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April 17, 2020

VIA ELECTRONIC MAIL

Melanie A. Bachman, Esq.
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Revity Energy LLC, Petition for a Declaratory Ruling, Pursuant to Connecticut General Statutes § 4-176 and § 16-50k, for the Proposed Construction, Operation, and Maintenance of a 12.25-Megawatt Solar Photovoltaic Electric Generating Facility on Approximately 74.9 Acres Located at 424 Snake Meadow Road, Plainfield, and Associated Electrical Interconnection to Eversource Energy's Fry Brook Substation

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes ("CGS") § 16-50k(a), Revity Energy LLC ("Revity") hereby submits to the Connecticut Siting Council ("Council") a petition ("Petition") for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is necessary for the construction of a 12.25-megawatt (AC) ground mounted solar photovoltaic system, a 23 kV electrical interconnection, and associated equipment (collectively, the "Project") on a 185-acre lot, which lies within both the Town of Plainfield and the Town of Sterling. The address of the Project is 424 Snake Meadow Road, Plainfield, Connecticut (the "Property").

Given that the Council has waived all hard copy filing requirements as part of its response to the COVID-19 pandemic, by this letter, Revity submits to the Council an electronic copy of its Petition and the associated exhibits, and all other relevant attachments in connection therewith.

Should the Council require any additional material for the review of this Petition or have any questions regarding the Petition, please do not hesitate to contact me.

Very truly yours,

Bruce L. McDermott

Enclosures

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STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Revity Energy LLC, Petition for a Declaratory Ruling, Pursuant to Connecticut General Statutes § 4-176 and § 16-50k, for the Proposed Construction, Operation, and Maintenance of a 12.25-Megawatt Solar Photovoltaic Electric Generating Facility on Approximately 74.9 Acres Located at 424 Snake Meadow Road, Plainfield, and Associated Electrical Interconnection to Eversource Energy's Fry Brook Substation	)	PETITION NO._____ April 17, 2020

PETITION FOR DECLARATORY RULING

Pursuant to Sections 4-176(a) and 16-50k(a) of the Connecticut General Statutes ("CGS") and Section 16-50j-38 *et seq.* of the Regulations of Connecticut State Agencies ("RCSA"), Revity Energy LLC ("Revity") requests that the Connecticut Siting Council ("Council") issue a declaratory ruling for Revity's proposed, construction, operation and maintenance of a 12.25-megawatt ("MW") ground mounted solar photovoltaic ("PV") system, 23kV electrical interconnection and associated equipment (together, the "Project"). The Project address is 424 Snake Meadow Road, Plainfield, Connecticut, and will involve the development of 74.9 acres of the underlying approximately 185-acre lot, which lies within both the Town of Plainfield ("Plainfield") and the Town of Sterling ("Sterling"), Connecticut (collectively, the "Towns").

CGS Section 16-50k(a) provides, in pertinent part:

> Notwithstanding the provisions of this chapter or title 16a, the council shall, in the exercise of its jurisdictions over the siting of generating facilities, approve by declaratory ruling . . . the construction or location of any . . . grid-side distributed resources project or facility with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Energy and Environmental Protection.

The Project will provide 12.25 MWs of clean renewable energy. As discussed more fully in this Petition, the construction, operation and maintenance of the Project satisfies the statutory elements of CGS Section 16-50k(a) and will not have a substantial adverse environmental effect. Accordingly, this Petition for a Declaratory Ruling should be approved by the Council. Further, the Project advances Connecticut's renewable energy goals and contributes to the state's grid reliability. The Project's utilization of solar power, a Class I renewable energy source pursuant to CGS Section 16-1(a)(20), supports Connecticut's renewable energy policy,[1] while contributing to the reliability of Connecticut's electric supply and the competitiveness of Connecticut's electric market.[2]

1. THE PETITIONER

Revity is a Delaware limited liability company, but Rhode Island based with its principal place of business located at 117 Metro Center Boulevard, Suite 1007, Warwick, Rhode Island. Revity was organized in 2019 and its founders and project team have previously developed PV system projects throughout Rhode Island. Specifically, Revity's founders have already successfully installed a number of systems generating a total of over 82,200,000 kWh of energy per year, which systems range in size from 250 kW up to 22 MW. Revity's project team has experience developing PV systems in a multitude of community types such as landfills, brownfields, industrial areas, rural areas, and mid-density suburban areas and is committed to using safe, reliable, and efficient tier 1, best in class technology in developing its PV systems. To that end, Revity will lead the Project

[1] CGS § 16a-35k.
[2] CGS § 16 50p(c)(1).

development and has engaged skilled and competent technical advisors and contractors to assist in developing and installing the Project.

Please address all correspondence and/or communications regarding this Petition to:

Revity Energy LLC
117 Metro Center Boulevard, Suite 1007
Warwick, RI 02886
Attn: Ryan Palumbo
Phone: (401) 922-5954
Email: ryan@revityenergy.com

A copy of all such correspondence or communications should also be sent to Revity's attorney:

Murtha Cullina LLP
265 Church Street
New Haven, CT 06510
Attn: Bruce L. McDermott
Phone: (203) 772-7787
Fax: (203) 772-7723
bmcdermott@murthalaw.com

2. PROPERTY DESCRIPTION

The site of the Project is an approximately 184.6-acre parcel (Exhibit A), a majority of which is located within the northeastern portion of Plainfield (176.1 acres), and the remaining smaller portion of which is located in the northwestern portion of Sterling (8.5 acres). *Environmental Assessment* at 1, April, 2020, All-Points Technology Corporation (the "EA") (Exhibit B). The Property is bound by (1) Snake Meadow Road and Valley View Road to the north; (2) State Highway 664 to the west; (3) Demers Road to the south; and (4) Valley View Road to the east. *See* Figure 1 (Area Map of Project). Additionally, the portion of the Property that is closest to the Town of Killingly to the north is approximately 3,080 feet therefrom.

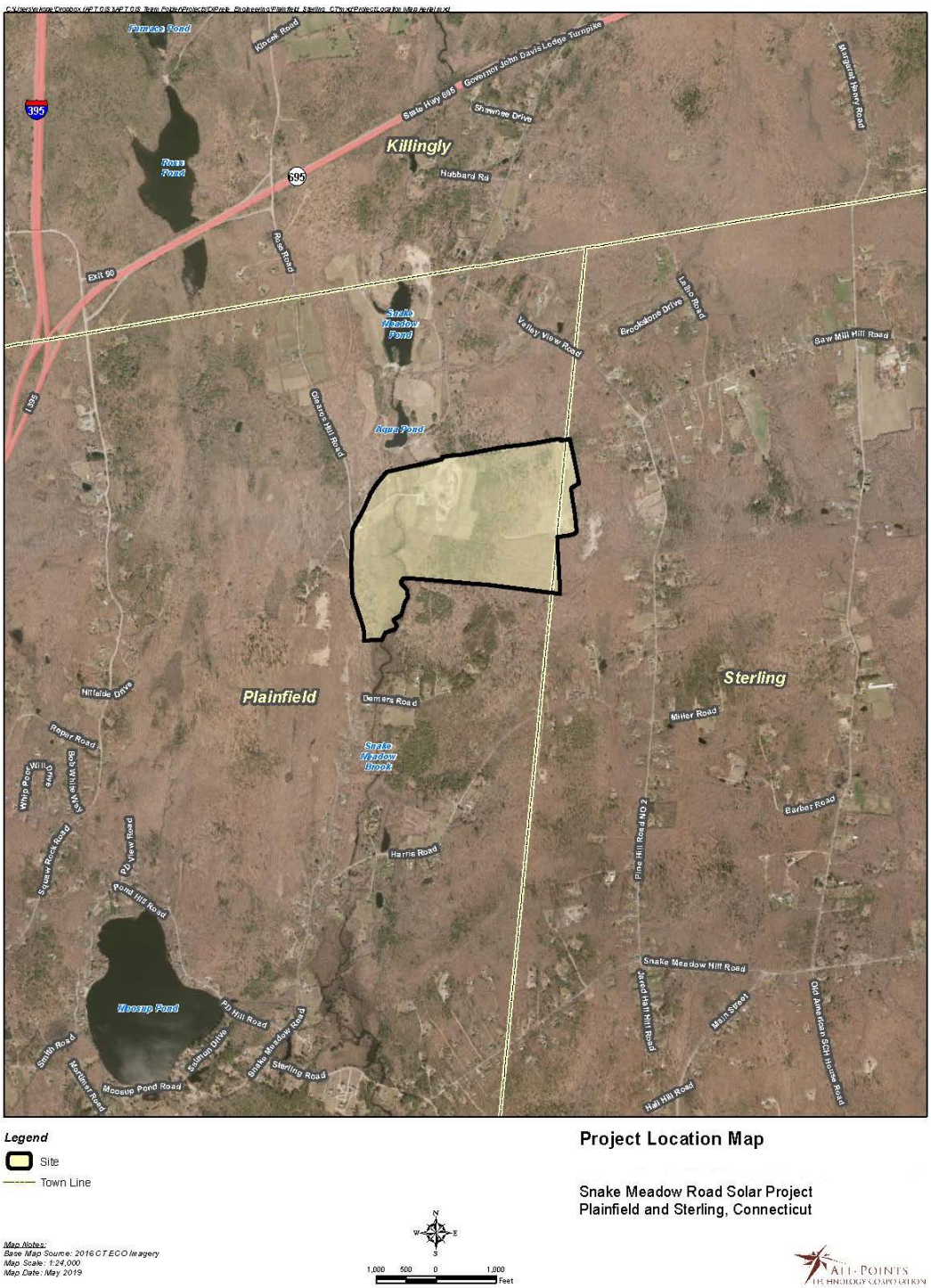


Figure 1 (Area Map of Project)

Figure 2 depicts the roughly 74.9 acres of area of the Property upon which Revity will develop the Project. A more detailed depiction of the Project Site Plan is shown on Appendix B of the EA.

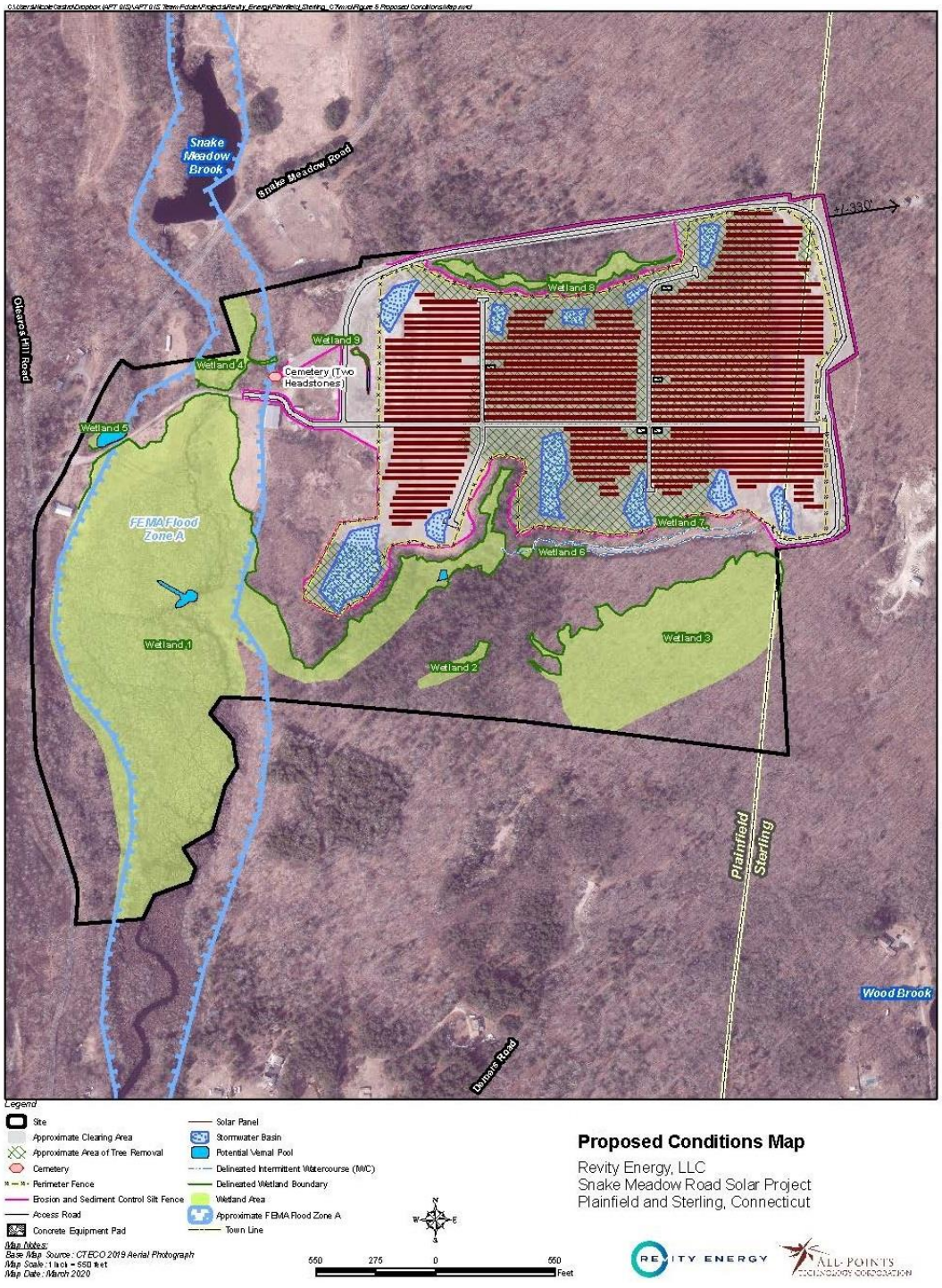


Figure 2 (Project Area)

Overall, the Property is undeveloped with the western portion of the Property currently occupied by a small-scale mining operation while the eastern portion is primarily wooded with the exception of a few small fields and unpaved access roads. EA at 1, 4.

The area of the Property located within Plainfield is zoned "RA-60", which is the primary zone within the Town but which does not include the use of solar photovoltaic energy system as a permitted use. The area of the Property located within Sterling is zoned "Residential", which also does not include the use of solar photovoltaic energy system as a permitted use. Pursuant to CGS Section 16-50k, the Project will be regulated by the Siting Council and while the Council has exclusive jurisdiction over the facilities it regulates, it must consider municipal regulations and other state laws when making declaratory rulings. Although the Project is not subject to the Towns' zoning regulations, Revity has designed the Project to adhere to the applicable property line setbacks in the Towns' zoning districts as follows:

	Plainfield ("RA-60")	**Sterling** ("Residential")
Front Yard:	-50 feet	-50 feet (town street) -75 feet (state highway)
Side Yard:	-40 feet	-25 feet
Rear Yard:	-40 feet	-25 feet

In total, the Project development area will result in approximately 74.9 acres of disturbance to the Property and upon its completion, the solar energy system will occupy approximately 58.5 acres of the Property.

The Property is currently owned by Joseph R. Vinagro ("Vinagro") and Revity has entered into a long term (25 years with two optional 5-year extensions) lease agreement with Vinagro, for the right to develop, own, operate, and maintain the Project on the Property. Revity currently has land control of the Property in the form of a binding lease agreement. Vinagro has been consulted about the filing of the Petition.

The Project site is comprised of the four contiguous properties listed on the table below (collectively, the "Property"):

Landowner	Parcel Identification	Parcel Size (Acres)	Project Area (Acres)[3]
Vinagro	036-0118-0006*	147.93	50.8
Vinagro	035-0118-0010*	4.19	4.2
Vinagro	035-0118-0011	3.16	0.0
Vinagro	035-0118-006A*	29.34	19.9
		184.62	74.9

* contains property in Sterling and Plainfield

3. PROJECT DESCRIPTION

a. Overview.

The Project is a renewable energy generation facility that will use PV solar modules to convert solar radiation to electricity. Although this Project does not currently have a power purchase agreement or a ZREC agreement, the Project is an emergent development and once complete it will sell sustainably generated electricity to a willing purchaser. The design service life of the Project is roughly 25 years.

The 12.25-MW Project will consist of approximately 31,125 photovoltaic modules (based on a module rating of 460 watts), associated ground equipment, and installation of electrical interconnection facilities. The final configuration of the array layout will be provided in the Project's development and management plan ("D&M Plan").

The modules will be supported above the ground by a pile-mounted racking system, which will be driven into the ground, and therefore, require no poured-concrete foundation. However, the Project will include seven equipment pads (transformer, AC panelboard, and

[3] Areas based off of the best available sources survey from surveyor and are subject to change based upon updates to layout, drainage, survey, and other factors.

multiple string inverters), which will be underlain with concrete foundations. As shown on Figure 2, the solar PV panels will be positioned in areas located throughout the Property that have been selected to maximize use of previously disturbed areas and to avoid and minimize potential impacts to natural resources. The panels will be installed in linear arrays in a generally east-west orientation across the Property with the arrays generally facing south with an approximately 20-degree tilt. In addition, the wiring that connects the panels will utilize aboveground wire management systems such as conduit or cable trays. A majority of the area under the panels will remain vegetated. Additionally, Project materials will be stored on-site in temporary laydown areas within the proposed 74.9-acre limits of disturbance during the roughly 12-month construction period, which areas will require no additional tree clearing.

b. Stormwater.

During construction, Revity will implement protective measures to safeguard nearby water resources from potential impacts by implementing a Stormwater Pollution Control Plan ("SWPCP"). The SWPCP will include monitoring of established sedimentation and erosion controls in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and, to the extent practicable, the Connecticut Department of Energy and Environmental Protection ("DEEP") Stormwater Management at Solar Farm Construction Projects. Post construction, Revity will implement a series of stormwater ponds and stone drainage ditches for the east-central portion of the Project.

c. Project Access.

The Project site will be accessible by the northwestern portion of the Property via Snake Meadow Road, in Plainfield. Roughly 2,017 feet of existing unpaved farm and mining operation roads will be improved, and an additional approximately 9,951 feet of new gravel roads will be constructed to allow for access and maintenance of the Project. Minor grading may be required along some of these proposed access roads depending on topography and to appropriately manage stormwater flows, mitigating erosion and sedimentation. EA at 30.

d. Interconnection.

The interconnection of the Project will be evaluated and eventually approved by Eversource. An impact study application based on the PV system design will be submitted to Eversource, which will contain Project specific interconnection requirements that are already incorporated into the system design. A high-level analysis has been conducted by an independent interconnection consultant and the results have been discussed with Eversource. Revity expects to submit its application by May 1st of this year.

The Project will be interconnected from an Eversource 23kV circuit served from the Fry Brook Substation 23 kV circuit, six 2,500kVA service transformers, which steps up the 600-Volt inverter output to the 23kV Eversource distribution voltage. The new transformer, service conductors and metering will be installed by Eversource for the interconnection. The Fry Brook Substation is approximately 9.5 miles from the Property.

e. Decommissioning.

Revity's Decommissioning Plan is provided in Exhibit C of this Petition, which details the Project's end-of-life disassembly. The Decommissioning Plan will also discuss the recyclability and reuse of the Project and its associated materials.

The decommissioning will consist of the physical removal of all Project components, such as the solar arrays and associated equipment (e.g., inverters, and transformers), structures, security barriers and fencing, Project signage and transmission lines from the Site. The decommissioning will also include, to the extent practicable, the restoration of the Site. If portion of the Site that Revity cleared for the Project would remain without vegetation, Revity will stabilize and revegetate these portions of the Site as necessary to minimize possible erosion.

Revity plans to decommission the Project and the associated equipment within 18 months of the date when the Project has been discontinued or has reached the end of its useful life. Revity will notify the Council and the Towns' officials of the proposed date the Project ceases operations and also provide any updated plans for the decommissioning.

4. PROJECT BENEFITS

a. Grid Stabilization and Green Energy.

The Project will provide the state's electrical system with additional generating capacity that will meet demand using renewable energy, upgrade grid infra-structure, contribute to grid stability, provide three-phase power to a rural community that will enhance the probability of future local commercial development opportunities, and foster the redevelopment and reuse of an underutilized property (cleared portions that have

historically been used as a sand and gravel mining operation). The Project is consistent with Connecticut's 2013 Comprehensive Energy Strategy ("CES"), which sets forth clear goals for increasing the use of renewable energy as part of the state's power generation portfolio:

> The Global Warming Solutions Act (Connecticut Public Act 08-98) sets a goal of reducing greenhouse gas emissions by 80% by 2050. Connecticut's Renewable Portfolio Standard (RPS) requires that 20% of generation serving state customers be from renewables by 2020. Meeting the 2020 RPS goal will require the development of 6,196 gigawatt-hours, or nearly 3 gigawatts of low carbon supply – more than 25 times the amount of power generated by Class I resources (i.e., solar power, wind power, and fuel cells) within Connecticut in 2011.
>
> CES, at 76 (footnotes omitted).

The Project will provide clean, renewable solar-powered electricity that will support achieving the state's legislatively mandated obligations under the RPS, as well as its other energy policies, including the goal to "develop and utilize renewable energy resources, such as solar and wind energy, to the maximum practicable extent." CGS Section 16a-35k. A carbon debt analysis was performed by Sage Environmental to determine the Project's net improvement in carbon reduction compared to the loss of 37 acres of trees. Based on this analysis, the Project will result in a net improvement of a 14,000-ton (28.0 million lbs.) annual reduction of CO_2. *See* Carbon Debt Analysis, Exhibit D. This CO_2 reduction will mean that approximately 189,000 trees would have to be planted to absorb the equivalent amount of CO_2 that will be conserved because of the Project or that the Project will result in the annual conservation of 29,456 barrels of oil being consumed.

b. Economic.

The Project anticipates using local and regional labor, as practicable, for construction, and will be a source of both direct and indirect revenue contribution to the local community. Approximately 100 jobs will be created during construction. Once completed, Revity will supply its own employees for the local operations and maintenance of the Project. In addition, the development of the Project on the Property, and the off-site utility infra-structure upgrades, will result in an increase of tax revenue for the Towns.

5. TECHNICAL DESCRIPTION OF THE PROJECT

The Project will have a total power output of approximately 12.25 MW (AC). Overall, the Project has a 30-inch minimum and 36-inch maximum height of ground clearance, and the row-to-row spacing will be 15 feet. Each system will contain a 1,500V (DC) array of several PV modules, and in turn, each PV module will contain 72 PV cells. The proposed solar array will be comprised of: (A) a total of 31,125 Hanwha QCells-Q.PEAK_DUO_XL-G9.3_460 - 460Wp[4] modules oriented directly due south at a tilt angle of approximately 20 degrees; (B) 49 Sungrow SG250 HX inverters (the inverters change the DC output of the solar modules to 600V three-phase AC output); and (C) an AlsoEnergy, Inc. monitoring system. Attached as Exhibit E are the specification sheets for the Project's solar panels and inverters and a photograph depicting a typical equipment pad. 1,500V (DC) strings will be connected to string combiner boxes distributed around the arrays at the end of each row next to the internal roads. DC wires from combiner boxes will be installed in an underground conduit and DC wires will be terminated to the string inverters located on

[4] This module brand has an efficiency of 20.8%; and likely expected maximum annual power degradation 0.54% per year.

seven equipment pads in various locations throughout the array. Each of the seven equipment pads will contain a transformer, an AC panelboard, and multiple string inverters. The inverter outputs are each connected to a dedicated circuit breaker at each AC panelboard. The output of the solar system would electrically connect to switchgear and transformers to step the voltage up to 23kV; which would include a recloser for connection and protection of the system. Revity's 23kV will connect to Eversource's electric distribution system via Eversource-owned metering. Additionally, if one section of the solar array experiences an operational issue and that issue is limited to a portion of the PV system, it can be effectively isolated and other portions of the array can continue to generate power without interruption. The Project has a capacity factor of 16.0% and an 82.42% performance ratio.

The panels will be mounted on a fixed tilt ground mount racking system. The array is designed as continuous tables with two modules installed in portrait fashion.

The monitoring system will be used to monitor the solar array to ensure maximum uptime and system availability. This Data Acquisition System ("DAS") consists of several components, which all work together to provide a complete perspective on system health to its operator. This DAS includes inverter direct data collection, revenue grade metering, and cell temperature and irradiance data and wind speed. The DAS system will also send automatic alerts when the PV system performance ratio is outside of the tolerance threshold.

Additionally, there are no plans currently to deploy energy storage at the site or have the Project serve as a micro-grid.

6. LOCAL INPUT & NOTICE

Throughout the process, Revity has kept the Towns and state regulators apprised of the Project's progress and engaged in providing feedback on Project design and permitting. Revity has been committed to soliciting input from officials from the Towns and from the general public in an effort to develop a Project that results in the most public benefit with the least impact. For example, on March 7, 2019, a public presentation and feedback session was held at the Plainfield Town Hall. At this meeting, an informational presentation was given in order to explain the nature of the Project and get feedback from residents before filing this Petition. Revity has obtained letters of support from each Town's First Selectman (Kevin Cunningham and Russell M. Gray). *See* Exhibit F.

As required by R.C.S.A. Section 16-50j-40(a), Revity provided notice of its intent to file this Petition to the adjacent property owners as well as the relevant municipal officials and government agencies (*see* Exhibit G-1 and Exhibit G-2).

Revity will continue to work with officials from the Towns and the local community by pursuing a multi-faceted and inclusive public outreach effort.

7. POTENTIAL ENVIRONMENTAL EFFECTS

a. Existing Project Site Land Use and History.

Overall, the Property is mostly undeveloped with the western portion currently occupied by a small-scale mining operation while the eastern portion is primarily wooded with the exception of a few small fields and unpaved access roads. The region of the Property is characterized by hilly landscapes of intermediate elevation with smaller localized ridge systems, plateau-like uplands and broad river valleys. The Property's

topography slopes down from east to west. Snake Meadow Brook traverses the western portion of the Site in a north-to-south direction. EA at 4.

Until the 1970s, the western portion of the Property was used as farmland, primarily grazing and pastureland, while the eastern portion was undeveloped and wooded. By the mid-1990s, the western portion of Property had begun to be mined for sand and gravel. By the mid-2000s, mining operations had expanded into small areas in the far eastern portions of the Property. These areas were stripped of topsoil and the subsoil was mined down to the underlying hardpan. EA at 1, 3.

b. Existing Surrounding Land Use.

The Property is surrounded by the post-agricultural second-growth forest typical of the region. EA at 7. Beyond the Property's eastern-most and southern-most boundaries exists low-density residential lots. North of the Property exists a few low-density residential lots and the Snake Meadow Club, which club's members participate in a number of activities such as hunting, shooting, fishing, and social gatherings.

c. Proposed Land Use Impact.

Development of the Project will transform an underutilized property to a productive solar energy facility that will deliver renewable energy to the regional grid. The Project has been designed to minimize impacts on the land and natural resources on the Property. The Project is consistent with local, state, and federal land use plans, and is not inconsistent with either the Plainfield or Sterling Plans of Conservation.

Approximately 37 acres of trees located on the Property will be removed for construction, development, and to prevent shading of the Project. EA at 27. Vegetation near and around the PV array will be cleared in accordance with a vegetation management plan filed subsequently with the Council as part of the D&M Plan. The Project will use a ground mounted, pile-driven, racking system, which will minimize the extent of soil disturbance resulting from installation. Overall, the Project's design minimizes the creation of impervious surfaces. Some site manipulation (cuts/fills) and re-grading of the disturbed areas associated with the current mining operation will be required to allow for development of the Project. In contrast, native terrain (central and eastern portions) within the Project area can be developed without significant cuts and/or fills. In order to safeguard resources from potential impacts during construction, a SWPCP will be implemented and will include monitoring of established sedimentation and erosion controls that will be installed and maintained in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and, to the extent practicable, the DEEP Stormwater Management at Solar Farm Construction Projects, dated September 8, 2017. EA at 48-49. The Project will comply with DEEP air and water quality standards. Further, the Project will not have an undue adverse effect on the existing environment or the local ecology. EA at 48.

8. PUBLIC HEALTH AND SAFETY

The Project will meet or exceed applicable industry, state, and local codes and standards. All applicable health and safety requirements relevant to solar energy generating facilities will be followed during construction and operation and the Project will not pose any safety concerns or hazards to the general public. The construction contractors and employees involved with this Project's development have previously

received general and project-specific health and safety training. The contractors and their employees will be made aware of state and local health and safety requirements, location and routes to nearby emergency care facilities, stop work triggers, and communication protocols for reporting health and safety issues. All construction workers will comply with required health and safety controls and will understand and observe the health and safety plan developed for the Project. Any and all unsafe conditions will be reported to the construction manager. After its completion, the Project will not consume any raw materials, will not produce any by-products, and will be unstaffed during normal operating conditions.

Revity does not anticipate that the Project will have a significant impact on traffic flow, however, Revity will coordinate with local authorities to minimize potential impacts of Project-related construction on existing traffic patterns and roadways. The location of the Project site will minimize effect on local roadways. Any potential construction-related traffic will be temporary and restricted to the Project's approximately 12-month construction period. Once operational, the Project will be generally unstaffed and will require only occasional vehicle trips to the Project area for the purpose of routine site maintenance activities. No raw or hazardous materials or fuels will be delivered to or stored at the Property.

The solar modules are designed to absorb incoming solar radiation and minimize light reflected off the panels, with only a small percentage of incidental light reflected off the surface of the panels. The panels will be tilted toward the southern sky at an approximate angle of 20 degrees. The incidental light reflected off the panels will be significantly less than light reflected off of common building materials or the surface of undisturbed water, therefore, reflected light is not anticipated to impact public health and safety.

Before Project operation commences, Revity will meet with local first responders to supply information on responding to emergencies at solar facilities. A tour of the Project will be provided and the clearly marked disconnect switches will be identified for use during an emergency. The system will be remotely monitored through a DAS, allowing for remote shutdown of the Project in the event of a fault or other power outage event. Emergency vehicles and service equipment will be provided adequate access to the Project area via the Project's access roads.

The Project will be fenced in with a chain-link six-foot-high fence consistent with the National Electric Safety Code and National Electric Code. Additionally, the Project will have a locked gate and limited access for authorized personnel only. Given the benign nature of solar photovoltaic generation, the perimeter fencing, and other safety measures that will be implemented in connection with the Project, the Project will not impact the public health and safety of the Property or that of the area surrounding the Property. EA at 27.

9. AIR QUALITY

Given the nature of PV technology, which requires only sunlight to generate energy, there will be no air emissions resulting from the Project. As such, no air permit is required. Accordingly, the Project will not impact the air quality of the Property or that of the area surrounding the Property. EA at 44. During construction, potential air emissions will include those from construction vehicles and construction activities. These air emissions will be temporary and will be controlled by appropriated mitigation measures, including but not limited to: water for use of dust control; limits on idling of construction equipment in

accordance with applicable state regulations; and proper maintenance of equipment and vehicles. Additionally, based on a carbon-debt analysis conducted in connection with the Project, it will result in a net annual reduction of 14,000-ton (28.0 million lbs.) of CO_2. As a result, any potential air quality effects associated with Project construction activities will be *de minimis*, and will not exceed thresholds requiring an air permit.

10. NOISE

The Project will be an extremely low source of noise. The Project will be located in a Class A Land Use Category (under DEEP noise regulations). The construction of the Project will cause temporary (8 to 10 months) increases in the sound levels on and in the vicinity of the Property as a result of activities such as the operation of construction equipment and vehicles. However, because of the location of the Project and the distance from the nearest residential property, these minor temporary increases in noise will generally be insignificant. Further, typical construction activities are expected to occur during daylight hours, between 7:00 am and 6:00 pm, Monday to Saturday and Sunday 9:00 am to 5:00 pm (only when necessary). It should also be noted that these noise levels will not be dissimilar to any noise generated from the sand and gravel operations at the Property. After this construction period, there will be an approximately two month-long period of system testing and commissioning of the system to ensure working operations, which will require minimal personnel and emit little to no noise.

The only equipment proposed for the Project that will generate noise consists of the operation of the inverters and transformers. A Noise Evaluation Study determined that once the Project is constructed and in service, the combined noise levels will comply with DEEP criteria for Commercial Emitters to Commercial and Residential Receiver Zones.

Additionally, Property access for maintenance equipment will be limited to normal working hours. EA at 46.

When operational, the Project is expected to have a noise output of at most 51.0 dba (daytime only), which is well below the daytime dba threshold established by the State of Connecticut Noise Control regulations under the RCSA Section 22a-69-1 to 22a-69-7.4. Therefore, the Project will not impact the noise levels associated with the Property or that of the area surrounding the Property. EA at 46.

11. SCENIC VALUES

The proposed Project will have minimal visibility and will not reflect a significant change in the character of views currently experienced. The Project site is not located proximal to a State Designated Scenic Road or scenic area. There are no State Designated Scenic Roads located in Plainfield (or Brooklyn or Killingly to the north), and the only State Designated Scenic Road in Sterling is a small portion of Route 14A for 0.70 miles from Route 49 east to Porter Pond Road, which is more than 3 miles away from the Project area. EA at 25.

The Project will consist of a total of 31,125 non-reflective photovoltaic modules and will not exceed a height of approximately 12 feet above ground. The nearest neighboring residential structure to the Project's array is approximately 330 feet to the east (163 Valley View Road, Sterling, CT), and the nearest neighboring property line is approximately 45 feet to the north (undeveloped woods at 45 Valley View Road, Plainfield, CT). *See* Figure 2. Seasonal views (i.e., during leaf-off conditions) of the Project system may be possible from locations immediately to the west along the Property's frontage with Snake Meadow

Road and to some degree, from portions of the abutting properties to the west, all through existing mature vegetative screening. Otherwise, the Project will be set back sufficiently from neighboring properties and other roads, and is benefited by substantial intervening vegetation, such that the Project system components will not be visible from most locations off the Property. EA at 47.

The Project's proposed electrical interconnections will utilize a combination of aboveground and underground utility lines installed along the northwestern main access road to the Project site. No transmission poles will be located within the fenced Project area. Additionally, although there will be some small lighting fixtures within the equipment to aid in maintenance, no exterior lighting is planned for the Project. EA at 46.

Therefore, due to the significant separation between the Property boundary and the Project, and the vegetative screening of the Property, the Project will not impact the scenic values of the Property or that of the area surrounding the Property.

12. RECREATIONAL VALUES

Given that there will exist significant separation between the Property and the screening that will be used in connection with the Project, no recreational areas will be impacted by the Project. The nearest public recreational areas are Pachaug State Forest and Old Furnace State Park, which are both located approximately 0.85 miles to the northwest. Additional recreation areas are located within each of the Towns, but are not proximate to the Project as shown on Figure 3. Therefore, the Project lacks proximity to any recreational area, and will not impact the recreational values of the Property or that of the area surrounding the Property. EA at 25, 46.

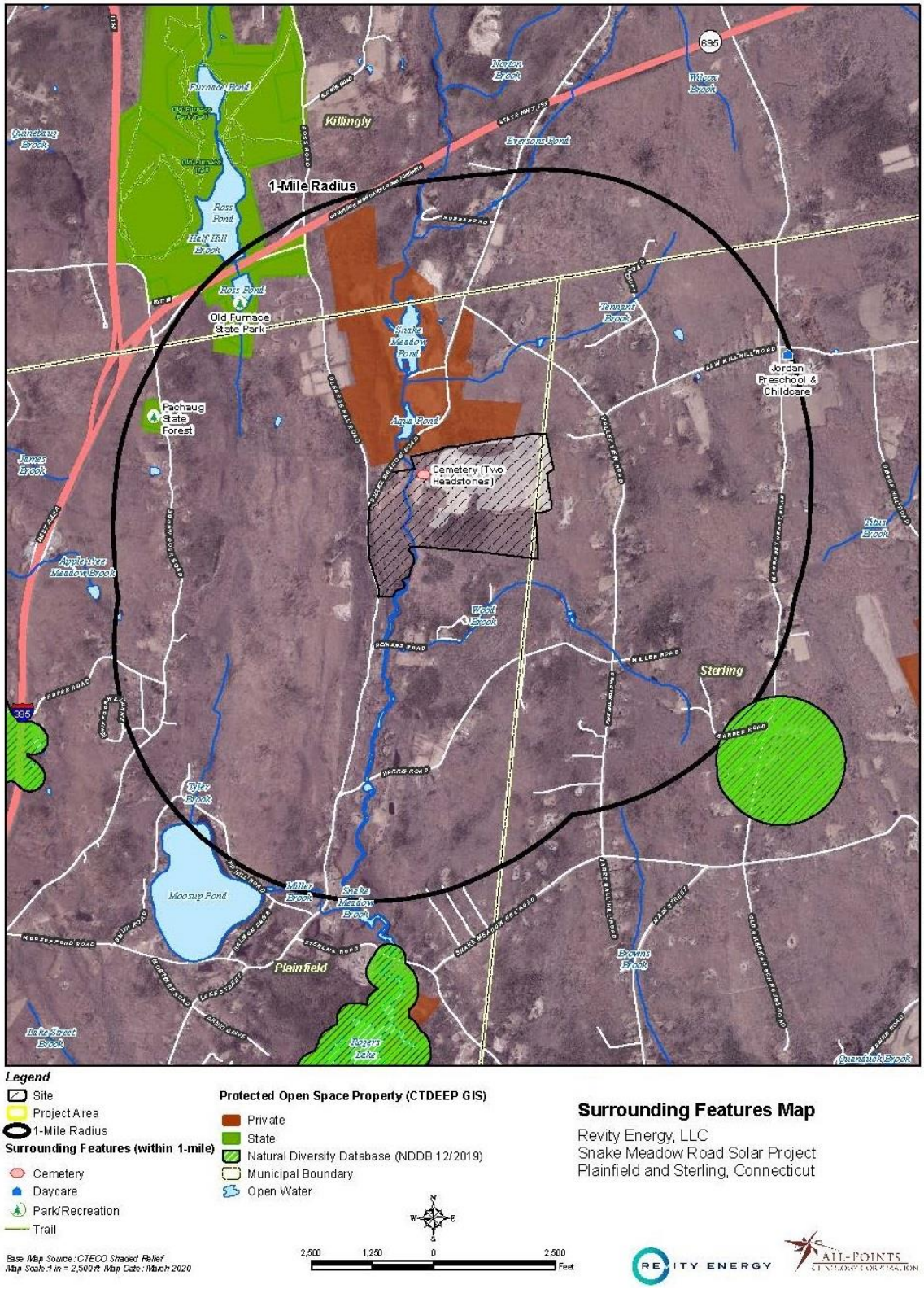


Figure 3 (Surrounding Features Map)

13. FAA CONSIDERATIONS

The nearest airports to the Project are the Danielson Airport, which is 4.87 miles to the northwest; and the Riconn Private Airfield, which is 5.19 miles to the southeast. Revity submitted the relevant Project information to the Federal Aviation Administration ("FAA") for an aeronautical study to evaluate potential hazards to air navigation and is awaiting the FAA's determination. Based on Revity's experience with numerous other solar projects and FAA assessments, Revity does not anticipate any adverse aviation impacts.

14. HISTORIC/ARCHAEOLOGICAL VALUES

The Property contains no properties or historic standing structures listed on or eligible for listing on the National or State Registers of Historic Places, structures, or buildings, and no other characteristics that have been classified as historic. EA at 45.

In terms of archaeological potential, the pedestrian survey of the Project area revealed that the western portion has been altered by sand and gravel operations in the past. In addition, there are existing access roads and other disturbed areas in the northern, eastern, and southernmost portions of the Property. As a result, it has been determined that these areas no longer retain intact soil deposits or the potential to yield intact cultural deposits. A zone of moderate/high archaeological sensitivity with the potential to yield subsurface archaeological deposits exists within the east-central portion of the Project area. The State Historic Preservation Office responded in writing on March 15, 2019 (*see* EA Appendix G) to a request for review of the Project and has recommended a Phase 1B professional cultural resources assessment and reconnaissance survey be completed

within the identified zone of sensitivity. Revity will provide the results of this Phase 1B to the Council once it is completed. The headstones associated with the existing burial plot located in the northwest corner of the Property are within the Project fence line, but are outside any areas proposed for re-grading and or cuts/fills. Some tree removal is proposed within this area, but Revity will take the utmost care to ensure that headstones are not disturbed. EA at 45. Therefore, for the above-mentioned reasons, the Project will not impact the historic values of the Property or that of the area surrounding the Property.

15. FOREST RESOURCES

Two datasets were evaluated to assess Project impacts to potential core forest located at the Site: (1) DEEP's Forestland Habitat Impact Mapping, which evaluation determined that the Site contains no core forest resources; and (2) UConn's Center for Land Use Education and Research's ("CLEAR") Forest Fragmentation Analysis ("FFA") study, which evaluation determined that two "small core" forest blocks extend onto the Site. Similar to the CLEAR FFA study, Revity's own independent GIS analysis indicated that the combined total area of these two small core forest blocks (both on the Site and extending offsite) is approximately 172 acres. *See* Figure 4 (Existing and Proposed Forest Maps).

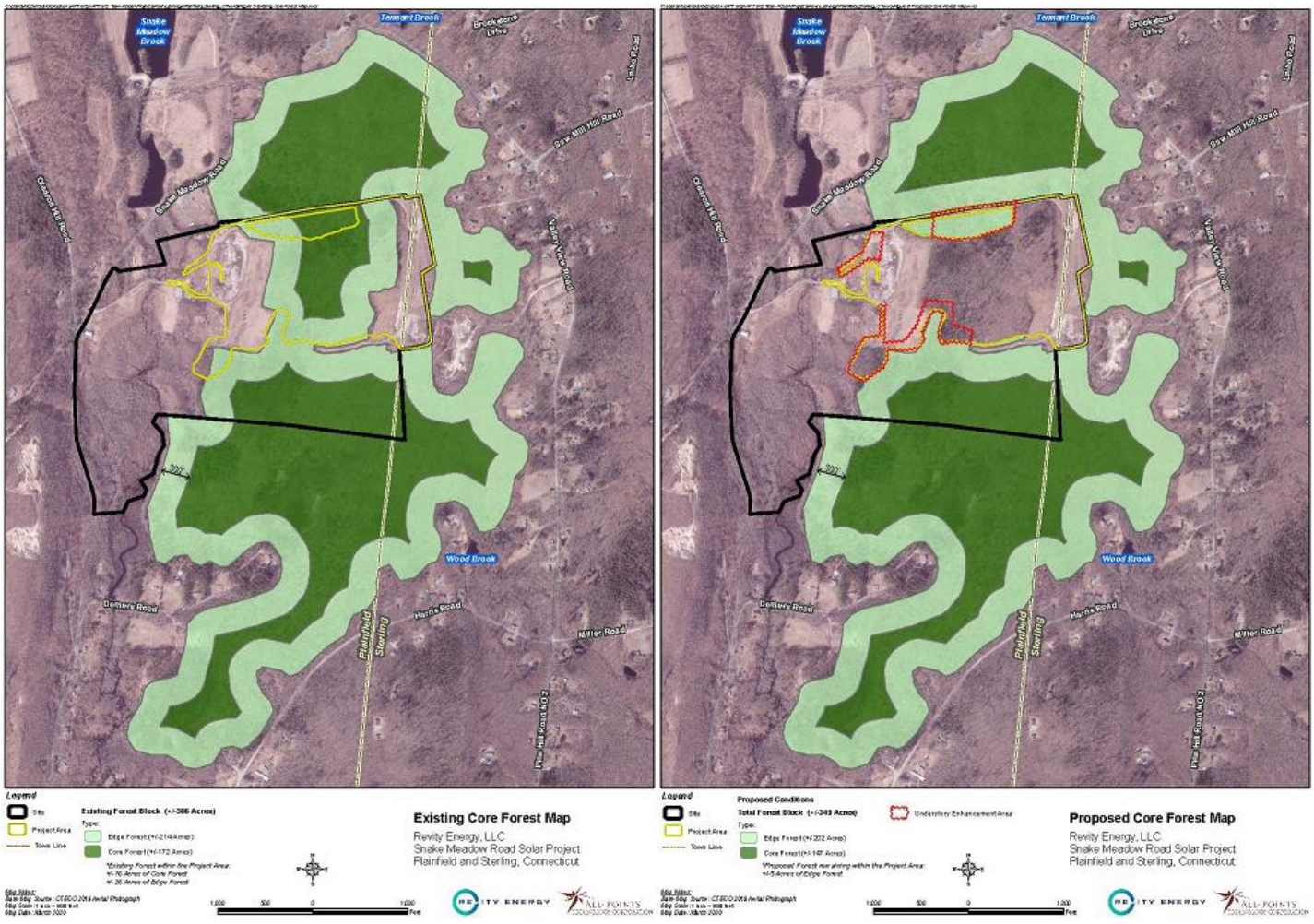


Figure 4 (Existing and Proposed Forest Maps)

These two small core forest blocks are connected by surrounding edge forest, creating an oblong and narrow contiguous forest area totaling approximately 386 acres of mostly (55%) edge forest. Additionally, this area is bisected by existing access roads and the eastern and western portions have experienced prior clearing for agricultural use and mining operations, respectively. Therefore, the Project will not significantly impact the Site's forest-related resources because the two small core forest blocks of primarily edge forest represent a less significant habitat, and one that been historically influenced by surrounding residential, agricultural, commercial development, and local roads.

16. AGRICULTURAL

The Property has been historically used for extensive gravel and sand mining operations, which have dramatically altered its soils characteristics. These mining activities have resulted in the stripping and degradation of the topsoil at the Property—diminishing the value of these historically valuable farmlands. Based on State mapping sources, the 74.9-acre Project contains less than one acre of Prime Farmland Soils and approximately 31 acres of Statewide Important Farmland Soils. However, all Project development will be located outside of Prime Farmland Soils mapped on the Site. Therefore, the Project will not impact Prime Farmland Soils, and a consultation with the Department of Agriculture is not required.

Approximately 17 acres of the Project has been mapped as Statewide Important Farmland Soils. The majority of this acreage has been historically and dramatically degraded by mining operations that have stripped topsoil and diminishing the quality of these historically valuable farmlands. For Statewide Important Farmland Soils in areas outside of where historic mining operations were carried out, Revity will use a minimally intrusive method for construction of the Project. EA at 44–45. Therefore, because Project development will avoid Prime Farmland Soils, and because the majority of Statewide Important Farmland Soils have already been degraded by historic mining operations, the Project will not negatively impact the Property's agricultural resources.

17. FISH, AQUACULTURE, & WILDLIFE

Several amphibians and reptiles were observed in and proximate to wetlands located on the Property. These include the green frog, the northern water snake, the garter snake, the painted turtle, the spring peeper, the gray treefrog, the American toad, and the pickerel frog. EA at 19.

The Property supports forested and early-successional habitats for both wetland and upland species of breeding birds and may also support habitat for forest-dwelling birds, which may include areas suitable for forest-interior neotropical migrants. EA at 19-20. Additionally, although the Project will result in a number of trees being removed, the Project will not likely result in an adverse effect or incidental takes of the Northern Long-Eared Bat and does not require a permit from the United States Fish and Wildlife Service. EA at 21.

A fisheries survey was not conducted at the Property, but a review of an available 2010 data set (sample location approximately 900 feet south of the Property) from the DEEP Fisheries Division has determined that the following species are located within Snake Meadow Brook (which flows through the western portion of the Property): brown bullhead, bluegill sunfish, chain pickerel, and redbreast sunfish. These species are all considered common and/or prevalent within Connecticut and inhabit moderate to large streams and waterbodies. Native brook trout were not noted in the sample data, but were recorded in tributaries feeding Snake Meadow Brook such as Wood Brook located ±571 feet southeast of the Project site. EA at 20.

The most recent DEEP Natural Diversity Data Base ("NDDB") mapping reveals that Threatened or Endangered species, species of Special Concern, or critical habitats do not exist at or are proximate to the Project site. The nearest buffer area is located

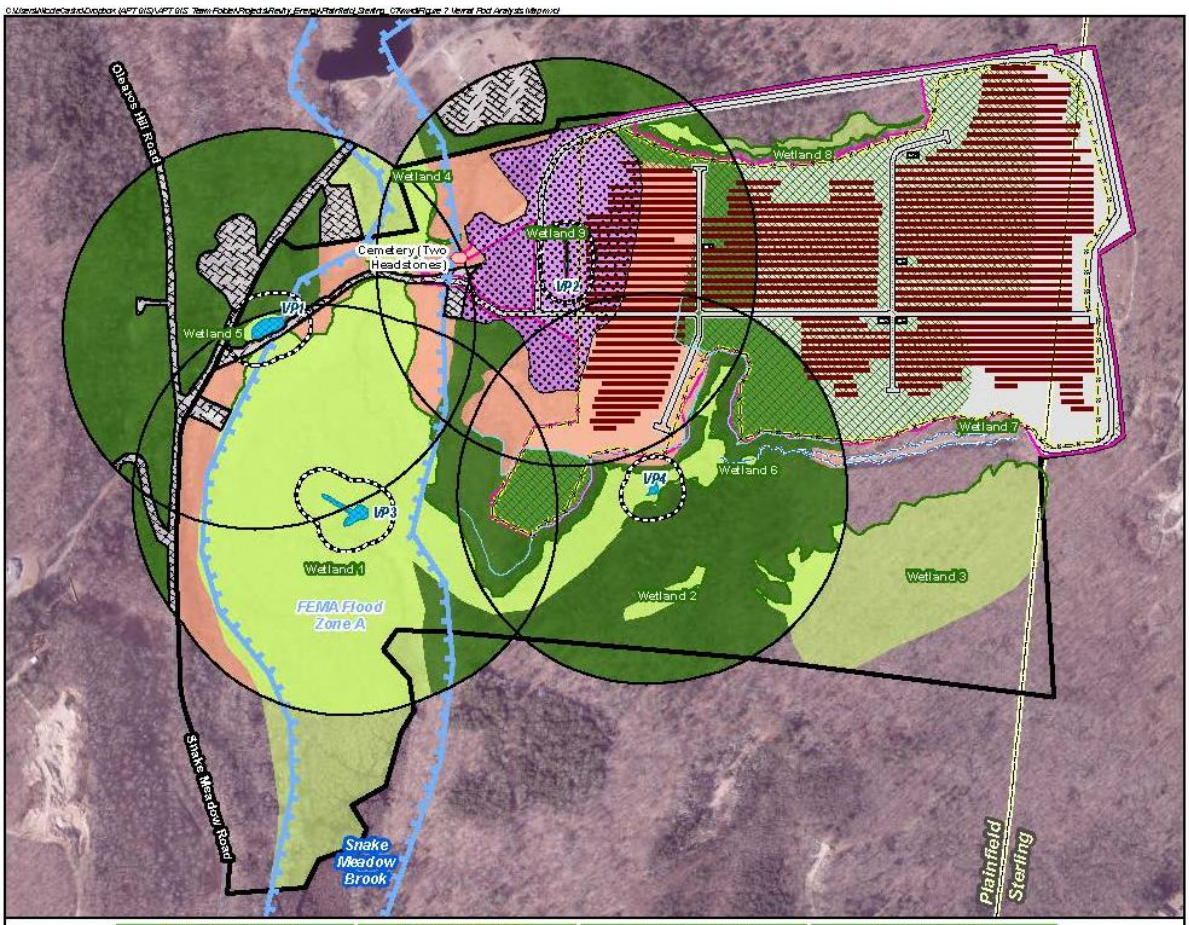
approximately 0.92 miles to the southeast. *See* EA Appendix F. As such, consultation with DEEP NDDB is not required based upon the DEEP NDDB's or the Council's screening criteria. EA at 21, 41. Therefore, for the above-mentioned reasons, the Project will not substantially impact the wildlife or habitat within or in close proximity to the Property.

18. WETLANDS

a. Overview.

Nine wetland areas and four vernal pools were identified as the wetland resources at the Property. The Project area has been configured to avoid direct impacts to wetlands. All clearing and grading limits for the Project's primary infrastructure (solar arrays, security fencing, and associated equipment) will maintain a minimum setback of at least 50 feet from the nearest wetland resource areas, except for areas bordering Wetlands 8 and 9, which will maintain a minimum 10-foot buffer.[5] These wetland features are summarized below and depicted on Figure 5. EA at 34.

[5] Due to Wetlands 8 and 9's proximity to the existing gravel access road, in conjunction with the historical disturbances to this resource and its resultant limited functions and values, maintaining a 50-foot buffer was not considered a high priority.



