I Sieve Limit L (%)		Limit	Index	Initial Conditions	Dry
B-2	3 - 5	CL	84.7	32	17	15	-	-
B-6	3 - 5	CL	93.6	38	19	19	72	185
B-8	3 - 5	CL	94.3	34	21	13	71	215

Table 1 - General Laboratory Test Results

Note: Thermal resistivity specimen reconstituted to approximate 85% of maximum standard proctor density near the optimum moisture content.

Table 2 - Corrosivity & Electrical Resistivity Testing Results

Location	Sample	USCS	_{DH} R	лH	Redox	Sulfate	Chloride	Sulfide	Electrical (ohm	Resistivity 1-cm)
No.	(ft)	Symbol	рп	(mV)	(mg/kg)	(mg/kg)	(mg/kg)	As Received	Saturated	
B-2	3 - 5	CL	7.0	188	ND	ND	ND	2,200	2,150	
B-6	3 - 5	CL	5.6	207	ND	ND	ND	3,070	SC	
B-8	3 - 5	CL	5.6	213	ND	ND	ND	3,750	SC	

Note: SC = Sample received in Saturated Condition. ND = Not detected at the Reporting Limit.



3.4 Field Resistivity Testing

Field resistivity testing was performed near the proposed equipment pad along two perpendicular traverse lines. The soil resistivity testing was performed using the Wenner four-electrode method in general accordance with ASTM G 57. The testing along each traverse line was performed with electrodes evenly spaced at intervals of 2.3, 5, 10, and 25 feet. Variations in the recorded resistivity may be encountered due to changing weather conditions.

Electrodes Spacing	Direction	Resistivity (p) ohm-cm			
(Feel)		B-6	B-8		
0.0	N - S	4,320	5,970		
2.3	E - W	5,040	4,260		
	N - S	4,030	5,330		
5	E - W	4,570	3,970		
10	N - S	7,350	8,250		
10	E - W	8,160	7,150		
25	N - S	9,040	10,400		
20	E - W	10,120	9,230		

Table 3 - Field Resistivity Testing Results

*Resistivity was completed on April 10, 2025 with an ambient temperature of approximately 55 degrees Fahrenheit.



4.0 EVALUATIONS AND RECOMMENDATIONS

4.1 Site Preparation

<u>Site Earthwork.</u> It is anticipated that a minimal amount of earthwork will be required to prepare the Site for construction. The ground surface at the Site is mostly in the range from approximately Elev. 560 to 562 feet MSL. Based on the Google Earth topographic information, the site appears to be relatively flat. Earthwork and preparation will be required for the access roads (both paved and gravel), equipment support pads and the solar panel area.

<u>Topsoil Stripping.</u> The Site is covered with grass and farmland vegetation. An approximate 1-foot thick surface cover of Black Silty Clay Topsoil was encountered in all of the borings. The Topsoil and vegetation root mat should be removed to the depth encountered from the limits of the proposed roadways and equipment support slabs.

4.2 Solar Panel Foundation System Design Criteria

<u>Design Information</u>. Pioneer understands that the foundation system for the solar panels will likely consist of a grid of H piles. The solar arrays are lightly loaded structures and the design is typically controlled by the uplift loads. For discussion purposes, it is assumed that the piles will be embedded a minimum depth of 10 feet below existing grade.

<u>Soil Conditions.</u> For driven or vibrated steel H piles, the axial resistance is developed through skin friction between the sides of the pile and the surrounding soils. The allowable side friction (or adhesion) value for a deep foundation design is dependent on the depth, soil friction angle, and average undrained shear strength of the soils. The following soil properties were used to develop the recommended design parameters.

Depth from Ground Surface (ft)	Soil Type	Estimated Unit Weight (pcf)	Moisture Content (%)	Average SPT N-Values (blows per foot)	Estimated Angle of Internal Friction (degrees)	Undrained Shear Strength (psf)
0 - 1.0	Black Silty Clay Topsoil	110	27	-	-	-
1.0 - 17.0	Tough to Very Tough Gray & Brown Silty Clay	125	24	7	-	1,500
17.0 - 20.0	Very Dense Dark Gray Silt & Very Tough to Hard Clayey Silt	130	15	39	42	-

Table 4 - Summary	of Soil	Properties
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<u>Allowable Side Friction Recommendations.</u> The following table provides recommended allowable side friction values for the soils that were encountered in the borings. These values include a factor of safety of 2.0.