Vernal Pool 1 Impact Analysis		
Total Vernal Pool Envelope (VPE) Area: ±1.7 acre Project Area Within VPE Area: None Total 100'-750' Critical Terrestrial Habitat (CTH) Area: ±45.1 acres Project Area Within CTH Area: ±0.2 acre		
Existing VPE Areas: (no proposed habitat changes to VPE Areas)		
Developed	±0.3 acre	18%
Old Field / Meadow	±0.2 acre	12%
Upland Forest	±0.6 acre	35%
Wetlands	±0.6 acre	35%
Existing CTH Areas:		
Developed	±5.3 acres	12%
Old Field / Meadow	±5 acres	11%
Sand and Gravel Pit	±0.1 acre	<1%
Upland Forest	±18.6 acres	41%
Wetlands	±16.1 acres	35%
Proposed CTH Areas:		
Developed	±5.35 acres	12%
Old Field / Meadow	±4.98 acres	11%
Sand and Gravel Pit	±0.07 acre	<1%
Upland Forest	±18.6 acres	41%
Wetlands	±16.1 acres	35%

Vernal Pool 2 Impact Analysis		
Total Vernal Pool Envelope (VPE) Area: ±1.3 acre Project Area Within VPE Area: ±1.2 acres Total 100'-750' Critical Terrestrial Habitat (CTH) Area: ±43.5 acres Project Area Within CTH Area: ±2.1 acres		
Existing VPE Areas:		
Sand and Gravel Pit	±1.25 acre	96%
Wetlands	±0.05 acre	4%
Proposed VPE Areas:		
Developed	±1.25 acre	96%
Wetlands	±0.05 acre	4%
Existing CTH Areas:		
Developed	±2.4 acres	6%
Old Field / Meadow	±15.8 acres	36%
Sand and Gravel Pit	±10 acres	23%
Upland Forest	±11.9 acres	27%
Wetlands	±13.4 acres	9%
Proposed CTH Areas:		
Developed	±23.2 acres	53%
Old Field / Meadow	±6.8 acres	16%
Sand and Gravel Pit	±3.6 acres	9%
Upland Forest	±6.5 acres	15%
Wetlands	±3.4 acres	9%

Vernal Pool 3 Impact Analysis		
Total Vernal Pool Envelope (VPE) Area: ±2 acres Project Area Within VPE Area: None Total 100'-750' Critical Terrestrial Habitat (CTH) Area: ±47 acres Project Area Within CTH Area: ±1.6 acres		
Existing VPE Areas: (no proposed habitat changes to VPE Areas)		
Wetlands	±2 acres	100%
Existing CTH Areas:		
Developed	±2 acres	4%
Old Field / Meadow	±6 acres	13%
Upland Forest	±11 acres	23%
Wetlands	±28 acres	60%
Proposed CTH Areas:		
Developed	±3.6 acres	7%
Old Field / Meadow	±5.9 acres	13%
Upland Forest	±9.5 acres	20%
Wetlands	±28 acres	60%

Vernal Pool 4 Impact Analysis		
Total Vernal Pool Envelope (VPE) Area: ±1.14 acre Project Area Within VPE Area: None Total 100'-750' Critical Terrestrial Habitat (CTH) Area: ±42.34 acres Project Area Within CTH Area: ±13.2 acres		
Existing VPE Areas: (no proposed habitat changes to VPE Areas)		
Old Field / Meadow	±0.08 acre	7%
Upland Forest	±0.50 acre	44%
Wetlands	±0.56 acre	49%
Existing CTH Areas:		
Old Field / Meadow	±8.8 acres	21%
Sand and Gravel Pit	±1.74 acres	4%
Upland Forest	±27 acres	64%
Wetlands	±4.8 acres	11%
Proposed CTH Areas:		
Developed	±13.2 acres	31%
Old Field / Meadow	±2.64 acres	6%
Sand and Gravel Pit	±1 acre	3%
Upland Forest	±20.7 acres	49%
Wetlands	±4.8 acres	11%

Legend

Site
Approximate Limit of Disturbance
Approximate Area of Tree Removal
Cemetery
Perimeter Fence
Erosion and Sediment Control Silt Fence
Access Road
Solar Panel
Concrete Equipment Pad
Vernal Pool
Delineated Intermittent Watercourse (IWC)
Delineated Wetland Boundary
Wetland Area
Approximate FEMA Flood Zone A
Town Line
100' Vernal Pool Envelope (VPE)
100'-750' Critical Terrestrial Habitat (CTH)
Developed
Old Field /Meadow
Sand and Gravel Pit
Upland Forest
Wetland

Vernal Pool Analysis Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Map Notes:
Base Map Source : CT ECO 2019 Aerial Photograph
Map Scale : 1 inch = 500 feet
Map Date : March 2020

500 250 0 500 Feet

REVITY ENERGY ALL-POINTS TECHNOLOGY CORPORATION

Figure 5 (Wetland Features)

b. Wetlands 1, 4, and 5.

Wetlands 1, 4, and 5 consist of wetlands surrounding and including Snake Meadow Brook. This large wetland system continues offsite to the north and south and is bisected by the existing Property access road crossing. Wetlands 1, 4, and 5 are combined for this discussion because all these resources are directly or indirectly connected and/or homogenous in hydrology, soils, and/or vegetation. The western portions of these Wetlands consist of a groundwater slope wetland with a saturated hydrology, and the eastern portions consist of riparian wetlands associated with Snake Meadow Brook. Three embedded vernal pools have also been identified in these wetlands areas and are discussed in more detail in the Vernal Pool section below. EA at 14.

c. Wetland 2.

Wetland 2, located in the southcentral portion of the Property, consists of a small isolated groundwater slope wetland. This wetland generally drains south as a narrow-forested seep that eventually drains off the subject Property and potentially into Wetland 1 further off of the Property. EA at 15.

d. Wetland 3.

Wetland 3 consists of a complex of hillside seep wetland areas feeding and draining from a large perched wetland system located on a localized plateau. This wetland resource is located in the southeast corner of the Property and generally drains south with smaller seeps draining west. The northern extents of Wetland 3 have experienced historic

alteration including filling/cutting of soils from the quarry operation and interception of the contributing hydrology. EA at 15.

e. Wetlands 6 and 7.

Wetlands 6 and 7 are combined for this discussion because they consist of similar soils, formation, hydrology, and vegetation and both drain into Wetland 1. Wetlands 6 and 7 consist of two parallel intermittent watercourse features that are formed within historically constructed drainage swales. These historically constructed parallel drainage swales consist of 1-to-3-foot-wide channels with stone-armored, sandy bottoms with well incised banks. Despite the anthropogenic origin of these swales, they contain the necessary hydrology to maintain flows outside of storm events and consist of a dominance of hydrophytic vegetation. Running and standing water was present within these swales at the time of inspection. EA at 15.

f. Wetland 8.

Wetland 8 consists of a narrow hillside seep system with an interior braided intermittent watercourse. This wetland generally drains east to west originating at a seep outbreak within a large boulder field/slope. Areas of this wetland have experienced historic logging with skid trails crossing the wetland resulting in the creation of small canopy openings. The hydrology supporting this wetland generally dissipates as topography forces the drainage into a rip-rap armored drainage swale adjacent to the existing interior dirt access road. EA at 16.

g. Wetland 9.

Wetland 9 is located in the central portion of the gravel pit and consists of an isolated, anthropogenic linear swale that was historically cut to intercept groundwater seepage in addition to receiving drainage from a rock armored swale to the north and east. This swale generally drains north where it terminates at a fill slope. Inundation depths were observed from 8 to 12 inches during multiple inspections. Wetland 9's vegetation is generally sparse and an embedded vernal pool (Vernal Pool 2) is located at the toe of the slope on the eastern side of the gravel pit floor. EA at 16.

h. Vernal Pools.

Vernal pool surveys were conducted on April 11, April 26, May 7 and May 29, 2019. The four Vernal Pools identified at the Site are classified as cryptic, or embedded, pools. Vernal Pools 1, 2, and 4 are either man-made or have been anthropogenically modified. EA at 16-17. A brief summary of each Vernal Pool proceeds below:

A. Vernal Pool 1.

Vernal Pool 1 is embedded within Wetland 5 and is located adjacent to the north side of the existing access road. When this historic access road was installed, it bifurcated the former contiguous wetland, which altered Wetland 5's hydrology, and subsequently created a longer hydroperiod that enhanced its suitability for amphibian breeding. EA at 17.

B. Vernal Pool 2.

Vernal Pool 2 lies within Wetland 9 at the toe of the slope on the eastern side of the gravel pit floor. It was created as a result of the large-scale grading and soil removal associated with gravel extraction and processing. While both wood frog and spotted salamander were observed breeding in the pool, its productivity is likely diminished by its poor accessibility to, and distance from, terrestrial forest habitat (nearest forest approximately 500). EA at 17-18.

C. Vernal Pool 3.

Vernal Pool 3 is located within Wetland 1 (a large floodplain wetland bordering Snake Meadow Brook). Vernal Pool 3 supports amphibian breeding. Currently, the hydrology of this vernal pool is enhanced by a beaver dam, but without the dam slowing the water velocity and creating an expanse of open water, this vernal pool would be greatly diminished in size. Due to the likely high predation occurring within this pool, Vernal Pool 3 could be discounted as a significant vernal pool feature. EA at 18.

D. Vernal Pool 4.

Vernal Pool 4 consists of an old farm pond created alongside an intermittent stream channel and drainageway in the eastern end of Wetland 1. The pool is sediment-laden, which results in a shallower inundation and a maximum depth of less than five (5) inches. EA at 18.

i. Wetland Protective Measures.

The Project will include a number of protective measures for wetlands and vernal pools at the Site. The Project has been designed to minimize clearing requirements in areas proximate to Wetlands 1, 3, 4, 6, 7, and 8. Tree clearing adjacent to Wetland 1 outside of the security fence will be limited to mature trees that would cause shading of the solar arrays, however, low growth vegetation and ground cover would remain. Along the peripheral boundaries of Wetland 2, in areas where tree clearing is required, habitat enhancement measures (including new plantings) will be implemented. Additionally, best management practices ("BMPs") have been incorporated into the Project design in order to avoid unintentional impacts to wetland resources during construction activities. Potential short-term temporary impacts will be further minimized by proposed erosion and sedimentation control measures, which will be installed and maintained during construction activities in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. Potential long-term secondary impacts to wetland resources associated with the operation of the Project are negligible as the Project design minimizes the creation of impervious surfaces and maintains or enhances the majority of the surface around the facility with native grass or vegetation. Stormwater generated by the Project development will be properly handled and treated in accordance with the 2004 Connecticut Stormwater Quality Manual. Disturbed areas within the Project area will be underlain with a cover type of short meadow grasses consistent with current open field conditions. EA at 34-35.

By implementing the design features and management techniques described above, the proposed Project development will not result in an adverse impact to wetland

resources. With regard to the Vernal Pools specifically, construction and operation of the Project will not result in direct physical impact to these vernal pools. EA at 35.

Additionally, a Wetland and Vernal Pool Protection Plan has been developed for this Project to both protect the nearby wetland resources from potential temporary impacts and avoid unintentional impact or mortality to vernal pool herpetofauna (reptiles and amphibians) during construction activities. The Wetland and Vernal Pool Protection Plan will be implemented and maintained throughout the entire duration of construction and will incorporate vernal pool-specific measures during peak amphibian movement periods and late summer dispersal if construction cannot be avoided during these periods. Provided that the Wetland and Vernal Pool Protection Plan is properly implemented and maintained during construction activities, the potential adverse impacts to nearby vernal pool or wetland resources will be minimized. EA at 41.

After construction is completed, the Project will not generate substantial traffic within the vernal pools critical terrestrial habitat, and requires no nighttime activities or lighting that could result in disrupting amphibian behavior. Therefore, by implementing the BMPs and protective measures discussed above (and more fully discussed in the EA) and implementing the Wetland and Vernal Pool Protection Plan, the Project will not result in a material adverse impact to wetland or vernal pools resources. EA at 41.

19. WATER QUALITY

a. Surface Waters.

Based upon the DEEP water quality mapping, the Property is located in Major Drainage Basin 3 (Thames River), Regional Basin 35 (Moosup River), and Sub-regional

Drainage Basin 3502 (Snake Meadow Brook). The nearest DEEP mapped surface waterbody is Snake Meadow Brook, which traverses the western portion of the Property in a north-to-south direction. Snake Meadow Brook is classified by DEEP as a "Class A" surface water body. EA at 22.

With the exception of the western portion of the Project area, which is located within FEMA Flood Zone A associated with Snake Meadow Brook, the majority of the Project is located in an area of minimal flooding and the remaining portions of the Property are designated as Zone X and Zone C.[6] EA at 23, 43.

b. Groundwater.

The groundwater underlying the Property is classified by the DEEP as "GA". Based upon a review of available DEEP mapping, the Property is not located within a mapped preliminary or final Aquifer Protection Area.

c. Project Development Water Quality Mitigation.

The Project has no potable water uses or sanitary discharges planned. Once operative, the stormwater generated by the development of the Project will be handled and treated in accordance with the 2004 Connecticut Stormwater Quality Manual. The proposed post-development drainage characteristics will generally mimic existing conditions with the exception of an increased time of concentration that will occur in the east-central portion of the Project area as a result of tree removal activities. To

[6] Zones X and C are equivalent designations that are defined as areas of minimal flooding, typically above the 500-year flood level.

compensate for this increased time of concentration, a series of grass-lined stormwater detention ponds with low-flow overflow outlets are proposed at several locations within the Project. EA at 42-43.

Additionally, Revity will implement protective measures in the form of a SWPCP to safeguard nearby water resources from potential impacts during construction, which plan will be finalized and submitted pending approval by DEEP Stormwater Management. This plan will include monitoring of established sedimentation and erosion controls that will be installed and maintained in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and, to the extent practicable, the DEEP Stormwater Management at Solar Farm Construction Projects, dated September 8, 2017. Revity will also apply for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from DEEP.[7] Therefore, given the information provided above and Revity's proposed mitigation measures, no significant impacts on water quality or supply will occur with the construction or operation of the proposed Project. EA at 48-49.

[7] Aside from a DEEP permit for stormwater, no other permits will be required for the construction of the Project.

CONCLUSION

Accordingly, for the reasons stated herein, Revity respectfully requests that the Council rule that the Project will not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes, Section 16-50k, will not require a Certificate of Environmental Compatibility and Public Need.

Respectfully submitted,

On behalf of Revity Energy LLC

BY: _____

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bmcdermott@murthalaw.com

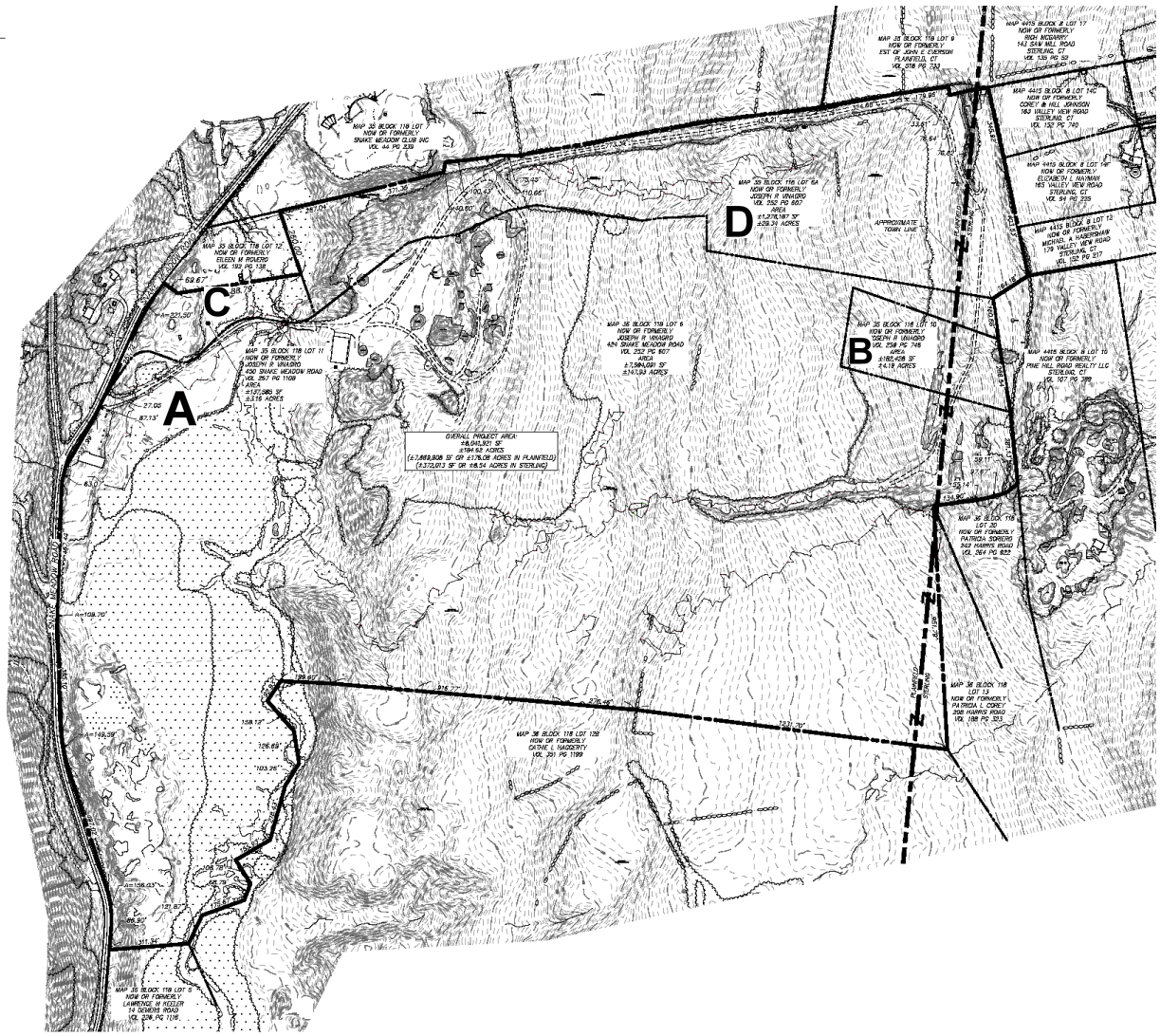
Exhibit List

Exhibit A – Property Parcels Map
Exhibit B – Environmental Assessment
Exhibit C – Decommissioning Plan
Exhibit D – Carbon Debt Analysis
Exhibit E – Spec. Sheets
Exhibit F – Municipal Letters of Support
Exhibit G-1 – Abutters List
Exhibit G-2 – Federal, State, and Local Agencies and Officials List
Exhibit H – Affidavits

Exhibit A – Property Parcels Map

LEGEND (NOT SHOWN TO SCALE)

■	BOLLARD
○	FLAG POLE
▣	MAILBOX
▪	SIGN
○	SHRUB
	TREE
	WETLAND FLAG
	CATCH BASIN
	FIRE HYDRANT
	POWER POLE
	LIGHT POLE
	WELL
BIT	BITUMINOUS
CONC	CONCRETE
CP	CONCRETE PAD
LSA	LANDSCAPED AREA
BSW	BUILDING OVERHANG
BW	BOTTOM OF WALL
EP	EDGE OF PAVEMENT
EG	EDGE OF GRAVEL
EW	EDGE OF WALK
DW	DETECTABLE WARNING
BC	BITUMINOUS CURB
CC	CONCRETE CURB
GC	GRANITE CURB
SC	SLOPED GRANITE CURB
SWS	SINGLE WHITE STRIPE
BWS	BROKEN WHITE STRIPE
SYS	SINGLE YELLOW STRIPE
DYS	DOUBLE YELLOW STRIPE
	METAL GUARD RAIL
	WOOD GUARD RAIL
	CHAINLINK FENCE
	IRON FENCE
	TREE LINE
	WETLAND LINE
	EASEMENT LINE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	CONTOUR LINE


A
B
C
D
OVERALL PROJECT AREA:
±8,040,921 SF
±184.62 ACRES
(±7,869,908 SF OR ±176.08 ACRES IN PLAINFIELD)
(±170,013 SF OR ±8.54 ACRES IN STERLING)
APPROXIMATE TOWN LINE
SNAKE MEADOW ROAD
CT RTE 165
MAP 35 BLOCK 118 LOT 3
NOW OR FORMERLY
SNAKE MEADOW CLUB INC
VOL 44 PG 339
MAP 35 BLOCK 118 LOT 12
NOW OR FORMERLY
EILEEN M ROGERS
VOL 192 PG 138
MAP 35 BLOCK 118 LOT 11
NOW OR FORMERLY
JOSEPH R VINARDO
430 SNAKE MEADOW ROAD
VOL 267 PG 1109
±137,985 SF
±3.16 ACRES
MAP 35 BLOCK 118 LOT 9
NOW OR FORMERLY
JOSEPH R VINARDO
434 SNAKE MEADOW ROAD
VOL 252 PG 807
±7,594,091 SF
±174.33 ACRES
MAP 35 BLOCK 118 LOT 9
NOW OR FORMERLY
EST OF JOHN E EMERSON
PLAINFIELD, CT
VOL 278 PG 730
MAP 39 BLOCK 118 LOT 6A
NOW OR FORMERLY
JOSEPH R VINARDO
VOL 252 PG 807
±2.21 AC IN PLAINFIELD
±258.39 ACRES
MAP 35 BLOCK 118 LOT 10
NOW OR FORMERLY
JOSEPH R VINARDO
VOL 238 PG 748
AREA
±185,438 SF
±4.18 ACRES
MAP 4415 BLOCK B LOT 17
NOW OR FORMERLY
RICH MCGARRY
142 SAW MILL ROAD
STERLING, CT
VOL 135 PG 20
MAP 4415 BLOCK B LOT 14C
NOW OR FORMERLY
CONEY & HILL JOHNSON
163 VALLEY VIEW ROAD
STERLING, CT
VOL 152 PG 740
MAP 4415 BLOCK B LOT 14F
NOW OR FORMERLY
ELIZABETH L HAYMAN
165 VALLEY VIEW ROAD
STERLING, CT
VOL 84 PG 339
MAP 4415 BLOCK B LOT 13
NOW OR FORMERLY
MICHAEL A HABERMAN
169 VALLEY VIEW ROAD
STERLING, CT
VOL 152 PG 917
MAP 4415 BLOCK B LOT 15
NOW OR FORMERLY
PINE HILL ROAD REALTY LLC
STERLING, CT
VOL 107 PG 399
MAP 36 BLOCK 118
LOT 30
NOW OR FORMERLY
PATRICIA SORRENTINO
349 HARRIS ROAD
VOL 264 PG 822
MAP 36 BLOCK 118
LOT 13
NOW OR FORMERLY
PATRICIA L CONEY
208 HARRIS ROAD
VOL 198 PG 323
MAP 36 BLOCK 118 LOT 12B
NOW OR FORMERLY
CAITHE L SADOFFSKY
VOL 251 PG 1199
MAP 35 BLOCK 118 LOT 5
NOW OR FORMERLY
LAWRENCE M ROGERS
14 SOMERS ROAD
VOL 206 PG 1126
N/F
N/F
N/F

	Parcel ID	Address	Current Owner	Size (Acres)
A	036-0118-0006	424 Snake Meadow Rd., Plainfield	Joseph R. Vinagro	147.93
B	035-0118-0010	0 Snake Meadow Rd., Plainfield	Joseph R. Vinagro	4.19
C	035-0118-0011	450 Snake Meadow Rd., Plainfield	Joseph R. Vinagro	3.16
D	35-0118-006A	0 Snake Meadow Rd., Plainfield	Joseph R. Vinagro	29.34
				184.62

Exhibit B – Environmental Assessment

ENVIRONMENTAL ASSESSMENT

PROPOSED SNAKE MEADOW ROAD SOLAR PROJECT

PLAINFIELD-STERLING, CONNECTICUT

WINDHAM COUNTY

Prepared for:

Revity Energy, LLC

117 Metro Center Boulevard Suite 1007
Warwick, RI 02886

Prepared by:

All-Points Technology Corporation, P.C.
567 Vauxhall Street Ext. – Suite 311
Waterford, CT 06385

April 2020

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1 Introduction

All-Points Technology Corporation, P.C. ("APT") prepared this Environmental Assessment ("EA") on behalf of Revity Energy, LLC (hereinafter referred to as the "Revity") for the proposed installation of an 12.25-megawatt[1] ("MW") solar-based electric generating facility ("Project" or "Facility") in the Towns of Plainfield and Sterling, Connecticut (the "Towns"). This EA has been completed to support the Revity's submission to the Connecticut Siting Council ("Council") of a petition for declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, maintenance, and operation of the Project.

The results of this assessment demonstrate that the proposed development will comply with the Connecticut Department of Energy and Environmental Protection's ("DEEP") air and water quality standards and will not have an undue adverse effect on the existing environment and ecology.

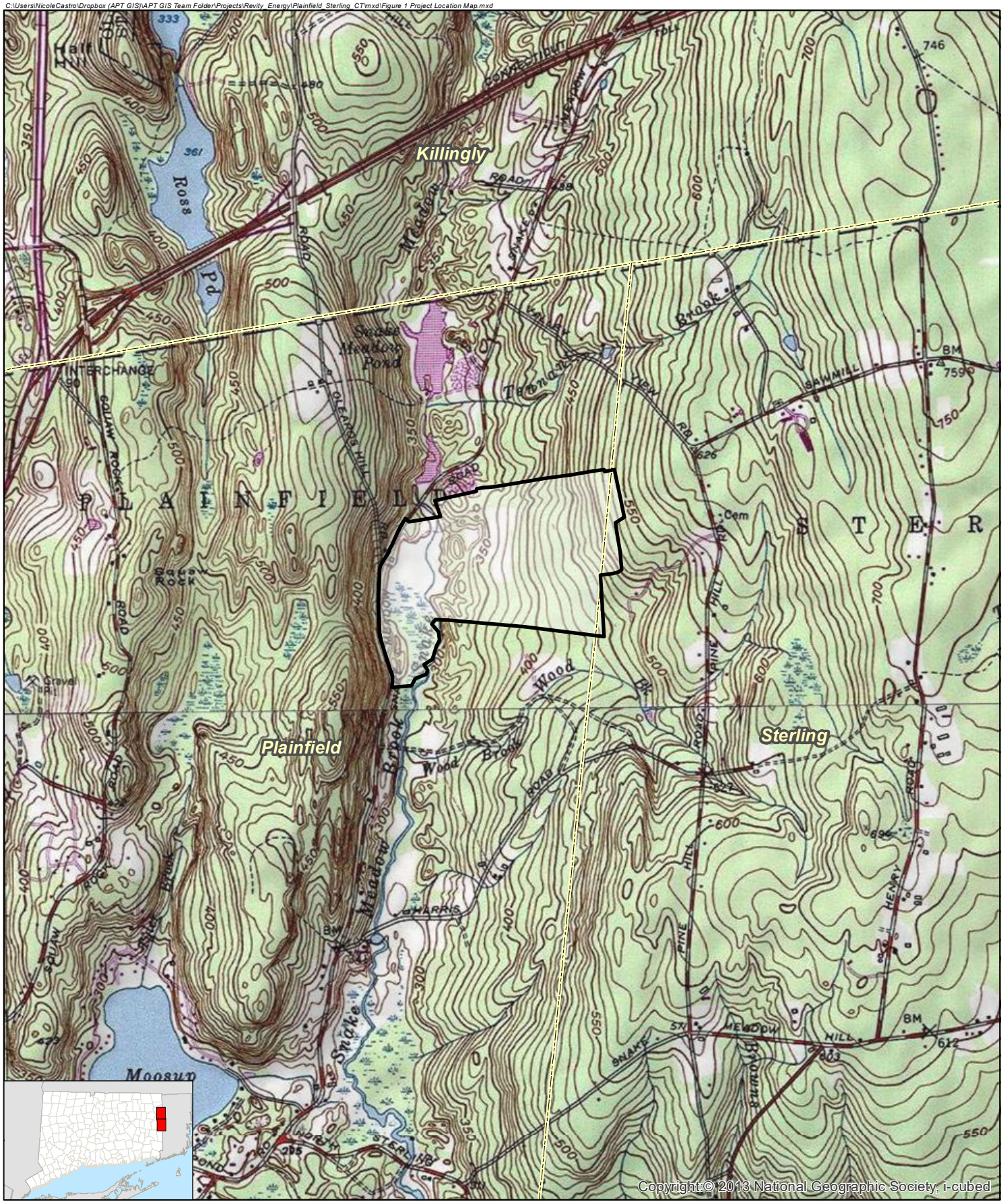
The Project will be located at 424 Snake Meadow Road (CT Route 664), a property which is primarily in the Town of Plainfield, Connecticut[2], with a small portion in the Town of Sterling ("Site"). The Site consists of approximately 184.6 acres of mostly undeveloped land; the western portion is bisected by Snake Meadow Brook and associated wetlands; the eastern portion is primarily wooded, interspersed with fields and unpaved access roads. A small-scale mining operation occupies the northwestern portion of the Site.

The proposed development will require disturbance of approximately 75 acres ("Project Area"). Upon its completion, the Facility will occupy approximately 58.5 acres of the Site with an additional ±16.5 acres of disturbance beyond the Facility's fenced limits to enable development. The Facility will be comprised of approximately 31,125 photovoltaic modules installed at a tilt angle of 20.0 degrees, 49 inverters, seven (7) transformers, and one (1) service interconnection point. The Facility will use a ground mounted, pile-driven, racking system and be enclosed by a 6-foot tall chain-link security fence. Connections to existing electrical distribution infrastructure located on Snake Meadow Road will utilize a combination of aboveground and underground utility lines installed along the main access road to the Site. Figure 1, *Project Location Map*, depicts the location of the Site and surrounding area.

[1] MW output is referenced as Alternating Current (AC) in this report.

[2] The majority of the Site (±176.08 acres) is located at 424 Snake Meadow Road (Parcel No.: 036-0118-0006 – Plainfield Assessor) in Plainfield with a small percentage of the eastern portion of the Site (±8.54 acres) located at 0 Valley Road (Parcel No.: 04415-008-0011 – Sterling Assessor) in Sterling, Connecticut.

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Revity_Energy\Plainfield_Sterling_CT\mxd\Figure 1 Project Location Map.mxd



Legend

Site

Town Line

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Map, East Killingly, CT (1974) and Oneco, CT (1970)
Map Scale: 1:24,000
Map Date: March 2020

N
W E
S

1,000 500 0 1,000
Feet

Figure 1
Project Location Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

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2 Existing Conditions

2.1 Project Location

The Site is a privately-owned single parcel of land located east of Snake Meadow Road and west of Valley View Road and encompasses a total of ±184.6 acres. Primarily located in the town of Plainfield, Connecticut, a small percentage of the Site (its eastern portion) is located in the neighboring town of Sterling. The Site is mostly undeveloped with the northwestern portion currently occupied by a small-scale mining operation while the eastern portion is primarily wooded with the exception of a few small fields and unpaved access roads. The immediate Site vicinity is characterized as rural, with a mix of undeveloped land, agricultural fields and sparse residential development. The Site is zoned as Residential RA-60 in the Town of Plainfield and Residential in the Town of Sterling.

Regionally, the Site lies within the Northeast Hills Ecoregion[3]. This region is characterized by hilly landscapes of intermediate elevation with smaller localized ridge systems, plateau-like uplands and broad river valleys. Elevations within the region generally lie between 400 and 700 feet above mean sea level. The Site's topography slopes down from east to west, with elevations ranging from approximately 300 feet on its western side to 540 feet on the eastern edge. Snake Meadow Brook traverses the western portion of the Site in a north to south direction.

2.2 Site Access

Access to the Site is over an existing sand and gravel drive with a paved apron originating off of Snake Meadow Road (CT 664). The access drive extends east into the Site where it connects to a system of unpaved roads used for accessing interior fields and mining operations.

[3] Dowhan, J.J. and Craig, R. 1976. Rare and Endangered Species of Connecticut and Their Habitats. State Geological and Natural History Survey of Connecticut. The Natural Resources Center, Department of Environmental Protection.

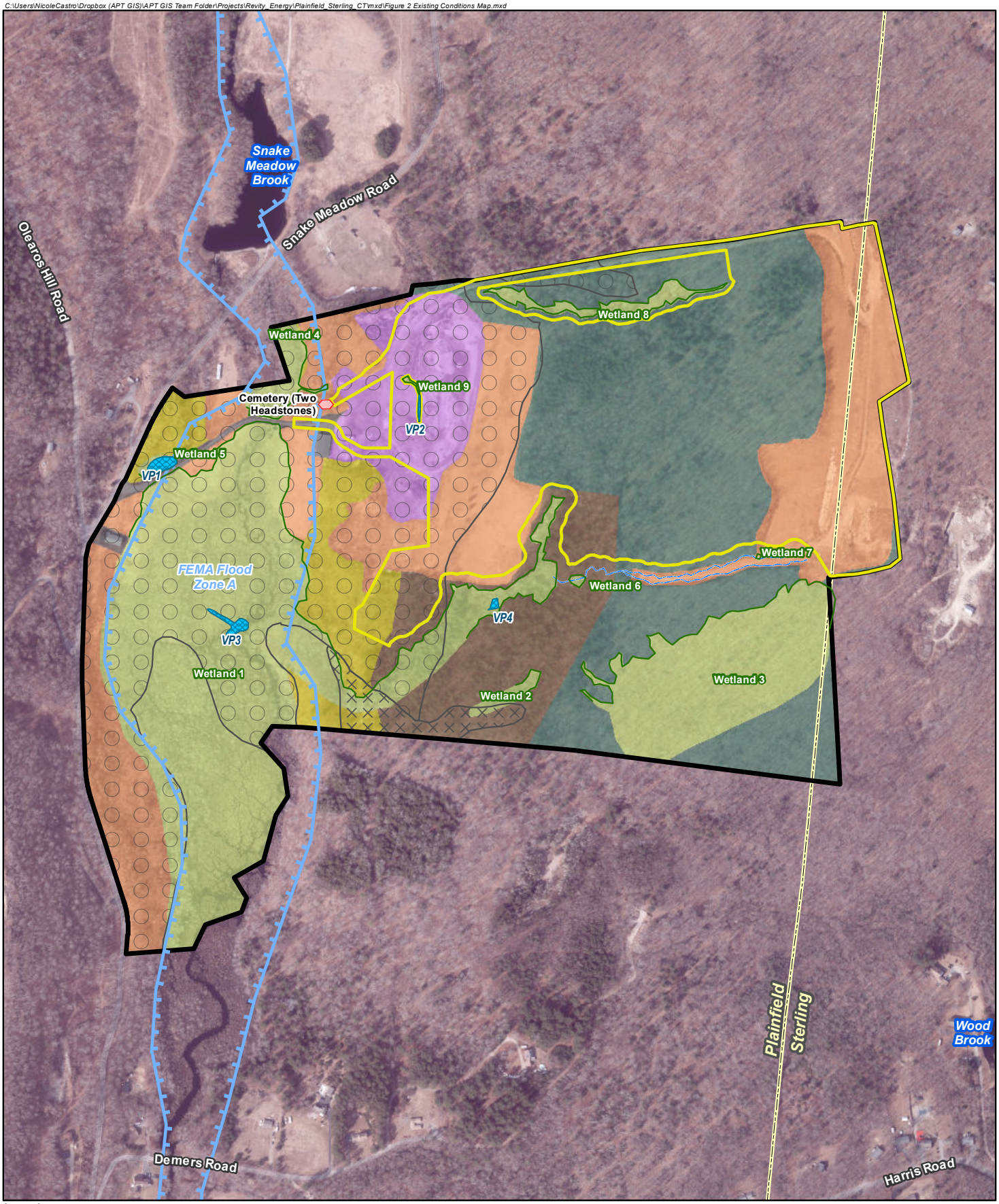
2.3 Habitat and Wildlife

Eight (8) habitat types (vegetative communities) have been identified on the Site, with six (6) located within or proximate to the Project Area, including:

- Old Field/Meadow
- Forested
    - Oak/Hardwood Forest
    - Pine/Hardwood Forest
    - Mixed Hardwood Forest
- Sand and Gravel Pit
- Wetland
    - Forested Wetland
    - Early-successional Wetlands (emergent and scrub-shrub)
- Vernal Pools
- Developed

Transitional ecotones separate these distinct habitat types. Peripheral wetland forest and other wetland habitats are also located in proximity to the Project Area. Most of these habitats have the ability to support several species. However, the Developed habitat on the Site consists of an existing building/garage that is part of the mining operations and associated gravel haul road and does not provide beneficial habitat functions or values. As a result, the Developed habitat is not discussed in any detail herein. Figure 2, *Existing Conditions Map*, depicts current conditions on the Site, its access, abutting properties, and several features discussed in this section.

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Revity_Energy\Plainfield_Sterling_CT\mxd\Figure 2 Existing Conditions Map.mxd



Legend

- Site
- Project Area
- Delineated Wetland Boundary
- Delineated Intermittent Watercourse (IWC)
- Cemetery
- Approximate FEMA Flood Zone A

Habitat Cover Type

- Oak / Hardwood Forest
- Pine / Hardwood Forest
- Mixed Hardwood Forest
- Old Field / Meadow
- Sand and Gravel Pit
- Wetland
- Developed
- Vernal Pool

- Prime Farmland Soils
- Statewide Important Farmland Soils
- Town Line

N W E S

600 300 0 600 Feet

Figure 2
Existing Conditions Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Map Notes:
Base Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 600 feet
Map Date: March 2020

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2.3.1 Upland Habitat Types

2.3.1.1 Old Field/Meadow

This habitat type encompasses approximately 43 acres and occurs sporadically across the Site within historically cleared areas. It includes two large meadows (eastern meadow and western meadow) within the Project Area, as well as land surrounding the access road and frontage along Snake Meadow Road.

The eastern field consists of soils that have been stripped of topsoil and upper soil horizons, then graded smooth. The vegetation consists largely of meadow species, with pockets of early successional woody species. The lack of topsoil favors nutrient-poor pioneer species such as broomsedge (*Andropogon virginicus*), sweet fern (*Comptonia peregrina*) and haircap moss which are common in the meadow areas. Mugwort (*Artemesia vulgaris*) and goldenrod *(Solidago spp.*) are also common herbaceous species. Tree and shrub species include autumn olive (*Elaeagnus umbellata*), quaking aspen (*Populus tremuloides*), gray birch (*Betula populifolia*), bebb willow (*Salix bebbiana*), white pine *(Pinus strobus)*, queen anne's lace (*Daucus carota*), asters (*aster spp.*), and deer tongue grass (*Dichanthelium clandestinum*). A large spoil pile is covered with a dense growth of bur cucumber (*Sicyos angulatus*).

The western field consists of a mowed/maintained cool-season, grass-dominated meadow. Dominant species include timothy grass (*Phleum pratense*), clover (*Trifolium spp.*), queen anne's lace, aster, purple lovegrass (*Eragrostis pectinacean*), flannel mullein (*Verbascum Thapsus*), milkweed (*Asclepias spp.*) and bedstraw (*Galium spp.*). The western field border includes a dense band of autumn olive. Several large shade trees, primarily shagbark hickory and eastern red cedar (*Juniperus virginiana*), lie within the field.

Old field areas bordering the active mining operations and access road are dominated by dense autumn olive and mugwort, with gray birch and quaking aspen also common.

2.3.1.2 Upland Forests

Three distinct upland forest cover types (or "stands") were identified, as discussed herein, based on species composition and age class. Overall, the upland forest habitat on the Site is typical of post-agricultural, second-growth forest existing throughout this region. Tree size classes are

predominantly sawtimber (trees 11.5 inches diameter at breast height ["DBH"] and greater) and pole-timber (trees 5.5 to 11.5 inches DBH).

2.3.1.2.1 Oak-Hardwood Forest

This stand encompasses approximately 52 acres in the eastern portion of the Site and represents the largest forest cover type within the Project Area. Species composition varies based on landscape position and soil drainage class. Species such as red maple (Acer rubrum) are common in depressions, drainageways and wetlands with aquic moisture regimes,[4] while white pine, black oak *(Quercus velutina),* and white oak *(Quercus alba)* are typically found in drier (xeric) areas. Trees in the easternmost areas, bordering the existing field, are characterized by smaller diameter shade-intolerant (early successional) species such as black birch *(Betula lenta*). Saplings (trees 0.5 to 5.5 inches DBH) provide a dense mid and low-canopy component in this area. Red oak *(Quercus rubra*), black oak, white pine, and hickories *(Carya spp.)* are common components throughout this stand.

Shrub and vine cover include scattered mountain laurel *(Kalmia latifolia*), highbush blueberry *(Vaccinium corymbosum*), witch-hazel (*Hamamelis virginiana*), lowbush blueberry *(Vaccinium angustifolium*), Grapevine *(Vitis spp.*) and the invasive non-native multiflora rose *(Rosa multiflora*), burning bush *(Euonymus alatus*), Asiatic bittersweet *(Celastrus orbiculatus*) and Japanese barberry *(Berberis thunbergii*). Herbaceous species present include poison ivy *(Toxicodendron radicans*), cinnamon fern *(Osmundastrum cinnamomeum)*, and club mosses (*Lycopodiaceae spp.*).

2.3.1.2.2 Pine-Hardwood Forest

This stand is located in the south-central portion of the Site and encompasses approximately 15 acres. White pine is the dominant component of this forest matrix and includes a large volume of mature pines throughout the stand. Red maple is also a predominant tree species within this stand, which has less diversity than other forest cover types on the Site, with a relatively open mid-canopy and shrub layer. Herbaceous species present include cinnamon fern, wood fern *(Dryopteris sp.),* and club mosses.

[4] In this case, consisting of soil that has been saturated with water at some point in time.

2.3.1.2.3 Mixed-Hardwood Forest

In total, this habitat encompasses approximately 9 acres and is located largely within the south-central portion of the Site between the pine-hardwood forest stand and Snake Meadow Brook. An additional smaller fragment is located in the northwest corner of the Site. This stand is distinguished from adjacent forest communities by its relatively younger age and is primarily comprised of pole-timber and saplings. Species composition is characterized by shade-intolerant, early successional species such as black cherry *(Prunus serotina)* and eastern red cedar *(Juniperus virginiana).*

2.3.1.2.4 Core Forest Determination

APT evaluated the size and extent of the contiguous interior forest block present within and adjacent to the Site. The evaluation used two (2) publicly available GIS-based datasets designed to assess impacts to potential core forest habitat and supplemented this information with its own independent evaluation (based on GIS analysis of 2016 leaf-off aerial photography, professional experience and field observations).

The first dataset, the Department's *Forestland Habitat Impact Mapping* [5], does not include the Site within an area mapped as core forest. The second dataset was UConn's Center for Land Use Education and Research's ("CLEAR") Forest Fragmentation Analysis ("FFA")[6] study. The FFA study designates "core forest" as greater than 300 feet from non-forested habitat. This 300-foot zone is referred to as the "edge width" and represents sub-optimal breeding habitat for forest-interior birds due to decreased forest quality, increased levels of disturbance, and increased rates of nest predation and brood parasitism within this transitional forest edge ("edge effect"). The FFA study identifies three categories of core forest: small (< 250 acres); medium (250-500 acres); and large (>500 acres). Based on the FFA criteria, two "small core" forest blocks extend onto the Site. This is consistent with APT's own GIS analysis, which indicates that the combined total area of these two small core forest blocks (both on the Site and extending offsite) is approximately 172 acres. See Figure 3, *Existing Core Forest Map.*

[5] Source: http://ctdeep.maps.arcgis.com/apps/webappviewer/index.html?id=7b81844bab634281b544c20bf2d7bfb8: This spatial screening layer identifies prime continuous and connected core forestland blocks. It is intended to identify areas of potential forestland habitat impacts relative to solar installation applications made to the Connecticut Siting Council. If the project intersects with the Forestland Habitat Impact Map there is a potential for material effects to core forest.

[6] CLEAR's FFA: http://clear.uconn.edu/projects/landscape/forestfrag/forestfrag_public%20summary.pdf

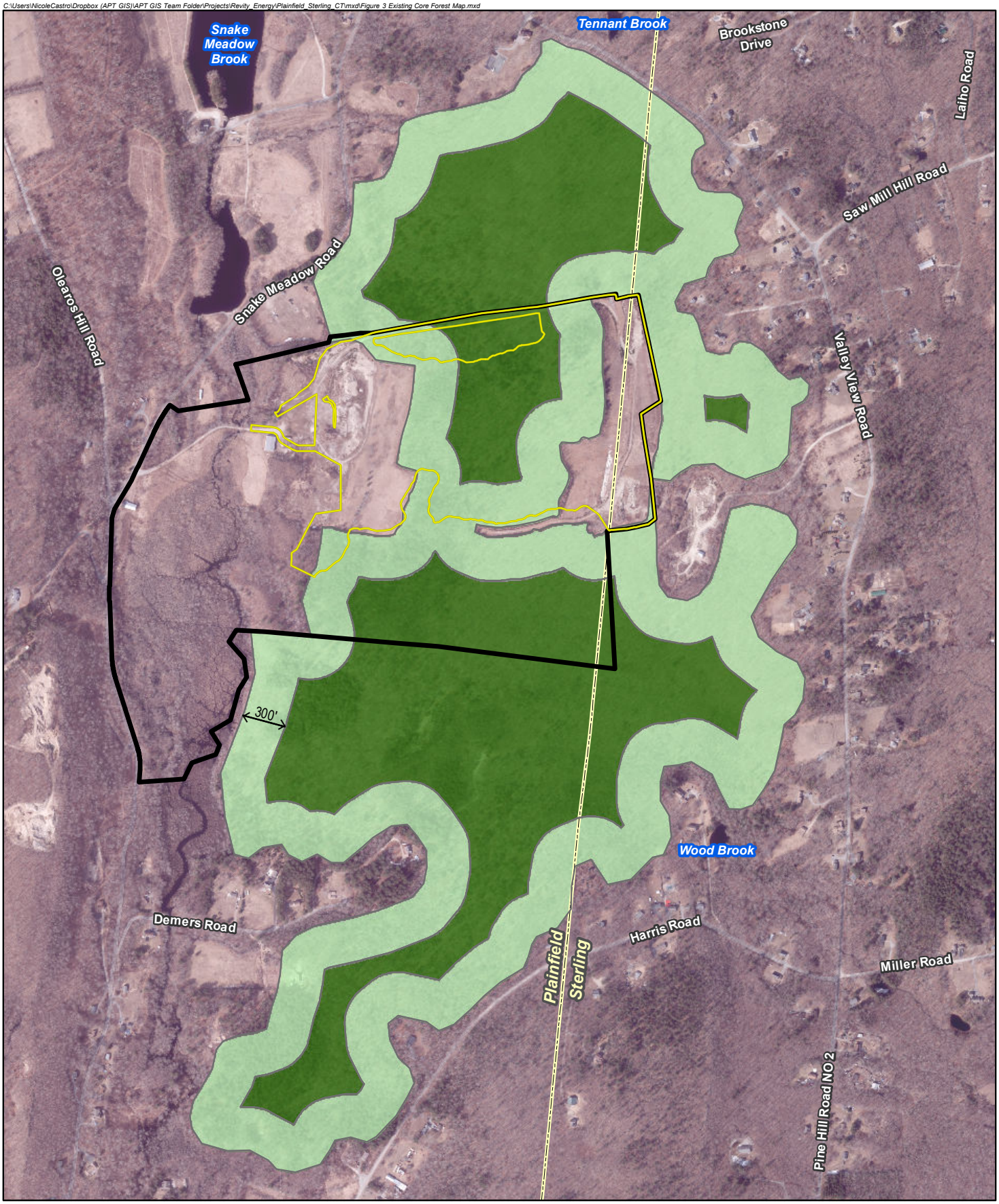
These small-sized core forest blocks are connected by surrounding edge forest such that they create an oblong and somewhat narrow contiguous forest matrix totaling ±386 acres. This contiguous forest block is divided by edge forest into two (2) distinct "zones"[7] of core forest. The Project Area is located within the northern core forest zone. An additional, smaller zone of core forest (approximately 1 acre) is located off the Site to the east.

Due to characteristics of the contiguous forest matrix and surrounding land uses, the ratio of edge forest to core forest is high (214 of the 386 total forest acreage – or 55%). As introduced above, the central portion of the entire forest block, abutting the southern limits of the Project Area, is bisected by existing access roads while the eastern and western portions have experienced prior clearing for agricultural use and mining operations, respectively.

The cumulative acreage of the two (2) core forest blocks extending onto the Site (172 acres) represents a less significant habitat with respect to its importance for forest-dwelling birds, mammals and reptiles when compared to a medium or larger core forest. This is due primarily to the forest block's relatively small size and its existing fragmentation that is influenced by surrounding residential/agricultural/commercial development and local roads. The two (2) separate core forest components are separated by edge forest, further compromising habitat significance.

[7] The forest block is broken into three zones. The northern zone is approximately 61 acres, the southern zone is approximately 110 acres, and the small eastern zone is approximately 1 acre.

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Revity_Energy\Plainfield_Sterling_CT\mxd\Figure 3 Existing Core Forest Map.mxd



Legend

- Site
- Project Area
- Town Line

Existing Forest Block (+/-386 Acres)

Type:

- Edge Forest (+/-214 Acres)
- Core Forest (+/-172 Acres)

**Existing Forest within the Project Area:*
+/-16 Acres of Core Forest
+/-26 Acres of Edge Forest

N
W E
S

1,000 500 0 1,000 Feet

Figure 3
Existing Core Forest Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Map Notes:
Base Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 900 feet
Map Date: March 2020

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2.3.1.3 Sand and Gravel Pit

This habitat is located in the north central portion of the Site and occupies approximately 11 acres. The area consists of unvegetated or sparsely vegetated, unconsolidated sand and gravel. The topography of this area is highly irregular, consisting predominantly of sand and gravel stockpiles, steeply-graded slopes and constructed ditches.

Dominant plant species in vegetated areas include colonizers of disturbed xeric habitats such as the invasive non-native mugwort, little bluestem (*Schizachyrium scoparium*), white pine, autumn olive, and goldenrod.

2.3.1.4 Developed Areas

The Developed habitat on the Site consists of an existing building/garage and associated gravel haul road and does not provide beneficial habitat functions or values.

2.3.2 Wetlands

APT completed field inspections and wetland delineations at the Site on August 23, 24, and September 6, 2018 and May 29, 2019 by Registered Soil Scientist Matthew Gustafson and Professional Soil Scientist Eric Davison. A total of nine (9) wetland areas, comprising a total of approximately 54 acres, were identified on the Site. The information presented below summarizes the results of the field surveys; locations of the resources identified are depicted on Figure 2, *Existing Conditions Map*. Additional information regarding wetlands and wetland habitats is provided in Appendix A, *Wetland Inspection Report*.

Two wetland habitat types exist on the Site, Forested and Early-Successional, as discussed below.

2.3.2.1 Forested Wetlands

Forested Wetlands (a.k.a. wooded swamps) are the most abundant wetland type on the Site and occur within Wetlands 1, 2, 3, 6 and 8. This habitat features vegetational communities which are characterized by a forest canopy at least 20 feet tall with additional areas of shrub layer ranging from moderately open to dense. Herbaceous/ground cover is interspersed along interior intermittent watercourses.

Within Wetlands 1, 2, 3, 6 and 8, the tree canopy is dominated by red maple, with swamp white oak (*Quercus bicolor*), black gum (*Nyssa sylvatica*), yellow birch (*Betula alleghaniensis*) and green ash (*Fraxinus pennsylvanica*) as codominant and suppressed components of the overstory.

The shrub layer ranges from moderately open to dense and consists predominantly of highbush blueberry (*Vaccinium corymbosum*), sweet pepperbush (*Clethra alnifolia*), winterberry (*Ilex verticillata*) and spicebush (*Lindera benzoin*).

Herbaceous/ground cover vegetation consists of cinnamon fern, skunk cabbage (*Symplocarpus foetidus*), sphagnum moss, greenbriar (*Smilax rotundifolia*) and swamp dewberry (*Rubus hispidus*). The invasive non-native Japanese stiltgrass (*Microstegium vimineum*) is common along wooded intermittent watercourses.

2.3.2.2 Early-Successional Wetlands (Emergent and Scrub-Shrub)

Early-successional wetlands, which include wet meadows, emergent marshes and scrub-shrub wetlands, occur within Wetlands 1, 4, 5, 7 and 9. Wet meadows and emergent marshes are dominated by persistent and non-persistent grasses, sedges, rushes, and other herbaceous grass-like plants. Shrub-scrub wetlands are dominated by woody vegetation and shrubs, with some scattered stunted trees generally less than 20 feet in height.

Early successional cover within Wetland 1 is largely a scrub-shrub wetland, but the northern reaches along the main access road consist of emergent marsh and wet meadow. Scrub-shrub areas are dominated by speckled alder (*Alnus rugosa*) and bebb willow. Other common shrub species include silky dogwood (*Cornus amomum*), buttonbush (*Cephalanthus occidentalis*), meadowsweet (*Spirea latifolila*) and brambles (*Rubus spp.*). Herbaceous species include the invasive reed canarygrass (*Phalaris arundinacea*), joe-pye-weed (*Eutrochium purpureum*), goldenrods (*Solidago spp.*), woolgrass (*Scirpus cyperinus*), rushes (*Juncus spp.*), sensitive fern (*Onoclea sensibilis*), asters (including New York aster [*Symphyotrichum novi-belgii*] and tussock sedge (*Carex stricta*). In the northwest portion of this wetland immediately adjacent to the main access road, the invasive non-native purple loosestrife (*Lythrum salicaria*) is common.

Wetland 4 is a scrub-shrub wetland with vegetation similar to Wetland 1. Wetland 5 is an emergent marsh dominated by cattail (*Typha latifolia*), with the wetland fringe consisting of dense bebb willow. Wetland 7 is a small wet meadow dominated by tussock sedge and woolgrass.

2.3.3 Description of Site Wetlands

Wetlands 1, 4, and 5

Wetlands 1, 4 and 5 have been combined for this discussion as all these resources are directly or indirectly connected and associated with Snake Meadow Brook. Collectively, these areas are part of a large complex of diverse wetland and cover types that share common hydrology, soils, and/or vegetation. This large wetland system continues offsite to the north and south and is bisected by the existing Site access road, which separates Wetlands 4 and 5 from Wetland 1.

Wetland 1 is the dominant system on the Site and includes both Forested and Early-successional cover types. Its main body surrounds Snake Meadow Brook, with a long narrow corridor extending east into the southcentral portion of the Site. The western portions of the main body consist of a groundwater slope wetland[8] with saturated hydrology[9]. The main eastern component consists of riparian wetlands associated with an interior perennial watercourse (Snake Meadow Brook); itis characterized by broad bordering semi-permanently flooded wetlands dominated with a mix of floodplain emergent and scrub-shrub wetlands.

The eastern corridor of Wetland 1 receives focused discharges from two (2) intermittent watercourses (Wetlands 6 and 7) via a hillside seep system. These two (2) feeder watercourses convey flows at the top of a localized watershed divide created by a ridge along the eastern Site boundary and drain west before emptying into the Snake Meadow Brook riparian corridor. This eastern-most extent of Wetland 1 lies within a mature, closed canopy forest.

Wetlands 4 and 5 are associated with the same dominant system (Wetland 1) but are located north of the existing gravel access road. Wetland 4 is connected to Wetland 1 via a crossing under the existing access road while Wetland 5, which was historically connected to Wetland 1, is now bisected and separated by the existing access road. There is no direct or culverted drainage between Wetlands 1 and 5.

Three (3) embedded vernal pools were identified in Wetlands 1 and 5, and are discussed in greater detail in Section 2.3.4.

[8] Groundwater slope wetlands develop on slopes or hillsides where groundwater discharges to the surface as springs or seeps.

[9] Saturated hydrology refers to conditions in which the substrate is thoroughly wet for extended periods during the growing season, but standing water is rarely present.

Wetland 2

Wetland 2, located in the southcentral portion of the Site, consists of a small hillside seep. This wetland generally drains south as a narrow-forested seep that eventually drains to the south and off the Site (and potentially empties into Wetland 1 farther south).

Wetland 3

Wetland 3 consists of a complex of hillside seep wetland areas feeding and draining from a large perched wetland system located on a localized plateau. This wetland resource is located in the southeast corner of the Site and generally drains south with smaller seeps draining west. It is characterized by areas of shallow hummock/hollow topography with seasonal surface saturation. The northern extents of Wetland 3 have experienced historic alteration including filling/cutting of soils from the mining operations and interception of the contributing hydrology. A large fill slope is located along the far northeast wetland boundary with seepage draining from the fill interface.

Wetlands 6 and 7

Wetlands 6 and 7 have been combined for this discussion because they consist of similar soils, formation, hydrology and vegetation. They also drain to a common wetland resource area (Wetland 1). Both wetlands consist of two parallel intermittent watercourse features that are formed within historically constructed drainage swales. The swales consist of 1 to 3-foot-wide channels characterized by stone armored, sandy bottoms with well incised banks. They convey hillside seep drainage from the eastern side of the Site, as well as runoff from the interior dirt access road that eventually drains into Wetland 1. These two watercourses converge into a singular feature at the terminus of one of the interior dirt access roads before draining within a heavily incised/scoured channel into the eastern extent of Wetland 1. This singular swale/watercourse consists of areas of stone armoring and exposed stone/boulders from intense stormwater flows. Despite the anthropogenic origin of these swales, they contain the necessary hydrology to maintain flows outside of storm events and hydrophytic vegetation dominates. Running and standing water was present within these swales at the time of inspections.

Wetland 8

Located in the northern portion of the Site, Wetland 8 consists of a narrow hillside seep system with an interior braided intermittent watercourse. This wetland generally drains east to west,

originating at a seep outbreak within a large boulder field/slope. Bordering wetlands to the watercourse are very narrow forested seeps. Areas of the wetland have experienced historic logging, and associated crossing skid trails have resulted in the creation of small canopy openings. The hydrology supporting this wetland generally dissipates as topography forces the drainage into a rip-rap armored drainage swale adjacent to the existing interior dirt access road.

Wetland 9

Wetland 9 is located in the central portion of the gravel pit and consists of an isolated, anthropogenic linear swale that was historically cut to intercept groundwater seepage in addition to receiving drainage from a rock armored swale to the north and east. This swale generally drains north where it terminates at a fill slope. A saddle point at the midpoint of the swale retains water in the southern half of the swale. APT observed inundation depths ranging from 8 to 12 inches during multiple inspections. Vegetation is generally sparse due to a lack of topsoil and consists of emergent vegetation within the swale and scrub/shrub vegetation along the margins. An embedded vernal pool was identified in Wetland 9, as discussed in greater detail in Section 2.3.4.

2.3.4 Vernal Pools

Vernal pool surveys were conducted on April 11, April 26, May 7 and May 29, 2019. Survey methods included visual observations to identify egg masses as well as adults; audial surveys to record breeding choruses; and dipnet surveys to identify amphibian larvae. Surveys were conducted under sunny skies, with temperatures ranging from the mid-40s in early April to the mid-60s in late May. Four (4) vernal pools were identified on the Site. The limits of the pools were field located using a Trimble GPS unit and plotted using ESRI ArcMap software. Indicator species observed, including egg mass tallies for each pool, are summarized in Table A below.

Table A: Vernal Pool Indicator Species and Egg Mass Totals

Indicator Species	Egg Masses/Larvae
Vernal Pool 1 (Wetland 5)	
Wood Frog	~150 masses
Spotted Salamander	14 masses
Vernal Pool 2 (Wetland 9)	
Wood Frog	Larvae
Spotted Salamander	Larvae
Vernal Pool 3 (Wetland 1)	
Wood Frog	Not observed
Spotted Salamander	38 masses
Vernal Pool 4 (Wetland 1)	
Wood Frog	~41 masses
Spotted Salamander	14 masses
(~) indicates approximate wood frog egg masses within a large communal egg mass raft	

All the vernal pools observed at the Site are classified as cryptic, or embedded, pools. Pools 1, 2 and 4 are either man-made or have been anthropogenically modified.

Pool 1 is embedded within Wetland 5 and is located adjacent to the north side of the existing access road. Historically, Wetland 5 was directly connected to Wetland 1 to its south. The installation of the access road bifurcated the former contiguous wetland which altered its hydrology, resulting in the retention of water in the southern portion of what is now Wetland 5. This subsequently created a longer hydroperiod that enhanced its suitability for amphibian breeding.

Pool 2 lies within Wetland 9 at the toe of the slope on the eastern side of the gravel pit floor. It was created as a result of the large-scale grading and soil removal associated with gravel extraction and processing. In order to control water discharging from the eastern hillside into the pit floor, diversion and collection channels were created on the eastern slope. These channels discharge directly into Wetland 9. The southern limits of this swale maintain a late-spring, early-summer hydrology capable of supporting amphibian breeding in wetter years. While both wood frog and spotted salamander were observed breeding in the pool, its productivity is likely diminished by its poor accessibility to, and distance from, terrestrial forest habitat (the nearest forest lies approximately 500 feet from this pool). Migration into the pool requires traversing

unvegetated areas where adult or metamorph amphibians are at greater risk of predation and desiccation (due to exposure by the lack of cover). This risk is more pronounced for the slower moving spotted salamander and juveniles of either species emerging from the pool. If the area is left undisturbed, over time the vegetation will change and become more suitable for amphibian migration. However, vegetative succession is likely to have more profound negative consequences to the pool's hydrology, as increased transpiration rates caused by establishing vegetation will reduce contributing flows to the pool, and may shorten the hydroperiod, ultimately making it no longer suitable for amphibian breeding.

Pool 3 is located within Wetland 1, the large floodplain wetland bordering Snake Meadow Brook. Within this vast floodplain wetland are discrete pools of standing water, situated within the hummocky microtopography, that support amphibian breeding. Currently, the hydrology of these pools is enhanced by a beaver dam constructed across the brook that has resulted in a large area of open water. Without the beaver dam slowing the water velocity and creating an expanse of open water, this vernal pool would be greatly diminished in size. The productivity of this pool is limited by the presence of fish which feed on salamander larvae. Due to the likely high predation occurring within this pool, Pool 3 could be discounted as a significant vernal pool feature. However, for the purposes of this analysis, it was conservatively considered a potential vernal pool resource.

Pool 4 consists of an old farm pond created alongside an intermittent stream channel and drainageway in the eastern end of Wetland 1. Historically, a small earthen berm was constructed on the downslope side of the pool in order to retain standing water, most likely to serve as a watering site for livestock. Due to its large contributing drainage area, the pool is sediment-laden resulting in more shallow inundation, with a maximum depth of less than five (5) inches. This pool's hydrology is maintained by seasonal groundwater discharge from the upslope wetland despite this shallow inundation.

2.4 Wildlife

2.4.1 Amphibians and Reptiles

In addition to the evidence of two vernal pool obligate species observed on the Site (wood frog and spotted salamander larvae/egg masses), several wetland-dependent species were observed during APT's Site surveys. These include green frog (*Rana clamitans*), northern water snake (*Nerodia sipedon*) and painted turtle (*Chrysemys picta*) within Wetland 1; and spring peeper (*Pseudacris cruficer*), gray treefrog (*Hyla versicolor*), American toad (*Bufo americanus*) and pickerel frog (*Rana palustris*) within the forested areas surrounding Wetlands 1 and 3.

Other amphibian and reptile species observed on the Site include American toad (*Bufo americanus*), garter snake (*Thamnophis sirtalis*), painted turtle (*Chrysemys picta*), gray treefrog (*Hyla versicolor*), and pickerel frog (*Rana palustris*). All of these species are common throughout Connecticut, and are not vernal pool indicator species.

Sand and gravel pits often represent significant habitats for certain species of amphibians and reptiles, particularly when they occur as part of a larger intact habitat mosaic as is the case with this Site. Turtles often utilize the friable soils within pits for nesting, and toads often use ephemeral pools in pits for breeding. However, due to the steep slopes and stockpiles as opposed to more gentle grades, the habitat value of this sand and gravel pit area is low for breeding toads as no ephemeral pools beyond VP9 are present. The pit does represent optimal nesting habitat for turtles, particularly those utilizing the adjacent Snake Meadow Brook wetlands, including painted turtle (observed) and potentially spotted turtle (*Clemmys guttata*).

2.4.2 Breeding Birds

The Site supports forested and early-successional habitats for both wetland and upland bird species. These habitats are regionally important for several groups of birds in Connecticut due to their declining numbers and occurrences within the State.

2.4.2.1.1 Forest-dwelling Species

Habitat for forest-dwelling birds includes areas suitable for forest-interior neotropical migrants, many of which are identified as a "greatest conservation need" ("GCN") species by the Connecticut Department of Energy and Environmental Protection's ("DEEP") *2015 Connecticut Wildlife Action Plan*. The approximately 172 acres of core forest on and proximate to the Site

represents a less than optimal habitat for GCN species. Typical species expected to occur in a small core forest include wood thrush (*Hylocichla mustelina*), eastern wood pewee (*Contopus virens*) and the red-eyed vireo (*Vireo olivaceus*).

2.4.2.2 Early-Successional Habitat Species

Significant early-successional habitats on the Site include upland old field/meadow (approximately 40 acres) as well as scrub-shrub wetlands (approximately 30 acres). These habitats can support several GCN species such as the blue-winged warbler (*Vermivora cyanoptera*), prairie warbler (*Setophaga discolor*) and indigo bunting (*Passerina cyanea*). Suitable habitat is also present for the state-listed special concern species brown thrasher (*Toxostoma rufum*) and American kestrel (*Falco sparverius*).

2.4.3 Fisheries

A field survey was not conducted at the Site but available data from the DEEP Fisheries Division was reviewed[10] and included a Snake Meadow Brook sample location from 2010 approximately 900 feet south of the Site. Species recorded within this data set included brown bullhead (*Ameiurus nebulosus*), bluegill sunfish (*Lepomis macrochirus*), chain pickerel (*Esox niger*) and redbreast sunfish (*Lepomis auratus*). These species are all considered common and/or prevalent within Connecticut and inhabit moderate to large streams and waterbodies. Native brook trout were not noted in the sample data but were recorded in tributaries feeding Snake Meadow Brook, including Wood Brook located ±571 feet southeast of the Site.

2.4.4 Rare Species

The DEEP Natural Diversity Data Base ("NDDB") program performs hundreds of environmental reviews each year to determine the impact of proposed development projects on state listed species and to help landowners conserve the state's biodiversity. In furtherance of this endeavor, the DEEP also developed maps to serve as a pre-screening tool to help applicants determine if there is the potential project-related impact to state-listed species.

The NDDB maps represent approximate locations of (i) endangered, threatened and special concern species and, (ii) significant natural communities in Connecticut. The locations of species

[10] www.CTECO.com

and natural communities depicted on the maps are based on data collected over the years by DEEP staff, scientists, conservation groups, and landowners. In some cases, an occurrence represents a location derived from literature, museum records and/or specimens. These data are compiled and maintained in the NDDB. The general locations of species and communities are symbolized as shaded (or cross-hatched) areas on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner's rights whenever species occur on private property.

APT reviewed the most recent DEEP NDDB mapping (December 2019) to determine if any such species or habitats occur within the vicinity of the Site. According to the available DEEP NDDB maps, the Site is not located within 0.25 mile of a NDDB buffer area[11]. The nearest NDDB buffer area is located approximately 0.92 mile to the southeast. The nearest NDDB buffer area to the Project is depicted in Figure 4, *Surrounding Features Map.*

2.4.4.1 Northern Long-eared Bat

The northern long-eared bat ("NLEB"; *Myotis septentrionalis*) is a federally-listed[12] threatened species known to occur in the vicinity of the Site. The NLEB's range encompasses the entire State of Connecticut. Suitable NLEB roost habitat includes trees (live, dying, dead, or snag) with a diameter at breast height ("DBH") of three (3) inches or greater.

APT reviewed current publicly-available mapping with respect to NLEB[13] to determine the locations of any known maternity roost trees or hibernaculum. This map reveals that there are currently no known NLEB maternity roost trees in Connecticut. The nearest NLEB habitat resource to the Site is located in East Granby, ±47 miles to the northwest.

[11] Current DEEP NDDB criteria requires consultation with the agency when a project site is located within 0.25-mile. Therefore, there is no need to consult with DEEP for this Project.

[12] Listing under the federal Endangered Species Act

[13] *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance* (February 1, 2016)

2.5 Groundwater and Surface Water Classification

2.5.1 Groundwater

Groundwater underlying the Site is classified by the DEEP as "GA". This classification indicates groundwater within the area is presumed to be suitable for human consumption without treatment.[14] Based upon a review of available DEEP mapping, the Site is not located within a mapped preliminary or Aquifer Protection Area ("APA").

2.5.2 Surface Water Classification

Based upon DEEP mapping, the Site is located in Major Drainage Basin 3 (Thames River), Regional Basin 35 (Moosup River), and Sub-regional Drainage Basin 3502 (Snake Meadow Brook). The nearest mapped surface waterbody is Snake Meadow Brook, which traverses the western portion of the Site in a north to south direction. Snake Meadow Brook is classified by the DEEP as a Class A surface waterbody.[15]

2.6 Floodplain Areas

APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Maps ("FIRM") for the Site. A FIRM is the official map of a community on which FEMA has delineated both the special hazard areas and risk premium zones applicable to the community. The Site is included on two (2) separate FIRM maps. The western portion of the Site is mapped on FIRM PANEL #090116 0005 B, dated June 17, 1991; the eastern portion of the Site is mapped on FIRM PANEL #090118 0005 B, dated March 4, 1985. As indicated on the maps, low-lying areas associated with Snake Meadow Brook, on the western portion of the Site, are classified as Zone A, which is defined as a Special Flood Hazard Area subject to inundation by a 1-percent-annual-chance flood event.

[14] Designated uses in GA-classified areas include existing private and potential public or private supplies of drinking water and base flow for hydraulically-connected surface water bodies.

[15] Designated uses for Class A surface water bodies include habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; and water supply for industry and agriculture.

Remaining portions of the Site appear to be designated as Zone X and Zone C. Zones X and C are equivalent designations[16] defined as areas of minimal flooding, typically above the 500-year flood level.

2.7 Geology and Soils

Surficial materials on the Site and surrounding area are comprised of deposits of sand and gravel overlying sand, alluvium overlying undifferentiated coarse deposits, and thin deposits of glacial till. Soil types located on and in the vicinity of the Site are identified as Hinckley loamy sand, Rippowam fine sandy loam, Walpole sandy loam, Ridgebury, Leicester, and Whitman soils, Canton and Charlton fine sandy loams, and Charlton-Chatfield complex. Bedrock geology beneath the western portion of the Site is identified as the Plainfield Formation. The Plainfield Formation is described as an interlayered light-gray, thin-bedded quartzite, in places with feldspar, mica, graphite, or pyrite, light to medium-gray gneiss composed of quartz, oligoclase, and biotite (rarely microcline), medium to dark-gray schist composed of quartz, oligoclase, biotite, sillimanite, and garnet, dark-gray or green gneiss composed of plagioclase, quartz, biotite, and hornblende (commonly with diopside), amphibolite, diopsite-bearing quartzite, and calc-silicate rock. Bedrock geology beneath the eastern portion of the Site is mapped as Quartzite unit in the Plainfield Formation, described as a light-gray, glassy, generally thin bedded quartzite, also feldspathic and micaceous quartzite containing quartz-sillimanite nodules.

2.8 Farmland Soils

Farmland soils include land that is defined as prime, unique, or farmlands of statewide or local importance based on soil type, in accordance with the Code of Federal Regulations, CFR title 7, part 657. They represent the most suitable land for producing food, feed, fiber, forage, and oilseed crops.

According to the Connecticut Environmental Conditions Online Resource Guide[17], approximately 73 acres of Statewide Important Farmland Soils are mapped within the central, western, and southwestern portion of the Site while approximately three (3) acres of Prime Farmland Soils are located in the south-central portion of the Site (See Figure 2, *Existing Conditions Map)*. The

[16] The two designations are a result of two different vintage FIRM Maps. Zone X has replaced the older Zone C designation on updated FIRM Maps.
[17] Connecticut Environmental Conditions Online (CTECO) Resource Guide www.cteco.uconn.edu.

majority of mapped Statewide Important Farmland Soils are located in Wetland 1. A large percentage of the remaining Statewide Important Farmland Soils are mapped in the north central portion of the Site (uplands), within areas that have been extensively mined for sand and gravel, resulting in the stripping of topsoil, and further subjected to compaction from equipment and vehicles associated with those operations.

2.9 Historic and Archaeological Resources

Heritage Consultants LLC of Newington, Connecticut, reviewed relevant historic and archaeological information to determine whether the Site holds potential cultural resource significance. A review of historic maps and aerial images of the Site, examination of files maintained by the Connecticut State Historic Preservation Office ("SHPO"), and a pedestrian survey of the Site revealed that the proposed Project is not located in the immediate vicinity of any National or State Register of Historic Places properties or historic standing structures.

In terms of archaeological potential, the pedestrian survey of the Project Area revealed that the western portion has been altered by sand and gravel operations in the past. In addition, there are existing access roads and other disturbed areas in the northern, eastern, and southernmost portions of the Site. As a result, it was determined that these areas no longer retain intact soil deposits or the potential to yield intact cultural deposits. In contrast, the east-central portion of the Project Area appears to contain intact soil deposits, exhibits low slopes, and is proximate to Snake Meadow Brook, thus retaining a moderate/high potential to produce intact cultural deposits.

During a March 7, 2019 public meeting for the Project, a local resident suggested the potential presence of an existing burial plot located on the Site. Heritage Consultants performed an additional pedestrian survey on March 12, 2019 and located two headstones in the northwest corner of the Site. The headstones were recorded and mapped using submeter GPS and are identified on Figure 2, *Existing Conditions Map.*

2.10 Scenic and Recreational Areas

The Site is not located near a State Designated Scenic Road or scenic area.

The nearest recreational area is the Pachaug State Forest and Old Furnace State Park, both located approximately 0.85 mile to the northwest.

The locations of these areas, non-residential development and other resources within one mile of the Site are depicted on Figure 4, *Surrounding Features Map*.

2.11 Noise

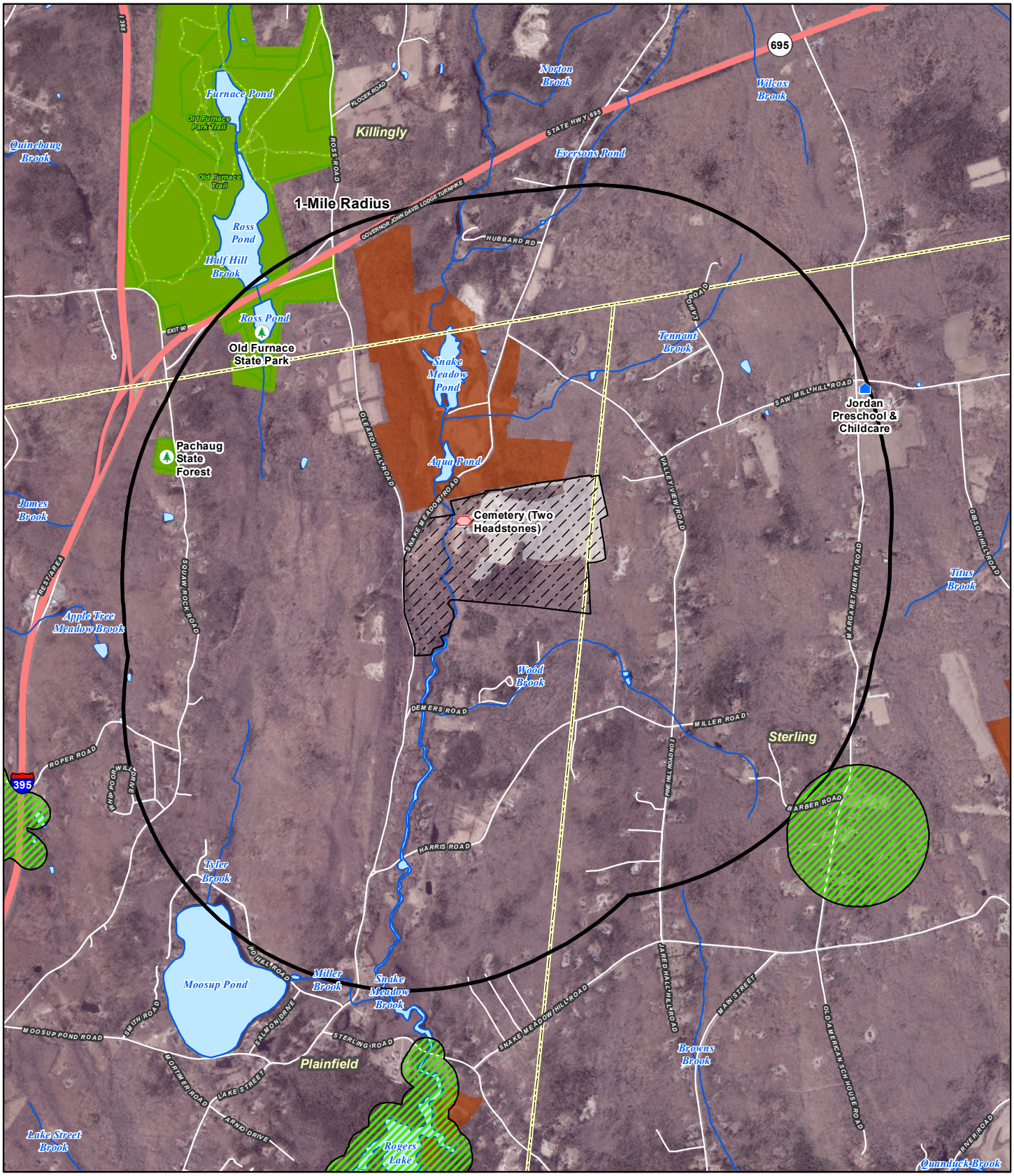
The majority of the Project Area is undeveloped, where no noise sources exist. Some noise associated with the mining and hauling of sand and gravel takes place periodically.

2.12 Air Quality

A portion of the Site is currently occupied by an existing mining operation utilizing mobile source emissions associated with mining vehicles. Some fugitive dust is created during the mining and hauling of materials but is generally contained on Site.

2.13 Lighting

No permanent lighting sources exist in the Project Area.



Legend

- Site
- Project Area
- 1-Mile Radius

Surrounding Features (within 1-mile)

- Cemetery
- Daycare
- Park/Recreation
- Trail

Protected Open Space Property (CTDEEP GIS)

- Private
- State
- Natural Diversity Database (NDDB 12/2019)
- Municipal Boundary
- Open Water

N W E S

2,500 1,250 0 2,500 Feet

Base Map Source: CTECO Shaded Relief
Map Scale:1 in = 2,500 ft Map Date: March 2020

Figure 4
Surrounding Features Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

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3 Effects on the Environment

This section analyzes and discusses the Project's potential effects on the environment.

3.1 Proposed Project Development

The Project Area will require approximately 75 acres of disturbance including land clearing, regrading, and interior access road development. Once constructed, the Facility will consist of a 12.25-megawatt solar-based electric generating facility and will occupy approximately 58.5-acres. Approximately 37 acres of trees will be removed for construction and to prevent shading of the Facility.

Facility development will require some manipulation (cuts/fills) and regrading associated with installation of stormwater management/erosion and sedimentation features and access. In addition, areas disturbed by the mining operation will be restored to level grade. Where possible, native terrain will be maintained to minimize grading and cuts/fills.

The 12.25-megawatt Facility will be comprised of approximately 31,125 photovoltaic modules installed at a tilt angle of 20 degrees, 49 inverters, seven (7) transformers, and one (1) service interconnection point that will tie directly into the Facility. A ground-mounted racking system, mounted on driven posts, will be used to secure the panel arrays. The Facility will be surrounded by a 6-foot-tall chain link security fence. Connections to existing electrical services located on Snake Meadow Road will require a combination of new aboveground and underground utility lines installed along the main access road to the Site. Once construction is complete, disturbed areas will be seeded to re-establish or enhance permanent cover.

The leading edge of the panels will be approximately 36 inches above the existing ground surface, providing adequate room for any accumulating snow to "sheet" off. Any production degradation due to snow build-up has already been modeled into the annual system output and performance calculations. Revity does not envision requiring any "snow removal" operations; rather, the snow will be allowed to melt or slide off.

Figure 5, *Proposed Conditions Map*, depicts the proposed Project layout while Project Plans are provided in Appendix B.

3.1.1 Public Health and Safety

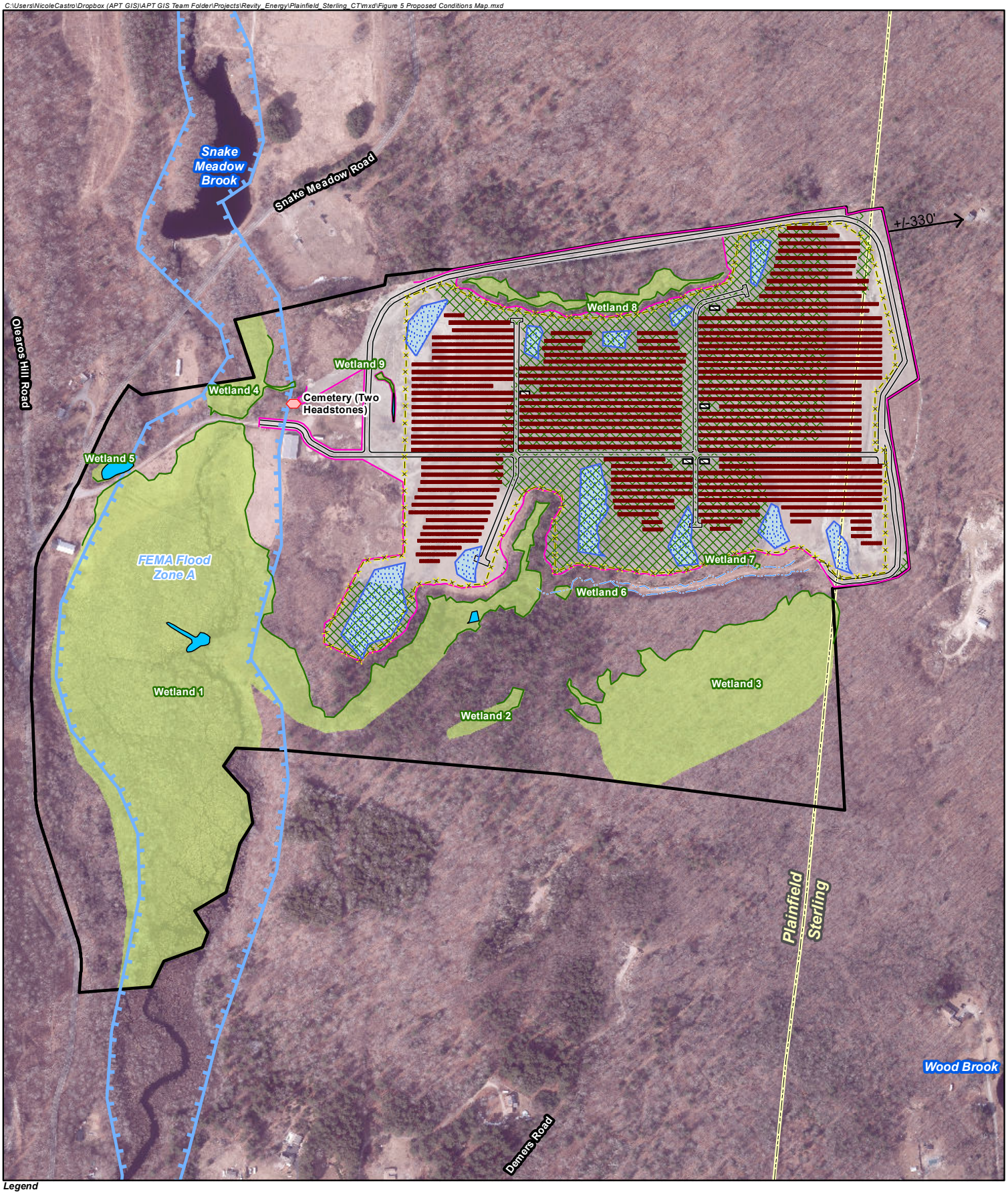
The Project will meet or exceed applicable local, state, national and industry health and safety standards and requirements applicable to electric power generation. The Facility will not consume any raw materials, will not produce any by-products and will be unstaffed during normal operating conditions. The Facility will be enclosed by a six (6)-foot tall chain-link fence. The main entrance to the Facility will be gated, limiting access to authorized personnel only. All Town emergency response personnel will be provided access codes to on-site locks.

Construction equipment will be required to access the Site during normal working hours. Please refer to Appendix C, the *Construction Schedule* and *Construction Work Hours/Days Letter* for detailed information concerning the construction schedule and proposed construction work hours/days. After construction is complete and the Facility (unstaffed) is operable, traffic at the Site will be minimal. It is anticipated that the Facility will require mowing and routine maintenance of the electrical equipment two or three times per year. Annual maintenance will typically involve two (2) technicians for a day. Any equipment that breaks down is monitored remotely and will be repaired immediately on an as-needed basis.

3.1.2 Determination of No Hazard to Air Navigation

Revity submitted relevant Project information to the Federal Aviation Administration ("FAA") for an aeronautical study to evaluate potential hazards to air navigation on April 10, 2020 and is currently awaiting a response. Revity anticipates that the proposed Project will be determined "No Hazard to Air Navigation".

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Revity_Energy\Plainfield_Sterling_CT\mxd\Figure 5 Proposed Conditions Map.mxd



Legend

- Site
- Approximate Clearing Area
- Approximate Area of Tree Removal
- Cemetery
- Perimeter Fence
- Erosion and Sediment Control Silt Fence
- Access Road
- Concrete Equipment Pad
- Solar Panel
- Stormwater Basin
- Potential Vernal Pool
- Delineated Intermittent Watercourse (IWC)
- Delineated Wetland Boundary
- Wetland Area
- Approximate FEMA Flood Zone A
- Town Line

N W E S

550 275 0 550 Feet

Map Notes:
Base Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 550 feet
Map Date: March 2020

Figure 5
Proposed Conditions Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

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3.1.3 Local, State and Federal Land Use Plans

The Project is consistent with local, State, and Federal land-use plans. The 2018-2028 Town of Plainfield Plan of Conservation and Development ("POCD") states the Town's intent *"to provide opportunities for orderly and energy-efficient development*." The 2009 Town of Sterling POCD does not specifically reference energy efficient development but does see the provision of land "*for future utility facilities that will be needed by the community…"* as an important consideration.

The Project will support both the POCD's and State's energy policies and strategies by developing a renewable energy resource while not having a substantial adverse environmental effect. Although local land use requirements do not apply to this Project, it has been designed to meet the intent of local land use regulations, to the extent feasible. The Site lies within the Residential Zone for both Towns.

The Project would benefit the community by improving electrical service for existing and future development in the Towns through enhanced capacity.

3.2 Site Access

The existing access drive originating off Snake Meadow Road will be used for access to the Facility. Approximately 2,017 feet of existing unpaved farm and mining operation roads will be improved, and an additional ±9,951 feet of new gravel roads will be constructed to provide for access and maintenance of the Facility. See Figure 5, *Proposed Conditions Map*.

3.3 Habitat and Wildlife

Several habitats are found within the ±75-acre Project. The solar arrays, gravel and grass surfaces associated with the Project will alter the habitat types present within the Project Area. An analysis of impact to the Site habitats is provided below.

3.3.1 Old Field/Open Meadow

Solar arrays, stormwater controls, and access would cover approximately 23.9 acres of this habitat, including three common but discontinuous habitat blocks located on the east and west sides of the Project Area.

These types of successional (i.e., non-forested) habitats have potential to support some of Connecticut's rare bird species, if they are of sufficient size and quality. To support habitat specialists, habitat cover types typically need to be a minimum patch size of 10 acres. Two of the open field blocks where solar panels are planned exceed 10.0 acres and therefore have the potential for supporting habitat specialist bird species. These habitat blocks have been altered through historical disturbances involving the stripping of topsoil, heavy grading, and vegetation manipulation. While the stripping of topsoil can be beneficial in creating unique habitat types, it generally limits growth of beneficial shrub species favored by many birds. These historical Site activities have resulted in a general lack of vertical structure and a dominance of nuisance and invasive herbaceous vegetation that diminishes the quality of this habitat for grassland bird species. In addition, as these patches are just over the minimum 10-acre threshold and their morphology results in a greater amount of edge effect, these habitat blocks do not likely support the necessary core grassland habitat necessary for those dependent birds.

These early-successional habitat types are also capable of supporting habitat specialists that do not require as large a patch size. These are species often associated with the brushy and infrequently maintained field edges such as song sparrow (*Melospiza melodia*), northern mockingbird (*Mimus polyglottos*), indigo bunting, and others. This function will be maintained through the construction of this Project as these edges will remain along the peripheries of the Project.

3.3.2 Forested Habitat

Approximately 37 acres of forested habitat requires clearing to accommodate development of the Facility and reduce shading. This includes oak/hardwood, pine/hardwood, and mixed hardwood forest habitats.

3.3.2.1 Core Forest Determination

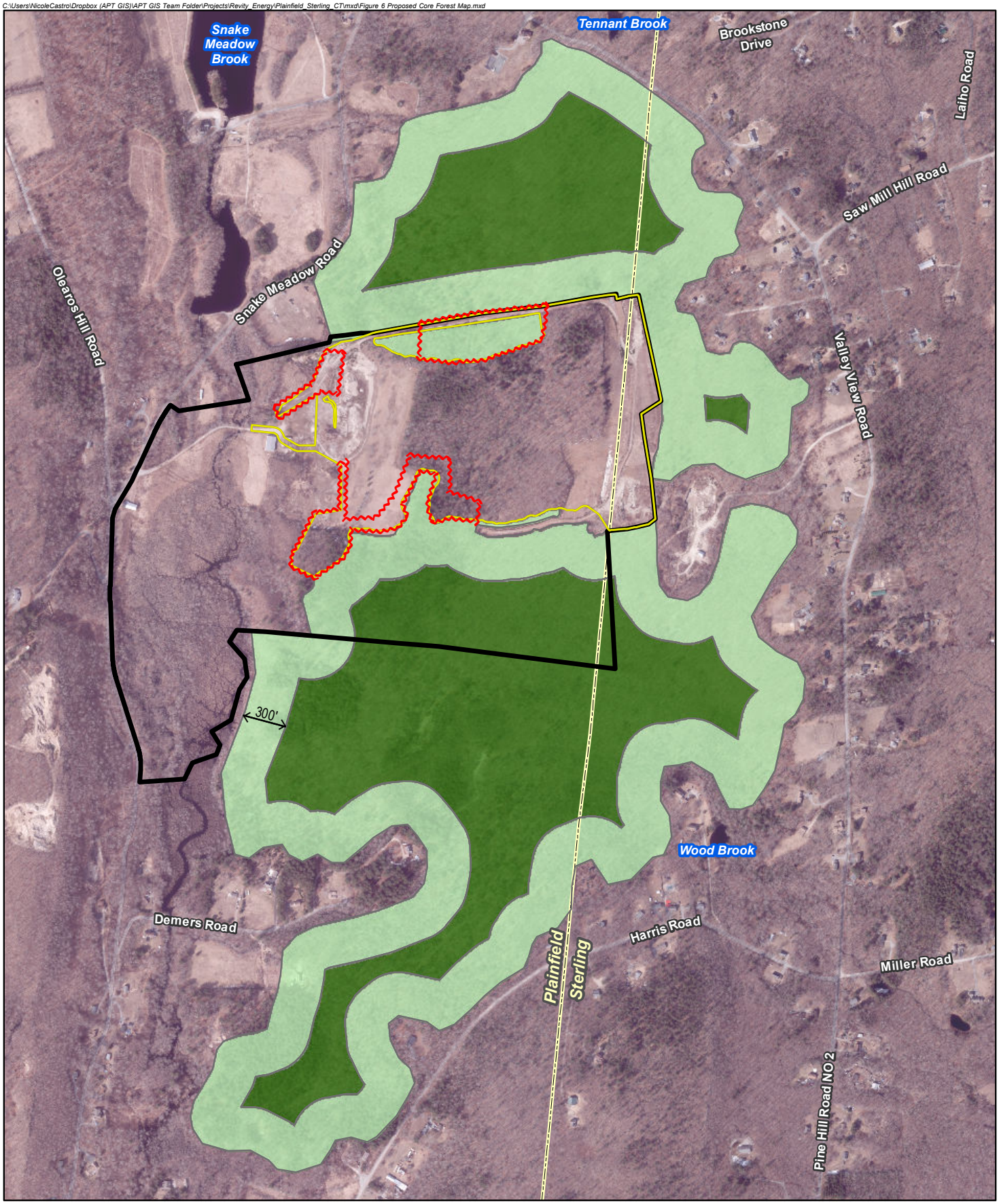
The Project Area is located within the southern portion of a ±61-acre small core forest block that extends off-site to the north and is surrounded by a high percentage of edge forest. The total amount of core forest within the Project area totals 16 acres. Project development will eliminate this entire area of on-Site core forest, as well as 21 acres of edge forest, leaving approximately five acres in the Project Area.

The existing understory will be preserved to promote the establishment of "soft" ecotone transitional areas in the northern extent, the northwestern corner and the southwestern portion of the Project Area. These transitional zones are intended to enhance wildlife use of the edges and mitigate for the disturbance of soils. Through the promotion of this scrub/shrub transitional zone, species that currently utilize this edge upland forest will continue to have this habitat type present post-construction.

See Figure 3, *Existing Core Forest Map* and Figure 6, *Proposed Core Forest Map* for a graphic comparison or pre- and post-development effects on core and edge forest and the location of the soft ecotone transitional areas (Figure 6).

Revity initiated consultation with DEEP Forestry in October 2019 and met with representatives of the agency on November 19, 2019 to present the Project and discuss core forest implications. A follow-up letter was provided to DEEP on December 4, 2019 to respond to agency questions and provide clarifications. Revity is currently waiting for a written response from DEEP. Copies of correspondence submitted to DEEP are provided in Appendix D*, DEEP Forestry Correspondence.*

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Revity_Energy\Plainfield_Sterling_CT\mxd\Figure 6 Proposed Core Forest Map.mxd



Legend

- Site
- Project Area
- Town Line

Proposed Conditions

Total Forest Block (+/-349 Acres)

Type:

- Edge Forest (+/-202 Acres)
- Core Forest (+/-147 Acres)

**Proposed Forest remaining within the Project Area: +/-5 Acres of Edge Forest*

- Understory Enhancement Area

N, W, E, S

1,000 500 0 1,000 Feet

Figure 6
Proposed Core Forest Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Map Notes:
Base Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 900 feet
Map Date: March 2020

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3.3.3 Sand and Gravel Pit

Project activities occurring within this habitat would disturb approximately 7.5 acres and include the installation of solar arrays, grading, construction of a gravel access road, and grading for a stormwater pond and armored emergency overflow. These areas have historically been mined for sand and gravel, resulting in heavy disturbance of soils and vegetation. As such, the Project would not negatively impact this habitat and will result in the partial revegetation and conversion to open field of currently exposed areas.

3.3.4 Developed Areas

Developed areas of the Site will not be substantially affected by the Project. Use of these areas will be limited to minor access road upgrades and the installation of the permanent security fence.

3.4 Wetlands

The Project Area has been configured to avoid direct impacts to wetlands. Clearing and grading limits for the Facility's primary infrastructure (solar arrays, security fencing, and associated equipment) have been designed to maintain a minimum setback of at least 50 feet from the nearest wetland resource areas, with the exception of areas bordering Wetlands 8 and 9. Due to the historical disturbances to these two (2) resources, the proximity of the existing gravel access road and their resultant limited functions and values, the proposed minimum 10-oot buffer will be sufficient to sustain the current functions and values of these degraded wetlands and prevent further degradation.

Project-related construction activities proximate to wetland resources consist of mature tree clearing/trimming, understory removal, security fencing installation and minor grading. Project-related activities are significantly separated from Wetlands 2 and 5 (440 and 560 feet respectively). The Facility has been designed to minimize clearing requirements in areas proximate to Wetlands 1, 3, 4, 6, 7, and 8. Tree clearing adjacent to Wetland 1 outside of the security fence will be limited to mature trees that would cause shading of the solar arrays; low growth vegetation and ground cover would remain. To promote protection of wetlands, best management practices ("BMPs") have been incorporated into the Facility design to avoid unintentional impacts to these resources during construction activities. These proposed BMPs are outlined in Appendix E, *Wetland and Vernal Pool Protection Plan.* In addition, habitat

enhancement measures are proposed along the peripheral boundaries of Wetland 2 where mature upland forest clearing is required. These plantings will consist of regularly spaced scrub/shrub plantings under sown with an approved conservation seed mix to promote the stabilization of soils and soft ecotone transition.

Potential short-term temporary impacts will be further minimized by proposed erosion and sedimentation control measures, which will be installed and maintained during construction activities in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. Potential long-term secondary impacts to wetland resources associated with the operation of this Facility are negligible as the design minimizes the creation of impervious surfaces and maintains/enhances the majority of the surface around the Facility with native grass/vegetation. Stormwater generated by the proposed development will be properly handled and treated in accordance with the 2004 Connecticut Stormwater Quality Manual. Disturbed areas within the Project Area will be underlain with a cover type of short meadow grasses consistent with current open field conditions. There will be clearing and grubbing required within mature upland forested areas located in the central-eastern and southwestern portions of the Project Area, including selective clearing along the Facility perimeter to reduce shading effects.

By implementing design features and management techniques described above, the proposed Project development will not result in an adverse impact to wetland resources.

3.5 Vernal Pool

Four (4) Site wetlands contain the necessary topographic and hydrological conditions to potentially support vernal pool breeding habitat. Vernal pools were identified within Wetland 1 (Pools 3 and 4), Wetland 5 (Pool 1), and Wetland 9 (Pool 2).

Construction and operation of the Facility would not result in direct physical impact to these vernal pools. It is widely documented that vernal pool dependent amphibians are not solely dependent upon the actual vernal pool habitat for breeding (i.e., egg and larval development) but require surrounding upland forest habitat for most of their adult lives. Accepted studies recommend

protection of adjacent habitat up to 750 feet from the vernal pool edge for obligate pool-breeding amphibians.[18]

In order to evaluate potential impacts to this vernal pool and its surrounding upland habitat, the resource was assessed using methodology developed by Calhoun and Klemens (2002). This methodology assesses vernal pool ecological significance based on two parameters: 1) biological value of the vernal pool; and 2) conditions of the critical terrestrial habitat. The biological rating is based on the presence of state-listed species and abundance and diversity of vernal pool indicator species. The terrestrial habitat is assessed based on the integrity of the vernal pool envelope (within 100 feet of the pool's edge; "VPE") and the critical terrestrial habitat (within 100-750 feet of the pool's edge; "CTH").

The landscape condition of the vernal pool was then evaluated to determine the existing and proposed quality of the terrestrial (non-breeding) habitat. Pools with 25% or less developed areas in the critical terrestrial habitat are identified as having high priority for maintaining this development percentage (including site clearing, grading and construction).

The results of the landscape analysis show that the proposed development would increase the amount of developed areas within the four (4) vernal pool CTHs. The VPEs associated with Pools 1, 3, and 4 will not be directly affected by the proposed development. The Project will encroach within the VPE of Pool 2. A discussion of the impact analysis for each vernal pool habitat is provided below and graphically depicted in Figure 7, *Vernal Pool Analysis Map*.

The Project would result in ±0.5 acres of additional development within the CTH of Pool 1, an increase of <1% of the total CTH associated with the vernal pool. No impacts are proposed within the VPE. Portions of the Project located within the CTH include fenced areas proposed for stormwater management measures and/or habitat enhancement mitigation areas. Due to the de minimis increase in development within the CTH, it is APT's opinion the proposed Project will not result in a likely adverse impact to Vernal Pool 1.

The Project's western extent is located within both the CTH and VPE of Vernal Pool 2, which is immediately surrounded in all directions by highly disturbed/developed surfaces associated with

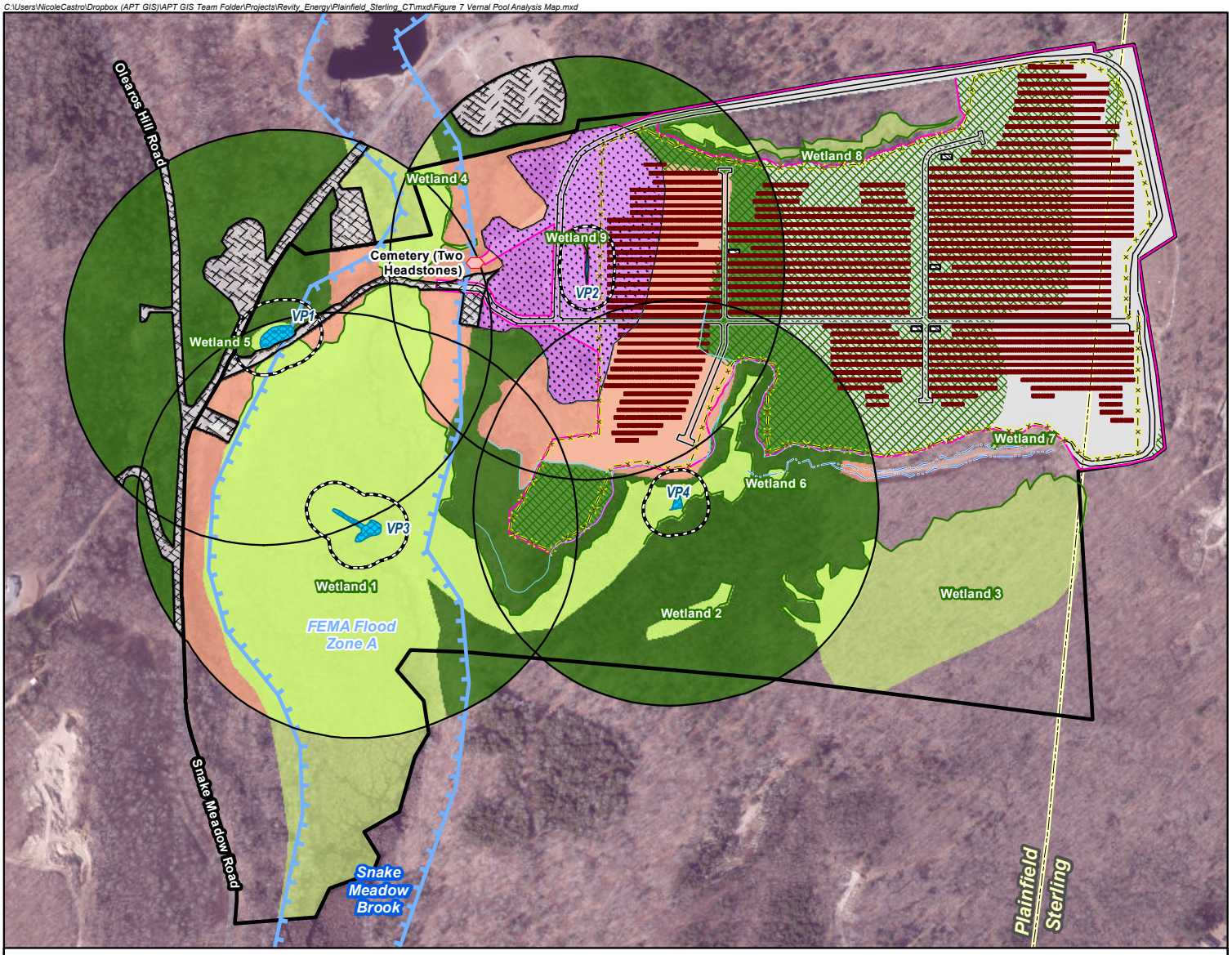
[18] Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5.

the mining operations identified as Sand and Gravel Pit habitat. The Project would result in an increase of 20.8 acres of additional development, an increase of ±47% of this pool's total CTH. However, these areas lack the vegetative cover and soil conditions (i.e. leaf litter, topsoil and duff) utilized for cover and concealment by vernal pool indicator species. Although this increase in development would technically reduce the tier rating for this vernal pool, it largely occurs within suboptimal habitat. Further, the connective integrity of this vernal pool's upland habitat has been lost.