Depth from Ground Surface (ft)	Soil Type	Allowable Side Friction or Adhesion (psf)	Allowable Adhesion for Uplift (psf)
0 - 1.0	Black Silty Clay Topsoil	-	-
1.0 - 17.0	Tough to Very Tough Gray & Brown Silty Clay	412	272
17.0 - 20.0 Very Dense Dark Gray Silt & Very Tough to Hard Clayey Silt		480	316

Table 5 - Skin Friction Values for Pile Design

The allowable skin friction quoted above should be used for compressive loading only. In designing to resist uplift loading, two-thirds of the allowable skin friction value quoted above should be used in the design. The upper 18-inches of profile should be ignored for skin friction due to frost action.

Lateral Load Design. Resistance to lateral loads can be developed from passive pressure of the soil against the pile. For lateral load analysis, the following subgrade resistance profile may be used.

Depth from Ground Surface (ft)	Soil Type	Lateral Subgrade Modulus (pci)	Soil Strain Parameter (ɛ ₅₀)
0 - 1.0	Black Silty Clay Topsoil	-	-
1.0 - 17.0	Tough to Very Tough Gray & Brown Silty Clay	500	0.007
17.0 - 20.0 Very Dense Dark Gray Silt & Very Tough to Hard Clayey Silt		125*	-
For granular soils, the lateral modulus of subgrade reaction is assumed to increase linearly with depth			

Table 6 - Summary of Modulus of Lateral Subgrade Reaction

<u>Anticipated Settlement.</u> Based on the subsurface conditions, laboratory testing and past experience, Pioneer anticipates that properly designed and constructed pile foundations should experience a maximum total settlement of less than 1/4-inch. Differential settlements ranging from 1/2 to 2/3 the total settlement are possible across the Site area due to variations in subsurface conditions and foundation loadings.

<u>Design to Resist Frost Heave.</u> Driven piles may be affected by uplift forces caused by frost heave. Frozen soil will adhere to embedded surfaces such as the steel perimeter of the drive piles. The soil will also expand in volume causing an upward heave of the ground surface. The combination of the uplift forces and the adherence to the embedded piles or anchors can result in upward movement of the pile and solar array. This will cause distortion and damage to the array.

For design purposes, the amount of uplift forces due to frost heave can be calculated using the following parameters.

- Depth of Maximum Frost Penetration of 18 inches
- Adhesion Uplift Force of 1,500 psf



• Outer perimeter of pile

For driven piles, the frost heave forces are resisted by the skin friction at the soil/pile interface as discussed in <u>Allowable Side Friction Recommendations</u>. This resistance for the embedded pile surface below the frost level is calculated by multiplying the Allowable Side Friction of Adhesion by the outer perimeter of pile by the embedment of pile below the frost line.

<u>Remedial Measures to Resist Frost Heave.</u> The following measures can be considered to minimize the amount of frost heave forces of the driven piles.

- Pre-drilling each pile location to the depth of frost penetration. The diameter of the hole should be several inches greater than largest diagonal dimension of the pile. After completion of pile driving, the annulus should be filled with coarse sand or gravel.
- Installing a low friction coating or sleeve to the section of pile within the frost depth.

Frost depth analysis was performed with reference to <u>A Ground Frost Climatology for Illinois, Illinois Academy</u> of Science, Wendland 1998.

4.3 Equipment Support Slabs

<u>Equipment Support Slabs.</u> Reinforced concrete slabs are typically used to support transformers and other electrical equipment. The slabs are most often ground-supported with no foundations. Although not common, equipment slabs supported on frost depth footings can also be used. Recommendations for both options are presented below.

<u>Slab-on-Grade</u>. If nominal slab movement from frost heave can be tolerated, the slab can be designed as a slab-on-grade using the following procedures. The Root Mat and Topsoil as discussed above should be removed to the depth encountered to a distance of 2 feet outside the limits of the slab. The Topsoil should be replaced with granular Structural Fill to design subgrade. The equipment slab should be supported by a minimum 8-inch thick granular base course of IDOT CA-6 Crushed Stone or equivalent. The slab should be suitably reinforced to make it as rigid as practical to reduce the effects of any potential frost related movements.