Project clearing requirements will result in the loss of approximately 5.4 acres of upland forested habitat within the eastern portion of the CTH (an increase of 12%). The entirety of Vernal Pool 2's direct upland habitat connection has been compromised through clearing and gravel mining that isolates it from the nearest optimal upland forested habitat (approximately 500 feet to the east and northeast). Due to lack of cover resulting from the loss of habitat surrounding the pool, it is likely that emerging juveniles and migrating adults from and to this pool would experience high levels of predation and mortality. Additional optimal upland forested habitat can be found off-site to the northeast.

While this vernal pool habitat will see some impacts from Project development, much of the surrounding habitat will remain similar to existing conditions (either as Developed or Open Field/Meadow habitat) or be improved to Open Field Habitat under the solar arrays as part of the vegetative management plan to establish a grass field.

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Revity_Energy\Plainfield_Sterling_CT\mxd\Figure 7 Vernal Pool Analysis Map.mxd



Vernal Pool 1 Impact Analysis		
Total Vernal Pool Envelope (VPE) Area: ±1.7 acre Project Area Within VPE Area: None Total 100'-750' Critical Terrestrial Habitat (CTH) Area: ±45.1 acres Project Area Within CTH Area: ±0.2 acre		
Existing VPE Areas: (no proposed habitat changes to VPE Areas)		
Developed	±0.3 acre	18%
Old Field / Meadow	±0.2 acre	12%
Upland Forest	±0.6 acre	35%
Wetlands	±0.6 acre	35%
Existing CTH Areas:		
Developed	±5.3 acres	12%
Old Field / Meadow	±5 acres	11%
Sand and Gravel Pit	±0.1 acre	<1%
Upland Forest	±18.6 acres	41%
Wetlands	±16.1 acres	35%
Proposed CTH Areas:		
Developed	±5.35 acres	12%
Old Field / Meadow	±4.98 acres	11%
Sand and Gravel Pit	±0.07 acre	<1%
Upland Forest	±18.6 acres	41%
Wetlands	±16.1 acres	35%

Vernal Pool 2 Impact Analysis		
Total Vernal Pool Envelope (VPE) Area: ±1.3 acre Project Area Within VPE Area: ±1.2 acres Total 100'-750' Critical Terrestrial Habitat (CTH) Area: ±43.5 acres Project Area Within CTH Area: ±21 acres		
Existing VPE Areas:		
Sand and Gravel Pit	±1.25 acre	96%
Wetlands	±0.05 acre	4%
Proposed VPE Areas:		
Developed	±1.25 acre	96%
Wetlands	±0.05 acre	4%
Existing CTH Areas:		
Developed	±2.4 acres	6%
Old Field / Meadow	±15.8 acres	36%
Sand and Gravel Pit	±10 acres	23%
Upland Forest	±11.9 acres	27%
Wetlands	±3.4 acres	8%
Proposed CTH Areas:		
Developed	±23.2 acres	53%
Old Field / Meadow	±6.8 acres	16%
Sand and Gravel Pit	±3.6 acres	8%
Upland Forest	±6.5 acres	15%
Wetlands	±3.4 acres	8%

Vernal Pool 3 Impact Analysis		
Total Vernal Pool Envelope (VPE) Area: ±2 acres Project Area Within VPE Area: None Total 100'-750' Critical Terrestrial Habitat (CTH) Area: ±47 acres Project Area Within CTH Area: ±1.6 acres		
Existing VPE Areas: (no proposed habitat changes to VPE Areas)		
Wetlands	±2 acres	100%
Existing CTH Areas:		
Developed	±2 acres	4%
Old Field / Meadow	±6 acres	13%
Upland Forest	±11 acres	23%
Wetlands	±28 acres	60%
Proposed CTH Areas:		
Developed	±3.6 acres	7%
Old Field / Meadow	±5.9 acres	13%
Upland Forest	±9.5 acres	20%
Wetlands	±28 acres	60%

Vernal Pool 4 Impact Analysis		
Total Vernal Pool Envelope (VPE) Area: ±1.14 acre Project Area Within VPE Area: None Total 100'-750' Critical Terrestrial Habitat (CTH) Area: ±42.34 acres Project Area Within CTH Area: ±13.2 acres		
Existing VPE Areas: (no proposed habitat changes to VPE Areas)		
Old Field / Meadow	±0.08 acre	7%
Upland Forest	±0.50 acre	44%
Wetlands	±0.56 acre	49%
Existing CTH Areas:		
Old Field / Meadow	±8.8 acres	21%
Sand and Gravel Pit	±1.74 acres	4%
Upland Forest	±27 acres	64%
Wetlands	±4.8 acres	11%
Proposed CTH Areas:		
Developed	±13.2 acres	31%
Old Field / Meadow	±2.64 acres	6%
Sand and Gravel Pit	±1 acre	3%
Upland Forest	±20.7 acres	49%
Wetlands	±4.8 acres	11%

Legend

- Site
- Approximate Limit of Disturbance
- Approximate Area of Tree Removal
- Cemetery
- Perimeter Fence
- Erosion and Sediment Control Silt Fence
- Access Road
- Solar Panel
- Concrete Equipment Pad
- Vernal Pool
- Delineated Intermittent Watercourse (IWC)
- Delineated Wetland Boundary
- Wetland Area
- Approximate FEMA Flood Zone A
- Town Line
- 100' Vernal Pool Envelope (VPE)
- 100'-750' Critical Terrestrial Habitat (CTH)

Critical Terrestrial Habitat

- Developed
- Old Field / Meadow
- Sand and Gravel Pit
- Upland Forest
- Wetland

Map Notes:
Base Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 600 feet
Map Date: March 2020

N W E S

500 250 0 500 Feet

Figure 7
Vernal Pool Analysis Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

REVITY ENERGY

ALL-POINTS TECHNOLOGY CORPORATION

The long-term viability of Vernal Pool 2 is questionable due to its man-made nature within an active gravel mine and the surrounding conditions. The pool was created in the mid-1990s when large-scale earth extraction for the gravel mine began[19]. Once the wetland was created, migrating and dispersing spotted salamanders and wood frogs colonized the pool. The source for breeding animals is likely one or more of the other three vernal pools, given that they are all located within established migratory travel distances of spotted salamander and wood frog (Colburn 2004)[20]. Vernal Pool 2's hydroperiod is directly related to the condition of its watershed. At present, much of the watershed is either unvegetated or sparsely vegetated. As a result, the rates of groundwater infiltration and surface water runoff feeding the pool are high, allowing it to maintain standing water sufficient to support breeding and larval development. However, if the mine is left fallow, it is anticipated that groundwater and surface water discharges to the pool will diminish as vegetative cover in the watershed increases, likely starving the pool of the water needed to support full larval development of both vernal pool indicator species. If the mine continues in operation, low productivity of the pool is likely to result due to continued disturbances within its VPE zone (i.e., material excavation, material stockpiling, heavy equipment use) and the discharge of sediment laden runoff into the pool resulting from such activities. In either scenario, the long-term productivity of this vernal pool is questionable.

The Project is located within the CTH of Pool 3 and would result in ±1.6 acres of additional development, an increase of 3% of the total CTH associated with this vernal pool. This minor development encroachment would not reduce the tier rating for this vernal pool habitat. No impacts are proposed within the VPE. While this vernal pool currently meets the standards for a Tier 1 vernal pool habitat, its quality is compromised due to its connectivity to the Snake Meadow Brook floodplain. With a direct nexus for predatory fish populations, Pool 3 likely experiences high mortality, degrading its quality and function.

The Project is also located within the CTH of Pool 4 and would result in ±13.2 acres of additional development, an increase of 31% of the total CTH. No impacts are proposed within the VPE. This increase in development would result in a degradation of the tier rating for this pool. However,

[19] As indicated through review of historic aerial photography from 1970, 1985-86, 1990, 1996, the gravel operation and Wetland 9/Vernal Pool 2 were not present from 1970 through 1996. The 1996 aerial photo is the first photo confirming the location and extent of the gravel mine as it is present today (source: CT State Library, https://libguides.ctstatelibrary.org/hg/aerialphotos).

[20] Colburn, Elizabeth A. 2004. Vernal Pools, Natural History and Conservation. The McDonald and Woodward Publishing Company. Blacksburg, VA.

a majority of the lost habitat occurs within suboptimal habitat associated with old field/meadow (6.16 acres) and sand and gravel pit habitat (0.74-acre). In addition, using the ACOE BMP's vector analysis procedure, much of the optimal upland forested habitat exists to the south of the Project and Pool 4. This means that while the Project would result in significant increases in development to the north, a majority of the supporting upland habitat to the south would remain intact, thus diminishing the significance of impacts within this vernal pool's CTH.

Potential short-term impact to herpetofauna associated with nearby vernal pool habitat are possible should migrating individuals enter the Project Area during construction. Any short-term impacts associated with the proposed development within vernal pool CTH's would be minimized/avoided by proper installation and maintenance of erosion and sedimentation controls in accordance with 2002 Connecticut Guidelines for Soil Erosion and Sediment Control combined with implementation of the proposed Wetland and Vernal Pool Protection Plan (*provided in Appendix E*).

Hydraulic Alterations

Land-use changes (i.e., clearing, increases in impervious surface) can increase surface runoff in the watershed of a vernal pool. Direct inputs of stormwater flows into a pool may produce sudden water level increases in a short period of time and may lengthen the duration of flooding (hydroperiod). Conversely, diversion of stormwater flows past a pool may have the opposite effect of decreasing water levels and shortening the pool's hydroperiod. In addition, stormwater features that create temporary pools of water can result in a biological "sink" or "decoy" pool, as breeding amphibians deposit eggs into a water body without the necessary hydraulic period to allow for successful development of the eggs into juveniles.

The proposed Facility development will not alter existing surface or subsurface flow conditions or directions. The clearing and grading activities associated with the Project will not divert or increase water levels or alter surface water drainage patterns of the vernal pools; stormwater basins and diversion channels will mimic the natural drainage patterns of the Site. Impervious surfaces associated with the Project have been minimized through the maintenance of existing ground cover or restoration of surfaces through 'soft' vegetative stabilization methods and the minimal use of gravel within the Project Area to support infiltration and local groundwater recharge. Therefore, the proposed development will not alter the hydrology of the nearby vernal pool. In

addition, no stormwater management features (temporary or permanent) are proposed that would result in creation of a temporary "decoy" pool and "sink" features, which could potentially affect breeding amphibians intercepted on their migration to a nearby vernal pool.

Recommended Vernal Pool Protective Measures

A Wetland and Vernal Pool Protection Plan has been developed for this Project to both protect the nearby wetland resources from potential temporary impacts and avoid unintentional impact or mortality to vernal pool herpetofauna during construction activities. The Wetland and Vernal Pool Protection Plan would be implemented and maintained throughout the entire duration of construction; it would incorporate vernal pool-specific measures during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to September 15th]) if construction cannot be avoided during these periods. Details are included in Appendix E, *Wetland and Vernal Pool Protection Plan*.

Provided the Wetland and Vernal Pool Protection Plan is properly implemented and maintained during construction activities, potential adverse impacts to nearby vernal pool or wetland resources would be minimized. Once constructed, the Project will not generate substantial traffic within the CTH (thus mitigating potential for roadkill), and requires no nighttime activities or lighting that could result in disruption to amphibian behavior.

3.6 Rare Species

APT reviewed the most recent DEEP NDDB mapping (December 2019) to determine if any Threatened or Endangered species, species of Special Concern or critical habitats occur on or within 0.25-mile of the Site. Based on the NDDB mapping, neither condition exists with respect to the Site.

3.7 Northern Long-eared Bat

The Project will result in the removal of a number of trees with greater than three (3) inches DBH[21]. Since the Project Area is located within potential NLEB habitat, a determination of compliance with Sections 7 and 10 of the ESA is required.

APT submitted the USFWS's Northern Long Eared Bat final 4(d) rule Streamlined Consultation Form on February 7, 2019 under the consultation framework that allows federal agencies to rely upon the USFWS January 5, 2016, intra-Service Programmatic Biological Opinion ("BO") on the Final 4(d) Rule for the NLEB for section 7(a)(2) compliance. The USFWS did not respond within thirty (30) days from submittal of this form and as such, one may presume that USFWS determination is informed by the best available information and that Revity's project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS' BO. Therefore, the proposed Project is not likely to result in an adverse effect to NLEB.

A full review of the Endangered Species Act Compliance Determination is provided in Appendix F, *USFWS & NDDB Compliance Statement*.

3.8 Habitat Enhancement Measures

Once the perimeter fence has been installed, a strip of land between the fence and the newly-created forest edge will need to remain clear of mature trees to prevent shading of the solar arrays. This area can be managed for wildlife by restricting mowing on a rotation basis every four (4) to seven (7) years, which will allow the area to revert to late old field habitat and create a "soft" ecotone that can provide cover and a suitable environment for forest-dwelling wildlife and edge nesting birds

3.9 Water Quality

The Facility will be unstaffed and no potable water uses or sanitary discharges are planned. No liquid fuels are associated with the operations of the Project. Once operative, the stormwater generated by the proposed development will be properly handled and treated in accordance with

[21] Suitable NLEB roost habitat includes trees (live, dying, dead, or snag) with a diameter a DBH of three (3) inches or greater.

the 2004 *Connecticut Stormwater Quality Manual*. Therefore, upon its completion the Project will have no adverse environmental effect on wetlands, watercourses or other water resources.

The proposed post-development drainage characteristics of the Site will change minimally. Within the Project Area, there will be an increase in the time of concentration of stormwater discharge due to the tree removal activities and the establishment of grasses. To compensate for this increase, a series of grass-lined stormwater detention ponds with low-flow outlets are proposed at several locations within the Project Area (See Appendix B, *Site Plans* for locations). The Project Area that is cleared and grubbed during construction will be stabilized with a low growth seed mix, New England semi-shade grass and forbs mix or equal. The Project has also been designed to meet the current draft of DEEP's *Appendix I, Stormwater Management at Solar Array Construction Projects*.

To safeguard water resources from potential impacts during construction, Revity is committed to implementing protective measures in the form of a Stormwater Pollution Control Plan ("SWPCP") to be finalized and submitted to the Council, pending approval by DEEP Stormwater Management. The SWPCP will include monitoring of established sedimentation and erosion controls that will be installed and maintained in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. Revity will also apply for a *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* from DEEP. Therefore, with the incorporation of the proposed protective measures, stormwater runoff from Project development will not result in an adverse impact to water quality associated with nearby surface water bodies.

The Project's Stormwater Report is provided under separate cover.

3.10 Floodplain Areas

The majority of the Project Area is located in an area of minimal flooding, with the exception of its western portion, which is located within FEMA Flood Zone A associated with Snake Meadow Brook. The only work occurring in Flood Zone A is the clearing of trees, installation of chain link fencing, upgrading the gravel access, and placing riprap for erosion control. None of this work will result in placement of fill within the existing flood plain. Work associated with the gravel road and installation of riprap will occur at existing grade and the installation of the chain link fence will occur after the removal of trees.

3.11 Air Quality

Due to the nature of a solar energy generating facility, no air emissions will be generated during operations, and therefore, the operation of the Facility will have no adverse effects on air quality and no permit is required.

Temporary, potential, construction-related mobile source emissions will include those associated with construction vehicles and equipment. Any potential air quality impacts related to construction activities can be considered de minimis. Such emissions will, nonetheless, be mitigated using available measures, including, inter alia, limiting idling ties of equipment; proper maintenance of all vehicles and equipment; and watering/spraying to minimize dust and particulate releases. In addition, all on-site and off-road equipment will meet the latest standards for diesel emissions, as prescribed by the United States Environmental Protection Agency and will consider reducing exhaust emissions by utility effective controls.

3.12 Soils and Geology

Once vegetative clearing is completed, minimal grading is required for construction of the Project in the area of clearing. A majority of the proposed grading activities will occur within historically altered soils associated with the sand and gravel mining operations. Additional grading will be required for installation of the stormwater controls. All exposed soils resulting from construction activities will be properly and promptly treated in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and the DEEP *Stormwater Management at Solar Farm Construction Projects*, dated September 8, 2017.

3.13 Farmland Soils

All Project development is located outside of Prime Farmland Soils mapped on the Site. Therefore, no impacts to these soil types are anticipated. As such consultation with the Department of Agriculture was not required.

Approximately 17 acres of areas mapped as Statewide Important Farmland Soils will be occupied by the Project. The majority of this acreage has been historically and dramatically altered by mining operations that have stripped topsoil, ultimately diminishing the quality of these historically valuable farmlands. Topsoil in areas immediately beyond the active sand and gravel operation has been similarly impacted (denoted on Figure 2 as Old Field/Meadow).

Recognizing that the Project has a useful life and could be considered temporary in nature, Revity has proposed using a minimally intrusive method for construction of the Facility in old field/meadow and existing forested areas. Using pile-driven mounts for installation of the solar panels, in the previously mentioned areas, minimizes the need for substantive grading of the Project Area. Final grading elevations in the area of the existing mining operations will be returned to pre-mining conditions.

3.14 Historic and Archaeological Resources

No properties or historic standing structures listed on or eligible for listing on the National or State Registers of Historic Places are located on or proximate to the Site. Therefore, it is APT's opinion that the Project will not have an effect on historic properties.

In terms of archaeological potential, the pedestrian survey of the Project Area revealed that the western portion has been altered by sand and gravel operations in the past. In addition, there are existing access roads and other disturbed areas in the northern, eastern, and southernmost portions of the Site. As a result, it has been determined that these areas no longer retain intact soil deposits or the potential to yield intact cultural deposits.

A zone of moderate/high archaeological sensitivity with the potential to yield subsurface archaeological deposits exists within the east-central portion of the Project Area. APT submitted Project and Site historic/cultural information to the SHPO for agency review and comment on March 13, 2019.

The SHPO responded on March 15, 2019, agreed that portions of the Project Area retain a moderate to high degree of potential to contain intact archaeological deposits, and recommended a Phase IB Professional Cultural Resources Assessment and Reconnaissance Survey be completed within the identified zone of sensitivity. Revity has committed to completing this survey prior to construction. A copy of the *Phase IA Cultural Resources Assessment Survey* and *SHPO Determination Letter* is included in Appendix G.

The headstones associated with the existing burial plot located in the northwest corner of the Site are within the Facility fence line but outside any areas proposed for regrading and or cuts/fills. Some tree removal is proposed within this area, but care will be taken to not disturb the existing headstones.

3.15 Scenic and Recreational Areas

No state designated scenic areas will be physically or visually impacted by development of the Project. The Site is not located near a State Designated Scenic Road or scenic area nor are there any recreational areas near the Site. Therefore, no adverse effects are anticipated.

3.16 Noise

The only equipment proposed for the Project that will generate noise consists of the operation of the inverters and transformers. A Noise Evaluation Study prepared by Sage Environmental of Pawtucket, Rhode Island determined that once the Project is constructed and in service, the combined noise levels will comply with DEEP criteria for Commercial Emitters to Commercial and Residential Receiver Zones.

When the Project is operative, the highest noise level at an adjacent property is anticipated to be 51 dBA, which is below the most conservative criteria of 55 dBA for daytime[22] noise levels as established by the State of Connecticut Noise Control regulations *(RCSA Section 22a-69-1 to 22a-69-7.4).* The inverters and transformers are inactive at night. During those times that the inverters are not operative, noise levels at nearby property lines and/or residences will not change from existing conditions. Additional information provided in Appendix H, *Noise Evaluation Report*.

3.17 Lighting

No exterior lighting is planned for the Facility. There will be some small lighting fixtures within the equipment to aid in maintenance.

3.18 Visibility

The Facility will consist of a total of 31,125 non-reflective solar panels and will not exceed a height of approximately 10 feet above ground. The solar modules are designed to absorb incoming solar radiation and minimize reflectivity, such that only a small percentage of incidental light will be reflected off the panels. This incidental light is significantly less reflective than common building materials, such as steel, or the surface of smooth water. The panels will be tilted up toward the southern sky at a fixed angle of 20 degrees, further reducing reflectivity.

[22] State of Connecticut Noise Control regulations establish a nighttime criterion of 45 dBA.

The proposed electrical interconnections will utilize a combination of aboveground and underground utility lines installed along the main access road to the Site. No utility poles will be located within the fenced Facility.

To understand the potential visibility of the Facility, APT prepared a computer-generated viewshed map incorporating a digital surface model ("DSM") derived from State of Connecticut 2016 LiDAR[23] LAS[24] data points. The DSM captures the elevations of natural and built features on the Earth's surface (such as treetops and buildings). The DSM also reflects the proposed vegetative clearing within the entire Project Area. Using ESRI's ArcMap GIS[25] software and available GIS data, multiple locations within the Project Area were modeled collectively, representing both the perimeter and interior Facility components. The results depict the predicted visibility of the Facility from surrounding locations.

Year-round views of the Facility from off-site locations would be limited to a small area along the east side of Snake Meadow Road directly west of the Facility. Additional year-round visibility would be experienced from the north at an elevated location northwest of Snake Meadow Pond in the neighboring town of Killingly where the existing access road and the current mining operations result in a lack of vegetation. Seasonal views of the Facility are anticipated from locations immediately to the west along Snake Meadow Road and from portions of the abutting properties to the east and north, albeit through existing mature vegetative screening. In general, the Project will be set back sufficiently from abutting properties[26] and other roads and is benefited by substantial intervening vegetation so that the Facility components will not be visible from most locations off the Site.

A Photo-Simulation and the Viewshed Analysis Maps of the Project are provided in Appendix I.

[23] Light Detection and Ranging

[24] A LAS file is an industry-standard binary format for storing airborne LiDAR data.

[25] ArcMap is a Geographic Information System desktop application developed by the Environmental Systems Research Institute for creating maps, performing spatial analysis, and managing geographic data.

[26] The nearest residence is located at 163 Valley View Road, Sterling, approximately 330 feet to the east of the Project Area. See Figure 5, *Proposed Conditions Map* for additional detail.

4 Conclusion

As demonstrated in this Environmental Assessment, the Project will comply with the DEEP air and water quality standards. Further, it will not have an undue adverse effect on the existing environment and ecology; nor will it affect the scenic, historic and recreational resources in the vicinity of the Project. Once operative, the Facility will be unstaffed and generate minimal traffic. The Project would not be visible from most locations off the Site.

Although impacts have been minimized to the greatest extent feasible, the Project will likely result in the removal of approximately 37 acres of forested habitat. Much of this habitat is classified as edge forest. Where feasible, the existing understory will be preserved to promote the establishment of "soft" ecotone transitional areas to minimize impacts to and enhance wildlife use of these areas. Additionally, to promote protection of the NLEB during the critical breeding and pup season, Revity would consider implementing a timing restriction on tree clearing; that is, limiting this work to the months of September through March.

The Facility will not result in direct impacts to wetland or vernal pool resources. The establishment of protective buffers as well as a Wetland and Vernal Pool Protection Plan will prevent any further degradations to these resources during construction and operation.

While the Site contains mapped state recognized farmland soils, the majority of them have been historically altered by the existing mining operations. to the Facility has been designed to avoid all mapped Prime Farmland Soils

Overall, the Project's design minimizes the creation of impervious surfaces; and, with the creation of a series of grass-lined stormwater detention ponds with low-flow overflow outlets proposed at several locations within the Project Area, is adequately designed to handle stormwater runoff. Some site manipulation (cuts/fills) and regrading will be required to allow for stormwater infiltration basin development and Project Area development but overall, the majority of the Project Area will use existing grades for the installation of the solar arrays. To safeguard resources from potential impacts during construction and in accordance with the DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, a SWPCP will be developed and implemented. The SWPCP will include provisions for monitoring of construction activities and the establishment of sedimentation and erosion controls that will be

installed and maintained throughout construction in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, and, to the extent practical the DEEP Stormwater Management at Solar Farm Construction Projects, dated September 8, 2017.

APPENDIX A

Wetlands Inspection Report

WETLAND INSPECTION

November 8, 2019
Revised **APT Project No.: CT553100**

Prepared For: Revity Energy, LLC
117 Metro Center Boulevard, Suite 2007
Warwick, RI 02886
Attn: Ryan Palumbo

Site Address: Snake Meadow Road
Plainfield/Sterling, Connecticut

Date(s) of Investigation: 8/23/18; 8/24/18; 9/06/18; 5/29/19

Field Conditions: **Weather:** sunny**,** high 80's on 8/23/18 and 8/24/18
Sunny, mid 80's on 9/6/18
Overcast, mid 50's on 5/29/19
Soil Moisture: dry to moist

Wetland/Watercourse Delineation Methodology*:
☒Connecticut Inland Wetlands and Watercourses
☐Connecticut Tidal Wetlands
☐Massachusetts Wetlands
☐U.S. Army Corps of Engineers

Municipal Upland Review Area/Buffer Zone (Plainfield):
Wetlands: 100 feet
Watercourses: 100 feet

The wetlands inspection was performed by†:
Matthew Gustafson, Registered Soil Scientist

Enclosures: Wetland Delineation Field Forms & Wetland Inspection Map

This report is provided as a brief summary of findings from APT's wetland investigation of the referenced Study Area that consists of proposed development activities and areas generally within 200 feet.‡ If applicable, APT is available to provide a more comprehensive wetland impact analysis upon receipt of site plans depicting the proposed development activities and surveyed location of identified wetland and watercourse resources.

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* *Wetlands and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance.*

† *All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.*

‡ *APT has relied upon the accuracy of information provided by Revity Energy LLC and its contractors regarding proposed solar facility location and access road/utility locations for identifying wetlands and watercourses within the Study Area.*

Attachments

- Wetland Delineation Field Forms
- Wetland Inspection Map

Wetland Delineation Field Form

Wetland I.D.:	Wetland 1, 4, 5	
Flag #'s:	WF 1-01 to 1-156; WF 4-1 to 4-12; 5-1 to 5-10	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☒	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☒	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: Wetland 1 consists of diverse wetland habitats that border along Snake Meadow Brook consisting of broad wet meadow areas, a feeder hillside seep system that focuses to an intermittent watercourse, and transitional scrub/shrub and forested wetland areas.		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☒
Open Water ☒	Disturbed ☒	Wet Meadow ☒
Comments: The sand and gravel pit operations and associated gravel access have resulted in some disturbance to these wetland systems and adjacent areas.		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☒	Tidal ☐
Watercourse Name: Perennial – Snake Meadow Brook; Intermittent - Unnamed		
Comments: The unnamed intermittent watercourse associated with the narrow eastern extension of the Wetland 1 system consists of 2-5 ft. wide channel with a stony bottom. This intermittent stream drains west into Snake Meadow Brook, a relatively large perennial watercourse. Snake Meadow Brook drains south, eventually crossing under the existing gravel access drive that serves the subject property.		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☐ Potential ☒	Other ☐
Vernal Pool Habitat Type: 'Classic'	
Comments: A small depressional pool that appears to be a historic farm pond is located interior to Wetland 1 in the east-central portion of the wetland and subject property. Depths of inundation at the time of the inspection exceeded 1 ft. with deep mucky organics preventing accurate measurements. Several juvenile wood frogs were observed within and proximate to Wetland 1 at the time of inspection giving indication that this depression may support vernal pool breeding. A comprehensive discussion of this vernal pool resource is discussed under separate cover.	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Red Maple (Acer rubrum)	Yellow Birch (Betula alleghaniensis)
Green Ash (Fraxinus pennsylvanica)	Sweet Pepperbush (Clethera alnifolia)
Spicebush (Lindera benzoin)	Highbush Blueberry (Vaccinium corymbosum)
New York Ironweed (Vernonia noveboracensis)	Winterberry (Ilex verticillata)
Poison Ivy (Toxicodendron radicans)	Joe Pye Weed (Eupatorium maculatum)
Fox Grape (Vitis labrusca)	Specked Alder (Alnus rugosa)
Jewelweed (Impatiens capensis)	Soft Rush (Juncus effuses)
Green Bulrush (Scirpus atrovirens)	Purple Loosestrife* (Lythrum salicaria)
Common Thistle (Cirsium vulgare)	

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

APT understands that Revity Energy, LLC is proposing to construct a photovoltaic solar facility ("Facility") at an abandoned quarry in Plainfield and Sterling, CT. The subject property consists of complexes of upland and wetland mature forest, large open field areas historically cleared and topsoil mined, a large complex of wetlands bordering Snake Meadow Brook, and more recently active quarry areas with exposed sand and a large associated building. An existing gravel/dirt access road provides access to the subject property off Snake Meadow Road running east and circumventing the outer boundary of the property north and east before doubling back to the west. Final layout and design of the proposed Facility is under development. Due to the large number of wetlands within the subject property and potential close proximity of development to wetland resources, an evaluation of potential impacts to wetland resources and permitting implications will be provided under separate cover as final facility designs/layout are completed.

Wetlands 1, 4 and 5 have been combined for the sake of this wetland discussion as all these resources are directly, or indirectly connected and homogenous in hydrology, soils, and/or vegetation. Wetlands 6 and 7, providing direct hydrological connection, have been separated for the purposes of this discussion due to their substantial differences from Wetlands 1, 4 and 5.

Wetlands 1, 4, and 5 consist of a large complex of diverse wetland types, cover types, and hydrological conditions. Eastern reaches of this wetland originate as a hillside seep system that receives focused discharges from two intermittent watercourses identified as Wetlands 6 and 7. These eastern extents of the wetland are dominated by mature, closed canopy forest. Located interior to this seep system is a well-defined intermittent watercourse channel that drains to the west. An interior potential vernal pool was also identified in this area. As this wetland drains west it empties into the Snake Meadow Brook riparian corridor. This corridor consists of an interior perennial watercourse with broad bordering wetlands dominated by a mix of wet meadow, backwater floodplain wetlands, transitional scrub/shrub areas and edge

mature forest. Snake Meadow Brook drains south under the existing gravel access road that serves the subject property. A second backwater wetland (Wetland 5) was identified that was historically connected to these other wetlands but was bisected by the existing gravel access road. This wetland contains seasonally flooded areas with dense emergent vegetation and subsurface drainage into and from Wetland 1. No direct or culverted drainage was noted between Wetlands 1 and 5.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 2	
Flag #'s:	WF 2-01 to 2-10	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: Wetland 2 is a small hillside seep wetland with seasonal saturation.		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☐	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: None		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Sphagnum moss (Sphagnum spp.)	Red Maple (Acer rubrum)
Highbush Blueberry (Vaccinium corymbosum)	Winterberry (Ilex verticillata)
Spicebush (Lindera benzoin)	

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

APT understands that Revity Energy, LLC is proposing to construct a photovoltaic solar facility ("Facility") at an abandoned quarry in Plainfield and Sterling, CT. The subject property consists of complexes of upland and wetland mature forest, large open field areas historically cleared, and topsoil mined, a large complex of wetlands bordering Snake Meadow Brook, and more recently active quarry areas with exposed sand and a large associated building. An existing gravel/dirt access road provides access to the subject property off Snake Meadow Road running east and circumventing the outer boundary of the property north and east before doubling back to the west. Final layout and design of the proposed Facility is under development. Due to the large number of wetlands within the subject property and potential close proximity of development to wetland resources, an evaluation of potential impacts to wetland resources and permitting implications will be provided under separate cover as final facility designs/layout are completed.

Wetland 2 consists of a small hillside seep wetland located south of Wetland 1 and west of Wetland 3 in the southcentral portion of the subject property. This wetland generally drains south as a narrow-forested seep. This wetland seep eventually drains south off the subject property and may drain into Wetland 1 further off property.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 3	
Flag #'s:	WF 3-01 to 3-88	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☒
Comments: Wetland 3 contains a very stony surface with areas of seasonal saturation resulting from seepage along steeper slopes and perched saturation on flatter plateau areas.		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: Wetland vegetation is dominated by relatively mature, closed canopy forest with transitional edges of scrub/shrub vegetation in smaller wind thrown tree areas and the filled/cleared interface along the northeastern wetland boundary.		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Sphagnum moss (Sphagnum spp.)	Yellow Birch (Betula alleghaniensis)
Highbush Blueberry (Vaccinium corymbosum)	Red Maple (Acer rubrum)
Black Gum (Nyssa sylvatica)	Spicebush (Lindera benzoin)
Spinulose Wood Fern (Dryopteris carthusiana)	

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

APT understands that Revity Energy, LLC is proposing to construct a photovoltaic solar facility ("Facility") at an abandoned quarry in Plainfield and Sterling, CT. The subject property consists of complexes of upland and wetland mature forest, large open field areas historically cleared, and topsoil mined, a large complex of wetlands bordering Snake Meadow Brook, and more recently active quarry areas with exposed sand and a large associated building. An existing gravel/dirt access road provides access to the subject property off Snake Meadow Road running east and circumventing the outer boundary of the property north and east before doubling back to the west. Final layout and design of the proposed Facility is under development. Due to the large number of wetlands within the subject property and potential close proximity of development to wetland resources, an evaluation of potential impacts to wetland resources and permitting implications will be provided under separate cover as final facility designs/layout are completed.

Wetland 3 consists of a complex of hillside seep wetland areas feeding and draining from a large perched wetland system located on a localized plateau. This wetland resource is located in the southeast corner of the subject property and generally drains south with smaller seeps draining west. Wetland areas are characterized by a very stony surface with areas of shallow hummock/hollow topography and seasonal surface saturation. Northern extents of the wetland have experienced historic alteration including filling/cutting of soils from the quarry operation. A large fill slope is located along the far northeast wetland boundary with seepage draining from the fill/native soil interface.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 6 & 7	
Flag #'s:	WF 6-1 to 6-9; 6-01 IWC to 6-31 IWC; WF 7-1 to 7-9 (Closed Loop); IWC 1X to IWC 42X	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: None		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☐
Open Water ☐	Disturbed ☒	Wet Meadow ☐
Comments: Vegetation within the constructed stormwater swales consist of a mix of emergent and scrub/shrub vegetation from historic manipulation. As the features drain west, the dominant vegetation class changes to relatively mature forest.		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☒	Tidal ☐
Watercourse Name: Unnamed		
Comments: Historically constructed parallel drainage swales consist of 1 to 3-foot-wide channels with stone armored and sandy bottom with well incised banks which are regulated as intermittent watercourses. These two swales converge into a singular intermittent watercourse feature with a heavily incised channel of exposed native stone.		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Bebb Willow (Salix bebbiana)	Green Bulrush (Scirpus atrovirens)
Sphagnum moss (Sphagnum spp.)	Broad-Leaf Cattail (Typha latifolia)
Jewelweed (Impatiens capensis)	Joe Pye Weed (Eupatorium maculatum)
Japanese Stilt Grass* (Microstegium vimineum)	

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

APT understands that Revity Energy, LLC is proposing to construct a photovoltaic solar facility ("Facility") at an abandoned quarry in Plainfield and Sterling, CT. The subject property consists of complexes of upland and wetland mature forest, large open field areas historically cleared, and topsoil mined, a large complex of wetlands bordering Snake Meadow Brook, and more recently active quarry areas with exposed sand and a large associated building. An existing gravel/dirt access road provides access to the subject property off Snake Meadow Road running east and circumventing the outer boundary of the property north and east before doubling back to the west. Final layout and design of the proposed Facility is under development. Due to the large number of wetlands within the subject property and potential close proximity of development to wetland resources, an evaluation of potential impacts to wetland resources and permitting implications will be provided under separate cover as final facility designs/layout are completed.

Wetlands 6 and 7 have been combined for the sake of this description as they consist of similar soils, morphology, hydrology and vegetation as well as drain to the same wetland resource area.

Both wetlands consist of two parallel intermittent watercourse features that are formed within historically constructed drainage ditches. These swales convey hillside seep drainage from the eastern extents of the subject property as well as runoff from the dirt access road and convey this drainage west eventually draining into Wetland 1. These two watercourses converge at the terminus of the access road and drain within a heavily incised/scoured channel into eastern extents of Wetland 1. The swale/watercourses consist of areas of stone armoring, or exposed stone/boulders from intense stormwater flows. A small perched wetland pocket is located adjacent to Wetland 6 (identified as Wetland 7) that intercepts hillside runoff. This small wetland area is located directly adjacent to the watercourse identified as Wetland 6 and drains into this resource area. Despite the anthropogenic origin of these swales, they contain the necessary hydrology to maintain some base flows beyond a storm event and consist of a dominance of hydrophytic vegetation. Flowing and standing water was present within these swales at the time of inspection.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 8	
Flag #'s:	WF 8-01 to 8-46	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☒	Seasonally Saturated - perched ☐
Comments: Wetland 8 is a narrow hillside seep system with seasonal saturation.		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☒	Wet Meadow ☐
Comments: The dominant vegetation class is relatively mature forest with interior areas of emergent and scrub/shrub vegetation resulting from historic logging clearing.		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☒	Tidal ☐
Watercourse Name: Unnamed		
Comments: Channel consists of a narrow channel (<2 ft.) with a stone/sand bottom. Watercourse consist of a braided system with areas where the channel dissipates.		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Red Maple (Acer rubrum)	Yellow Birch (Betula alleghaniensis)
Green Ash (Fraxinus pennsylvanica)	Sphagnum moss (Sphagnum spp.)
Highbush Blueberry (Vaccinium corymbosum)	Winterberry (Ilex verticillata)
Poison Ivy (Toxicodendron radicans)	

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

APT understands that Revity Energy, LLC is proposing to construct a photovoltaic solar facility ("Facility") at an abandoned quarry in Plainfield and Sterling, CT. The subject property consists of complexes of upland and wetland mature forest, large open field areas historically cleared, and topsoil mined, a large complex of wetlands bordering Snake Meadow Brook, and more recently active quarry areas with exposed sand and a large associated building. An existing gravel/dirt access road provides access to the subject property off Snake Meadow Road running east and circumventing the outer boundary of the property north and east before doubling back to the west. Final layout and design of the proposed Facility is under development. Due to the large number of wetlands within the subject property and potential close proximity of development to wetland resources, an evaluation of potential impacts to wetland resources and permitting implications will be provided under separate cover as final facility designs/layout are completed.

Wetland 8 consists of a narrow hillside seep system with an interior braided intermittent watercourse. This wetland generally drains east to west originating at a seep outbreak within a large boulder field/slope break. Bordering wetlands to the watercourse are very narrow consisting of forested seeps. Areas of the wetland have experienced disturbance from historic logging with skid trails crossing the wetland at one point, resulting in the creation of small canopy openings. The hydrology supporting this wetland generally dissipates as topography directs the drainage into a rip-rap armored drainage swale adjacent to the existing dirt access road.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 9	
Flag #'s:	WF 9-01 to 9-15 (Loop)	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☒

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☒	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☐
Comments: Wetland 9 is a narrow historically dug swale 1 to 3 feet wide resulting in seasonal flooding.		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: None		

CLASS:

Emergent ☒	Scrub-shrub ☒	Forested ☐
Open Water ☐	Disturbed ☒	Wet Meadow ☐
Comments: The dominant vegetation class consists of scrub/shrub and emergent habitats resulting from historic disturbance associated with the quarry operation.		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☒ No ☐ Potential ☐	Other ☐
Vernal Pool Habitat Type: Depths of inundation were observed within southern extents of the swale ranging from 8 to 12 inches. Breeding evidence of two obligate vernal pool species was observed within this pool (wood frog and spotted salamander). A comprehensive discussion of this vernal pool resource is discussed under separate cover.	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Bebb Willow (Salix bebbiana)	Broad-Leaf Cattail (Typha latifolia)
Sensitive Fern (Onoclea sensibilis)	Steeplebush (Spiraea tomentosa)
Green Bulrush (Scirpus atrovirens)	Soft Rush (Juncus effuses)
Specked Alder (Alnus rugosa)	

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

APT understands Revity Energy, LLC is proposing to construct a photovoltaic solar facility ("Facility") at an abandoned quarry in Plainfield and Sterling, CT. The subject property consists of complexes of upland and wetland mature forest, large open field areas historically cleared, and topsoil mined, a large complex of wetlands bordering Snake Meadow Brook, and more recently active quarry areas with exposed sand and a large associated building. An existing gravel/dirt access road provides access to the subject property off Snake Meadow Road running east and circumventing the outer boundary of the property north and east before doubling back to the west. Final layout and design of the proposed Facility is under development. Due to the large number of wetlands within the subject property and potential close proximity of development to wetland resources, an evaluation of potential impacts to wetland resources and permitting implications will be provided under separate cover as final facility designs/layout are completed.

Wetland 9 consists of an anthropogenic swale that was historically cut intercepting groundwater seepage in addition to receiving drainage from a rock armored swale to the north and east. This swale generally drains north although a saddle point at the midpoint of the swale does retain water in the southern half of the swale. During inspections, it was observed that inundation depths ranged from 8 to 12 inches. As this swale drains north, the artificially constructed depression terminates at a fill slope resulting in the isolation of the feature. Vegetation, due to a lack of topsoil, is generally sparse consisting of emergent vegetation within the swale, and scrub/shrub vegetation along the margins.

Wetland Inspection Map
Revity Energy LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

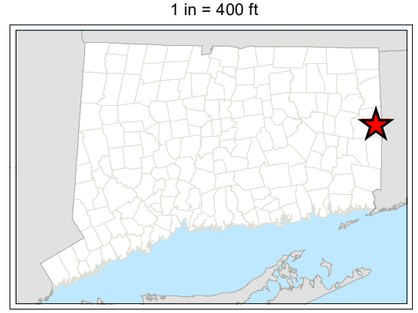
Legend

- Site
- Project Area
- Access Road
- Wetland/Watercourse Flag
- Delineated Intermittent Watercourse (IWC)
- Delineated Wetland Boundary
- Approximate Wetland Boundary
- Delineated Wetland Area
- Vernal Pool
- 100'' Vernal Pool Envelope (VPE)
- Approximate FEMA Flood Zone A
- Open Water (CTDEEP)
- Watercourse (CTDEEP)
- Municipal Boundary

N
W E
S

400 200 0 400 Feet

1 in = 400 ft



ALL-POINTS TECHNOLOGY CORPORATION

Map Sources:

Ortho Base Map: CT ECO 2016 Aerial Imagery

Elevation contours derived from 2016 LiDAR data provided by CTECO

No Digital FEMA Data is Available for Windham County.
Approximate FEMA Flood Zone digitized from FIRM Panel (see FEMA website).

CTDEEP's data library (http://www.ct.gov/deep)
Data layers are maintained and updated by CTDEEP and represent the most recent publications.

Map Date: June 2019

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\DiPrete_Engineering\Plainfield_Sterling_CT\mxd\Wetland Inspection Map.mxd

APPENDIX B

Project Plans

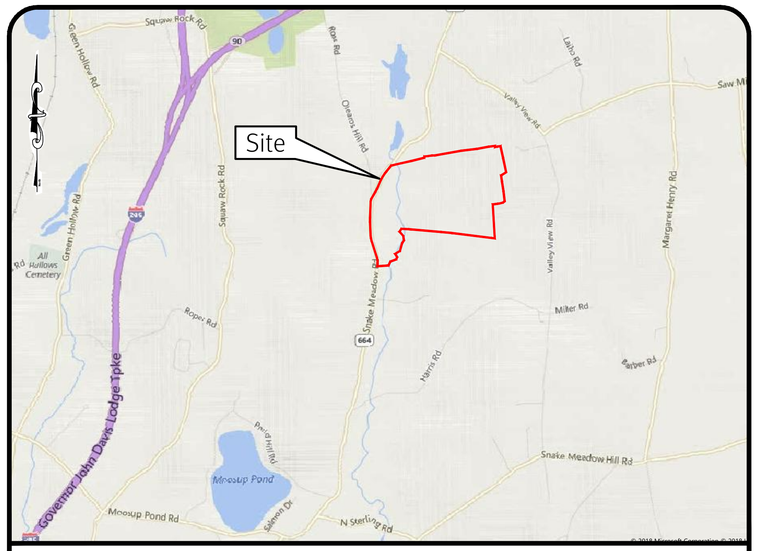
Construction General Permit Submission

Snake Meadow Road Solar

424 Snake Meadow Road
Plainfield, Connecticut

Town of Plainfield, CT: AP 35 Block 118 Lots 6A, 10 & 11
AP 36 Block 118 Lot 6

Town of Sterling, CT: Parcel ID 4415-008-0011



Location Map 1" = 2000'

Sheet Index

1 Cover Sheet
2 Aerial Half Mile Radius
3 Notes and Legend
4 Existing Condtions Plan
5 Stormwater Pollution Control Plan
6 Site Layout Plan
7 Grading and Drainage Plan - 1
8 Grading and Drainage Plan - 2
9 Grading and Drainage Plan - 3
10 Grading and Drainage Plan - 4
11 Detention Ponds A & B
12 Detention Ponds C & D
13 Detention Pond E
14 Detention Ponds F & G
15 Detention Ponds H & I
16 Detention Ponds J & K
17 Detention Pond L
18 Detail Sheet - 1
19 Detail Sheet - 2
1 of 1 Boundary Survey by Langan

SWPCP / O&M
The Stormwater Pollution Control Plan (SWPCP) and Operations and Maintenance Plan (O&M) are required documents with this plan set and must be maintained by the contractor and owner onsite.

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
Boston • Providence • Newport

This regulatory submission set shall not be used for construction purposes unless stamped "Issued for Construction" and signed by a DiPrete Engineering representative.

The contractor is responsible for all of the means, methods, safety precautions and requirements, and OSHA conformance in the implementation of this plan and design.

No.	Date	Description	By
0	3-24-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Cover Sheet

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

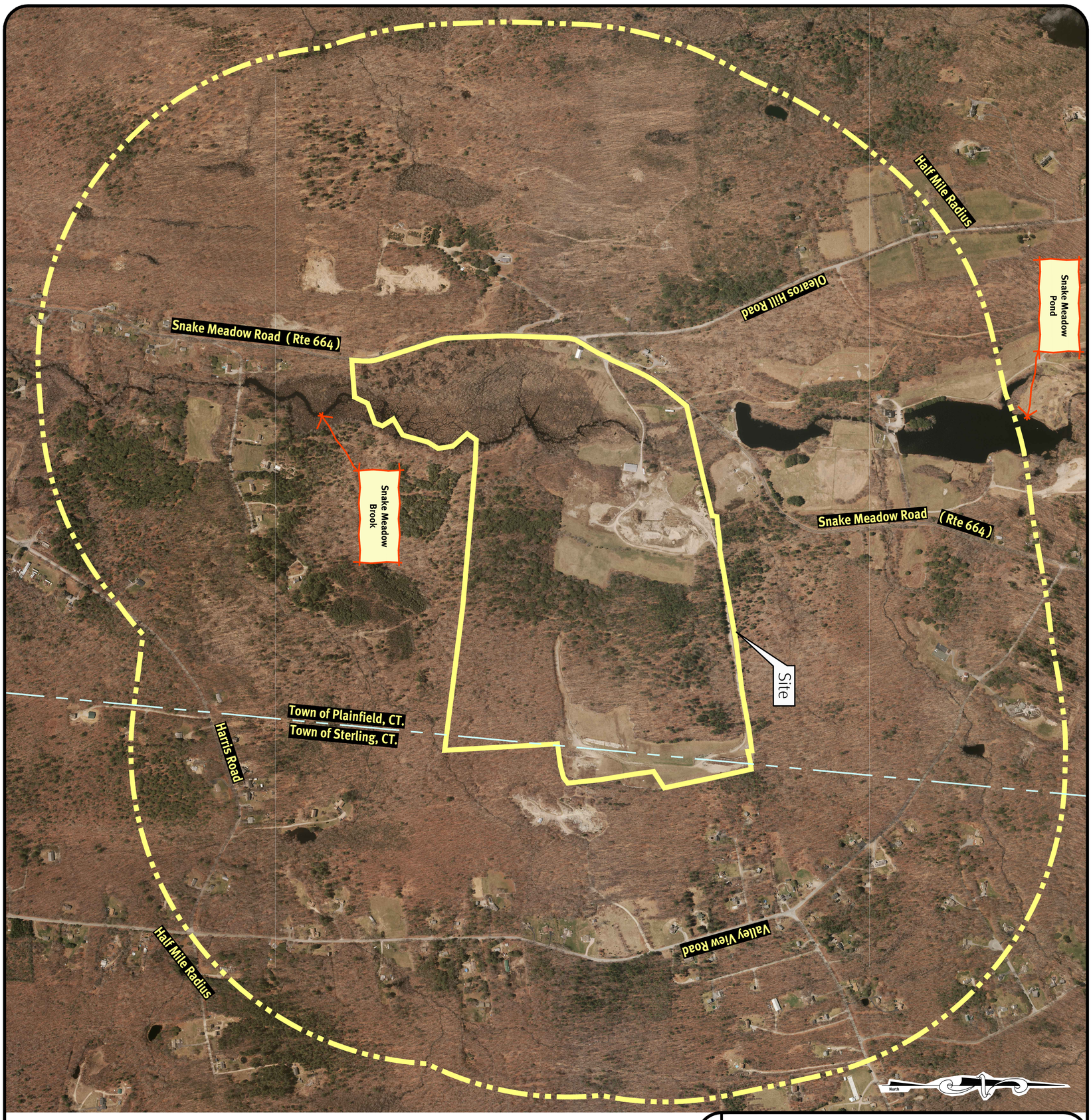
Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

SHEET 1 OF 19

DE Job No: 2437-018 Copyright 2020 by DiPrete Engineering Associates, Inc.

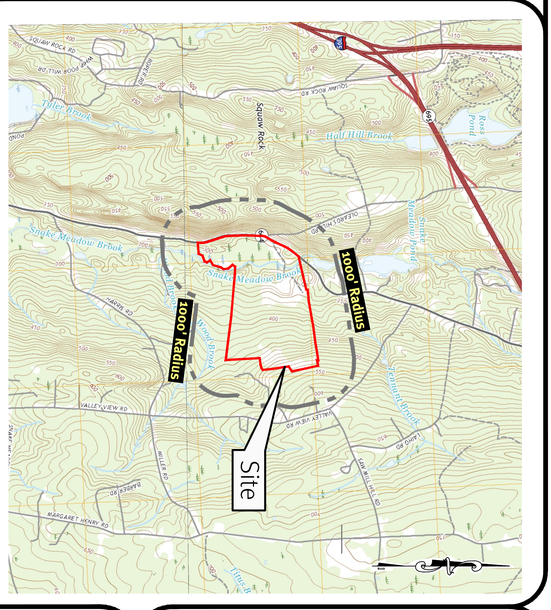
z:\demain\projects\2437-018 snake meadow road solar\autocad drawings\2437-018-tcvar.dwg Plotted: 4/15/2020

z:\demain\projects\2437-018 snake meadow road solar\autocad drawings\2437-018-cvar.dwg Plotted: 4/15/2020



Scale: 1"=400'
0
200'
400'
800'

Photo Obtained from 2016 CTGIS database.



USGS Map Scale: 1"=2000'

SHEET 2 OF 19

Aerial Half Mile Radius

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

No.	Date	Description	By:
0	3-24-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

This regulatory submission set shall not be used for construction purposes unless stamped 'Issued for Construction' and signed by a DiPrete Engineering representative.

The contractor is responsible for all of the means, methods, safety precautions and requirements, and OSHA conformance in the implementation of this plan and design.

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
Boston • Providence • Newport

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General Notes:

1. THE SITE IS LOCATED AT 424 SNAKE MEADOW ROAD AND IS IN THE TOWNS OF STERLING, CONNECTICUT AND PLAINFIELD, CONNECTICUT. THE TOTAL SITE AREA IS 184.62± ACRES:

   STERLING (8.54± ACRES) – PARCEL ID 4415-008-0011 – IS WITHIN STERLING'S PRIMARY ZONING ZONING DISTRICT.

   PLAINFIELD (176.08± ACRES) – ASSESSOR'S PLAT 35 BLOCK 118 LOTS 6A, 10, AND 11 AND ASSESSOR'S PLAT 36 BLOCK 118 LOT 6 - ZONED RA-60.

2. THE OWNER OF ALL PARCELS WITHIN THE SITE ARE OWNED BY:
   JOSEPH A. VINAGRO
   2208 PLAINFIELD PIKE
   JOHNSTON, RI 02919

3. THIS SITE IS LOCATED IN FEMA FLOOD ZONES X AND A. REFERENCE FEMA FLOOD INSURANCE RATE MAP 09011600058, REVISED JUNE 17, 1991 AND MAP 09011800058, REVISED MARCH 4, 1985. (FLOOD PLAIN DESCRIPTIONS SHOWN BELOW)

   ZONE A – THIS SITE IS LOCATED IN FEMA FLOOD ZONE A. ZONE A ARE AREAS OF 100-YEAR FLOOD; BASE FLOOD ELEVATIONS AND FLOOD HAZARD FACTORS NOT DETERMINED.

   ZONE X (UNSHADED) – THIS SITE IS LOCATED IN FEMA FLOOD ZONE X. ZONE X ARE AREAS WHERE THERE IS MINIMAL FLOODING.

4. THIS PLAN HAS BEEN CREATED BY INFORMATION PROVIDED FROM LANGAN SURVEYING ON SEPTEMBER 17, 2018. THIS SURVEY SHOWN WITHIN THIS PLAN SET IS A COMPILATION PLAN CONFORMING TO A HORIZONTAL ACCURACY OF CLASS D AND A TOPOGRAPHIC SURVEY CONFORMING TO T-3 ACCURACY. THE TOPOGRAPHY AND BOUNDARY INFORMATION SHOWN IN THIS PLANSET WAS COMPILED FROM OTHER MAPS, RECORD RESEARCH, AND OTHER SOURCES OF INFORMATION. NO SURVEY OR TOPOGRAPHIC INFORMATION SHOULD BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY, AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE. PLEASE REFER TO THE COMPILATION BOUNDARY SURVEY PREPARED BY LANGAN FOR MORE INFORMATION.

   THIS COMPILATION PLAN HAS BEEN PREPARED FROM SOURCES OF INFORMATION AND DATA WHOSE POSITIONAL ACCURACY AND RELIABILITY HAS NOT BEEN VERIFIED. THE PROPERTY LINES DEPICTED HEREIN DO NOT REPRESENT A BOUNDARY OPINION, AND OTHER INFORMATION DEPICTED IS SUBJECT TO SUCH CHANGES AS AN AUTHORITATIVE FIELD SURVEY MADE ON THE GROUND IN ACCORDANCE WITH THE RULES AND REGULATIONS AS STATED IN CMR 250 SECTION 6.00 MAY DISCLOSE.

5. ALL WORK PERFORMED HEREIN IS TO BE GOVERNED BY CURRENT EDITIONS OF THE CONNECTICUT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, TOWNS STERLING, CT AND PLAINFIELD, CT STANDARD SPECIFICATIONS AND DETAILS AND SPECIFICATIONS INCLUDED AS PART OF THE DRAWINGS. IN AREAS OF CONFLICT BETWEEN THE DIFFERENT SPECIFICATIONS, THE DESIGN PLANS AND PROJECT SPECIFICATIONS WILL TAKE PRECEDENCE OVER THE GENERAL SPECIFICATIONS AND THE DESIGN ENGINEER WILL INTERPRET THE CONSTRUCTION REQUIREMENT. THE CONTRACTOR IS ADVISED TO SUBMIT A REQUEST FOR INFORMATION (RFI) FOR ANY AREAS OF CONFLICT BEFORE COMMITTING TO CONSTRUCTION.

6. THE SITE IS NOT WITHIN A:
   AQUIFER PROTECTION AREA (CTDEEP)
   ENDANGERED SPECIES CRITICAL HABITAT AREA (CTDEEP)
   STATE AND FEDERAL LISTED SPECIES AREA (CTDEEP)

7. THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE PROJECT PLANS AND THE CONTRACTOR/ OWNER MUST MAINTAIN THESE DOCUMENTS AS PART OF A FULL PLAN SET:

   - EROSION AND SEDIMENT CONTROL PLAN (E&S). THE E&S PLAN CONTAINS THE FOLLOWING:
     - EROSION CONTROL MEASURES
     - SHORT TERM MAINTENANCE
     - ESTABLISHMENT OF VEGETATIVE COVER
     - CONSTRUCTION POLLUTION PREVENTION
     - SEQUENCE OF CONSTRUCTION
   - OPERATION AND MAINTENANCE PLAN (O&M). THE O&M CONTAINS:
     - LONG TERM MAINTENANCE
     - LONG TERM POLLUTION PREVENTION

8. DETAILED SOIL EROSION AND SEDIMENT CONTROL MEASURES CONFORM TO CTDEEP BEST MANAGEMENT PRACTICES.

9. THE SITE DOES NOT REQUIRE PUBLIC WATER, PUBLIC SEWER, PRIVATE WELL, PUBLIC WELL OR SUBSURFACE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

10. PROPOSED GRAVEL ACCESS ROADS ARE TO BE 20' WIDE.

11. THE SITE IS PROPOSED TO BE BUILT IN 3 PHASES.

12. TEST PITS AND SOIL EVALUATIONS, WERE COMPLETED BY DIPRETE ENGINEERING ON 10/16/2018 AND 10/17/2018.

13. ANY PROPRIETARY PRODUCTS REFERENCED IN THIS PLAN SET ARE REPRESENTATIVE OF THE MINIMUM DESIGN REQUIREMENTS FOR THE PURPOSE IT PROPOSES TO SERVE. ALTERNATIVES TO ANY PROPRIETARY PRODUCT MAY BE SUBMITTED TO THE ENGINEER OF RECORD FOR CONSIDERATION, WHICH MUST BE ACCOMPANIED BY APPROPRIATE SPECIFICATION SHEETS/ DESIGN CALCULATIONS THAT DEMONSTRATE THE ALTERNATIVE(S) MEET THE MINIMUM DESIGN PARAMETERS OF THE PRODUCT SHOWN ON THE PLANS. NO ALTERNATIVES MAY BE USED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.

Soil Information:

(REFERENCE: USDA NATURAL RESOURCES CONSERVATION SERVICE)

SOIL NAME	DESCRIPTION
3	RIDGEBURY, LEICESTER, AND WHITMAN SOILS, 0 TO 8 PERCENT SLOPES, EXTREMELY STONY
13	WALPOLE SANDY LOAM, 0 TO 3 PERCENT SLOPES
18	CATDEN AND FREETOWN SOILS, 0 TO 2 PERCENT SLOPES
23A	SUDBURY SANDY LOAM, 0 TO 5 PERCENT SLOPES
38C	HINCKLEY LOAMY SAND, 3 TO 15 PERCENT SLOPES
38E	HINCKLEY LOAMY SAND, 15 TO 45 PERCENT SLOPES
46B	WOODBRIDGE FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
46C	WOODBRIDGE FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY
61B	CANTON AND CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES, VERY STONY
103	RIPPOWAM FINE SANDY LOAM

Demolition Notes:

1. CONTRACTOR TO OBTAIN ALL FEDERAL, STATE, AND MUNICIPAL APPROVALS PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO PERFORM DAILY SWEEPING AT CONSTRUCTION ENTRANCE DURING DEMOLITION AND CONSTRUCTION TO MINIMIZE SEDIMENTS ON EXTERNAL STREETS.
3. ANY EXISTING BUILDING(S) AND PROPERTY PROPOSED TO REMAIN WHICH ARE DAMAGED BY THE CONTRACTOR MUST BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
4. CONTRACTOR IS RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) ALL MATERIALS INDICATED ON THE PLANS UNLESS SPECIFIED OTHERWISE HERE IN. R&D MATERIALS MUST INCLUDE BUT ARE NOT LIMITED TO PAVEMENT, GRAVEL, CATCH BASINS, MANHOLES, GRATES/FRAMES/COVERS, AND ANY EXCESS SOIL THAT IS NOT INCORPORATED INTO THE WORK.
5. IN ADDITION TO THOSE AREAS SPECIFICALLY DESIGNATED ON THE PLANS, ALL DISTURBED AREAS INCLUDING THE CONTRACTOR'S STOCKPILE AND STAGING AREAS WITHIN THE LIMIT OF WORK MUST BE RESTORED TO MATCH THE DESIGN PLANS.

Traffic Notes:

1. ALL TRAFFIC CONTROL MUST CONFORM TO THE MUTCD CONTROL DEVICES CURRENT EDITION.
2. DURING CONSTRUCTION, TRAFFIC CONES ARE TO BE USED FOR SEPARATION OF ACTIVE TRAFFIC FROM WORK ZONE PER MUTCD REQUIREMENTS.
3. DURING CONSTRUCTION FLAGGERS MUST BE EMPLOYED TO ENSURE SAFETY FOR INTERACTION OF CONSTRUCTION VEHICLES AND ACTIVE TRAFFIC.
4. ALL SIGNS, FLAGGERS, TRAFFIC CONTROL DEVICES, AND TEMPORARY TRAFFIC ZONE ACTIVITIES MUST MEET THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC (MUTCD) LATEST EDITION AND SUBSEQUENT ADDENDA.
5. TEMPORARY CONSTRUCTION SIGNS MUST BE MOUNTED ON CTDOT APPROVED SUPPORTS AND MUST BE REMOVED OR COVERED WHEN NOT APPLICABLE.

As-Built Notes:

ALL COMPONENTS OF THE DRAINAGE SYSTEM MUST BE ASBUILT PRIOR TO COVERING. ENGINEER TO BE NOTIFIED PRIOR TO COVERING TO SURVEY ASBUILT LOCATIONS. ENGINEER WILL NOT ACCEPT FIELD MEASUREMENTS FROM THE SITE CONTRACTOR.

Grading and Utility Notes:

1. CONSTRUCTION TO COMMENCE SPRING 2020 OR UPON RECEIPT OF ALL NECESSARY APPROVALS.
2. THE CONTRACTOR AND APPLICANT MUST COORDINATE WITH ALL OF THE APPROPRIATE UTILITY COMPANIES FOR AGREEMENTS TO SERVICE THE PROPOSED BUILDING. THIS MUST BE DONE PRIOR TO CONSTRUCTION. NO REPRESENTATIONS ARE MADE BY DIPRETE ENGINEERING THAT UTILITY SERVICE IS AVAILABLE.
3. PRIOR TO START OF CONSTRUCTION, CONTRACTOR MUST VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED ACCESS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES. CONTRACTOR MUST NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
4. ALL PROPOSED UTILITIES SERVING THE SITE AND BUILDINGS TO BE COORDINATED WITH OWNER, SOLAR ENGINEER, AND CIVIL ENGINEER PRIOR TO INSTALLATION. THIS NOTE IS PARTICULARLY IN REFERENCE TO THE CONNECTION TO THE POWER GRID.
5. ALL RETAINING WALLS AND STEEP SLOPES ARE SUBJECT TO FINAL STRUCTURAL DESIGN. DIPRETE ENGINEERING IS NOT PROVIDING THE STRUCTURAL DESIGN OF THESE ITEMS. ALL WALLS AND STEEP SLOPES ARE TO BE DESIGNED AND BUILT UNDER THE DIRECTION OF A PROFESSIONAL GEOTECHNICAL ENGINEER AND CERTIFIED TO THE OWNER PRIOR TO THE COMPLETION OF THE PROJECT. SHOP DRAWINGS TO BE SUBMITTED PRIOR TO CONSTRUCTION. FINAL STRUCTURAL DESIGN MUST INCORPORATE THE INTENT OF THE GRADING SHOWN ON THESE PLANS AND ALL WORK MUST BE WITHIN THE LIMIT OF DISTURBANCE SHOWN ON THE PLANS.
6. ALL CUT AND FILL AREAS ARE TO BE DONE UNDER THE DIRECTION OF A PROFESSIONAL GEOTECHNICAL ENGINEER WITH TESTING AND CERTIFICATION TO BE PROVIDED TO THE APPLICANT AT THE COMPLETION OF THE PROJECT. DIPRETE ENGINEERING IS NOT PROVIDING THE FILL SPECIFICATION, GEOTECHNICAL ENGINEERING, STRUCTURAL ENGINEERING SERVICES, OR SUPERVISION AS PART OF THESE DRAWINGS.
7. NO STOCKPILING OF MATERIAL TO BE LOCATED IN THE RIGHT OF WAY AND NO OPEN TRENCHES ARE TO BE LEFT OVERNIGHT.
8. ALL LOAM IN DISTURBED AREAS TO BE STOCKPILED FOR FUTURE USE.
9. ALL EXCESS SOIL, TREES, ROCKS, BOULDERS, AND OTHER REFUSE, MUST BE DISCARDED OFF SITE IN AN ACCEPTABLE MANNER AT AN APPROVED LOCATION. STUMPS MUST BE GROUND ON SITE OR REMOVED.
10. NO STUMP DUMPS ARE PROPOSED ON SITE.

DRAINAGE

ALL DRAINAGE PIPING TO BE HIGH-DENSITY POLYETHYLENE (HDPE) WITH WATERTIGHT JOINTS WHERE INSTALLED WITHIN THE SEASONAL HIGH GROUNDWATER, UNLESS NOTED OTHERWISE ON THE PLANS OR IN THE SPECIFICATIONS. ALL STORMWATER PIPE WITHIN THE STATE'S RIGHT OF WAY TO BE REINFORCED CONCRETE PIPE (RCP) PIPE.

ELECTRIC

PROPOSED ELECTRIC UTILITIES ARE SHOWN SCHEMATICALLY AND ARE PROPOSED TO BE UNDERGROUND. OWNER & CONTRACTOR TO COORDINATE FINAL DESIGN WITH APPROPRIATE UTILITY COMPANIES. ALL WORK TO BE IN ACCORDANCE WITH EACH UTILITY COMPANY'S STANDARDS AND DETAILS AS WELL AS LOCAL AND FEDERAL REGULATIONS. THIS INCLUDES BUT IS NOT LIMITED TO, POLES, TRANSFORMERS, PULL BOXES, CONCRETE PADS, CONCRETE ENCASEMENTS AND CONDUITS. CONNECTION POINTS FOR ELECTRIC AND TELECOM UTILITIES, AT THE EXISTING INFRASTRUCTURE, ARE CURRENTLY SHOWN AS UNDERGROUND UTILITIES. THESE UTILITIES MAY BE UNDERGROUND OR OVERHEAD AND WILL BE COORDINATED WITH ENERGY SUPPLY COMPANY PRIOR TO CONSTRUCTION.

Abbreviations Legend

ADA	AMERICANS WITH DISABILITY ACT
AP	ASSESSOR'S PLAT
BC	BOTTOM OF CURB
BT	BOTTOM OF TESTHOLE
BIT	BITUMINOUS (BERM)
BIO	BIORETENTION
BS	BASEMENT SLAB ELEVATION
BW	FINISHED GRADE AT BOTTOM OF WALL
CB	CATCH BASIN
(C)	CALCULATED
℄	CENTERLINE
(CA)	CHORD ANGLE
CLDIP	CONCRETE LINED DUCTILE IRON PIPE
CO	CLEAN OUT
CONC	CONCRETE
(D)	DEED
DCB	DOUBLE CATCH BASIN
DI	DROP INLET
DMH	DRAINAGE MANHOLE
DP	DETENTION POND
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
ESC	EROSION AND SEDIMENT CONTROL
EX	EXISTING
FES	FLARED END SECTION
FFE	FINISH FLOOR ELEVATION
GS	GARAGE SLAB ELEVATION
GWT	GROUND WATER TABLE
HW	HEADWALL
HC	HIGH CAPACITY CATCH BASIN GRATE
HDPE	HIGH DENSITY POLYETHYLENE
ID	INLINE DRAIN
INV	INVERT
IP	INFILTRATION POND
LF	LINEAR FEET
LOD	LIMIT OF DISTURBANCE
LP	LIGHT POLE
(M)	MEASURED
N/F	NOW OR FORMERLY
OHW	OVERHEAD WIRE
PE	POLYETHYLENE
℗	PROPERTY LINE
PR	PROPOSED
PVC	POLYVINYL CHLORIDE
R	RADIUS
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RL	ROOF LEADER
ROW	RIGHT OF WAY
S	SLOPE
SD	SUBDRAIN
SED	SEDIMENT FOREBAY
SF	SQUARE FOOT
SFL	STATE FREEWAY LINE
SFM	SEWER FORCE MAIN
SG	SLAB ON GRADE ELEVATION
SHL	STATE HIGHWAY LINE
SMH	SEWER MANHOLE
SNDF	SAND FILTER
SS	SIDE SLOPE
STA	STATION
TC	TOP OF CURB
TD	TRENCH DRAIN
TF	TOP OF FOUNDATION
TRANS	TRANSITION
TW	TOP OF WALL (FINISHED GRADE AT TOP OF WALL)
TYP	TYPICAL
UDS	UNDERGROUND DETENTION SYSTEM
UIS	UNDERGROUND INFILTRATION SYSTEM
UP	UTILITY POLE
WO	WALKOUT ELEVATION
WQ	WATER QUALITY

Existing Legend

(AS SHOWN ON PROPOSED PLANS)

NOT ALL ITEMS SHOWN WILL APPEAR ON PLANS

PROPERTY LINE
ASSESSORS LINE
BUILDING
BRUSHLINE
TREELINE
GUARDRAIL
FENCE
RETAINING WALL
STONE WALL
MINOR CONTOUR LINE
MAJOR CONTOUR LINE
WATER LINE
SEWER LINE
SEWER FORCE MAIN
GAS LINE
ELECTRIC LINE
OVERHEAD WIRES
DRAINAGE LINE
SOILS LINES
50' REGULATED WETLAND AREA
100' REGULATED WETLAND AREA
200' REGULATED WETLAND AREA
FEMA BOUNDARY
STREAM
WETLAND LINE & FLAG
STATE HIGHWAY LINE
STATE FREEWAY LINE

NAIL FOUND/SET
DRILL HOLE FOUND/SET
BOUND FOUND/SET
SIGN
BOLLARD
SOIL EVALUATION
CB CATCH BASIN
DCB DOUBLE CATCH BASIN
DMH DRAINAGE MANHOLE
FES FLARED END SECTION
GUY POLE
EMH ELECTRIC MANHOLE
UP UTILITY/POWER POLE
LIGHTPOST
SMH SEWER/SEPTIC MANHOLE
SEWER VALVE
CLEANOUT
HYDRANT
IRRIGATION VALVE
WATER VALVE
WELL
MONITORING WELL
UNKNOWN MANHOLE
GAS VALVE
BENCH MARK
STREAM FLOW DIRECTION

Proposed Legend

NOT ALL ITEMS SHOWN WILL APPEAR ON PLANS

PROPERTY LINE
BUILDING SETBACKS
CHAINLINK FENCE
GUARDRAIL (CTDOT STD OR APPROVED EQUAL)
RETAINING WALL
MINOR CONTOUR LINE
MAJOR CONTOUR LINE
SPOT ELEVATION
EDGE OF PAVEMENT
BITUMINOUS BERM (CTDOT STD)
CONCRETE CURB (CTDOT STD)
BUILDING FOOTPRINT
BUILDING OVERHANG
ASPHALT PAVEMENT
HEAVY DUTY ASPHALT PAVEMENT
HEAVY DUTY CONCRETE
CONCRETE SIDEWALK
ASPHALT SIDEWALK
SAWCUT LINE
SIGN (CTDOT STD AS APPLICABLE)
SINGLE LIGHT
DOUBLE LIGHT
OVERHANGING LIGHT
ACCESSIBLE PARKING SPACE SYMBOLS
BUILDING INGRESS/EGRESS
SOLAR ARRAY

DRAINAGE LINE
PERFORATED SUBDRAIN
SWALE
SEWER FORCE MAIN
GAS LINE
WATER LINE
HYDRANT ASSEMBLY
WATER SHUT OFF
WATER VALVE
THRUST BLOCK
SEWER LINE
OVERHEAD WIRE
ELECTRIC, TELEPHONE, CABLE LINE
LIMIT OF DISTURBANCE/ LIMIT OF CLEARING
SEDIMENTATION BARRIER, SILT FENCE (PER CTDOT STANDARDS AND SPECIFICATIONS), COMPOST SOCK OR APPROVED EQUAL
2:1 OR 1:1 SLOPES
UNDERGROUND INFILTRATION OUTLINE
POND ACCESS
RIP RAP
SAND FILTER
BIO RETENTION
CATCH BASIN
DOUBLE CATCH BASIN
MANHOLE
FLARED END SECTION
HEAD WALL

Utility Note:

ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN WERE PROVIDED BY OTHERS AND ARE APPROXIMATE ONLY. LOCATIONS MUST BE DETERMINED IN THE FIELD BEFORE EXCAVATION, BLASTING, UTILITY INSTALLATION, BACKFILLING, GRADING, PAVEMENT RESTORATION, AND ALL OTHER SITE WORK. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THESE DOCUMENTS. CONTACT DIG SAFE A MINIMUM OF 72 WORKING HOURS PRIOR TO ANY CONSTRUCTION AT 811. DIG SAFE IS RESPONSIBLE FOR CONTACTING MEMBER UTILITY COMPANIES. DIG SAFE MEMBER UTILITY COMPANIES ARE RESPONSIBLE TO MARK ONLY THE FACILITIES THAT THEY OWN OR MAINTAIN. NON DIG SAFE MEMBER COMPANIES ARE NOT NOTIFIED BY DIG SAFE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INVESTIGATE AND NOTIFY IF ANY PRIVATELY OWNED OR NON DIG SAFE MEMBER UTILITIES ARE IN THE AREA.

PER THE CODE OF FEDERAL REGULATIONS – TITLE 29, PART 1926 IT IS THE SITE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ACCURATE UNDERGROUND UTILITY LINE LOCATIONS FROM THE UTILITY COMPANIES, UTILITY OWNERS AND, OR VIA UNDERGROUND UTILITY LOCATION EQUIPMENT AS NEEDED TO ESTABLISH ACCURATE LOCATIONS PRIOR TO ANY EXCAVATION. THE USE OF PROFESSIONAL UTILITY LOCATING COMPANIES PRIOR TO ANY EXCAVATION IS RECOMMENDED.

DIPRETE ENGINEERING IS NOT A PROFESSIONAL UTILITY LOCATION COMPANY, AND IS NOT RESPONSIBLE FOR UNDERGROUND UTILITIES, DEPICTED OR NOT, EITHER IN SERVICE OR ABANDONED. ANY SIZES, LOCATIONS, EXISTENCE, OR LACK OF EXISTENCE OF UTILITIES SHOWN ON THESE PLANS SHOULD BE CONSIDERED APPROXIMATE UNTIL VERIFIED BY A PROFESSIONAL UTILITY LOCATION COMPANY. DIPRETE ENGINEERING ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED.

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No	Date	Description	By
0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Notes And Legend

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

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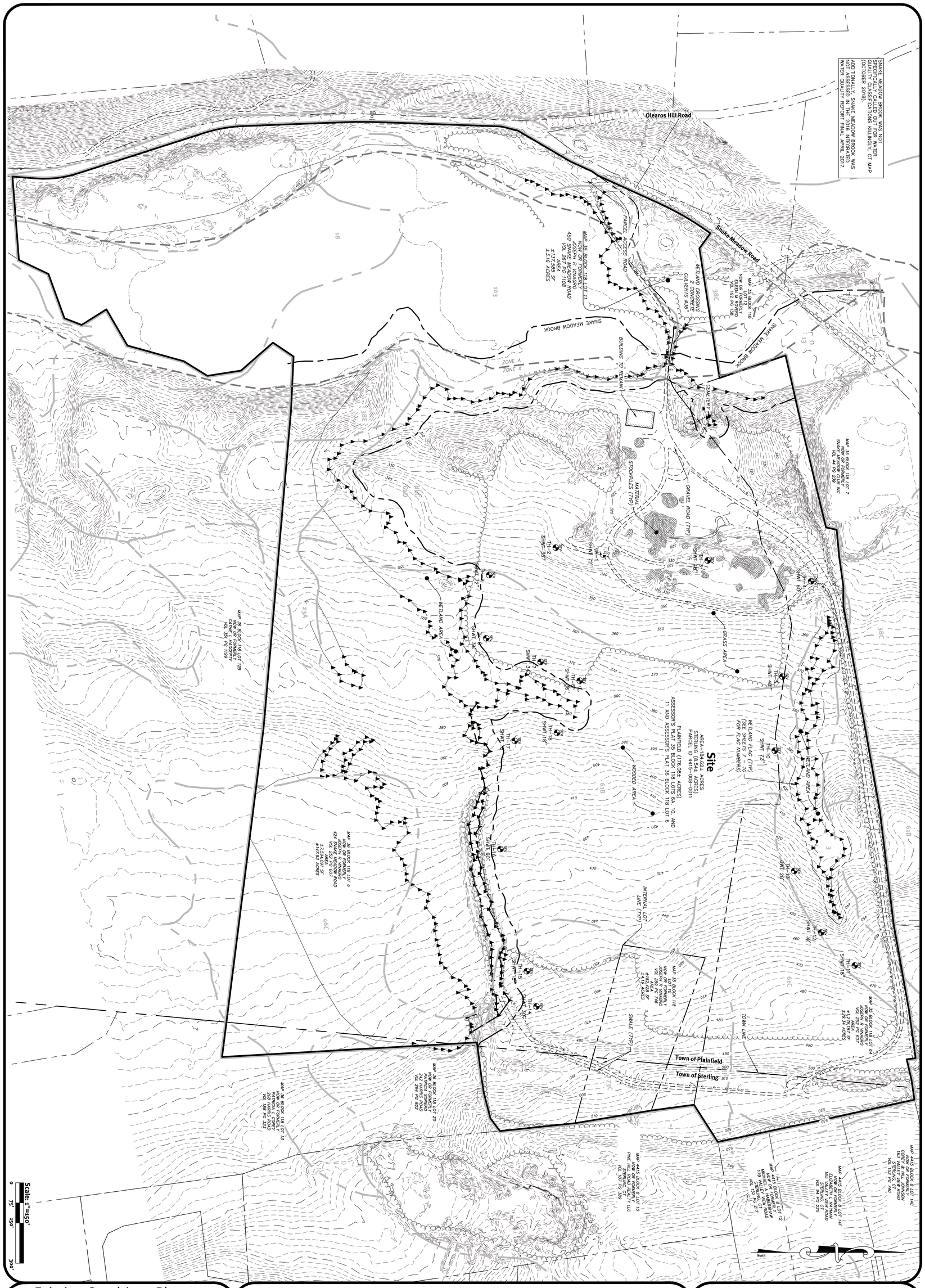

Existing Condtions Plan

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

SHEET 4 OF 19

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Soil Erosion Control Legend:

- DIVERSION RUNOFF CONVEYANCE MEASURE (SWALE AND/OR BERM)
- TEMPORARY SEDIMENT BASIN
- TEMPORARY SEDIMENT TRAP
- EROSION CONTROL (COMPOST SOCK, SILT FENCE, OR APPROVED EQUAL)
- LIMIT OF DISTURBANCE (NO SEDIMENT CONTROL)
- LIMIT OF DISTURBANCE (WITH SEDIMENT CONTROL)
- CONSTRUCTION ENTRANCE (CTDOT STD)
- FINAL CONTOUR GRADE (368)

North

Temporary Sediment Trap 1A (SEE SHEET 19)

Temporary Sediment Trap 1B (SEE SHEET 19)

Temporary Sediment Trap 1C (SEE SHEET 19)

Temporary Sediment Trap 2A (SEE SHEET 19)

Temporary Sediment Trap 2B (SEE SHEET 19)

Temporary Sediment Trap 2C (SEE SHEET 19)

Temporary Sediment Trap 3A (SEE SHEET 19)

Temporary Sediment Trap 3B (SEE SHEET 19)

Temporary Sediment Trap 3C (SEE SHEET 19)

Temporary Sediment Trap 3D (SEE SHEET 19)

Temporary Sediment Basin 1 (SEE SHEET 19)

Temporary Sediment Basin 3 (SEE SHEET 19)

STOCKPILE AREA (SEE SHEET 18)

CONCRETE WASHOUT AREA (SEE SHEET 18)

PHASE 1 AREA
3 SEDIMENT TRAPS
1 SEDIMENT BASIN

PHASE 2 AREA
3 SEDIMENT TRAPS

PHASE 3 AREA
4 SEDIMENT TRAPS
1 SEDIMENT BASIN

Note: This Plan Must Be Reproduced In Color

Scale: 1"=150'
0 75' 150' 300'

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Stormwater Pollution Control Plan

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

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Development Data:

TOTAL FENCED AREA:	58.45± ACRES
TOTAL LOT AREA:	184.62± ACRES
PLAINFIELD LOT AREA:	176.08± ACRES
STERLING LOT AREA:	8.54± ACRES
SOLAR ARRAY POWER:	12,250 kW AC
ACCESS ROAD:	20' WIDE

Dimensional Regulations:

TOWN	PLAINFIELD	STERLING	
CURRENT ZONING:	RA-60	TOWN WIDE ZONE	
	REQUIRED	REQUIRED	PROVIDED
MINIMUM LOT AREA:	60,000 SF	56,983 SF	8,042,047 SF
MINIMUM FRONTAGE:	150'	250'	2,730' ±
MINIMUM FRONT:	50'	75' (STATE HWY 664)	1,276' ±
MINIMUM SIDE YARD:	40'	25'	45' ±
MINIMUM REAR YARD:	40'	25'	62' ±

PERMEABLE ACCESS DRIVE (TYP) (SEE SHEET 18)

PROPERTY LINE

SWALE (TYP) (SEE SHEET 19)

Detention Pond A

Detention Pond B

Detention Pond D

WETLAND AREA

Detention Pond E

WETLAND AREA

Detention Pond C

HISTORICAL CEMETERY TO REMAIN

CONCRETE EQUIPMENT PAD (TYP)

1276.2' TO PROPERTY LINE

62.2'

DOUBLE SWING GATE (SEE SHEET 18)

EXISTING BUILDING TO REMAIN

Detention Pond H

Detention Pond F

Detention Pond J

Detention Pond K

Detention Pond I

6' HIGH SECURITY FENCE (SEE SHEET 18)

Detention Pond G

Detention Pond L

WETLAND AREA

Scale: 1"=100'

0 50' 100' 200'

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tel 401-943-1000 fax 401-464-6046 www.diprete-eng.com
Boston • Providence • Newport

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No.	Date	Description	By
0	4-24-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Site Layout Plan

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0237

SHEET 6 OF 19

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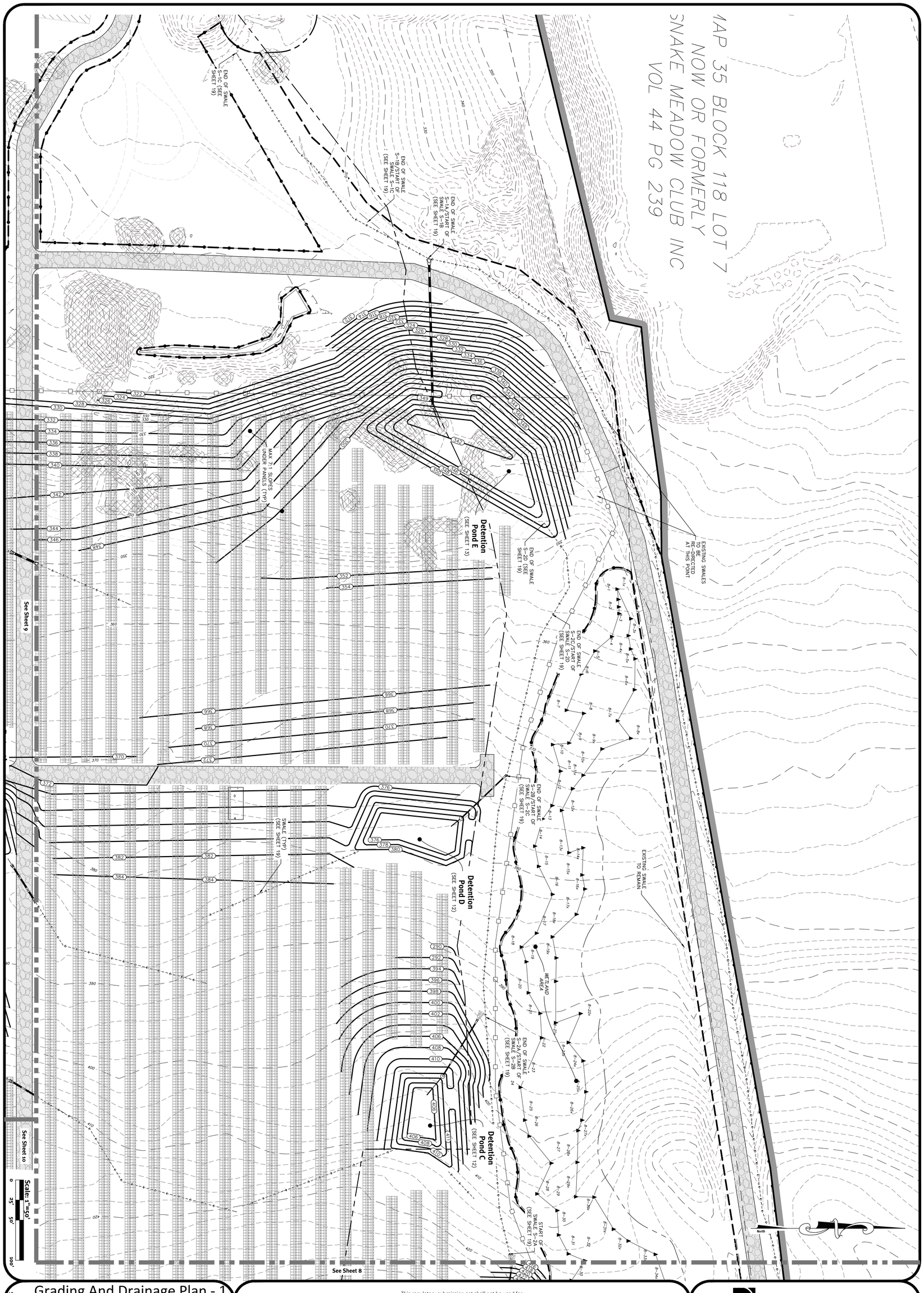

Grading And Drainage Plan - 1

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

SHEET 7 OF 19

No.	Date	Description	By:
0	3-24-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

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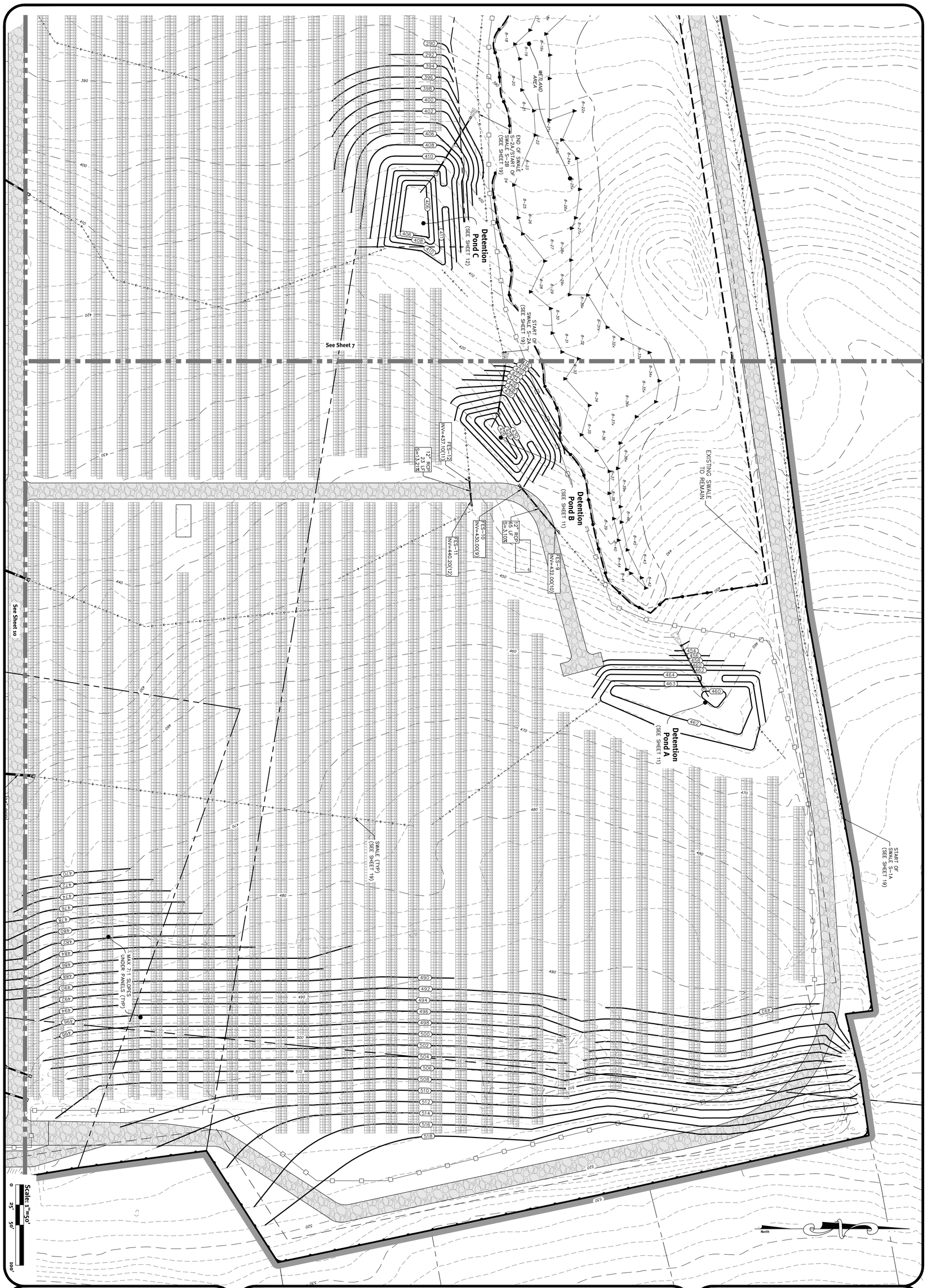

Scale: 1"=50'
0 25' 50' 100'

Grading And Drainage Plan - 2

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

SHEET 8 OF 19

No.	Date	Description	By:
0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

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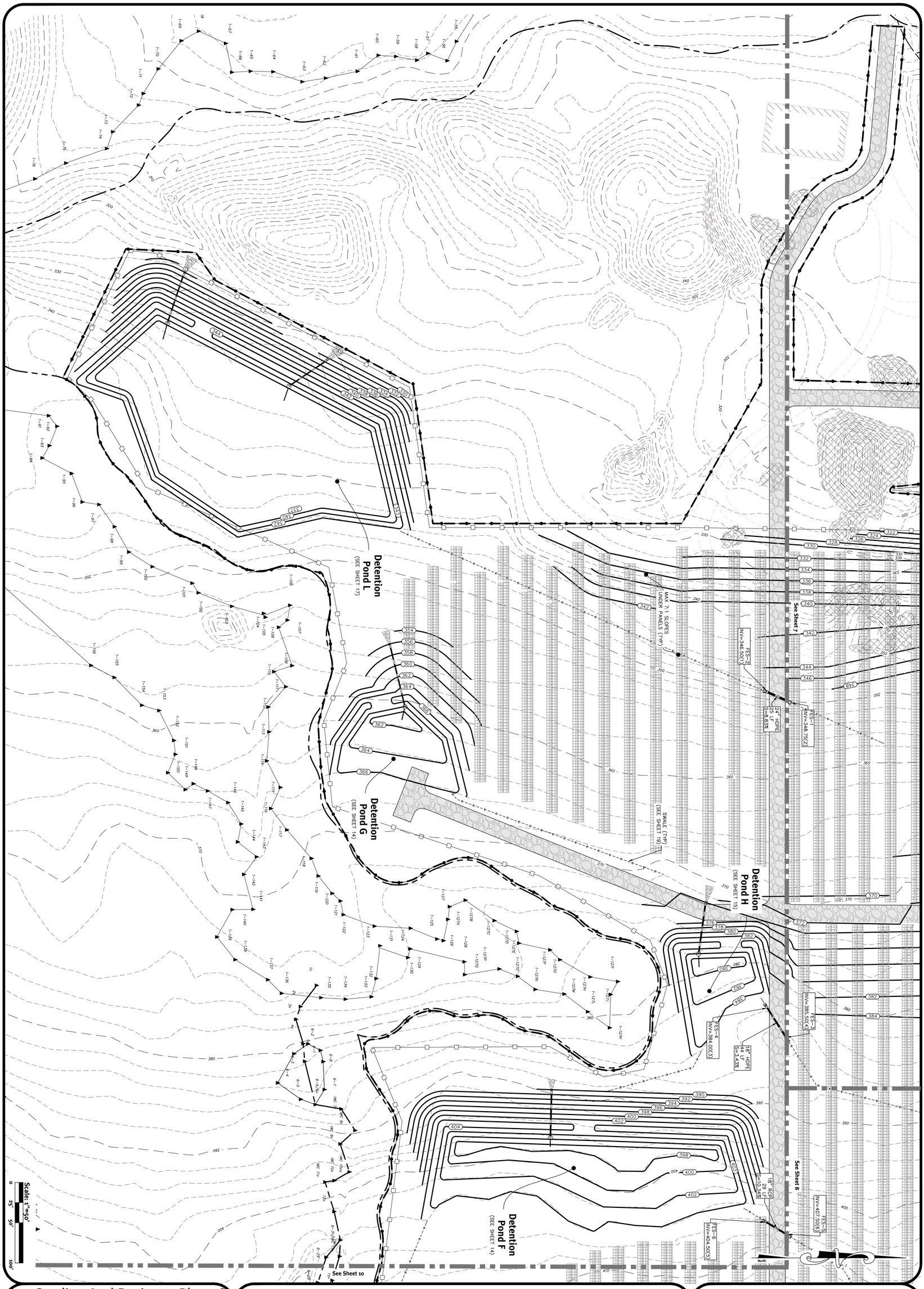

SHEET 9 OF 19

Grading And Drainage Plan - 3

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

No.	Date	Description	By:
0	3-24-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

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tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
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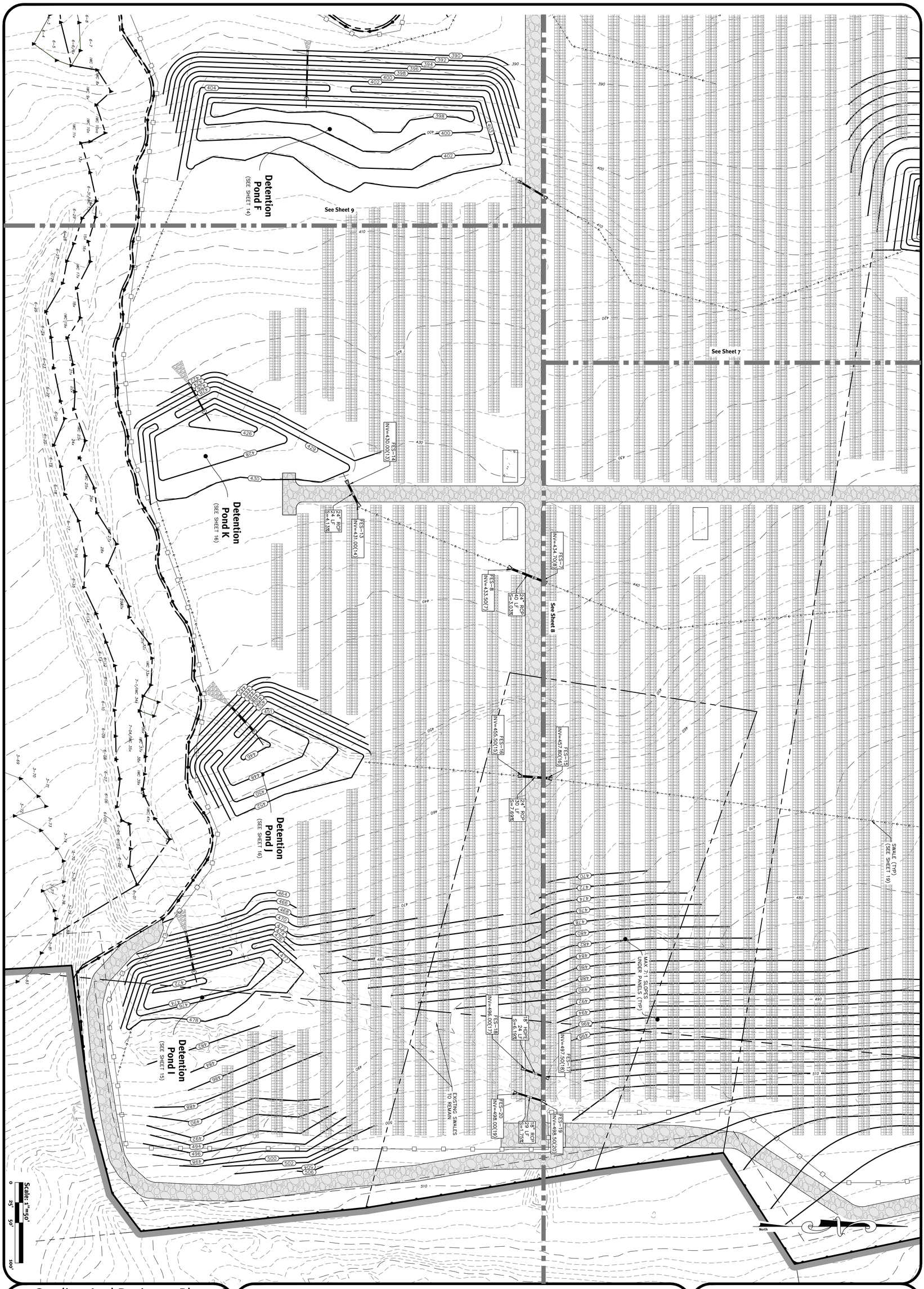

SHEET 10 OF 19

Grading And Drainage Plan - 4

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

No.	Date	Description	By:
0	3-24-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

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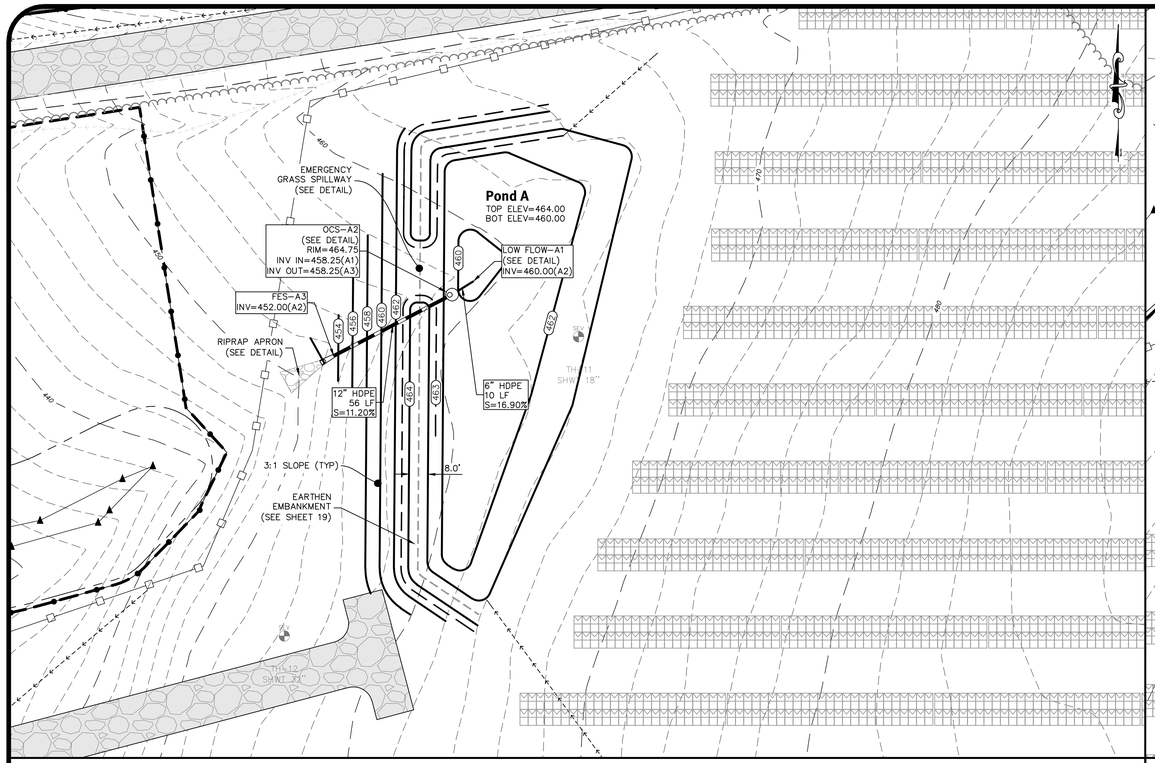

Detention Pond A

Scale: 1"=30'
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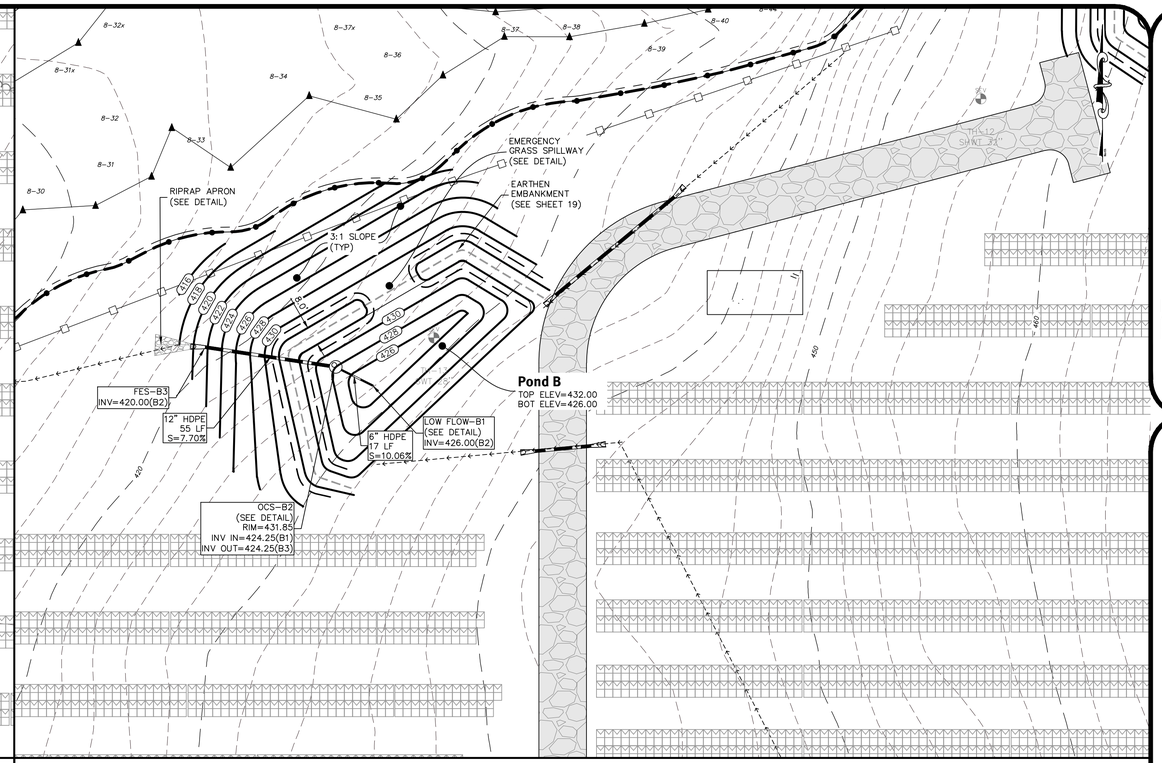
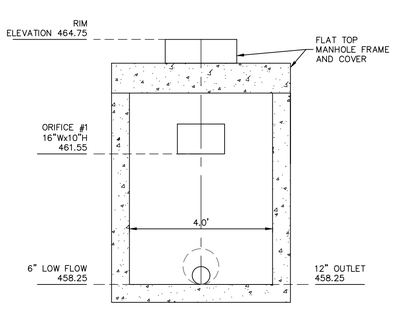
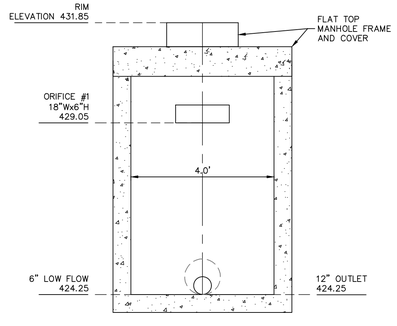


Detention Pond B

Scale: 1"=30'
0 15' 30' 60'

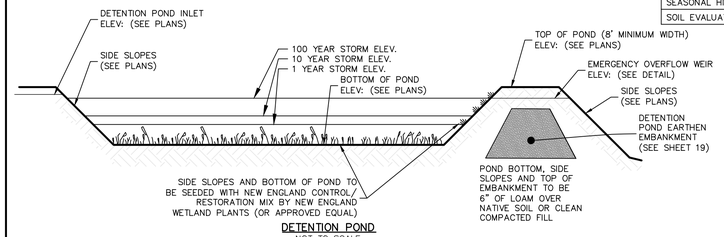


Outlet Control Structure
4' Diameter Manhole (OCS-A2)
SCALE: 1"=2'



Outlet Control Structure
4' Diameter Manhole (OCS-B2)
SCALE: 1"=2'

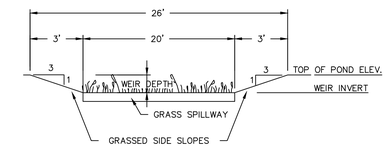
DESCRIPTION	DP-A	DP-B
TOP OF POND ELEVATION	464.00	432.00
100 YEAR STORM ELEVATION	463.00	430.98
10 YEAR STORM ELEVATION	462.29	429.79
2 YEAR STORM ELEVATION	461.73	429.03
BOTTOM OF POND ELEVATION	460.00	426.00
SEASONAL HIGH GWT ELEVATION	458.50	422.70
SOIL EVALUATION	TH-11	TH-13



DETENTION POND
NOT TO SCALE

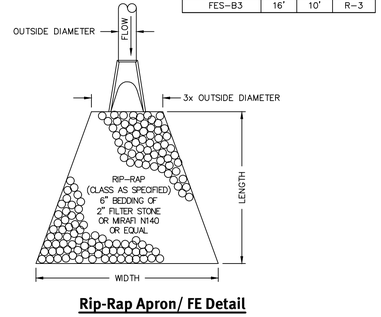
Detention Pond Detail
NOT TO SCALE

LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
POND A	464.00	463.00	1.00
POND B	432.00	431.00	1.00



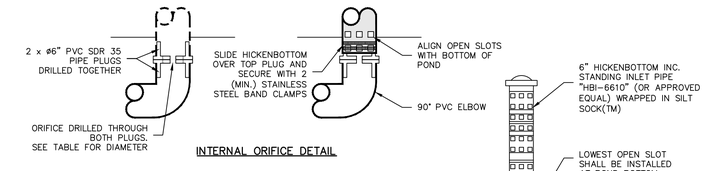
Emergency Overflow Weir Detail
NOT TO SCALE

FLARED END	LENGTH	WIDTH	CLASS
FES-A3	20'	11'	R-3
FES-B3	16'	10'	R-3

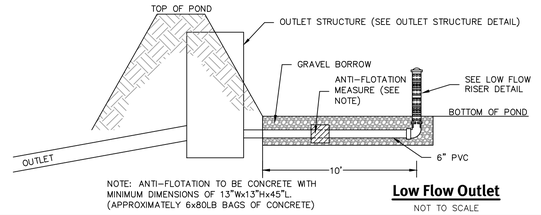


Rip-Rap Apron/ FE Detail
NOT TO SCALE

INTERNAL ORIFICE SCHEDULE	
LOCATION	DIAMETER
POND A	2.00"
POND B	2.50"

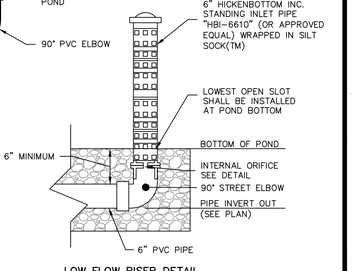


INTERNAL ORIFICE DETAIL



NOTE: ANTI-FLOTATION TO BE CONCRETE WITH MINIMUM DIMENSIONS OF 13"Wx13"Hx45"L. (APPROXIMATELY 6x80LB BAGS OF CONCRETE)

Low Flow Outlet
NOT TO SCALE



LOW FLOW RISER DETAIL

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
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No.	Date	Description	By:
0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Detention Ponds A & B
Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 64, 10 & 11; AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011.