If minor frost related movements are not desirable, the Topsoil and underlying Silty Clay can be undercut to a minimum depth of 3.5 feet below the lowest adjacent grade and replaced with granular Structural Fill (IDOT CA-6 gradation). The following procedures should be used for support and to help minimize settlement of the at-grade floor slabs.

Once the equipment slab areas are excavated to the design subgrade, the subgrade should be inspected for unsuitable soils. If encountered, highly organic material should be removed to the depth encountered and replaced with Structural Fill. The exposed subgrade should be inspected for stability by proofrolling, if possible. Granular soils, if encountered, should be thoroughly densified using a vibratory compactor. Unstable areas should be removed to a depth of 2 feet below slab subgrade and replaced with Structural Fill.



The Structural Fill should be an approved granular soil equivalent to an IDOT CA-6 gradation. This engineered fill should be placed and compacted in lifts with a maximum lift thickness of 6 inches. Each lift should be compacted to a minimum of 95% of the maximum density in accordance with ASTM D1557.

If the slab subgrade is prepared in the winter during freezing conditions, any exposed subgrade soils should be protected from freezing, typically with blankets. Engineered fill should not be placed on frozen soils.

Assuming the slab subgrade is prepared as recommended, a modulus of subgrade reaction of 75 pounds per cubic inch (pci) should be used.

<u>Continuous/Spread Footings For Structural Slabs.</u> Conventional foundations of continuous footings can also be used to support any equipment structural slabs.

Frost-depth footings founded at a depth of approximately 3.5 feet below existing grade and supported on the native Silty Clay or on a pad of Structural Fill can be dimensioned using a net allowable bearing capacity of 2,000 psf. The net allowable soil bearing pressure refers to that pressure which may be imposed on the foundation soils in excess of the final minimum surrounding overburden pressure.

<u>Undercut/Replacement of Unsuitable Soil.</u> The following should be used where unsuitable soil is encountered below the design footing subgrade and an undercut-replacement scheme is used for footing support. Any unsuitable soils, such as highly organic material or Silty Clay that has unconfined compressive strengths less than 1.1 tsf, that are encountered at the design footing subgrade should be removed to the depth encountered and replaced with Structural Fill. Typical Structural Fill, such as 3-inch Crushed Limestone or Crushed Concrete choked with 1-inch nominal granular material (IDOT CA-7 gradation), should be placed in 18-inch lifts and compacted by use of a vibratory compactor or through the force of a backhoe's bucket to seat the stone. The width of the excavation should extend at least one foot horizontally beyond the perimeter of the footing on all sides for each one foot of vertical undercut below the bottom of the footing, thus providing for adequate lateral distribution of the foundation stresses.

An additional discussion of the placement and compaction of Structural Fill is included in the Earthwork Controls section of this report.

<u>Additional Footing Design Criteria.</u> All footings should be founded a minimum of 3.5 feet below final exterior grade to eliminate the effects of frost on footing behavior. In order to prevent a local bearing failure, isolated column footings should have a minimum lateral dimension of 24-inches and continuous footings should have a minimum width of 18-inches. If the structures are constructed during winter months or if the footings will likely be subjected to freezing temperatures after construction is completed, then the footings should be protected from freezing.

In order to limit the effects of differential movement that may occur due to variations in the character of the supporting soils and variations in seasonal moisture contents, Pioneer recommends that the continuous footings be suitably reinforced to make them as rigid as practical.



Excavation Stability. Groundwater was not encountered in and of the Borings during drilling operations. Groundwater is not expected to be a concern during construction.

During rainy seasons and under normal conditions, surface runoff and seepage water that may accumulate overnight or momentarily in foundation excavations should be promptly removed through standard perimeter ditch, sump, and pump procedures. Water, as well as loosened or disturbed materials, should be removed from the base of excavations immediately prior to the placement of concrete. The soil base of the excavations should also be protected during construction from deterioration or softening caused by frost and construction activity.

Pioneer recommends sloping the sides of the excavation in accordance with local ordinances and OSHA regulations. Materials removed from the excavation should not be stockpiled immediately adjacent to the excavation, since this surcharge load may cause a sudden collapse of the slope.

4.4 Pavement Design Considerations

<u>Pavement Type.</u> It is anticipated that most of the Site access roads will be paved with an aggregate surface. Access roads between the Public Road and the site property line may require a bituminous concrete or concrete paved surface, depending on the local government requirements. The following recommendations can be used for the selected pavement type.

<u>Pavement Support.</u> The proposed pavement areas should be excavated to design subgrade to outside the limits of the paved area. Any Topsoil or root mat should be removed from the pavement area to a maximum depth of 2 feet below design subgrade and replaced with Structural Fill. Uniformity in support characteristics for the pavement can be attained by using the following procedures.

After excavating to pavement design subgrade, the exposed soil should be proofrolled with a vibratory steel drum roller or fully loaded truck. The subgrade should also be visually inspected for unsuitable soils. Any Fill containing a high content of topsoil, organic material or wood debris should be removed to the depth encountered to a maximum depth of 2 feet below design subgrade.

All unsuitable soils, if any, should be replaced with compacted Structural Fill. Structural Fill should be an approved granular soil equivalent to an IDOT CA-6 or CA-7 gradation. If highly unstable areas are encountered, the Structural Fill should be IDOT CA-1 (3-inch nominal size) gradation. Use of a woven geotextile fabric should be considered for additional stability. Engineered fill should be placed and compacted in lifts with a maximum lift thickness of 8 inches. Each lift of IDOT CA-1 or CA-7 open graded granular soil should be compacted to a minimum of 75 percent of the relative density in accordance with ASTM Standards D 4253 and D 4254. If IDOT CA-6 granular material is used, the soil should be compacted to a minimum density per ASTM D 1557 (Modified Proctor).

<u>Pavement Section.</u> Pioneer recommends a flexible pavement section be designed according to the State of Illinois Department of Transportation, Division of Highways, Highway Design Manual using AASHTO-H-20 loading as a maximum. The AASTHO design method takes into consideration the structural design traffic, the subgrade support value, and the structural layer coefficients for each component of the



pavement system. Local pavement design practices are presented in the IDOT publication "Pavement Design Procedure" dated August 31, 1995.

The following pavement sections are considered the minimum pavement sections to be used for this project and are typically recommended in local practice, and are in general accordance with IDOT's "Pavement Design Procedures", for similar structures. It is recommended that the completed site plan be analyzed to determine the most likely traffic patterns for heavy service trucks. The recommended Heavy-Duty Pavement section should be used in these traffic corridors.

	Compacted Material Thickness (Inches)			
Pavement Material	Flexible Pavement (Light Duty)	Flexible Pavement (Heavy Duty)	Rigid Pavement (Heavy Duty)	Aggregate Access Road
Portland Cement Concrete	—	—	6.5	_
Bituminous Surface Coarse	1.5	2	—	_
Bituminous Binder Coarse	1.5	3	—	
Type B Granular Base Coarse (IDOT CA-6)	8	10	6	6(1)
Total Pavement Section Thickness	11	15	12.5	6

Table 7 - Pavement Section Recommendations

Notes: ⁽¹⁾The use of a woven geotextile is recommended beneath the Aggregate Surface Course

The bituminous concrete binder and surface courses should consist of fine, dense, graded aggregate, Class I as defined in the IDOT Standard Specifications for Road and Bridge Construction. All placement and compaction activities should meet the requirements of the IDOT Standard Specifications.

For aggregate surfaced accessed roads, the use of a woven geotextile is recommended beneath the Aggregate Surface Course to help stabilize the subgrade, and prevent ruts and potholes.

The design of pavements should incorporate provisions for drainage of both the pavement surface and the base course layer. Should standing water be allowed to accumulate on the pavement surface or within the base course, the sub-grade will soften and it is likely that the pavement will deteriorate. The base course should be protected from water inflow along drainage paths. The base course should extend beyond the edges of the pavement in low areas to allow any water that enters the base course a path for exit.



4.5 Seismic Design Criteria

The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with ASCE 7-16 and the International Building Code (IBC).

Based on the soil properties encountered at the site and as described on the boring logs, it is our professional opinion that the Seismic Site Classification is D ("Stiff Soil") as detailed in the table below. Subsurface explorations at the site were extended to a depth of 20 feet. Available geologic data was used to estimate the soil properties below this depth.