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

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SHEET 11 OF 19

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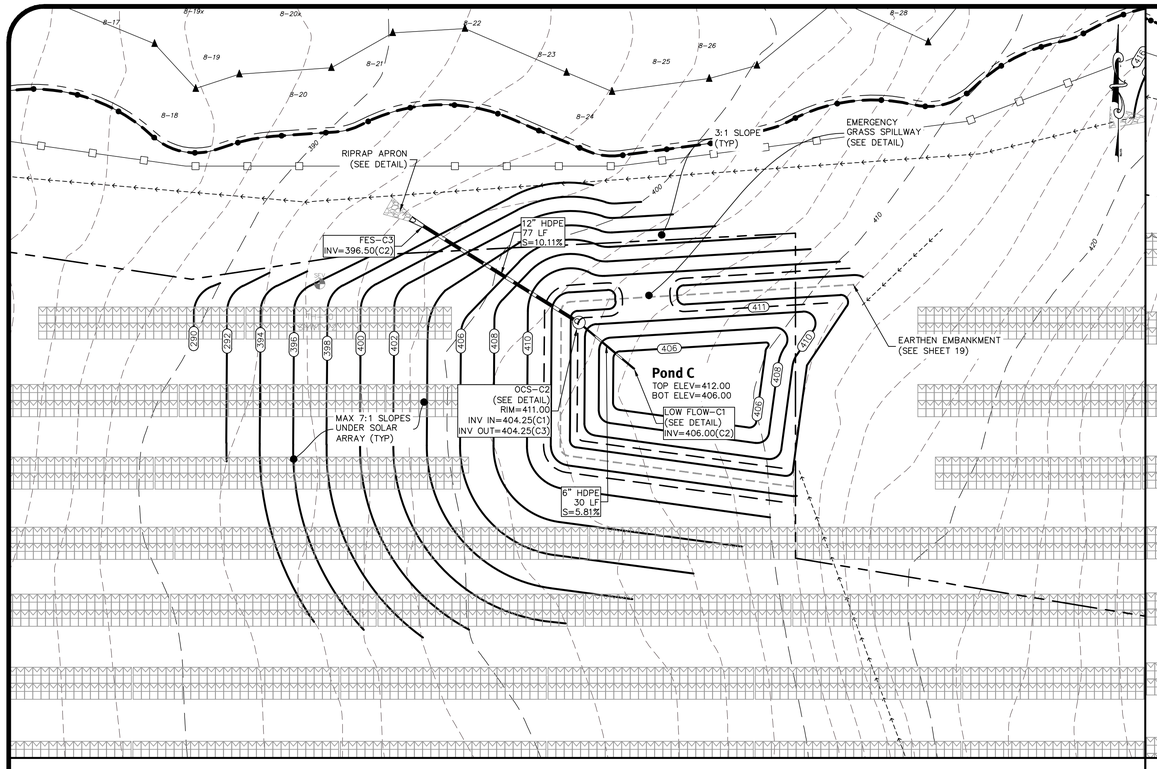
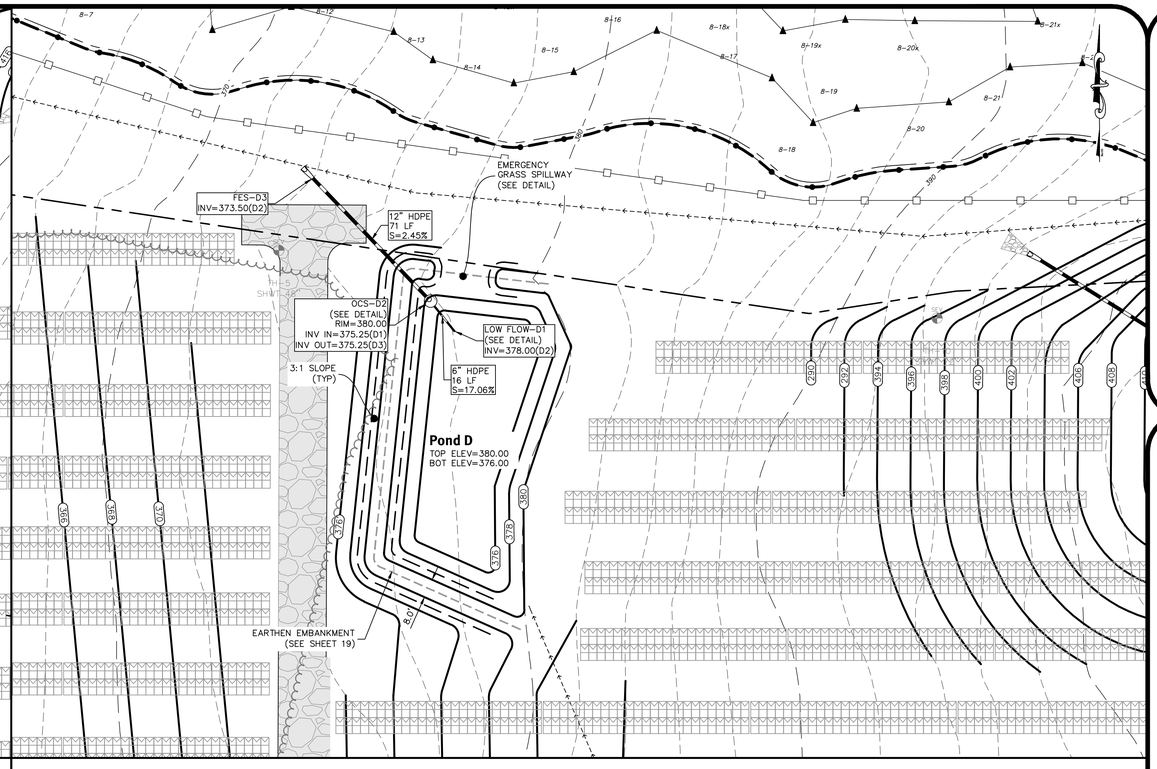


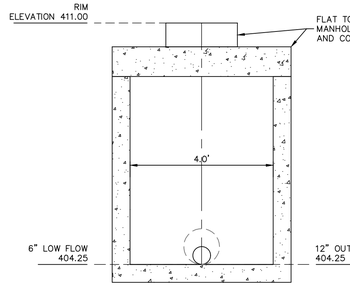


Detention Pond C

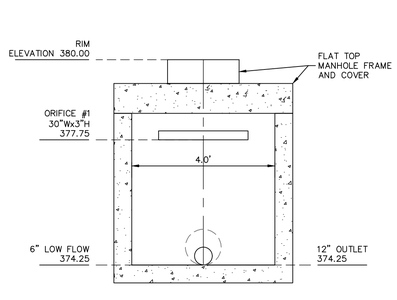
Scale: 1"=30'
0 15' 30' 60'

Detention Pond D

Scale: 1"=30'
0 15' 30' 60'

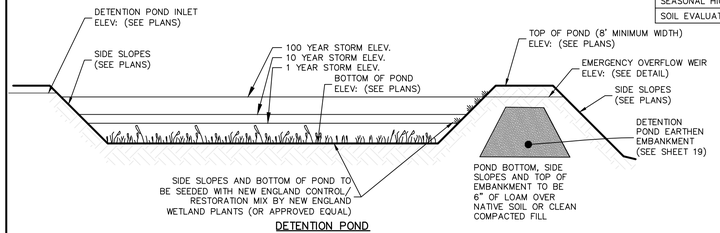


Outlet Control Structure
4' Diameter Manhole (OCS-C2)
SCALE: 1"=2'



Outlet Control Structure
4' Diameter Manhole (OCS-D2)
SCALE: 1"=2'

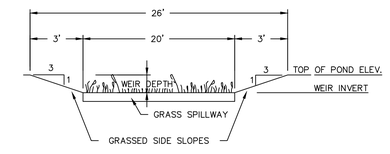
DESCRIPTION	DP-C	DP-D
TOP OF POND ELEVATION	412.00	380.00
100 YEAR STORM ELEVATION	410.98	379.00
10 YEAR STORM ELEVATION	409.12	378.06
2 YEAR STORM ELEVATION	407.54	377.71
BOTTOM OF POND ELEVATION	406.00	376.00
SEASONAL HIGH GWT ELEVATION	400.00	373.00
SOIL EVALUATION	TH-10	TH-5



DETENTION POND
NOT TO SCALE

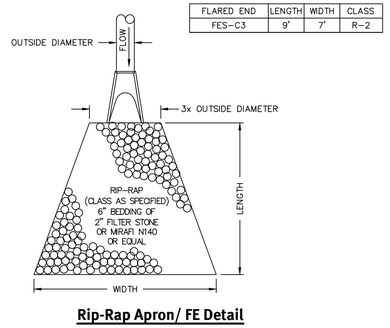
Detention Pond Detail
NOT TO SCALE

LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
POND C	412.00	411.00	1.00
POND D	380.00	379.00	1.00



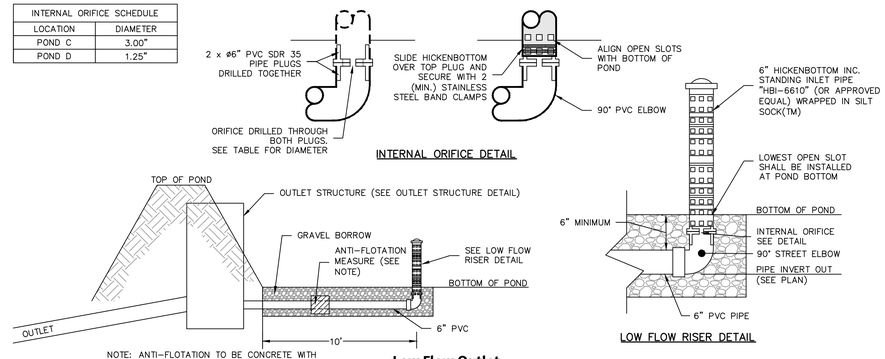
Emergency Overflow Weir Detail
NOT TO SCALE

FLARED END	LENGTH	WIDTH	CLASS
FES-C3	9'	7'	R-2



Rip-Rap Apron/ FE Detail
NOT TO SCALE

INTERNAL ORIFICE SCHEDULE	
LOCATION	DIAMETER
POND C	3.00"
POND D	1.25"



INTERNAL ORIFICE DETAIL

LOW FLOW RISER DETAIL

NOTE: ANTI-FLOTATION TO BE CONCRETE WITH MINIMUM DIMENSIONS OF 13"Wx13"Hx45"L. (APPROXIMATELY 6x80LB BAGS OF CONCRETE)

Low Flow Outlet
NOT TO SCALE

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tel 401-943-1000 fax 401-464-6066 www.diprete-eng.com
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No.	Date	Description	By
0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Detention Ponds C & D
Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 64, 10 & 11; AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

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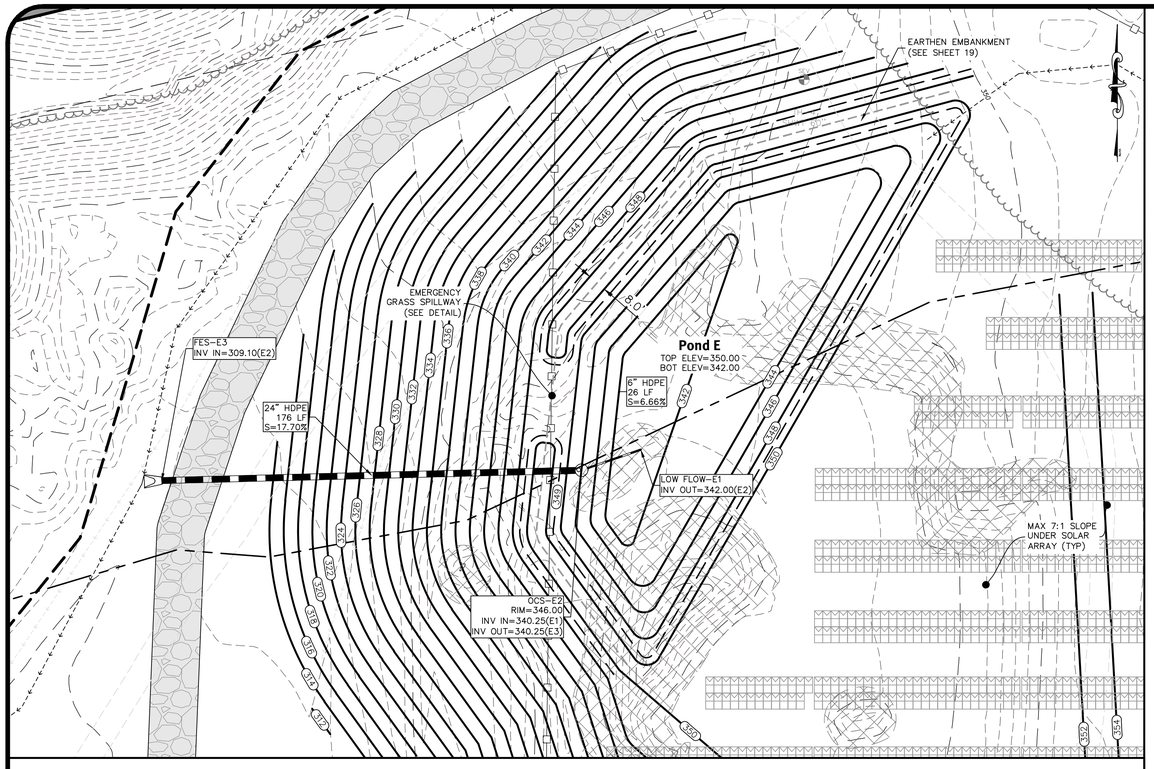
z:\deman\projects\2437-018 snake meadow road solar\autocad drawings\2437-018-plan.dwg Plotted: 4/15/2020

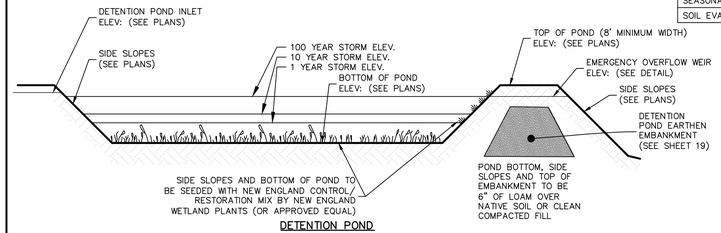


Detention Pond E

Scale: 1"=30'

0 15' 30' 60'

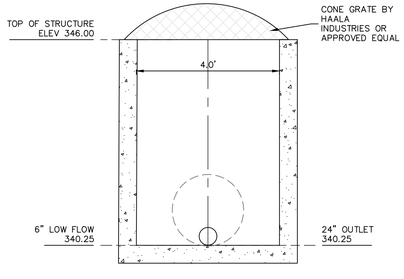
DESCRIPTION	DP-E
TOP OF POND ELEVATION	350.00
100 YEAR STORM ELEVATION	348.92
10 YEAR STORM ELEVATION	346.73
2 YEAR STORM ELEVATION	346.12
BOTTOM OF POND ELEVATION	342.00
SEASONAL HIGH GWT ELEVATION	329.00
SOIL EVALUATION	TH-4



DETENTION POND
NOT TO SCALE

Detention Pond Detail

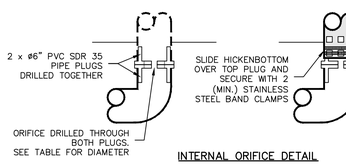
NOT TO SCALE



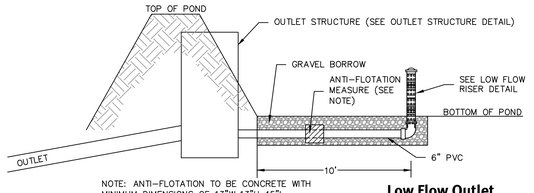
Outlet Control Structure
4' Diameter Manhole (OCS-E2)

SCALE: 1"=2'

INTERNAL ORIFICE SCHEDULE	
LOCATION	DIAMETER
POND E	4.50"



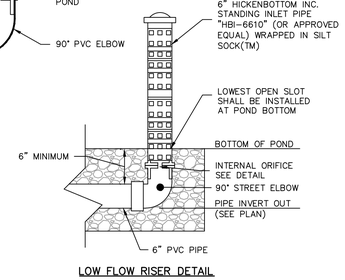
INTERNAL ORIFICE DETAIL



NOTE: ANTI-FLOTATION TO BE CONCRETE WITH
MINIMUM DIMENSIONS OF 13"Wx13"Hx45"L.
(APPROXIMATELY 6x80LB BAGS OF CONCRETE)

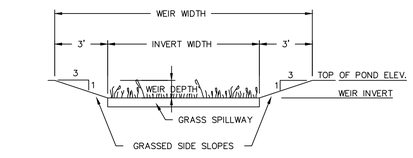
Low Flow Outlet

NOT TO SCALE



LOW FLOW RISER DETAIL

LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH	INVERT WIDTH	WEIR WIDTH
POND E	350.00	349.00	1.00	20.00	26.00



Emergency Overflow Weir Detail

NOT TO SCALE

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
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No.	Date	Description	By
0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Detention Pond E
Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 64, 10 & 11; AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

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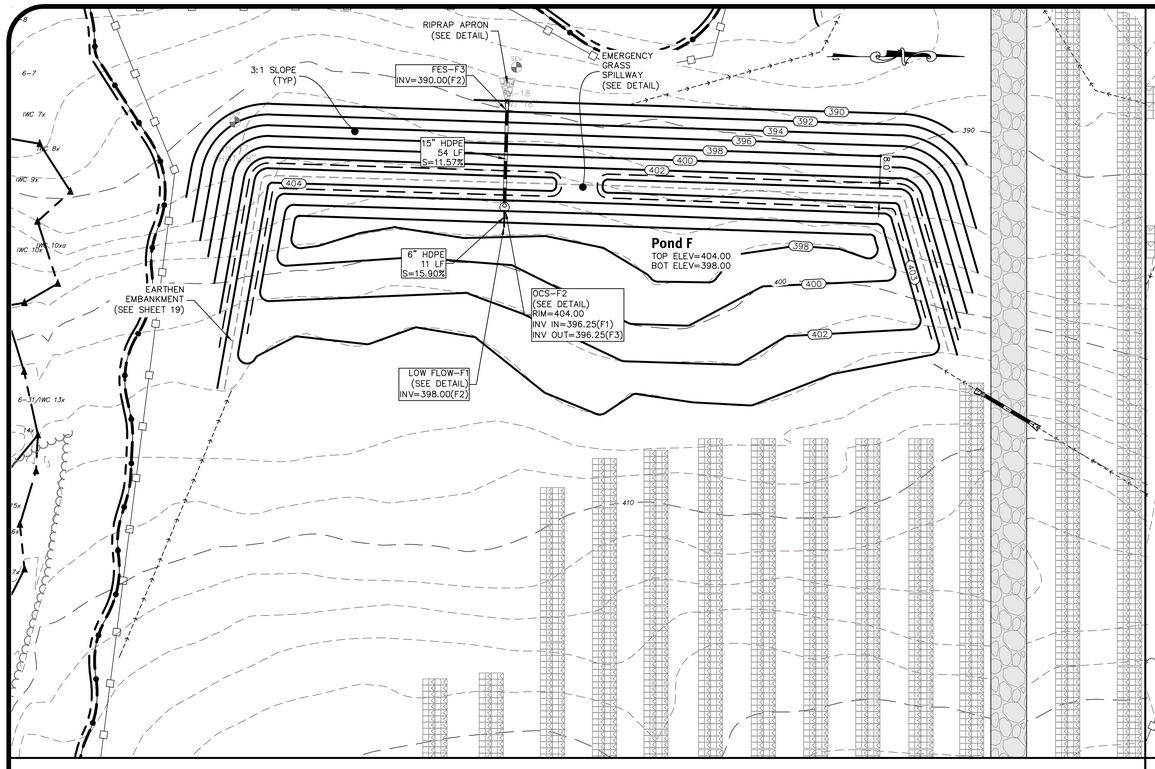
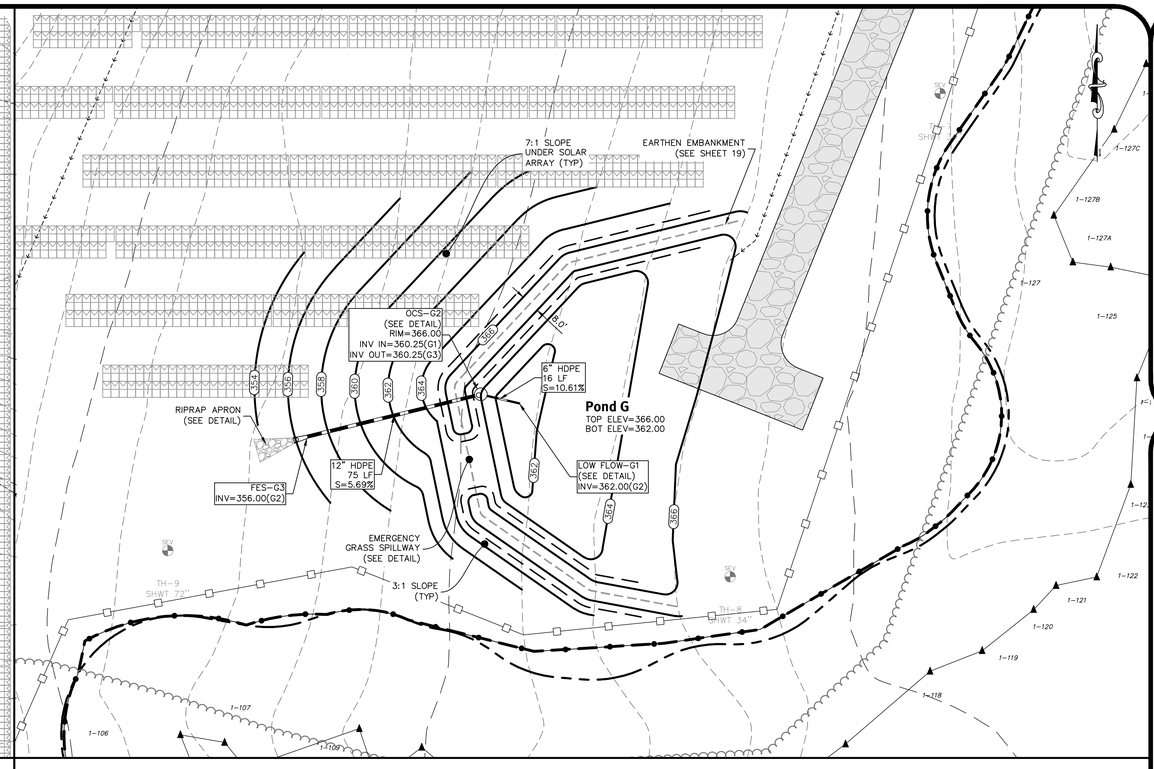
SHEET 13 OF 19

z:\domain\projects\2437-018 snake meadow road solar\autocad drawings\2437-018-plan.dwg Plotted: 4/15/2020



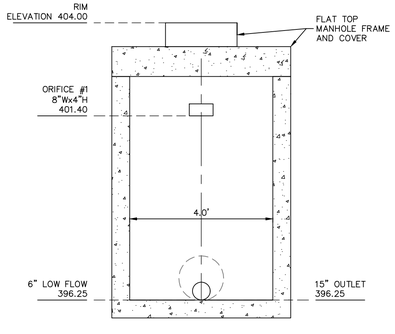


Detention Pond F

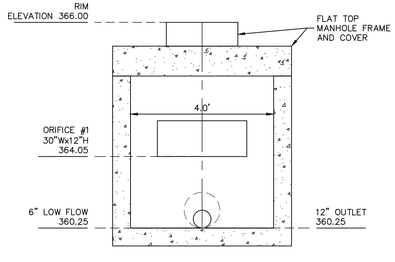
Scale: 1"=40'
0 20' 40' 80'

Detention Pond G

Scale: 1"=30'
0 15' 30' 60'

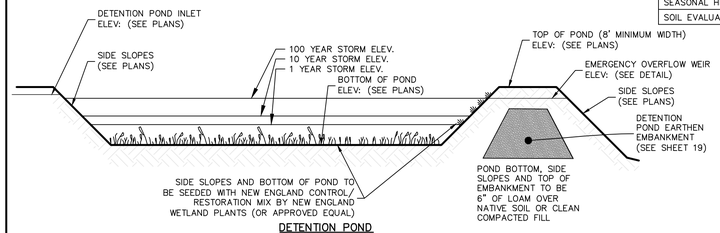


Outlet Control Structure
4' Diameter Manhole (OCS-F2)
SCALE: 1"=2'



Outlet Control Structure
4' Diameter Manhole (OCS-G2)
SCALE: 1"=2'

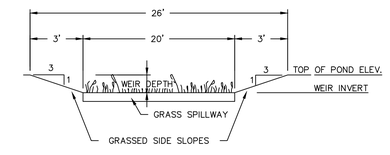
DESCRIPTION	DP-F	DP-G
TOP OF POND ELEVATION	404.00	366.00
100 YEAR STORM ELEVATION	402.98	365.02
10 YEAR STORM ELEVATION	401.84	364.49
2 YEAR STORM ELEVATION	400.83	364.05
BOTTOM OF POND ELEVATION	398.00	362.00
SEASONAL HIGH GWT ELEVATION	396.50	358.20
SOIL EVALUATION	TH-18	TH-8



DETENTION POND
NOT TO SCALE

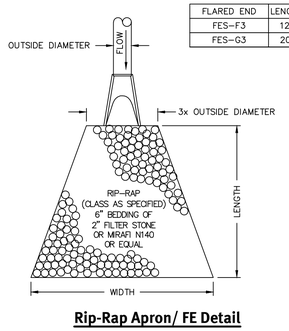
Detention Pond Detail
NOT TO SCALE

LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
POND F	404.00	403.00	1.00
POND G	366.00	365.00	1.00



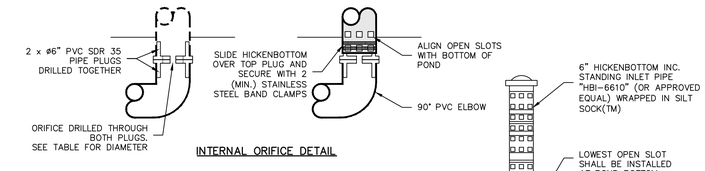
Emergency Overflow Weir Detail
NOT TO SCALE

FLARED END	LENGTH	WIDTH	CLASS
FES-F3	12'	9'	R-2
FES-G3	20'	11'	R-3

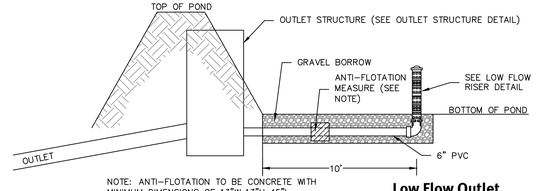


Rip-Rap Apron/ FE Detail
NOT TO SCALE

INTERNAL ORIFICE SCHEDULE	
LOCATION	DIAMETER
POND F	1.25"
POND G	2.50"



INTERNAL ORIFICE DETAIL



NOTE: ANTI-FLOTATION TO BE CONCRETE WITH MINIMUM DIMENSIONS OF 13"Wx13"Hx45"L. (APPROXIMATELY 6x80LB BAGS OF CONCRETE)

Low Flow Outlet
NOT TO SCALE

LOW FLOW RISER DETAIL

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
Boston • Providence • Newport

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No.	Date	Description	By:
0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Detention Ponds F & G
Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 64, 10 & 11; AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

SHEET 14 OF 19

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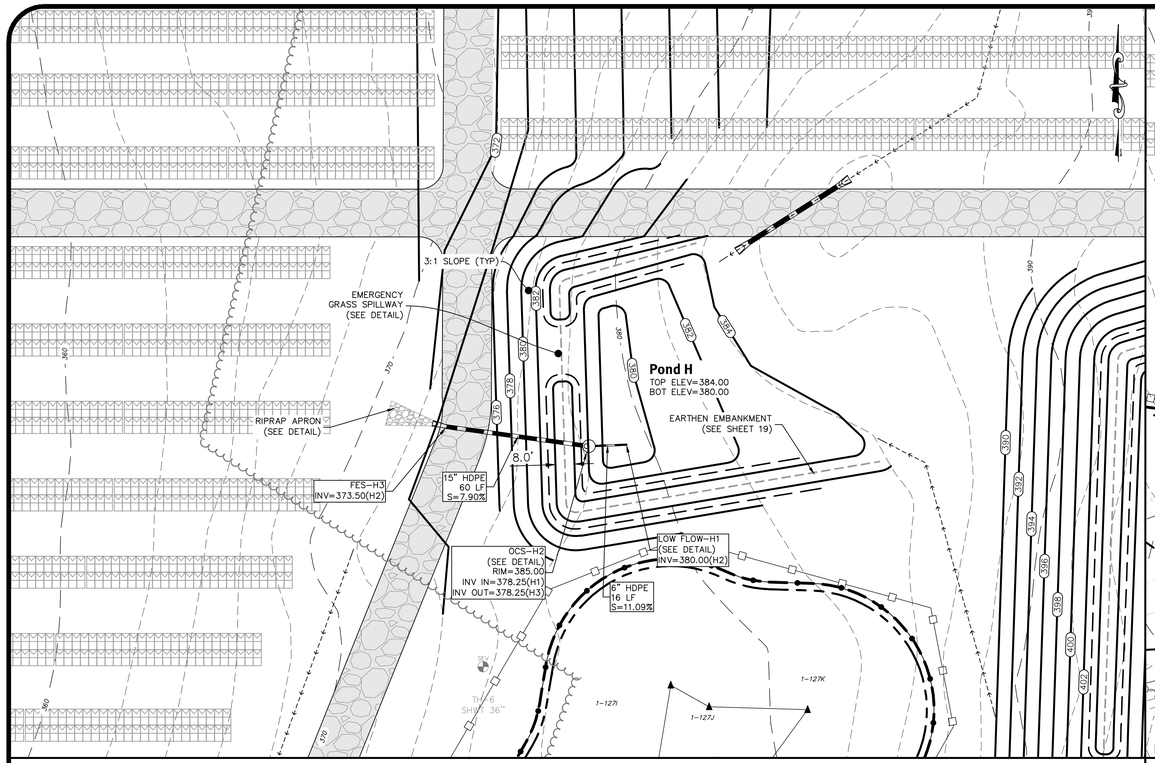
z:\deman\projects\2437-018 snake meadow road solar\autocad drawings\2437-018 plan.dwg Plotted: 4/15/2020



Detention Pond H

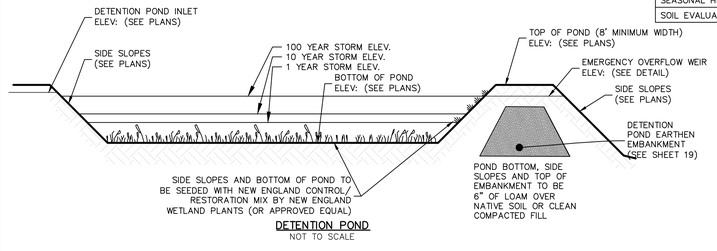
Scale: 1"=30'
0 15' 30' 60'



Detention Pond I

Scale: 1"=30'
0 15' 30' 60'

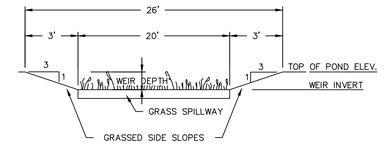
DESCRIPTION	DP-H	DP-I
TOP OF POND ELEVATION	384.00	478.00
100 YEAR STORM ELEVATION	382.99	477.00
10 YEAR STORM ELEVATION	382.46	475.86
2 YEAR STORM ELEVATION	381.97	475.14
BOTTOM OF POND ELEVATION	380.00	472.00
SEASONAL HIGH GWT ELEVATION	377.00	469.50
SOIL EVALUATION	TH-6	TH-14



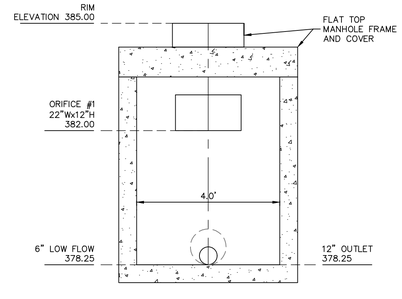
DETENTION POND
NOT TO SCALE

Detention Pond Detail
NOT TO SCALE

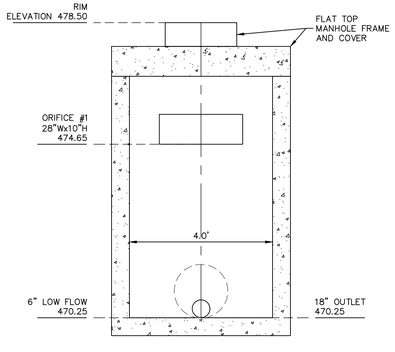
LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
POND H	384.00	383.00	1.00
POND I	478.00	477.0	1.00



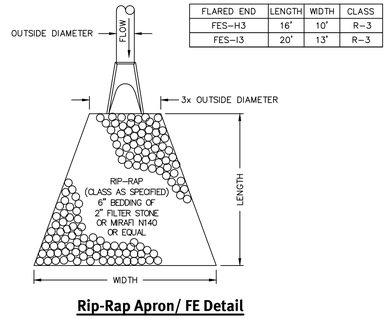
Emergency Overflow Weir Detail
NOT TO SCALE



Outlet Control Structure
4' Diameter Manhole (OCS-H2)
SCALE: 1"=2'



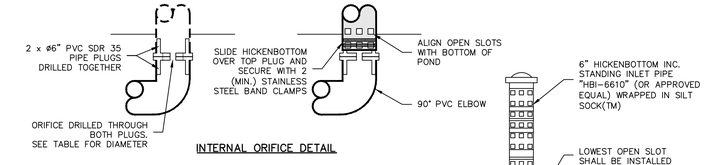
Outlet Control Structure
4' Diameter Manhole (OCS-I2)
SCALE: 1"=2'



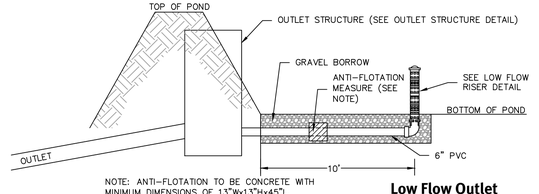
FLARED END	LENGTH	WIDTH	CLASS
FES-H3	16'	10'	R-3
FES-I3	20'	13'	R-3

Rip-Rap Apron/ FE Detail
NOT TO SCALE

INTERNAL ORIFICE SCHEDULE	
LOCATION	DIAMETER
POND H	2.00"
POND I	2.50"

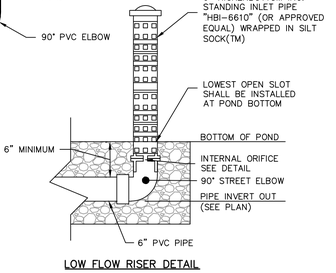


INTERNAL ORIFICE DETAIL



NOTE: ANTI-FLOTATION TO BE CONCRETE WITH MINIMUM DIMENSIONS OF 13"Wx13"Hx45"L. (APPROXIMATELY 6x80LB BAGS OF CONCRETE)

Low Flow Outlet
NOT TO SCALE



LOW FLOW RISER DETAIL

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
Boston • Providence • Newport

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No.	Date	Description	By:
0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Detention Ponds H & I
Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 64, 10 & 11; AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

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SHEET 15 OF 19

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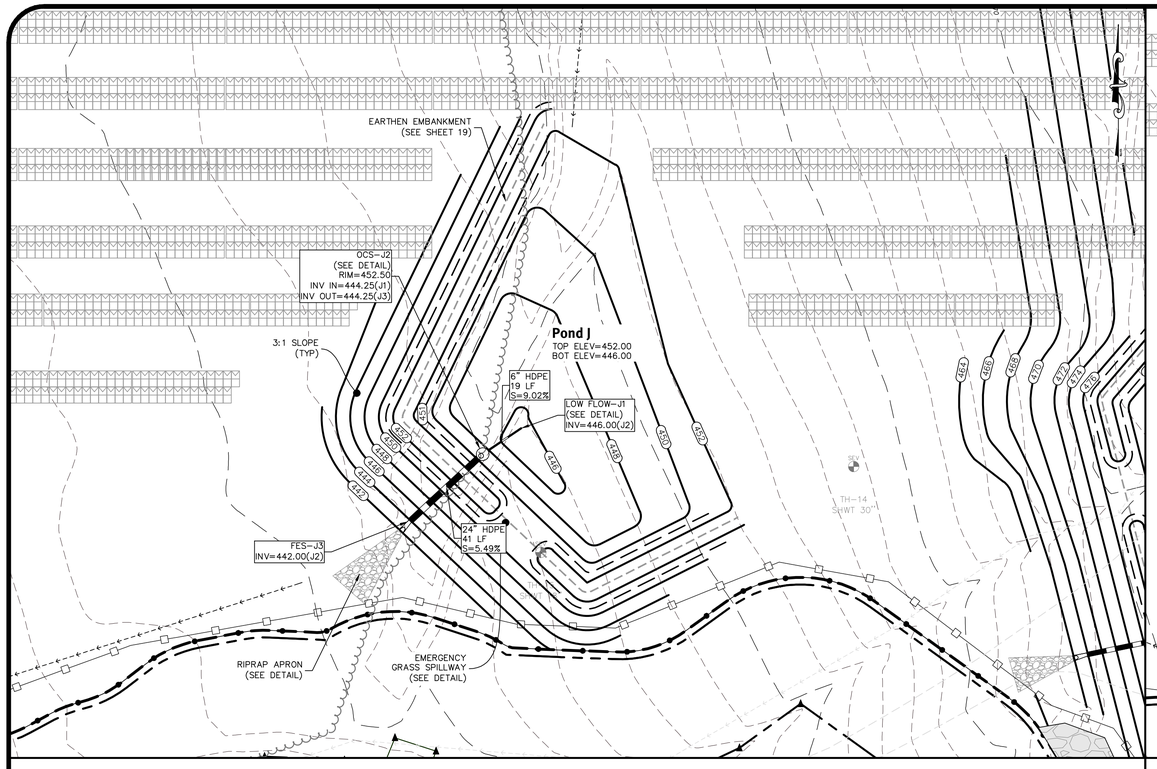
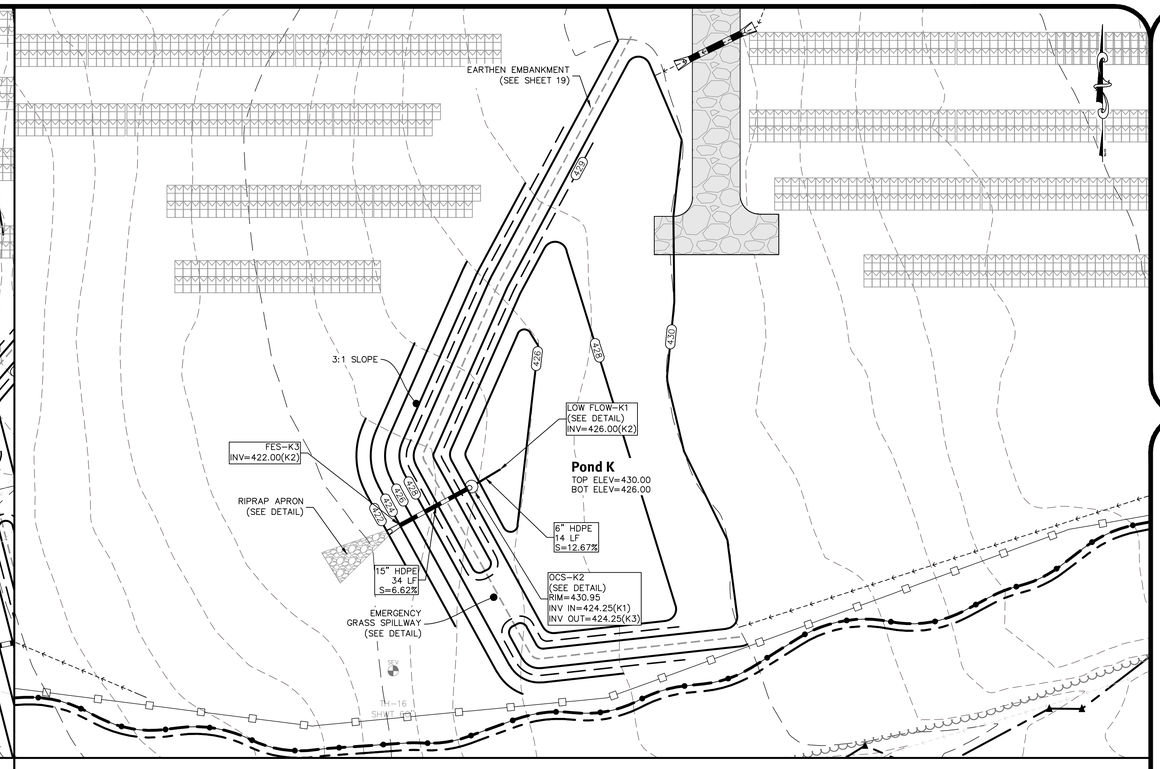


Detention Pond J

Scale: 1"=30'

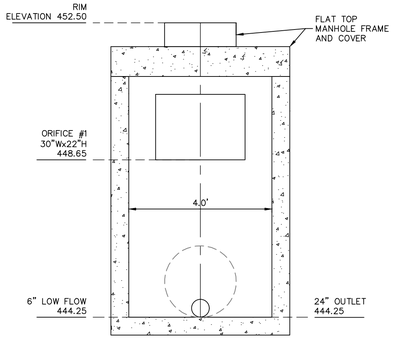
0 15' 30' 60'



Detention Pond K

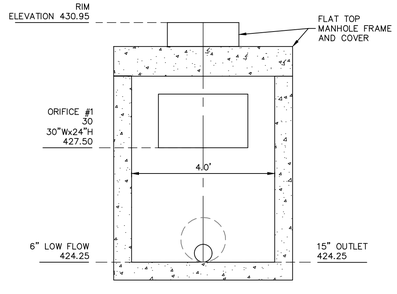
Scale: 1"=30'

0 15' 30' 60'



Outlet Control Structure
4' Diameter Manhole (OCS-J2)

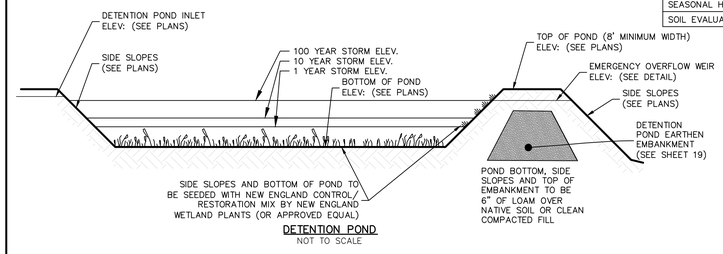
SCALE: 1"=2'



Outlet Control Structure
4' Diameter Manhole (OCS-K2)

SCALE: 1"=2'

DESCRIPTION	DP-J	DP-K
TOP OF POND ELEVATION	452.00	430.00
100 YEAR STORM ELEVATION	451.01	429.01
10 YEAR STORM ELEVATION	450.05	428.32
2 YEAR STORM ELEVATION	449.19	427.75
BOTTOM OF POND ELEVATION	446.00	426.00
SEASONAL HIGH GWT ELEVATION	443.50	420.00
SOIL EVALUATION	TH-14	TH-16

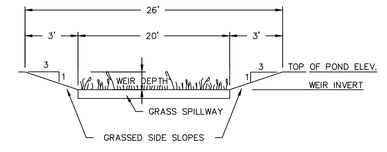


DETENTION POND
NOT TO SCALE

Detention Pond Detail

NOT TO SCALE

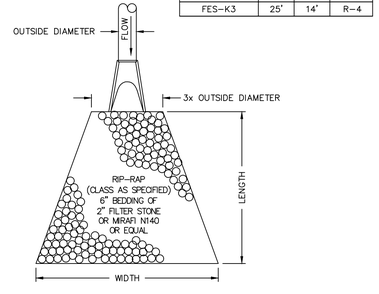
LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
POND J	452.00	451.00	1.00
POND K	430.00	429.00	1.00



Emergency Overflow Weir Detail

NOT TO SCALE

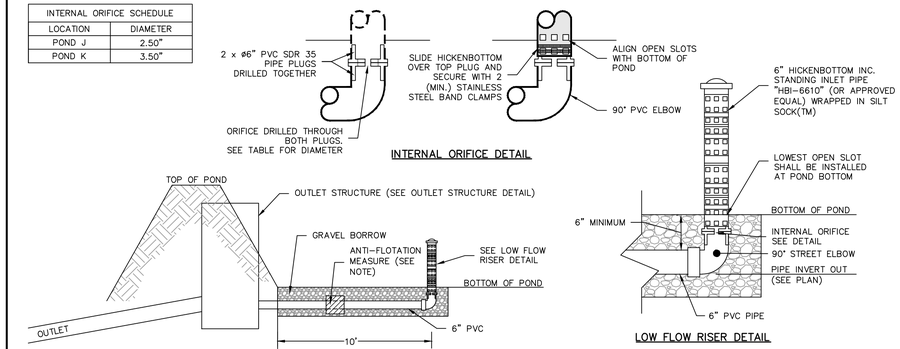
FLARED END	LENGTH	WIDTH	CLASS
FES-J3	31'	19'	R-5
FES-K3	25'	14'	R-4



Rip-Rap Apron/ FE Detail

NOT TO SCALE

INTERNAL ORIFICE SCHEDULE	
LOCATION	DIAMETER
POND J	2.50"
POND K	3.50"



Low Flow Outlet

NOT TO SCALE

DiPrete Engineering
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0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Detention Ponds J & K
Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 64, 10 & 11; AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

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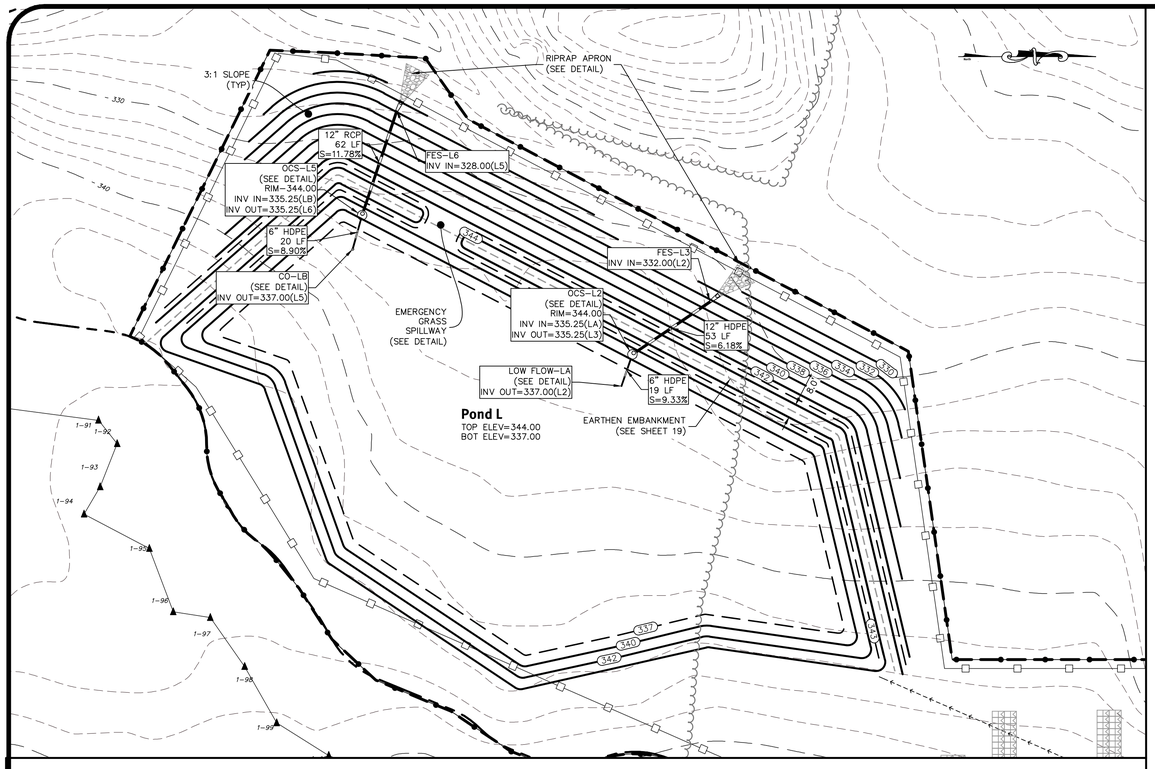
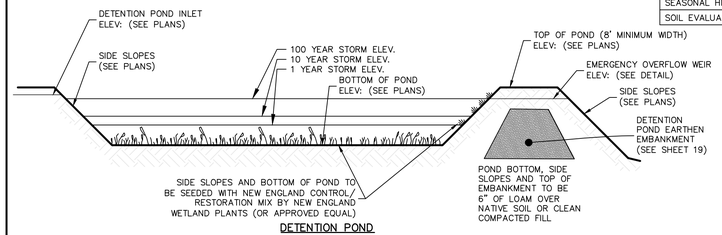


Detention Pond L

Scale: 1"=40'

0 20' 40' 80'

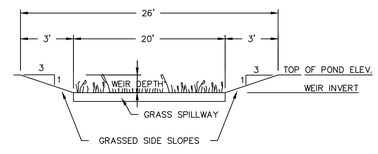
DESCRIPTION	DP-L
TOP OF POND ELEVATION	344.00
100 YEAR STORM ELEVATION	343.02
10 YEAR STORM ELEVATION	340.98
2 YEAR STORM ELEVATION	339.12
BOTTOM OF POND ELEVATION	337.00
SEASONAL HIGH GWT ELEVATION	332.00
SOIL EVALUATION	TH-9



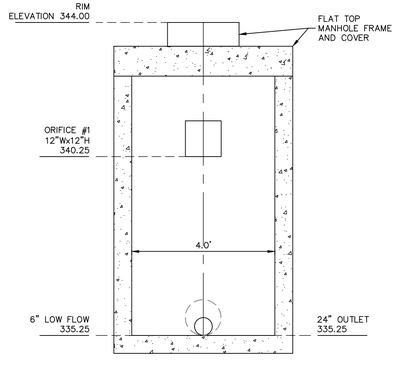
DETENTION POND
NOT TO SCALE

Detention Pond Detail
NOT TO SCALE

LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
POND L	344.00	343.00	1.00

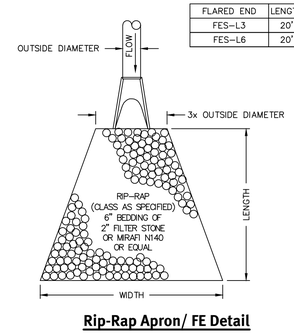


Emergency Overflow Weir Detail
NOT TO SCALE



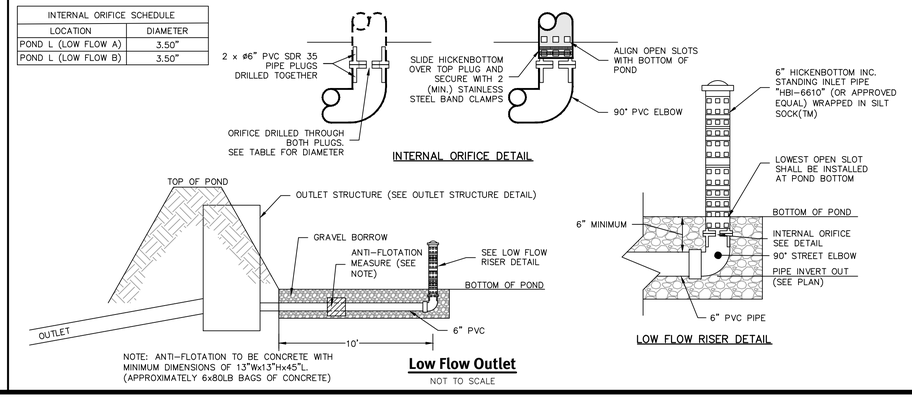
Outlet Control Structure
4' Diameter Manhole (OCS-L2 & OCS-L5)
SCALE: 1"=2'

FLARED END	LENGTH	WIDTH	CLASS
FES-L3	20'	11'	R-3
FES-L6	20'	11'	R-3



Rip-Rap Apron/ FE Detail
NOT TO SCALE

INTERNAL ORIFICE SCHEDULE	
LOCATION	DIAMETER
POND L (LOW FLOW A)	3.50"
POND L (LOW FLOW B)	3.50"



INTERNAL ORIFICE DETAIL

LOW FLOW RISER DETAIL

Low Flow Outlet
NOT TO SCALE

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
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Drawn By: K.E.D.

Detention Pond L
Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 64, 10 & 11; AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

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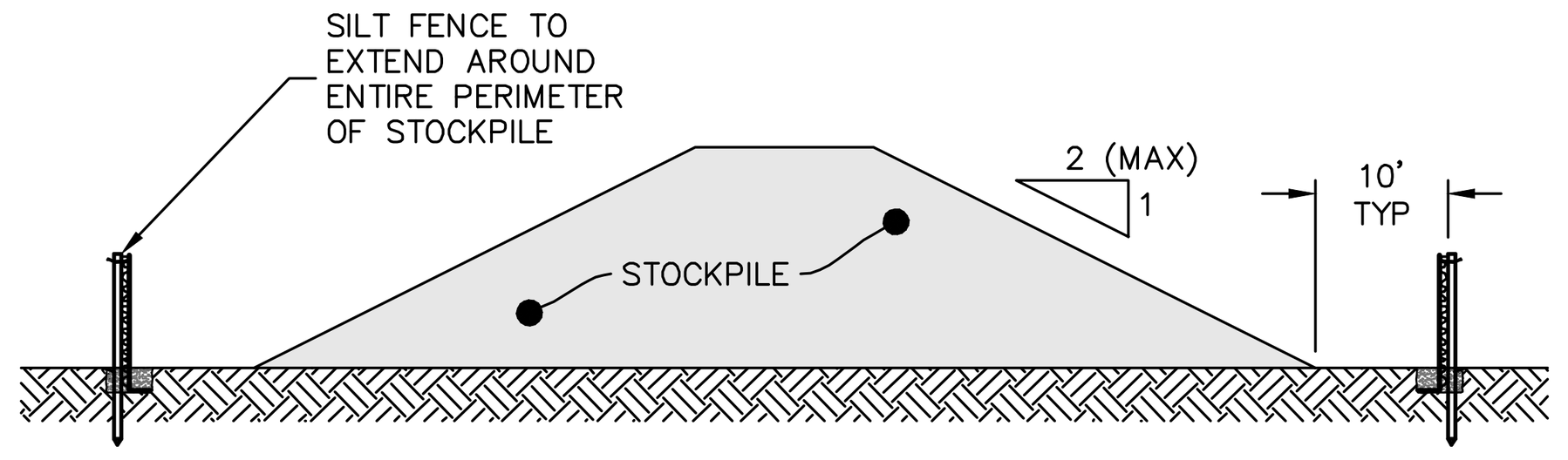
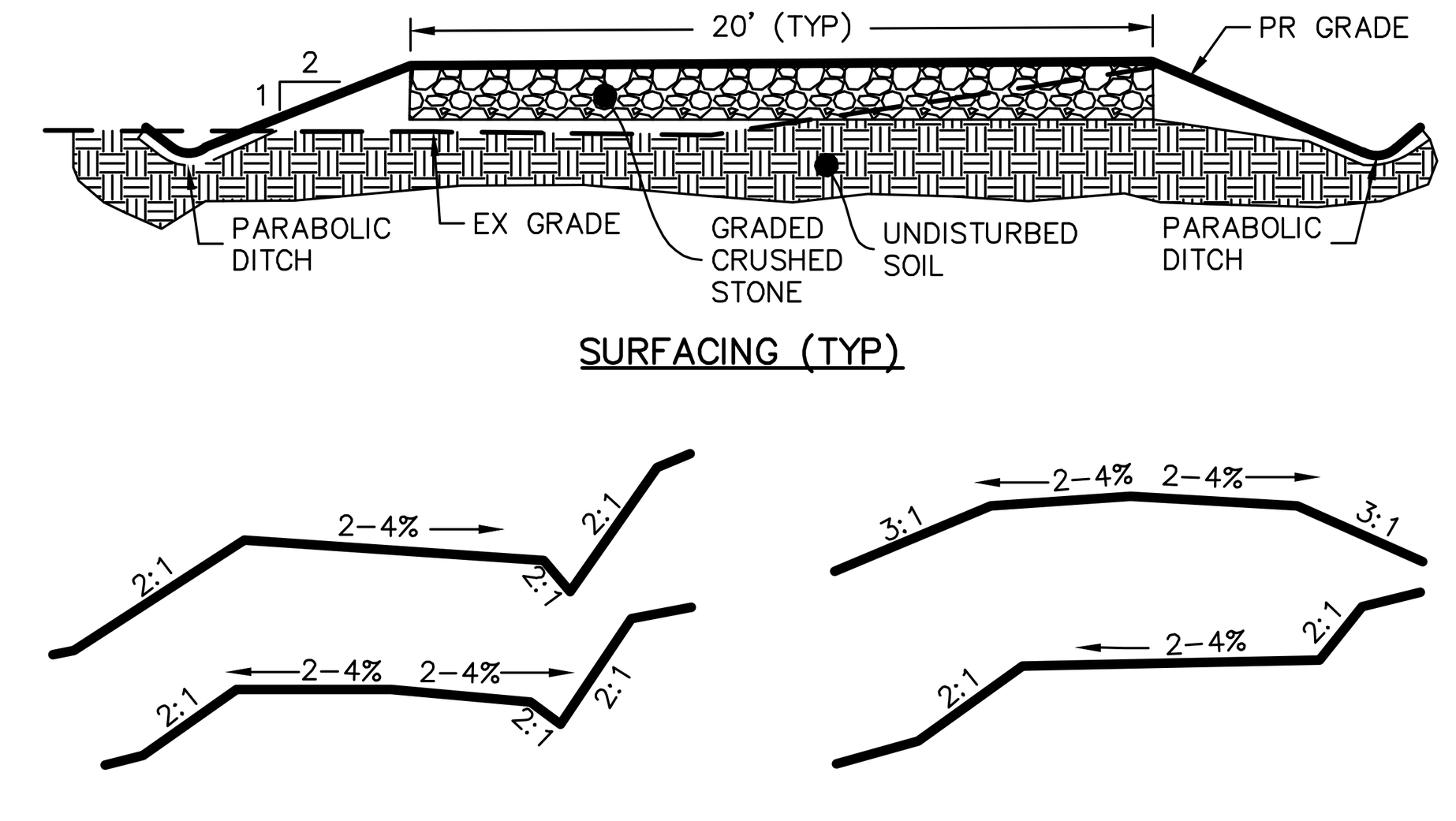


NOTES:
1. ALL STOCKPILES MUST BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH SECTION 4-9 "STOCKPILE MANAGEMENT" OF THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (LATEST REVISION).
2. DIVERT ALL STORMWATER AWAY FROM STOCKPILES.
3. SOIL STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER FORMATION OF THE STOCKPILE WITH SEED MIX COMPATIBLE WITH THE SOIL TYPE.
4. STOCKPILE AND SILT FENCE MUST BE INSPECTED AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF ½" OF RAINFALL. REPAIR/ REPLACE SILT FENCE (AND STOCKPILE COVERS WHERE APPLICABLE) AS NEEDED TO KEEP THEM FUNCTIONING ADEQUATELY.
5. SEDIMENT TRAPPED BY SILT FENCES MUST BE REMOVED AND PROPERLY DISPOSED OF WHENEVER SIGNIFICANT ACCUMULATION OCCURS.

Stockpile Protection

NOT TO SCALE



CONSTRUCTION NOTES:
A. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE POTENTIAL EROSION AND WATER QUALITY DEGRADATION.
B. FIXED EROSION CONTROLS AND SITE STABILIZATION SHALL BE CONDUCTED IN ACCORDANCE WITH APPROVED BMP'S, OR PURSUANT TO PROJECT SPECIFIC PERMITS.
C. TREES, STUMPS, ROOTS, BRUSH AND WEEDS SHALL BE REMOVED FROM THE WORK AREA IF DETERMINED NECESSARY TO SAFELY CONSTRUCT ROADWAY.
D. ON WEAK, BEARING SOIL SUCH AS LOOSE ALLUVIAL, OR WETLAND SOILS. SURFACE TREATMENTS SHOULD BE UNDERLAIN WITH WOVEN GEOTEXTILES.
E. AT MINIMUM, ROADSIDE DITCHES SHALL BE 1 FT BELOW ROAD SURFACE.
F. DISCHARGE POINTS FOR DITCHES SHALL NOT BE NEAR WETLANDS OR STREAMS, AND OR BE LOCATED AT THE DIRECTION OF THE EPSCS.

CONDITIONS:	ROAD THICKNESS:	STONE SIZE:	FINES:
BASE LAYER WITH GEOTEXTILE FABRIC (NOT EXCLUSIVELY WET)	4" MIN.	3–3 ½	0–6%
BASE LAYER WITH GEOTEXTILE FABRIC (WET CONDITIONS)	6" MIN.	3–3 ½	0–6%

SURFACING SPECIFICATIONS

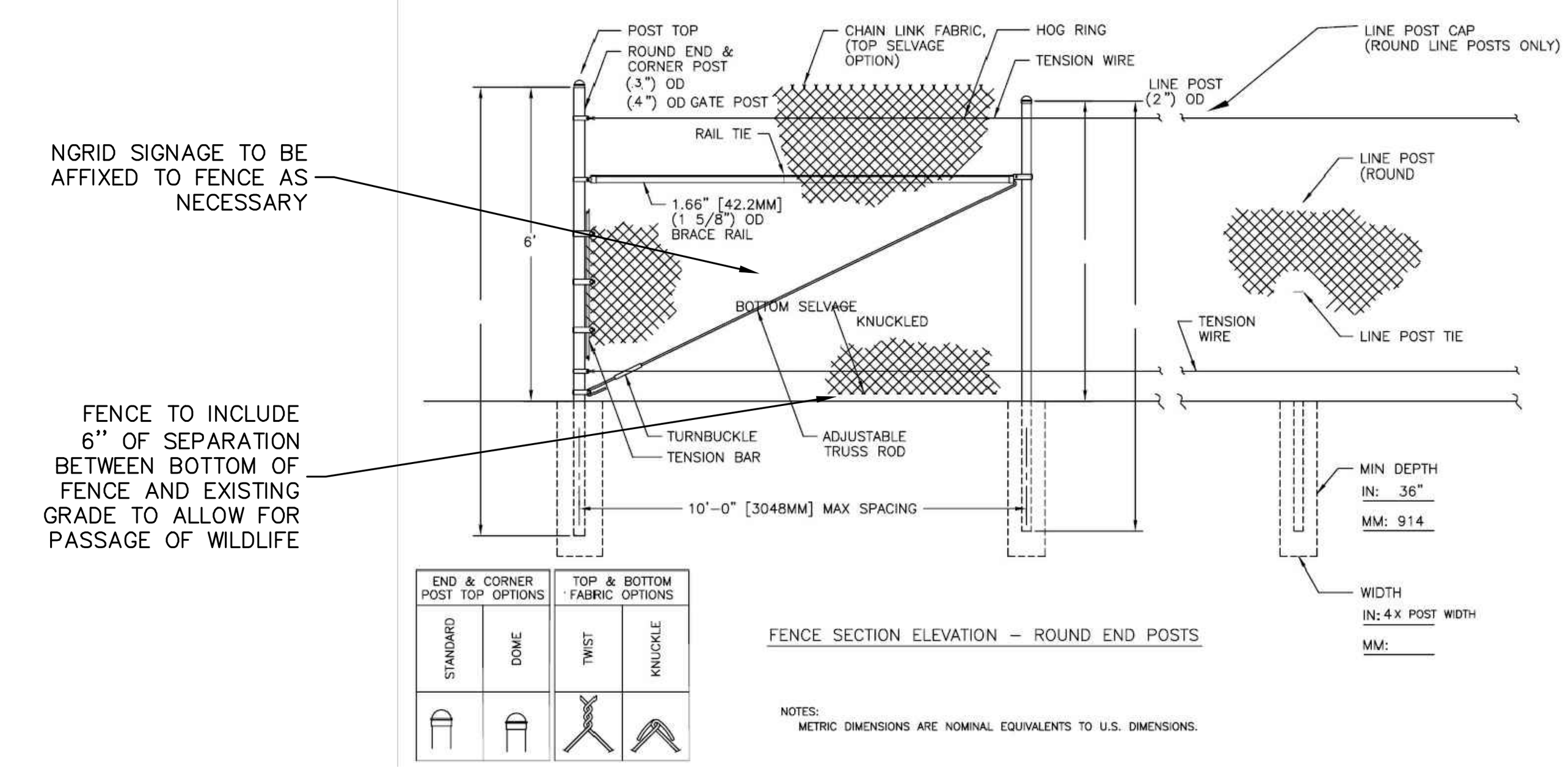
SIEVE DESIGNATION	PERCENTAGE BY MASS (WEIGHT) PASSING SQUARE MESH SIEVES
90MM (3.5 INCH)	100
75MM (3 INCH)	90–100
50MM (2 INCH)	75–100
25MM (1 INCH)	50–80
12.5MM (½ INCH)	30–60
4.75MM (NO. 4)	15–40
75μM (NO. 200)	0–6

DENSE GRADED CRUSHED STONE FOR SUBBASE:
A. DENSE GRADED CRUSHED STONE FOR SUBBASE SHALL CONSIST OF CLEAN, HARD, UNIFORMLY GRADED, CRUSHED STONE. IT SHALL BE SUFFICIENTLY FREE FROM DIRT, DELETERIOUS MATERIAL, AND PIECES THAT ARE STRUCTURALLY WEAK AND SHALL MEET THE FOLLOWING REQUIREMENTS:
B. SOURCE OF MATERIAL SHALL BE OBTAINED FROM AREAS STRIPPED AND CLEANED OF SOIL AND DEBRIS BEFORE BLASTING
C. MATERIAL COARSER THAN THE 4.75MM (NO. 4) SIEVE SHALL NOT BE MORE THAN 30%, BY MASS (WEIGHT), OF THING AND/OR ELONGATED PIECES.

MATERIAL SPECIFICATIONS

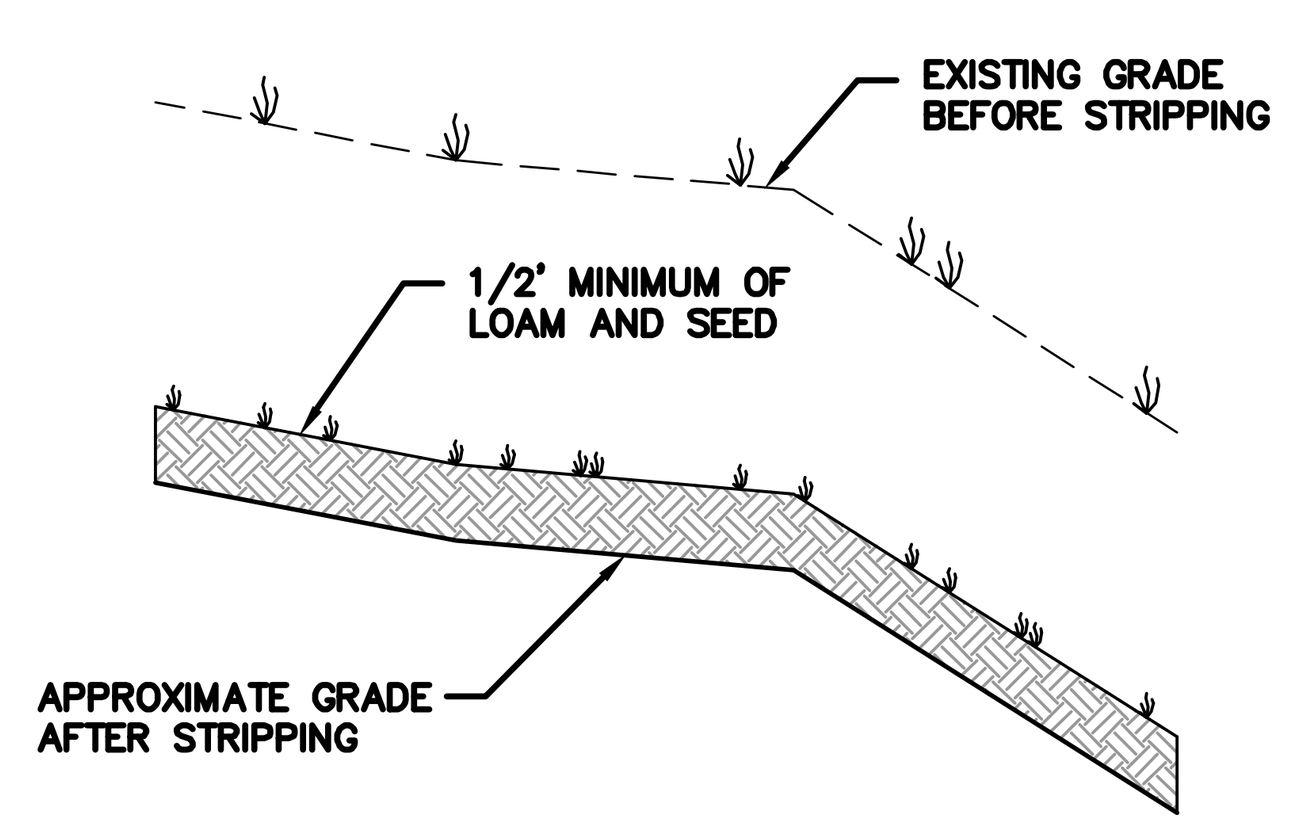
Permeable Access Detail

NOT TO SCALE



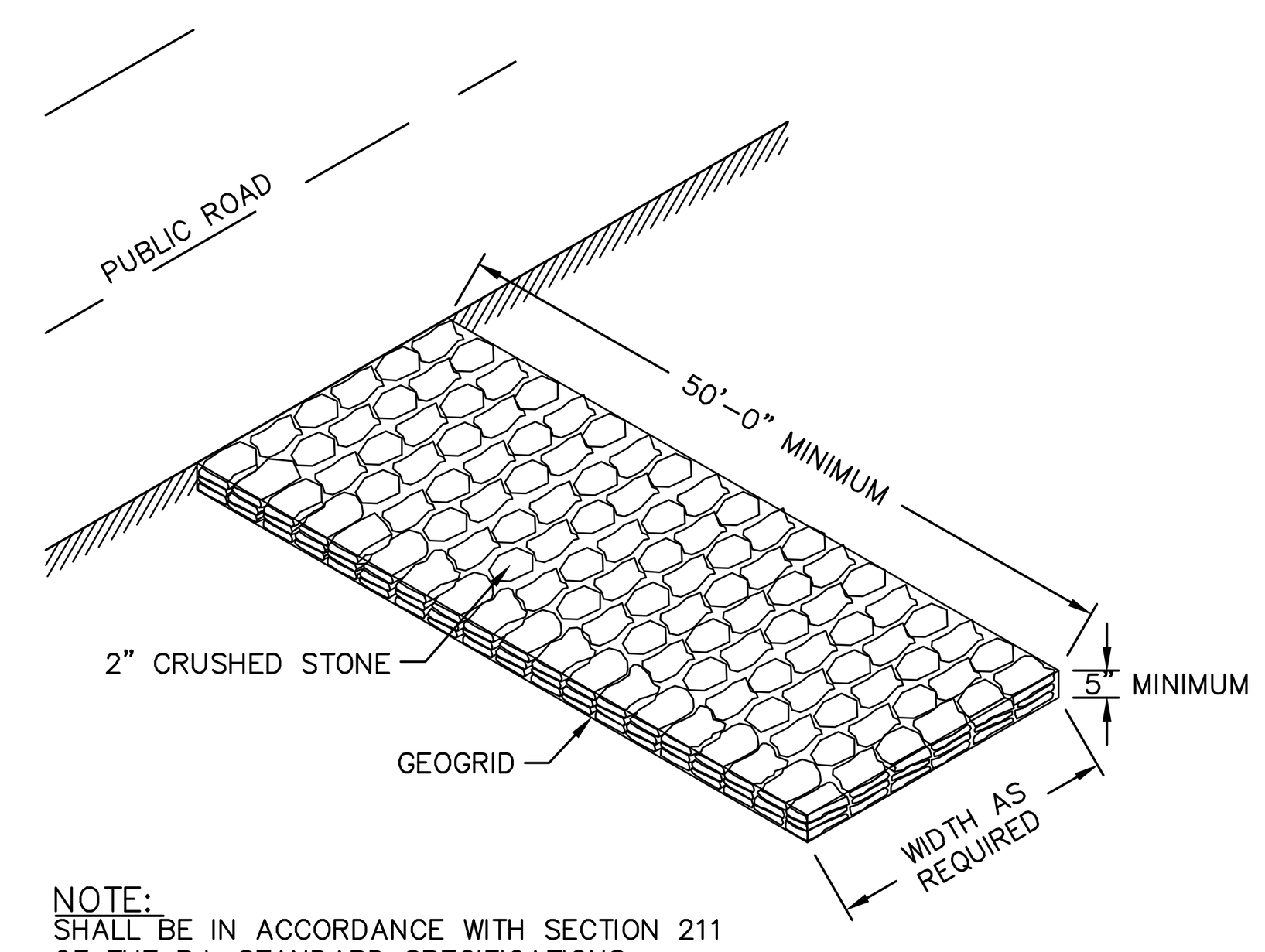
Fence Detail

NOTES:
1. THIS DETAIL IS PROVIDED AS THE MINIMUM REQUIREMENTS TO BE MET BY THE CONTRACTOR.
2. THIS DETAIL ONLY, IS VOID IN CASES WHERE CONFLICTS OCCUR WITH THE PLANTING DETAILS PROVIDED BY A LANDSCAPE ARCHITECT REGISTERED WITH THE STATE OF RHODE ISLAND.
3. SPECIAL CARE SHALL BE TAKEN TO INSURE THAT THE SOIL EROSION CONTROL MEASURES AND PROCEDURES ARE FOLLOWED.



Re-Establishment Of Vegetative Cover (Area Of Topsoil Stripping)

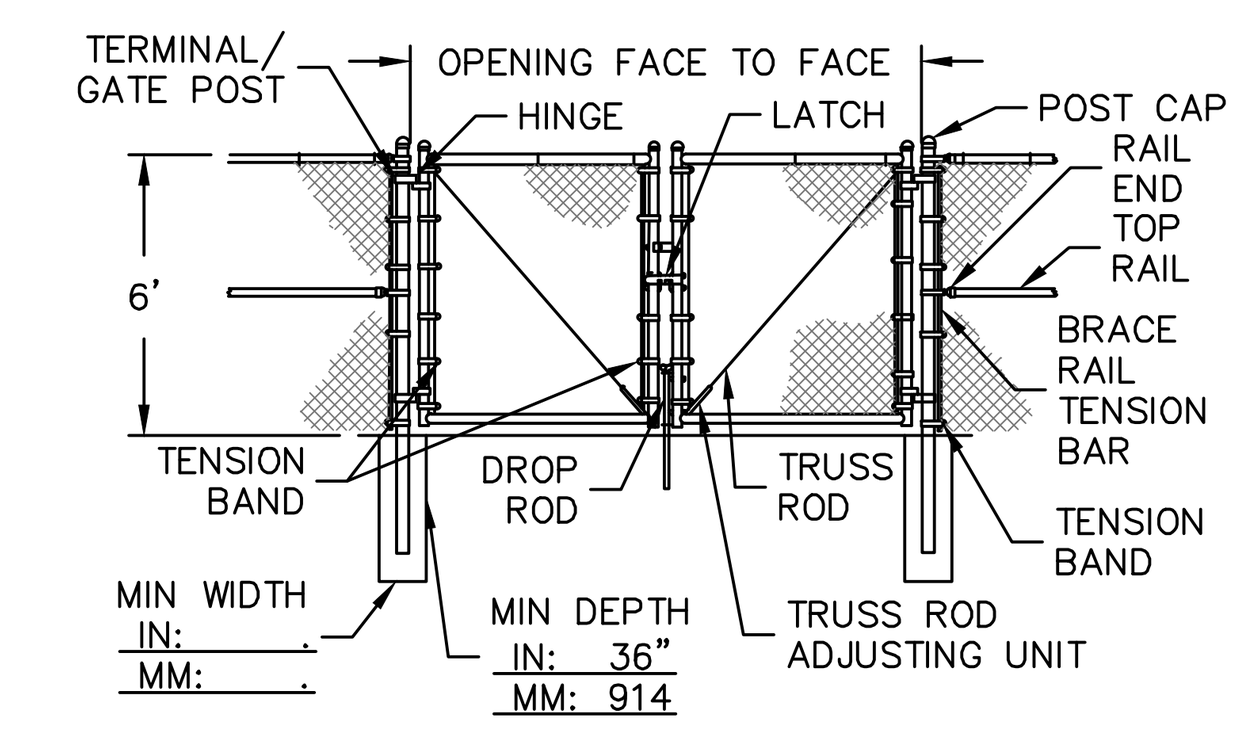
NOT TO SCALE



NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 211 OF THE R.I. STANDARD SPECIFICATIONS.

Construction Access

NOT TO SCALE

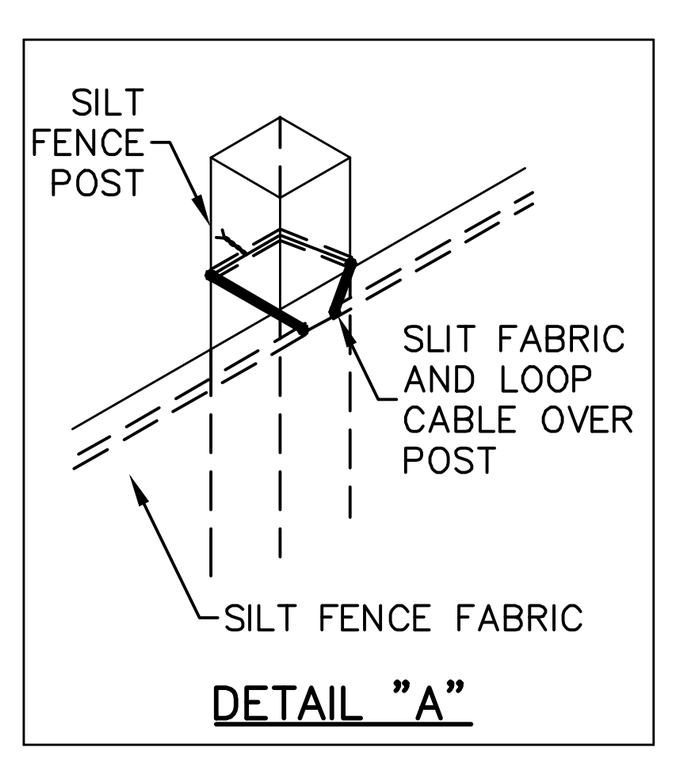


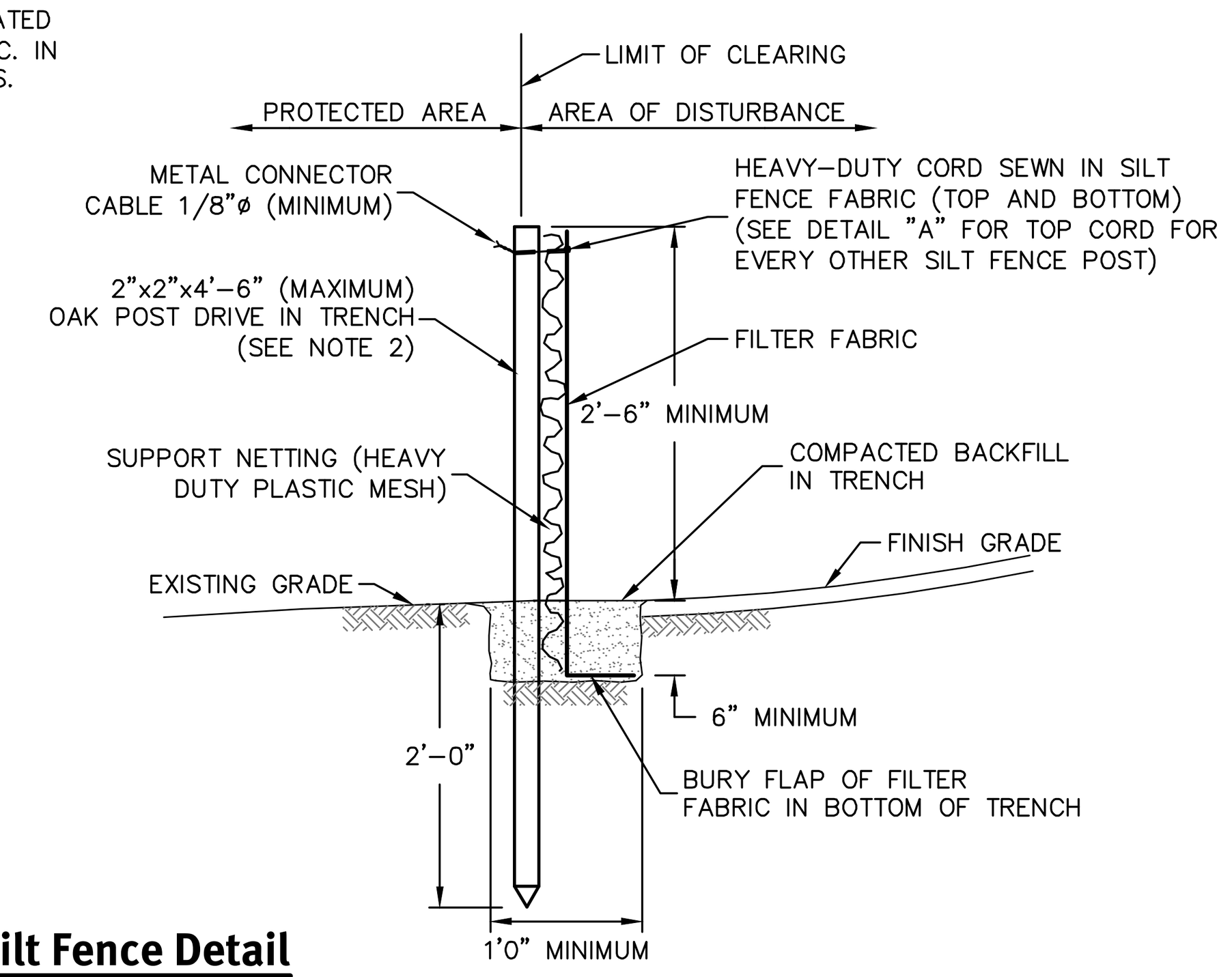
NOTE:
1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
2. SPECIFICATIONS SHOWN CAN BE CHANGED BY THE MANUFACTURER ONLY.
3. FOOTING WIDTH TO BE (4)X POST WIDTH.

Double Swing Gate 6-16' Opening

NOT TO SCALE

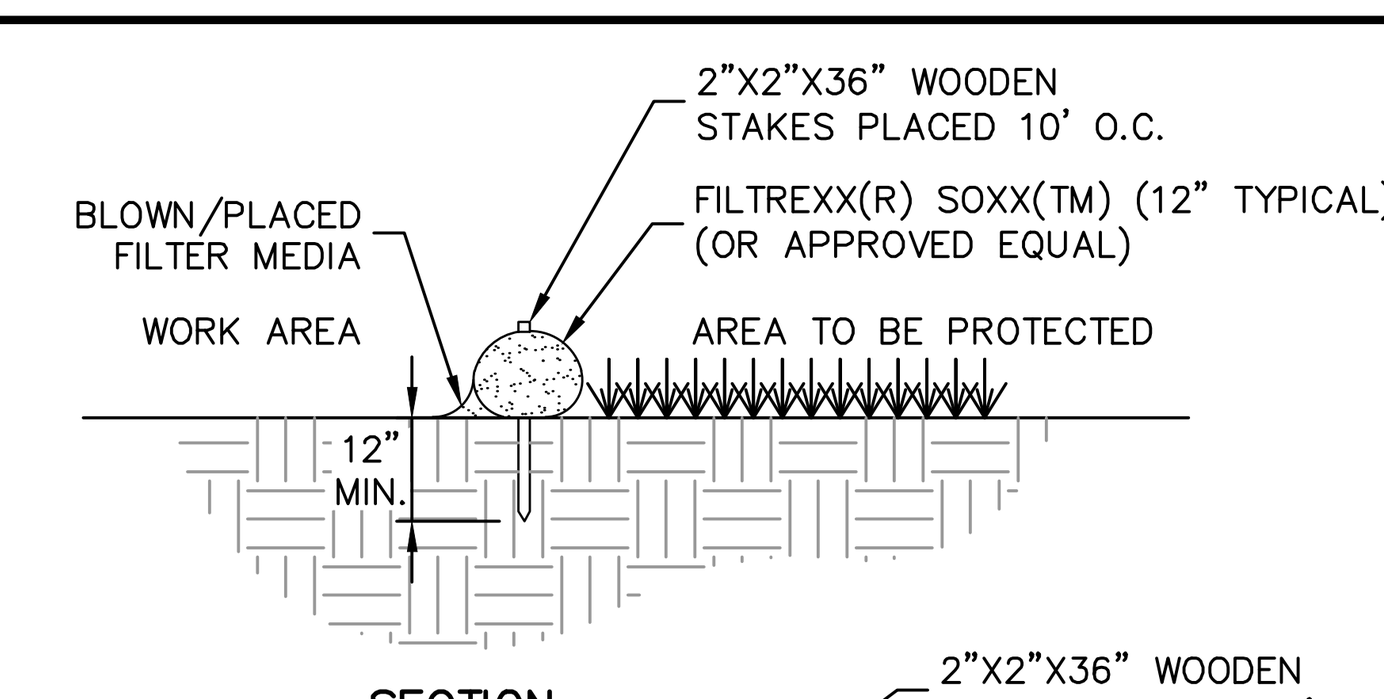
NOTES:
1. 2"x2"x4'–6" (MAXIMUM) OAK POSTS FOR SILT FENCE SHALL BE LOCATED 8'–0" (MAXIMUM) O.C. IN WETLAND AREAS AND 4'–0" (MAXIMUM) O.C. IN WETLAND RAVINE. GULLY OR DROP–OFF AREAS AS SHOWN ON PLANS.
2. 1"x1"x4'–6"(MINIMUM) POSTS PERMITTED FOR PRE–FABRICATED SILT FENCE.
3. SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

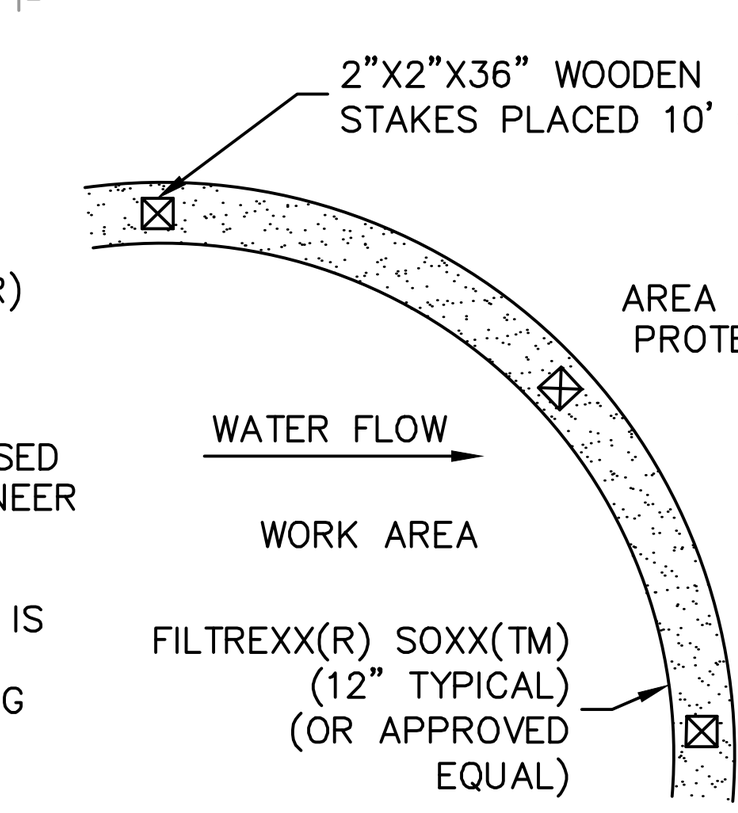




Silt Fence Detail

NOT TO SCALE

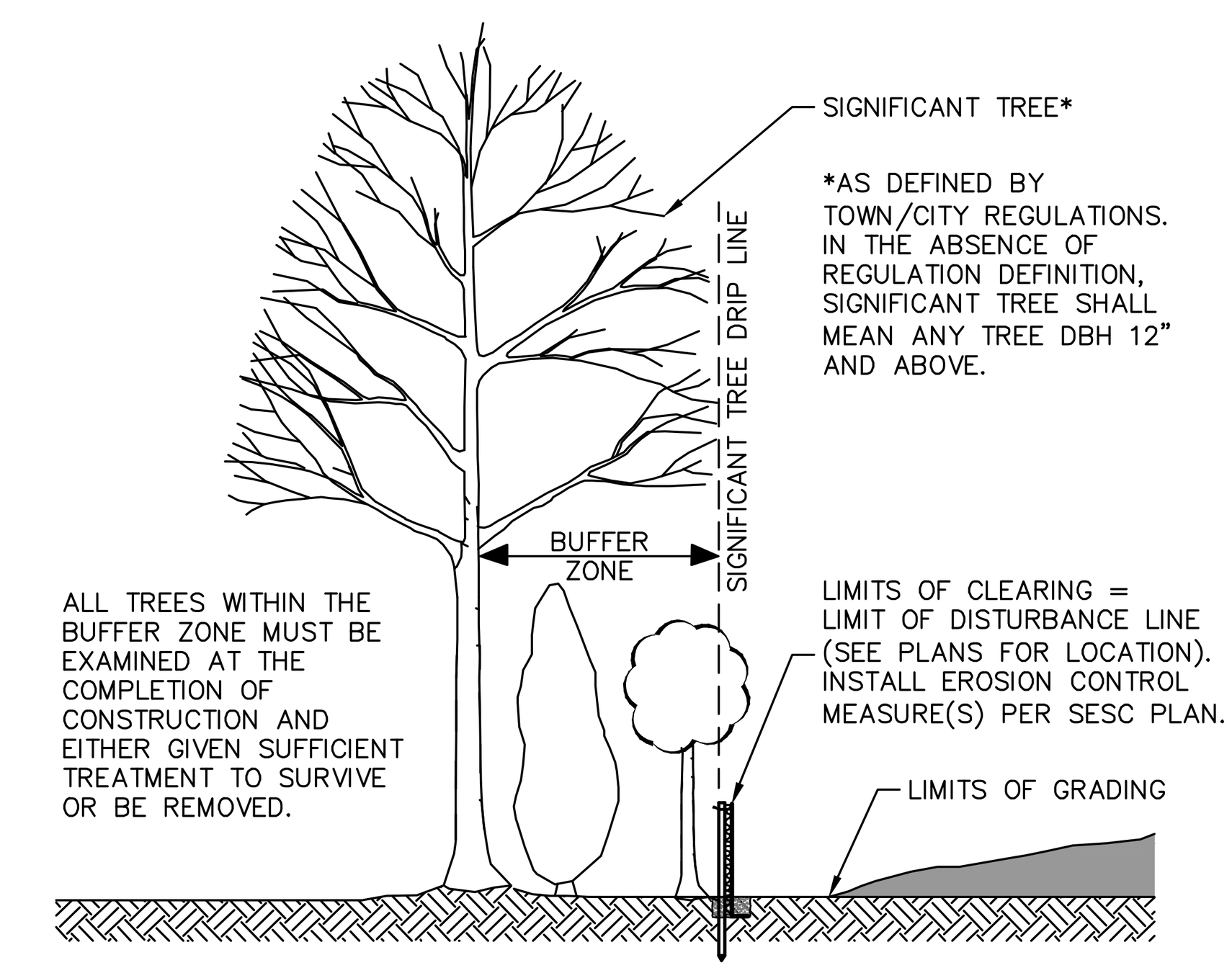




NOTES:
1. ALL MATERIAL TO MEET FILTREXX(R) SPECIFICATIONS
2. FILTER MEDIA(TM) FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER
4. STAKES ARE NOT TO BE USED IN PAVEMENT AREAS.
5. SELF WEIGHT OF FILTREXX SYSTEM IS ADEQUATE TO PREVENT SYSTEM MOVEMENT ONCE POSITIONED ALONG AREA SHOWN ON THE PLANS.
6. CONTRACTOR TO PLACE FILTREXX SEDIMENT CONTROL OR APPROVED EQUAL AROUND ALL CURB INLET LOCATIONS AS SPECIFIED ON PLANS.

Filtrexx Sediment Control (or Approved Equal)

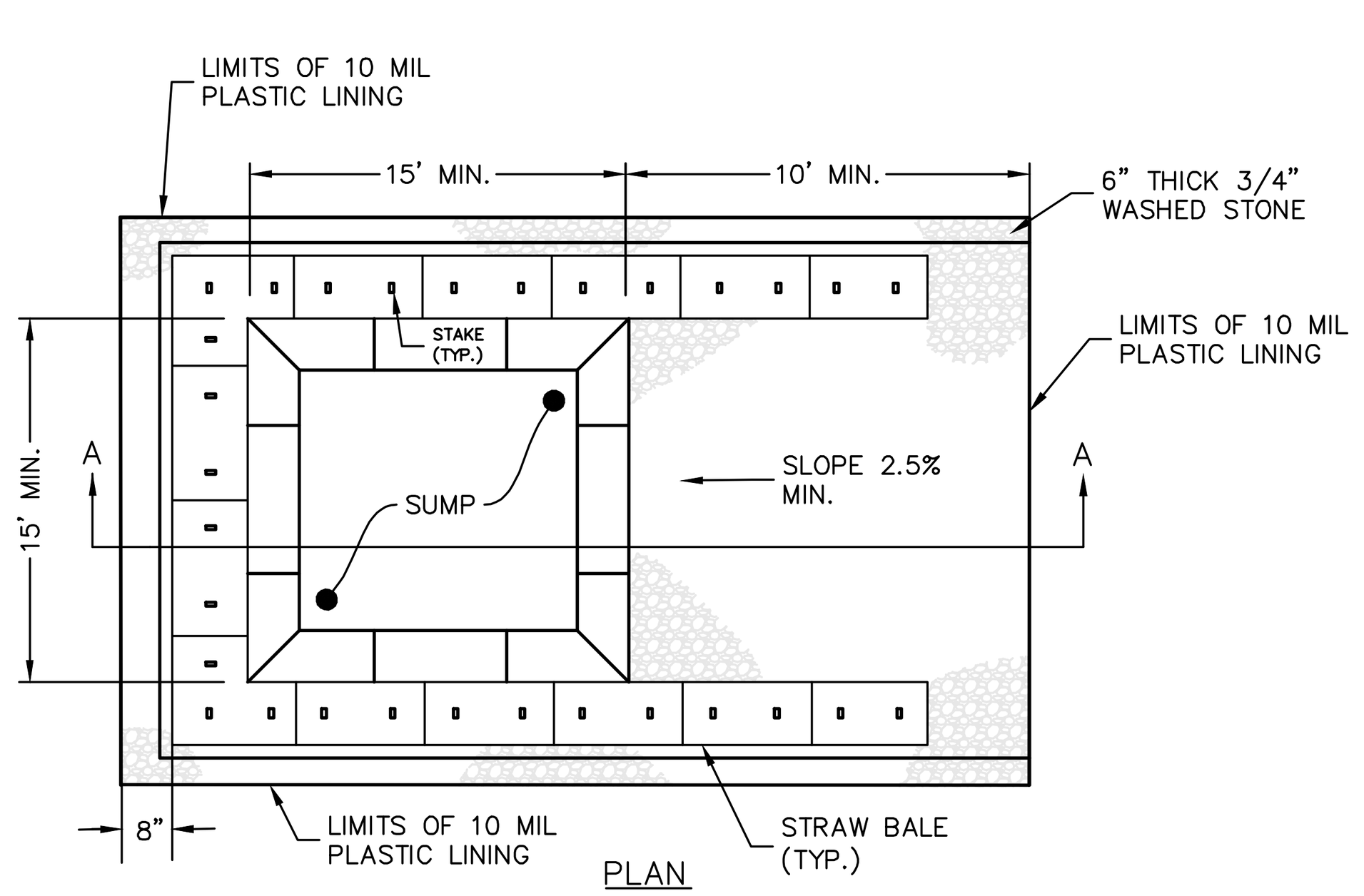
NOT TO SCALE

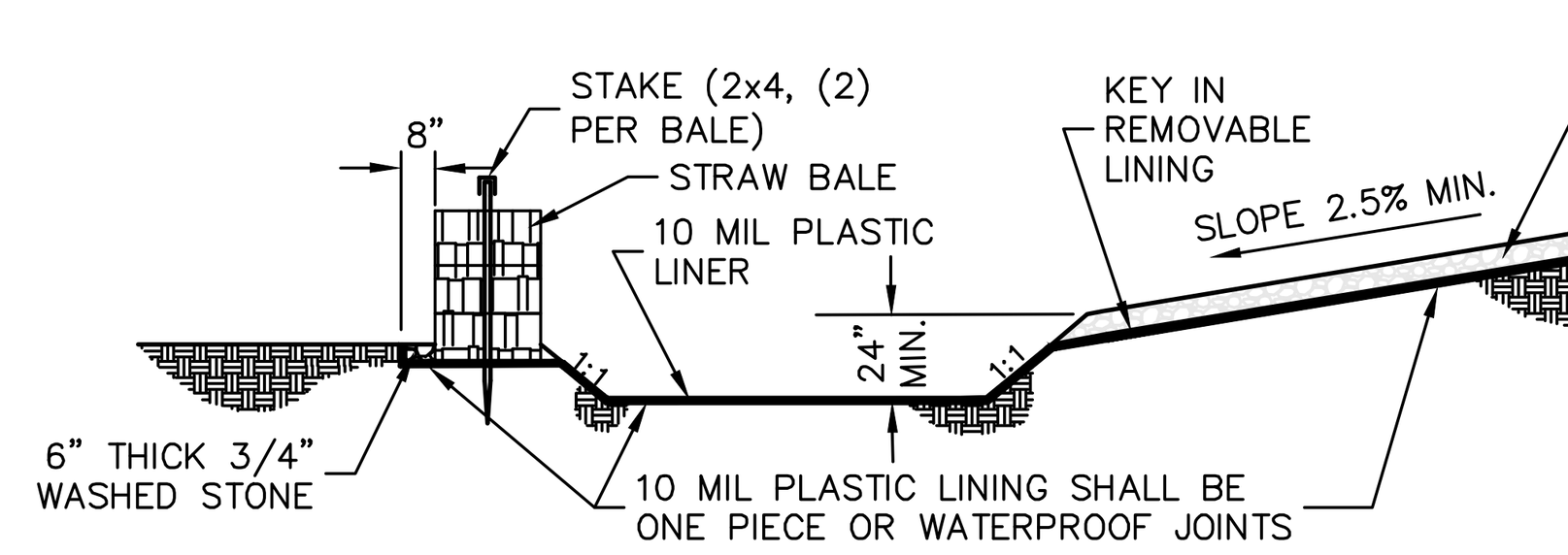


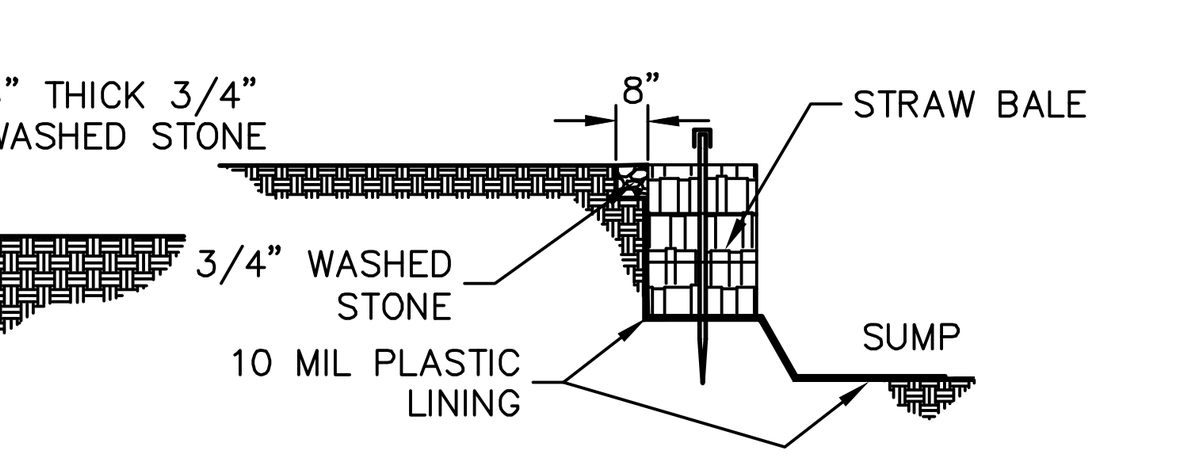
NOTE: LIMIT OF DISTURBANCE (LOD) MUST BE STAKED OUT PRIOR TO CONSTRUCTION. IF ANY SIGNIFICANT TREE DRIP LINE IS ENCROACHING PAST THE LOD, CONTRACTOR MUST CONTACT SITE ENGINEER PRIOR TO CONSTRUCTION.