Description	Туре	Value
Site Classification	Stiff Soil	D
Seismic Design Category	SDC	D
MCE _R Ground Motion (0.2 Sec Period)	Ss	0.329
MCE _R Ground Motion (1.0 Sec Period)	S ₁	0.132
MCE _G Peak Ground Acceleration	PGA	0.177

 Table 8 - Seismic Site Class

Although the Site has a Seismic Design Category of D, the soil profile consists of a predominately clayey (cohesive) profile which is not considered liquefiable. The silty soils (that have very little clay) near the bottom of the soil profile have N-values over 30 blows per foot and are not considered liquefiable. Therefore, a liquefaction or seismic response analysis is not required at the site.

4.6 Construction Considerations

Earthwork Controls. Structural Fill should meet the following properties for use as footing, floor slab, or pavement support soils.

Fill Type	USCS Classification	Acceptable Location for Placement
Cohesive	CL, CL-ML	Below floor slabs and pavement
Granular	GW, GP, GM, GC SW, SP, SM, SC	Below floor slabs, pavement and foundations
Unsuitable	CH, MH, ML, OL, OH, PT	Non-structural areas

Table 9 - Structural Fill Material Requirements

Structural Fill should be placed and compacted in accordance with the following requirements.



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Description	Requirement	
Fill Lift Thickness	 10 inches loose measurement when sheepsfoot or steel drum rollers are used 6 inches loose measurement when jumping jacks or plate compactors are used 	
Minimum Compaction Requirement Below Foundations and Slabs-on-Grade and Upper 12 Inches of Paved Areas	95% of the maximum dry density per ASTM D-1557 (Modified Proctor)	
Minimum Compaction Requirement Below 12 Inches of Paved Areas and Landscaped Areas	90% of the maximum dry density per ASTM D 1557 (Modified Proctor)	
Moisture Content of Cohesive Soils	-2% to +3 % of optimum moisture content per ASTM D 1557	
Open-graded Aggregate including IDOT CA-1 and CA-7 Gradations	Compact in 8-inch thick lifts loose measure to achieve stability through particle interlock	

	Table 10 -	Fill Placement	and Compaction	Requirements
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All subgrade surfaces should be protected during construction from deterioration or softening caused by frost or ponding of water. Water should not be allowed to stand in the excavations for a sustained period of time. All soft, loose, or disturbed soils should be removed to competent support materials. If any floor slab or pavement subgrade is prepared in the winter, exposed subgrade soils should be protected from freezing. Structural Fill should not be placed on frozen soils.



5.0 REPORT LIMITATIONS

5.1 General Considerations

This geotechnical investigation report has been prepared to aid in the evaluation and design of this project. As a result, this report has provided generalized guidelines to be considered during the actual design and construction phases of the project. The information provided in this report should be evaluated by and the structural site improvements should be designed by a licensed professional engineer, structural engineer, or architect. Should deviations from the noted subsurface conditions be encountered during construction, this information should be brought to Pioneer's attention. If you wish, Pioneer would welcome the opportunity to provide field construction services for this project.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated on the location diagram. It should be understood that these locations were approximate, since no survey was performed for the boring location sites. This report does not reflect any variations that may occur between or beyond these borings. The soil borings drilled at the site were backfilled with soil cuttings mixed with bentonite chips. Even though this backfill was compacted, some settlement can be expected due to the dead weight of the soil. Please note that it is the property owner's responsibility to maintain the boreholes' fill elevation.

The scope of services did not include any environmental assessment for the presence of wetlands or hazardous or toxic materials in the soil, surface water, groundwater, or air that was on, below or around this site. Statements in this report or on the boring logs regarding odors, colors, or unusual or suspicious items or conditions (if any are encountered during the performance of this sub-surface investigation) are strictly for the client's information.

5.2 Closing Remarks

This report has been prepared for the sole use of the Client and cannot be relied upon by other persons or entities without Pioneer's permission. The observations and conclusions contained herein are limited by the scope and intent of the work mutually agreed upon by the client and Pioneer and the work actually performed. There are no warranties, implied or expressed, concerning the integrity of the areas and/or mediums not analytically tested.