Limit of Disturbance at Vegetation

NOT TO SCALE







ALTERNATE SECTION
USE WHERE MORE THAN ONE ACCESSIBLE SIDE IS NEEDED

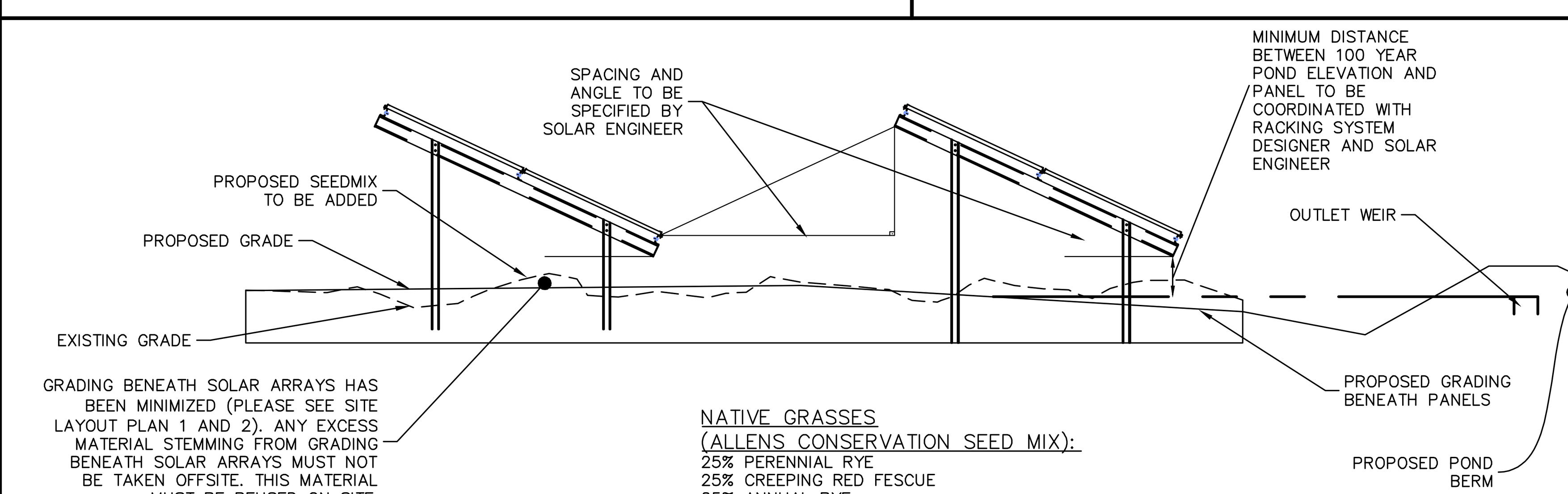


WASHOUT SIGN

NOTES:
1. PIT IS SPECIFICALLY DESIGNATED, DIKED AND IMPERVIOUS CONTAINMENT TO PREVENT CONTACT BETWEEN CONCRETE WASH AND STORMWATER.
2. WASH WATER SHALL NOT BE ALLOWED TO FLOW TO SURFACE WATER.
3. FACILITY MUST HOLD SUFFICIENT VOLUME TO CONTAIN CONCRETE WASTE WITH A MINIMUM FREEBOARD OF 12."
4. FACILITY SHALL NOT BE FILLED BEYOND 95% CAPACITY UNLESS A NEW FACILITY IS CONSTRUCTED.
5. SAW CUT PORTLAND CEMENT CONCRETE, RESIDUE FROM SAWCUT & GRINDING TO BE DISPOSED OF IN THE PIT.
6. CONCRETE WASHOUTS SHALL BE LOCATED A MINIMUM OF 100' FROM DRAINAGE WAYS, INLETS, & SURFACE WATERS.
7. MANUFACTURED CONCRETE WASHOUT DEVICES MAY BE USED IF REMOVED FROM THE SITE WHEN 95% FULL CAPACITY.

CONCRETE WASHOUT AREA

(NOT TO SCALE)



NATIVE GRASSES
(ALLENS CONSERVATION SEED MIX):
25% PERENNIAL RYE
25% CREEPING RED FESCUE
25% ANNUAL RYE
17% TALL DESCUE
5% KENTUCKY BLUEGRASS
1% COLONIAL BENTGRASS
1% RED TOP
1% WHITE CLOVER

Onsite Grading Material and PV Array Distance Scheme - Tilt, Angle, and Shading Detail

NOT TO SCALE

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
Boston • Providence • Newport

This regulatory submission set shall not be used for construction purposes unless stamped 'Issued for Construction' and signed by a DiPrete Engineering representative.

The contractor is responsible for all of the means, methods, safety precautions and requirements, and OSHA conformance in the implementation of this plan and design.

No.	Date	Description	By:
0	3-24-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Detail Sheet - 1

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4415-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0217

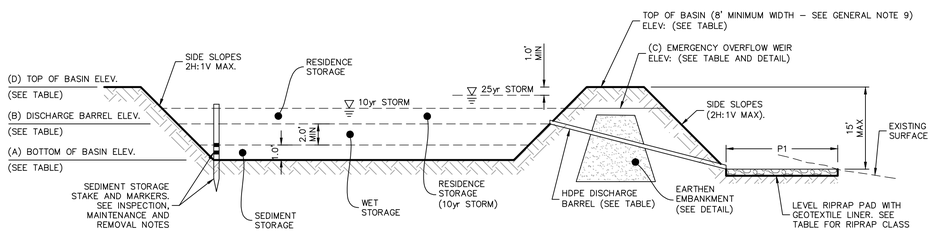
SHEET 18 OF 19

DE Job No: 2437-018 Copyright 2020 by DiPrete Engineering Associates, Inc.

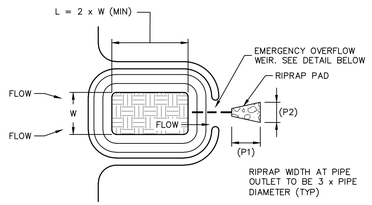
z:\demain\projects\2437-018 snake meadow road solar\autocad drawings\2437-018-cvar.dwg Plotted: 4/15/2020

SEDIMENT TRAP DIMENSIONS*	TRAP 1A	TRAP 1B	TRAP 1C	TRAP 2A	TRAP 2B	TRAP 2C	TRAP 3A	TRAP 3B	TRAP 3C	TRAP 3D
TRIBUTARY DRAINAGE AREA	4.34 ac	3.33 ac	3.37 ac	3.84 ac	4.76 ac	3.34 ac	4.71 ac	4.06 ac	5.18 ac	4.02 ac
WET STORAGE DEPTH (Dw)	2.0 ft	2.0 ft	2.0 ft	2.0 ft	2.0 ft	2.0 ft	2.0 ft	2.0 ft	2.0 ft	1.5 ft
DRY STORAGE DEPTH (Dd)	2.0 ft	2.0 ft	2.0 ft	1.0 ft	2.0 ft	1.0 ft	1.0 ft	1.5 ft	1.5 ft	1.5 ft
TOTAL DEPTH (D)	4.0 ft	4.0 ft	4.0 ft	3.0 ft	4.0 ft	3.0 ft	3.0 ft	3.5 ft	3.5 ft	3.0 ft
BOTTOM OF TRAP AREA (Ab)	4,850 sq.ft	4,850 sq.ft	4,850 sq.ft	4,850 sq.ft	4,850 sq.ft	4,850 sq.ft	4,850 sq.ft	4,850 sq.ft	4,850 sq.ft	4,850 sq.ft
WETTED SURFACE AREA (Aw)	6,224 sq.ft	6,224 sq.ft	6,224 sq.ft	6,224 sq.ft	6,224 sq.ft	6,224 sq.ft	6,224 sq.ft	6,224 sq.ft	6,224 sq.ft	5,871 sq.ft
SURFACE AREA AT OUTLET (Ad)	7,698 sq.ft	7,698 sq.ft	7,698 sq.ft	6,948 sq.ft	7,698 sq.ft	6,948 sq.ft	6,948 sq.ft	7,320 sq.ft	7,320 sq.ft	6,948 sq.ft

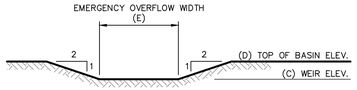
*TRAP DIMENSIONS REPRESENT MINIMUM REQUIRED SIZING TO MEET THE RISESCH. CONTRACTOR MAY SHAPE TRAP DIFFERENTLY THAN SHOWN ON PLANS AS LONG AS THE MINIMUM SIZING HAS BEEN PROVIDED.



SEDIMENT BASIN SECTION VIEW



SEDIMENT BASIN PLAN VIEW



EMERGENCY OVERFLOW WEIR

Temporary Sediment Basin Details

NOT TO SCALE

GENERAL NOTES:

1. THE TEMPORARY SEDIMENT TRAP SHALL MEET ALL REQUIREMENTS FOR TEMPORARY SEDIMENT TRAPS OUTLINED IN THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (LATEST REVISION).
2. THE TEMPORARY SEDIMENT TRAP MUST HAVE AN INITIAL STORAGE VOLUME OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. HALF OF THE STORAGE MUST BE PROVIDED IN THE FORM OF WET STORAGE.
3. ALL CUT AND FILL SLOPES MUST BE 2:1 OR FLATTER EXCEPT FOR THE EXCAVATED WET STORAGE AREA WHERE SLOPES MUST NOT EXCEED 1.5:1.
4. THE OUTLET MUST BE LOCATED AT THE MOST DISTANT HYDRAULIC POINT FROM THE INLET.
5. THE OUTLET CONSISTS OF A PERVIOUS STONE DIKE WITH A CORE OF MODIFIED RIPRAP AND FACED ON THE UPSTREAM SIDE WITH DOT #3 STONE. MODIFIED RIPRAP MUST MEET THE REQUIREMENTS OF DOT STANDARD SPECIFICATIONS SECTION M.12.02. DOT #3 STONE MUST MEET THE REQUIREMENTS OF DOT STANDARD SPECIFICATION SECTION M.01.01 FOR #3 AGGREGATE.
6. TEMPORARY SEDIMENT TRAPS MUST OUTLET ONTO STABILIZED GROUND.
7. MAXIMUM HEIGHT OF A TEMPORARY SEDIMENT TRAP EMBANKMENT IS LIMITED TO 5 FEET (BOTTOM OF DRY STORAGE TO TOP OF EMBANKMENT).
8. SIDE SLOPES OF THE EMBANKMENT MUST BE 2:1 OR FLATTER.

INSPECTION, MAINTENANCE, AND REMOVAL REQUIREMENTS:

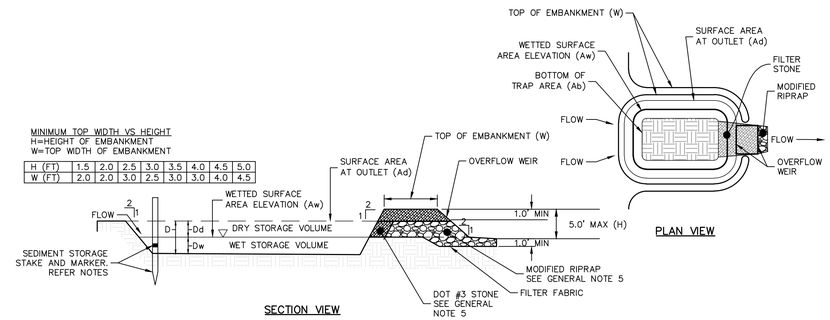
1. INSTALL "SEDIMENT STORAGE" STAKE WITH A MARKER AT ONE HALF OF THE WET STORAGE VOLUME.
2. INSPECT THE TEMPORARY SEDIMENT TRAP AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCH OR GREATER.
3. CHECK THE OUTLET TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
4. CHECK FOR SEDIMENT ACCUMULATION AND FILTRATION PERFORMANCE.
5. WHEN SEDIMENTS HAVE ACCUMULATED TO ONE HALF THE MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATER THE TRAP AS NEEDED, REMOVE SEDIMENTS AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS.
6. DISPOSE OF THE SEDIMENT REMOVED FROM THE BASIN IN A SUITABLE AREA AS DESIGNATED BY THE GEOTECHNICAL ENGINEER.
7. THE TEMPORARY SEDIMENT TRAP MAY BE REMOVED AFTER THE CONTRIBUTING DRAINAGE AREA IS STABILIZED.

INSTALLATION NOTES:

1. CLEAR, GRUB AND STRIP ANY VEGETATION AND ROOT MAT FROM ANY PROPOSED EMBANKMENT AND OUTLET AREA.
2. REMOVE STONES AND ROCKS WHOSE DIAMETER IS GREATER THAN THREE (3) INCHES AND OTHER DEBRIS.
3. EXCAVATE WET STORAGE AND CONSTRUCT THE EMBANKMENT AND/OR OUTLET AS NEEDED TO ATTAIN THE NECESSARY STORAGE REQUIREMENTS.
4. USE ONLY FILL MATERIAL FOR THE EMBANKMENT THAT IS FREE FROM EXCESSIVE ORGANICS, DEBRIS, LARGE ROCKS (OVER SIX (6) INCHES) OR OTHER UNSUITABLE MATERIALS. COMPACT THE EMBANKMENT IN 9–INCH LAYERS BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED
5. STABILIZE THE EARTHEN EMBANKMENT USING ANY OF THE FOLLOWING MEASURES, TEMPORARY SEEDING, PERMANENT SEEDING, OR STONE SLOPE PROTECTION, IMMEDIATELY AFTER INSTALLATION

MINIMUM TOP WIDTH VS HEIGHT
H=HEIGHT OF EMBANKMENT
W=TOP WIDTH OF EMBANKMENT

H (FT)	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
W (FT)	2.0	2.0	3.0	2.5	3.0	3.0	4.0	4.5



SECTION VIEW

Temporary Sediment Trap Detail

NOT TO SCALE

Sediment Basin	Tributary Area	Basin Floor Area L	Basin Floor Area W	Botton of Basin Elevation	Discharge Barrel Elevation	Overflow Weir Elevation	Top of Basin Elevation	Overflow Weir Width	Discharge Barrel Diameter	Number of Discharge Barrels	Riprap Pad L	Riprap Pad W	Riprap Pad Class
	ac	ft	ft	ft	ft	ft	ft	ft	in		ft	ft	
1	11.405	294	72	335.75	338.75	339.80	341.00	50	6	1	12	7	R-3
3	9.743	177	88	445.00	450.00	450.95	452.00	30	6	1	12	7	R-2

NOTE: THE ABOVE TABLE REPRESENTS RECOMMENDED BASIN PARAMETERS THAT MEET THE MINIMUM REQUIREMENTS OF THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (2002). ALTERNATE CONFIGURATIONS MAY BE PERMITTED BASED ON TOPOGRAPHY/ SITE CONSTRAINTS HOWEVER THE MINIMUM EQUIVALENTS MUST BE MET.

Temporary Sediment Basin Schedule

NOT TO SCALE

GENERAL SEDIMENT BASIN NOTES:

1. SEDIMENT BASINS MUST MEET OR EXCEED ALL REQUIREMENTS FOR SEDIMENT BASINS AS DETAILED IN THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (LATEST REVISION).
2. ALL CUT AND FILL SLOPES TO BE 2:1 OR FLATTER EXCEPT WHERE NOTED.
3. THE OUTLET(S) MUST BE LOCATED AT THE MOST DISTANT HYDRAULIC POINT FROM THE INLET(S). CONTRACTOR TO INSTALL BAFFLES IF NECESSARY TO PROVIDE AN EFFECTIVE FLOW LENGTH THAT IS AT LEAST TWO TIMES THE EFFECTIVE WIDTH OF THE BASIN. SEE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (LATEST REVISION) FOR MORE INFORMATION.
4. SEDIMENT BASIN CONTOURS SHOWN ON THE PLANS REFLECT THE RECOMMENDED DESIGN PARAMETERS TO MEET THE CRITERIA PER THE HANDBOOK. BASIN PARAMETERS MAY BE FIELD MODIFIED AS NECESSARY WITH APPROVAL OF DESIGN ENGINEER.
5. THE MINIMUM WIDTH OF AN EMERGENCY SPILLWAY IS TO BE 20'.
6. BASIN DISCHARGE ALTERNATIVES MAY BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL. ALTERNATIVES MUST BE ACCOMPANIED BY DETAILED CALCULATIONS INCLUDING (BUT NOT LIMITED TO) BUOYANCY RESISTANCE IF APPLICABLE.
7. DISCHARGE BARREL MUST HAVE WATERTIGHT JOINTS. ANY MATERIALS USED OTHER THAN HDPE FOR BARREL MUST BE IN COMPLIANCE WITH THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (LATEST REVISION).
8. ANY TEMPORARY SEDIMENT BASINS INSTALLED WITHIN THE FOOTPRINT OF INFILTRATION DEVICE LOCATIONS (OR PART THEREOF), MUST BE LINED SUFFICIENT TO PREVENT THE PROPAGATION OF SEDIMENT INTO THE GROUND. LINER MUST BE REMOVED WHEN TEMPORARY BASIN IS REMOVED, AND THE AFFECTED AREA SCARIFIED A MINIMUM OF 18".
9. IF THE CONSTRUCTED HEIGHT OF A SEDIMENT BASIN IS LESS THAN 10', THE TOP OF EMBANKMENT WIDTH MAY BE REDUCED TO 6' WIDE.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN SAFETY OF SEDIMENT BASINS TO PROTECT HUMANS AND ANIMALS FROM SUCH ACCIDENTS AS FALLING OR DROWNING.

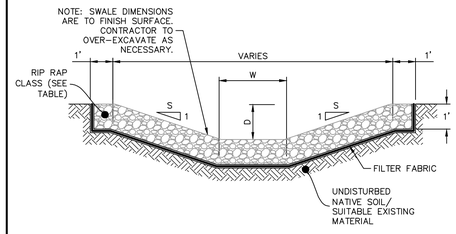
INSTALLATION NOTES:

1. SEDIMENT BASINS MUST BE INSTALLED IN ACCORDANCE WITH THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (LATEST REVISION).
2. CLEAR, GRUB AND STRIP ANY VEGETATION AND ROOT MAT FROM ANY PROPOSED EMBANKMENT AND OUTLET AREA.
3. REMOVE STONES AND ROCKS WHOSE DIAMETER IS GREATER THAN THREE INCHES AND OTHER DEBRIS.
4. EXCAVATE THE OUTLET APRON/ PAD AREA FIRST, TO USE AS A SEDIMENT TRAP DURING CONSTRUCTION OF THE BASIN.
5. EXCAVATE SEDIMENT STORAGE VOLUME/ AREA AND CONSTRUCT THE EMBANKMENT AS NEEDED TO ATTAIN THE NECESSARY STORAGE REQUIREMENTS.
6. AREAS ON WHICH FILL IS TO BE PLACED MUST BE SCARIFIED PRIOR TO PLACEMENT OF FILL.
7. INSTALL LINER WHERE NECESSARY. SEE GENERAL SEDIMENT BASIN NOTE 8.
8. FILL MUST BE CLEAN MINERAL SOIL, FREE OF ROOTS, WOODY VEGETATION, STUMPS, SOD OVER–SIZED STONES, MAN MADE MATERIALS, OR OTHER PERISHABLE OR MATERIAL DEEMED UNSUITABLE BY THE GEOTECHNICAL ENGINEER.
9. FILL TO BE PLACED IN 6"–9" CONTINUOUS LAYERS AND COMPACTED UNTIL 95% STANDARD PROCTOR IS ACHIEVED.
10. DISCHARGE BARREL TO BE PLACED ON FIRM, EVEN FOUNDATION.
11. A MINIMUM OF 2' OF FILL MUST BE HAND–COMPACTED OVER THE BARREL BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
12. CONSTRUCT EARTHEN EMBANKMENT PER SEDIMENT BASIN DETAILS AND SPECIFICATIONS, INCLUDING THE SEDIMENT BASIN EARTHEN EMBANKMENT DETAIL (IMPERVIOUS CORE).
13. EMBANKMENT MUST BE CONSTRUCTED 10% HIGHER THAN THE DESIGN "TOP OF BASIN" ELEVATION TO ALLOW FOR SETTLEMENT.
14. STABILIZE ALL DISTURBED AREAS (EXCEPT THE LOWER ONE–HALF OF SEDIMENT BASIN) AS SOON AS GRADING IS COMPLETE, USING NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES BY NEW ENGLAND WETLAND PLANTS, INC. (OR APPROVED EQUAL).

INSPECTION, MAINTENANCE, AND REMOVAL REQUIREMENTS:

1. INSTALL "SEDIMENT STORAGE" STAKE WITH A MARKER AT ONE HALF THE SEDIMENT STORAGE DEPTH. THIS WILL BE THE 'CLEANOUT LEVEL'. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO ONE–HALF THE SEDIMENT STORAGE DEPTH AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS. DEWATER IF NECESSARY. DEWATERING DEVICE MUST DRAIN WATER FROM THE TOP OF STANDING WATER, NOT BOTTOM.
2. DISPOSE OF THE SEDIMENT REMOVED FROM THE BASIN IN A SUITABLE AREA AS DESIGNATED BY THE GEOTECHNICAL ENGINEER.
3. INSPECT THE BASIN AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER.
4. CHECK EMBANKMENT, EMERGENCY SPILLWAY AND AND OUTLET FOR EROSION DAMAGE.
5. CHECK EMBANKMENT FOR: SETTLEMENT, SEEPAGE, OR SLUMPING ALONG THE TOE OR AROUND PIPE. LOOK FOR SIGNS OF PIPING. REPAIR IMMEDIATELY.
6. REMOVE TRASH AND OTHER DEBRIS FROM DISCHARGE BARREL, EMERGENCY SPILLWAY AND POOL AREA.
7. INSPECT, REPAIR AND MAINTAIN RIPRAP OUTLET PAD.
8. INSPECT VEGETATION; RESEED AND/ OR REMULCH IF NECESSARY.
9. AFTER ALL SEDIMENT–PRODUCING AREAS HAVE BEEN STABILIZED, INSPECTED AND APPROVED, REMOVE THE SEDIMENT BASIN. RESTORE AREA TO DESIGN GRADE AND STABILIZE IN ACCORDANCE WITH LANDSCAPE PLAN/ COVER AS SHOWN ON APPLICABLE PLANS.

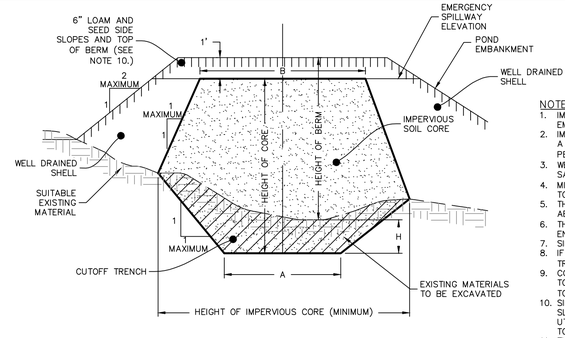
SWALE	BOTTOM WIDTH (W)	CHANNEL DEPTH (D)	SIDE SLOPE (S)	RIPRAP CLASS
S–1A	3.00'	3.25'	3:1	R–5
S–1B	3.00'	3.25'	3:1	R–4
S–1C	3.00'	3.25'	3:1	R–4
S–2A	2.00'	2.50'	3:1	R–4
S–2B	2.00'	2.50'	3:1	R–4
S–2C	2.00'	2.50'	3:1	R–5
S–2D	2.00'	2.50'	3:1	R–5
CHANNEL IN WETLAND DIVERSION	2.00'	2.50'	3:1	R–5
ALL OTHER SWALES	1.50'	2.00'	7:1	R–3



NOTES:
1. ALL SWALES MUST HAVE A MINIMUM SLOPE OF 1%.

Rip Rap Swale Cross Section

NOT TO SCALE



BERM HEIGHT (FT)	TOP WIDTH OF CORE – B (FT)
0–6.5	8.2
6.6–9.8	9.2
9.9–13.1	9.8
13.2–16.4	10.8
16.5–19.7	11.5

NOTES:
1. IMPERVIOUS SOIL CORE TO BE PROVIDED FOR ALL POND EMBANKMENTS.
2. IMPERVIOUS SOIL CORE TO BE CONSTRUCTED OF A MATERIAL WITH A MINIMUM OF 55% PASSING THE #200 SIEVE AND A MAXIMUM PERMEABILITY OF 0.00005 CM/S.
3. WELL DRAINED SHELL TO BE CONSTRUCTED OF GRAVEL AND/OR SAND WITH LESS THAN 5% PASSING THE #200 SIEVE.
4. MINIMUM DEPTH OF CUTOFF TRENCH (H) SHALL BE 3/4 OF THE TOTAL BERM HEIGHT.
5. THE IMPERVIOUS CORE AT A MINIMUM SHALL EXTEND UP BOTH ABUTMENTS TO THE EMERGENCY SPILLWAY ELEVATION.
6. THE MINIMUM BOTTOM WIDTH (A) SHALL BE 5'–8', AND WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT.
7. SIDE SLOPES OF THE TRENCH SHALL BE NO STEEPER THAN 1:1.
8. IF BEDROCK IS ENCOUNTERED BELOW THE DAM THE CUT OFF TRENCH CAN BE REDUCED TO 1'x1' (AxH).
9. COMPACTION REQUIREMENTS FOR THE SHELL AND IMPERVIOUS CORE TO BE 95% OF THE MODIFIED PROCTOR PER ASTM D1557. ALL FILL TO BE PLACED IN LIFTS NOT EXCEEDING 12".
10. SIDE SLOPE OF POND EMBANKMENT TO BE 2:1 MAXIMUM. IF SIDE SLOPES ARE STEEPER THAN 3:1, SLOPE PROTECTION MUST BE UTILIZED ON POND EMBANKMENT. THIS INCLUDES, BUT NOT LIMITED TO, RIPRAP AND EROSION CONTROL MATS.
11. THE IMPERVIOUS CORE SHALL BE KEPT FREE FROM STANDING WATER DURING THE BACKFILL OPERATION.
12. ALL EMBANKMENTS TO BE DESIGNED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION. ALL EMBANKMENT INSTALLATIONS TO BE SUPERVISED BY A GEOTECHNICAL ENGINEER.

Pond Earthen Embankment

NOT TO SCALE

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.diprete-eng.com
Boston • Providence • Newport

This regulatory submission set shall not be used for construction purposes unless issued for Construction and signed by a DiPrete Engineering representative.

The contractor is responsible for all of the means, methods, safety precautions and requirements and OSHA conformance in the implementation of this plan and design.

No.	Date	Description	By:
0	3-26-2020	CT DEEP Construction GP Submission	K.E.D.

Drawn By: K.E.D.

Detail Sheet - 2

Snake Meadow Road Solar

Plainfield and Sterling, CT
AP 35 Block 118 Lots 6A, 10 & 11, AP 36 Block 118 Lot 6, Parcel ID 4405-008-0011

Applicant
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007 Warwick, RI 02886
tel 401-562-0237

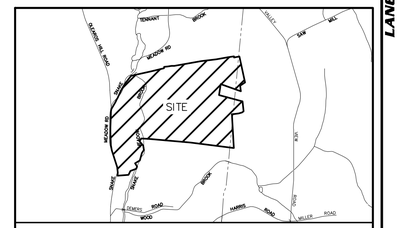
DE Job No: 2437-018 Copyright 2020 by DiPrete Engineering Associates, Inc.

z:\dennen\projects\2437-018 snake meadow road solar\autocad drawings\2437-018 plan.dwg Plotted: 4/15/2020

LEGEND (NOT SHOWN TO SCALE)

- BOLLARD
- FLAG POLE
- MAILBOX
- SIGN
- SHRUB
- TREE
- WETLAND FLAG
- CATCH BASIN
- FIRE HYDRANT
- POWER POLE
- LIGHT POLE
- WELL
- BIT — BITUMINOUS
- CONC — CONCRETE
- CP — CONCRETE PAD
- LSA — LANDSCAPED AREA
- BOH — BUILDING OVERHANG
- BW — BOTTOM OF WALL
- EP — EDGE OF PAVEMENT
- EG — EDGE OF GRAVEL
- EW — EDGE OF WALK
- DW — DETECTABLE WARNING
- BC — BITUMINOUS CURB
- CC — CONCRETE CURB
- GC — GRANITE CURB
- SG — SLOPED GRANITE CURB
- SWS — SINGLE WHITE STRIPE
- BWS — BROKEN WHITE STRIPE
- SYS — SINGLE YELLOW STRIPE
- DYS — DOUBLE YELLOW STRIPE
- METAL GUARD RAIL
- WOOD GUARD RAIL
- CHAINLINK FENCE
- IRON FENCE
- TREE LINE
- WETLAND LINE
- EASEMENT LINE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- CONTOUR LINE





PROJECT LOCATION MAP

SCALE: 1"=2000'

SOURCE:
CONNECTICUT DEPARTMENT OF TRANSPORTATION

CT NAD 83

NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.
   a. THIS SURVEY IS A COMPILATION PLAN CONFORMING TO A HORIZONTAL ACCURACY OF CLASS D AND A TOPOGRAPHIC SURVEY CONFORMING TO T-3 ACCURACY. THIS PLAN WAS COMPILED FROM OTHER MAPS, RECORD RESEARCH OR OTHER SOURCES OF INFORMATION. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY, AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE. THE PURPOSE OF THIS SURVEY IS TO DEPICT TOPOGRAPHIC FEATURES.
2. THIS SURVEY IS BASED UPON EXISTING PHYSICAL CONDITIONS FOUND AT THE SUBJECT SITE, DEED INFORMATION AND THE FOLLOWING REFERENCES:
   A. MAP TITLED "TOPOGRAPHICAL AND BOUNDARY SURVEY, PREPARED FOR JOSEPH AND NATHAN PETROWSKY, SNAKE MEADOW ROAD, PLAINFIELD, STERLING, CT", SCALE: 1"=100', DATED: 3/4/88, PREPARED BY: FRANSEN CONSULTANTS. MAP# 400
   B. MAP TITLED "SUBDIVISION OF LAND OWNED BY WILHO J. KALLIO, SR., A. ROSELLA KALLIO, 435 SNAKE MEADOW ROAD, MOOSUP, CT, 06354", SCALE: 1"=100', DATED: MARCH 22, 1989, PREPARD BY: ALBERT L. FITZBACK, L.L.S. MAP# 437
3. THE MERIDIAN OF THIS SURVEY IS REFERENCED TO CONNECTICUT STATE PLANE COORDINATE SYSTEM NAD 83 AS ESTABLISHED THROUGH GPS METHODS.
4. ELEVATIONS SHOWN ARE REFERENCED TO NAVD 88 ESTABLISHED THROUGH GPS METHODS.
5. PLANIMETRIC AND TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM AERIAL PHOTOGRAPHY DATED MAY 2, 2018 BY AEROTECH INTERNATIONAL.
6. AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAP ENTITLED "TOWN OF PLAINFIELD CONNECTICUT, WINDHAM COUNTY, CONNECTICUT PANEL 5 OF 10, MAP NUMBER 09011600005B, EFFECTIVE DATE JUNE 17, 1991" THE PROJECT AREA IS IN ZONE A & ZONE X (UNSHADED).

   AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAP ENTITLED "TOWN OF STERLING, CONNECTICUT, WINDHAM COUNTY, CONNECTICUT PANEL 5 OF 15, MAP NUMBER 09011800005B, EFFECTIVE DATE MARCH 4, 1985" THE PROJECT AREA IS IN ZONE C (UNSHADED).
7. WETLANDS DELINEATED BY ALL-POINTS TECHNOLOGY CORPORATION SERVICES THE MONTH OF SEPEMTBER, 2018. ALL FLAGS WERE FIELD LOCATED IN SEPTEMBER, 2018.
8. PRIOR TO ANY DESIGN OR CONSTRUCTION, THE PROPER UTILITY AGENCIES MUST BE CONTACTED FOR VERIFICATION OF UTILITY TYPE AND FOR FIELD LOCATIONS.
9. THIS SURVEY IS NOT VALID WITHOUT THE EMBOSSED OR INKED SEAL OF THE PROFESSIONAL.

200 0 100 200
SCALE IN FEET

STATE OF CONNECTICUT · ANDREW G. IVES · NO. 70286 · LICENSED LAND SURVEYOR

Date	Description	No.
06/03/19	PROPERTY LINE REVISIONS	1

REVISIONS

"TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON."

ANDREW G. IVES DATE SIGNED
PROFESSIONAL LAND SURVEYOR
CT STATE LIC. NO. 70286

LANGAN
Langan CT, Inc.
555 Long Wharf Drive
New Haven, CT 06511
T: 203.562.5771 F: 203.789.6142 www.langan.com

Project
424 SNAKE MEADOW ROAD
PLAINFIELD & STERLING CONNECTICUT

Drawing Title
COMPILATION BOUNDARY SURVEY

Project No. 140189301
Date SEPTEMBER 17, 2018
Drawn By JRL
Checked By AGI

Drawing No. VB101
Sheet 1 of 1

LANGAN PROJECT NO. 140189301

Filename: \\langan.com\data\NHV\data3\140189301\Project Data_Discipline\Survey\CAD\Existing\140189301-V-PR0101.dwg Date: 6/3/2019 Time: 15:08 User: akapsalhinski Style Table: Langan.stb Layout: VB0101

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APPENDIX C

Construction Schedule and

Work Days/Hours

Revity Energy, LLC
Warwick, Rhode Island

Construction Schedule	Days	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Oct-21
Approvals & Permitting	90																					
Equipment Procurement	120																					
Construction	360																					
Harvest Trees	*60*																					
Grub, Grade, Basins, UG Conduits, & Equipment Pad	*90*																					
Seeding	*21*																					
Grass Growing/Site Stabalization	*60*																					
Install Solar Racking, Modules, Inverters, &	*210*																					
Install Fence	*90*																					
Commissioning	*30*																					
Utility Approval & Project Close Out	*30*																					
Commercial Operation																						

Revity Energy, LLC.

CONSTRUCTION HOURS/DAYS

The following proposed construction work days and hours will be followed by all contractors for the construction of the Snake Meadow Road Solar Project.

- Monday – Saturday: 7 am to 6 pm
- Sunday – 9 am to 5 pm (only when necessary)
- Federal Holidays will be observed

APPENDIX D

DEEP Forestry Correspondence

MURTHA CULLINA
ATTORNEYS AT LAW

BRUCE L. MCDERMOTT
203.772.7787 DIRECT TELEPHONE
860.240.5723 DIRECT FACSIMILE
BMCDERMOTT@MURTHALAW.COM

October 7, 2019

VIA UPS

Commissioner Katie S. Dykes
Connecticut Department of
Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Re: Revity Energy, LLC's Request for No Material Impact Letter

Dear Commissioner Dykes:

As part of the requirements under Connecticut General Statutes ("CGS") Section 16-50k(a), Revity Energy, LLC ("Revity") is seeking written confirmation from the Department of Energy and Environmental Protection ("Department") that the solar photovoltaic electric generating project as described below will not materially affect the status of the underlying land as core forest.

Revity will be filing a petition for a declaratory ruling with the Connecticut Siting Council, pursuant to CGS Sections 4-176 and 16-50k, for the proposed construction, maintenance and operation of a 14.375-megawatt[1] solar photovoltaic electric generating facility and associated electrical interconnection equipment (the "Project") in Plainfield and Sterling Connecticut. The Project address is 424 Snake Meadow Road, Plainfield (the "Property"), and will involve the development of 86.5 acres of the underlying lot, which lies within both Plainfield and Sterling.

Up until the 1970s, the western portion of the Property was used as farmland, primarily grazing and pastureland, while the eastern portion was undeveloped and wooded. By the mid-1990s, the western portion of Property was mined for sand and gravel. By the mid-2000s, the mining operations had expanded into small areas in the far eastern portions of the Property. These areas were stripped of topsoil and the subsoil was mined down to the underlying hardpan. Given this Property's historic use as a gravel mine, Revity believes that it is an ideal site for development of the Project.

[1] AC – Alternate Current.

Revity contracted All-Points Technology ("APT") to evaluate if a contiguous forest block was present within and adjacent to the Property. APT used two publicly available GIS-based datasets designed to assess impacts to core forest habitat, plus their own professional experience and independent evaluation (based on GIS analysis of 2016 leaf-off aerial photography and field observations). The first dataset, the Department's *Forestland Habitat Impact Mapping*, does not include the Property within an area mapped as core forest. The second dataset, was UConn's Center for Land Use Education and Research's ("CLEAR") Forest Fragmentation Analysis ("FFA") study, which identifies the Property to be within a medium-sized core (or "interior") forest block (250–500 acres). This is consistent with APT's conclusions.

Relying on these resources, Revity has determined that the 86.5-acre Project area lies within a ±386-acre interior forest (See attached graphic, *Existing Contiguous Forest Map*). This medium-sized forest block is oblong in shape and somewhat narrow in width; therefore, the ratio of edge forest to core forest is high (approximately 214 of the 386 acres – or 55%). Additionally, the central portion of the forest block, abutting the southern limits of the Project, is bisected by existing access roads. When factoring in forest areas currently influenced by edge effect, the aggregate amount of forest interior habitat is approximately 172 acres. This represents a small, relatively confined forest block that is less significant with respect to its importance for forest-dwelling birds when compared to a large core forest.

The Project area is located within the narrow, central corridor of the forest block and would require ±37 acres of clearing in this area, resulting in the removal of ±25 acres of interior forest and ±12 acres of edge forest. Please note that Project development would not affect the entire southern portion of the existing interior forest block that extends off-site, leaving this forest block intact. Similarly, the entire northern (off-site) forest block total acreage remains the same as it will not be directly affected by construction; however, approximately eight (8) acres of interior forest would covert to edge forest. See the attached graphic, Proposed Contiguous Forest Map.

Where feasible, the existing understory will be preserved to promote the establishment of "soft" ecotone transitional areas to enhance wildlife use of the forest edges. Establishing this transitional zone allows for continued use of edge upland forest habitat post-construction.

Therefore, in the interest of maintaining a transparent and a collaborate relationship with the Department, Revity would like the opportunity to discuss the Project and any associated impacts on core forest resources with the Department and its Forestry Division. In the upcoming weeks, Revity will contact the Department to arrange for a meeting in which Revity will more thoroughly present the Project. Should

the Department have any questions regarding this request or the Project, please do not hesitate to contact me.

Very truly yours,

Bruce L. McDermott

cc: Christopher Martin, DEEP
Ryan Palumbo, Revity Energy, LLC



Legend

- Site
- Project Area
- Town Line

Existing Forest Block (+/-386 Acres)

Type:

- Edge Forest (+/-214 Acres)
- Interior Forest (+/-172 Acres)

**Existing Forest within the Project Area:*
+/-16 Acres of Interior Forest
+/-26 Acres of Edge Forest

N
W E
S

1,000 500 0 1,000 Feet

Existing Contiguous Forest Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Map Notes:
Base Map Source: CTECO 2016 Aerial Photograph
Map Scale: 1 inch = 900 feet
Map Date: September 2019

REVITY ENERGY

ALL-POINTS TECHNOLOGY CORPORATION



Legend

- Site
- Project Area
- Town Line

Proposed Forest Block (+/-349 Acres)

Type:

- Edge Forest (+/-202 Acres)
- Interior Forest (+/-147 Acres)

**Proposed Forest remaining within the Project Area: +/-5 Acres of Edge Forest*

N W E S

Proposed Contiguous Forest Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Map Notes:
Base Map Source: CTECO 2016 Aerial Photograph
Map Scale: 1 inch = 900 feet
Map Date: September 2019

1,000 500 0 1,000 Feet

REVITY ENERGY

ALL-POINTS TECHNOLOGY CORPORATION

Christopher Martin December 4, 2019
Connecticut Department of Environmental Protection
Bureau of Natural Resources Wildlife Division
79 Elm Street
Hartford, CT 06106-5127

Re: Revity Energy, LLC's Request for No Material Impact Letter
Snake Meadow Road
Plainfield, Connecticut

Dear Mr. Martin,

Thank you again for meeting with our Project team. We found the discussion productive. As follow up, I am responding to three items raised during the meeting, including core forest mapping, invasive species, and Natural Diversity Data Base ("NDDB") consultations.

Core Forest Mapping

As requested, we are providing you with the attached screen shot of the Department's *Forestland Habitat Impact Mapping* which depicts core forest in the area our Site location east of Snake Meadow Road. As documented in our October 7, 2019 letter to Commissioner Dykes and discussed at our meeting, the mapping does not include our Site within an area mapped as core forest.

Invasive Species

Noting comments raised at our meeting, Revity Energy, LLC ("Revity") intends to address invasive species management primarily through preventative means.

Revity recognizes that during Project-related construction activities on the Site, the resulting soil disturbance may create the opportunity for invasive plant species to invade and become established, thereby out competing desirable native plant species. Accordingly, Revity believes that taking certain preventative measures to avoid/minimize the introduction of invasive plant species represents an effective management technique for this Project.

One such preventive measure would be to immediately reclaim disturbed areas with the planting of native species. A pollinator-friendly seed mix (certified "weed-free"), consisting of New England Showy Wildflower Mix (New England Wetland Plants, Inc., or an approved equivalent) is proposed. This seed mix includes a selection of native wildflowers and grasses that will create a wildflower meadow and support a wide variety of pollinator species, as well as encouraging a weed-resistant habitat. To further discourage the establishment of invasive species, disturbed soils will be immediately seeded and mulched. If soils need to be changed to promote healthy root and foliage growth, Revity will use compost or an organic slow release fertilizer. Revity will avoid the use of commercial fertilizers, as weed growth is often encouraged and these products also reduce the ability to establish native plantings due to excessive nitrogen release. As another means of control, contractors will be required to clean their respective equipment prior to entering the Site to avoid introducing undesirable non-native plant seeds.
Currently, the Project Site is generally void of invasive plant species, as the understory and herbaceous layers primarily consist of native upland species. The exception is Japanese barberry (Berberis thunbergii), which is present in the understory throughout the Project area. As a result, it not practical to attempt to manage the potential spread of Japanese barberry during construction activities. Once clearing, grubbing and equipment installation are completed, the disturbed areas will be immediately planted and permanently stabilized.

Revity's Operation and Maintenance plan would include provisions for mowing areas within the interior of the facility two times per year and, for those areas outside of the perimeter fence rotational mowing every four (4) to seven (7) years. This should be sufficient to discourage the (re)establishment/proliferation of invasive species.

NDDB Consultations

Revity reviewed the most recent CTDEEP NDDB mapping (June 2019) to determine if any such species or habitats occur within the vicinity of the Site. According to the available CTDEEP NDDB maps, the Site is not located within 0.25 mile of a NDDB buffer area. The nearest NDDB buffer area is located approximately 0.92 mile to the southeast. Relying on the Department's criteria, there is no need to consult with the NDDB for this Project. We have included a graphic depicting the nearest NDDB buffer area to the Project as an attachment.

Recognizing that the NDDB maps are intended as a useful tool in prescreening project site, we understand that they are not considered to be definitive assessment of conditions at a given site because it includes those species and habitats known to exist and have been reported to DEEP. As a result, Revity undertook extensive field reconnaissance and surveys during spring and late-summer to document existing habitat and evaluate potential wildlife use of the Site during critical migration, breeding and foraging times of the year. No listed species were observed on the Site. As a result, we are confident that the Project will not result in an adverse impact to listed species or critical habitat.

Closing

I would like to reiterate that Revity met with staff of the Water Permitting and Enforcement Division Bureau of Materials Management and Compliance Assurance earlier this year to introduce the Project and obtain initial feedback and guidance. Revity subsequently designed the Project to comply with the Department's Appendix I, Stormwater Management at Solar Array Construction Projects. The Project will require a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. As discussed, we intend to submit an application for that permit soon after submitting the Petition to the Siting Council, allowing Revity to incorporate any suggestions forthcoming from the Council.

On behalf of Revity, we appreciate the Department's input and counsel and again would like to extend our thanks for taking the time to meet with the Project team.

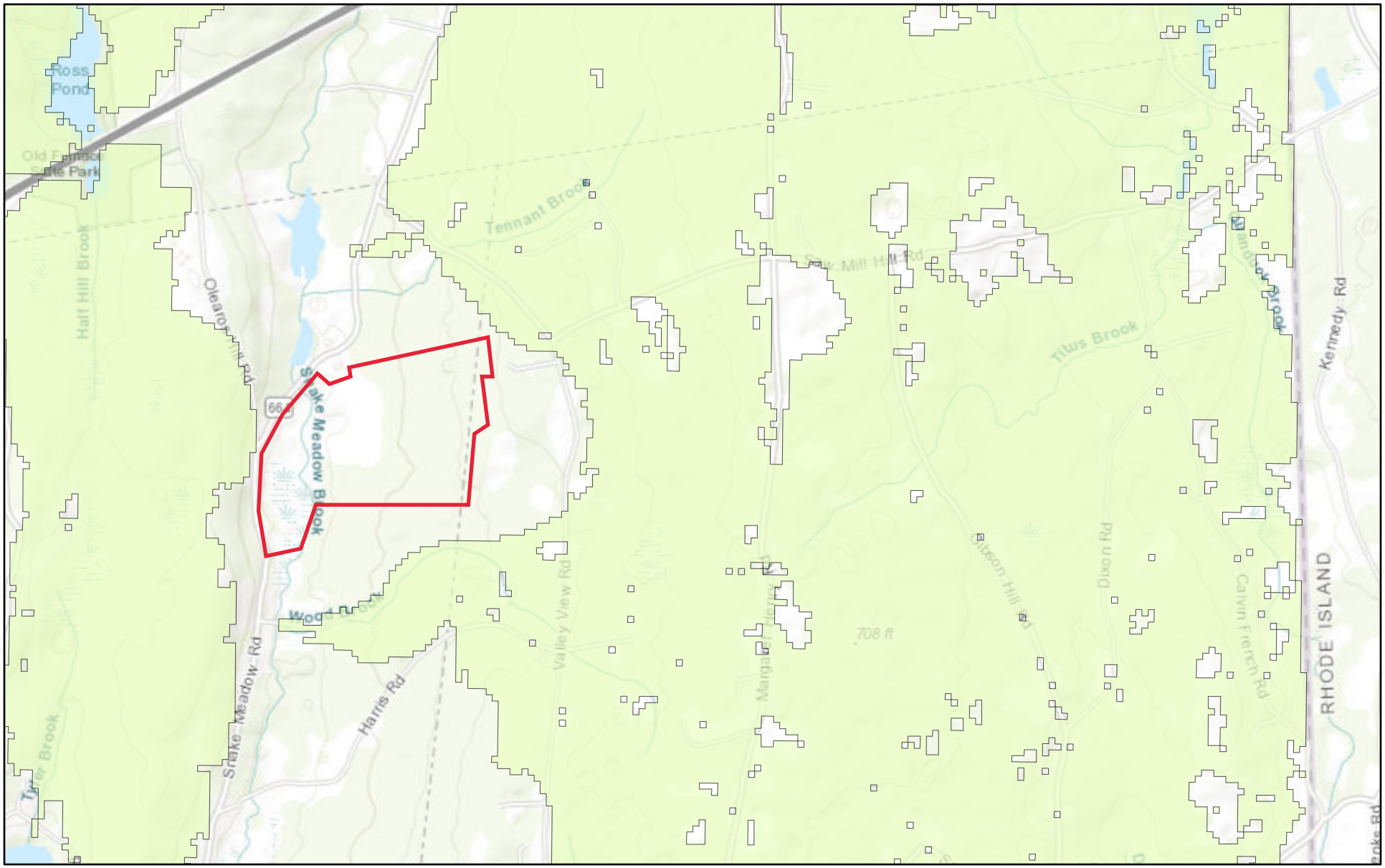
Sincerely,

Michael Libertine

Michael Libertine
Director, Environmental Siting and Permitting

Attachment

Forestland Habitat Impact Map



11/19/2019, 5:24:33 PM

Forestland Habitat Impact

Site

1:36,112

0 0.23 0.45 0.9 mi

0 0.35 0.7 1.4 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

Web AppBuilder for ArcGIS

DEEP Wildlife Division

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\DiPrete_Engineering\Plainfield_Sterling_CT\mxd\NDDB Attachment A.mxd



Legend

- Site
- Natural Diversity Database (updated December 2018)
- Town Line

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Map, East Killingly, CT (1974) and Oneco, CT (1970)
Map Scale: 1:24,000
Map Date: February 2019

1,000 500 0 1,000 Feet

NDDB
Attachment A: Overview Map

Southern Sky Renewable Energy Rhode Island, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

ALL-POINTS TECHNOLOGY CORPORATION

APPENDIX E

Wetland & Vernal Pool

Protection Plan

ENVIRONMENTAL NOTES - Wetland and Vernal Pool Protection Plan

As a result of the proposed development's location in the vicinity of wetlands and vernal pool habitat, the following Best Management Practices ("BMPs") are recommended to avoid unintentional impact to wetland habitats or mortality to vernal pool herpetofauna (i.e., spotted salamander, wood frog, turtles, etc.) during construction activities. This plan includes elements that will protect herpetofauna should construction activities occur during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to September 15th]) as well as wetland habitats regardless of the time of year. These BMPs will be incorporated into the construction drawings to ensure the Contractor is fully aware of the Project's environmentally sensitive setting.

It is of the utmost importance that Revity Energy LLC's selected contractor ("Contractor") complies with the requirements of this protection plan. All-Points Technology Corp. ("APT") will serve as the "Environmental Monitor" for this Project to ensure that these BMPs are implemented properly. The Contractor shall contact Matthew Gustafson, APT's Wetland Scientist, at least 5 business days prior to pre-construction mobilization. Mr. Gustafson can be reached by phone at (860) 552-2041 or via email at mgustafson@allpointstech.com.

The proposed wetland and vernal pool protection program consists of several components including: isolation of the construction area perimeter; periodic inspection and maintenance of erosion controls and isolation structures; herpetofauna sweeps; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting. Complete details of the recommended BMPs are provided below,

1. **Erosion and Sedimentation Controls**

    a. Plastic netting with large mesh openings (> ¼") used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the Project. Temporary erosion control products that will be exposed at the ground surface represent a potential for wildlife entanglement will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (i.e., net less) or netting with a mesh size <¼" such as that typically used in compost filter socks to avoid/minimize wildlife entanglement.

    b. Installation of erosion and sedimentation controls, required for erosion control compliance and creation of a barrier to possible migrating/dispersing herpetofauna, shall be performed by the Contractor following clearing activities and prior to any earthwork. The Environmental Monitor will inspect the work zone area prior to and following erosion control barrier installation to ensure the area is free of herpetofauna and satisfactorily installed. The intent of the barrier is to segregate the majority of the work zone from migrating/dispersing herpetofauna. Oftentimes complete isolation of a work zone is not feasible due to accessibility needs and locations of staging/material storage areas, etc. In those circumstances, the barriers will be positioned to deflect migrating/dispersal routes away from the work zone to minimize potential encounters with herpetofauna.

    c. If a staging area for equipment, vehicles or construction materials is required for this Project, such area(s) shall be located outside of any wetland resource Buffer Zone and surrounded by silt fence to isolate the area from possible migrating herpetofauna.

    d. All erosion control measures shall be removed within 30 days of completion of work and permanent stabilization of site soils so that herpetofauna movements between uplands and wetlands are not restricted.

2. Contractor Education:

a. Prior to work on site and initial deployment/mobilization of equipment and materials, the Contractor shall attend an educational session at the pre-construction meeting with the Environmental Monitor. This orientation and educational session will consist of information such as, but not limited to: representative photographs of typical herpetofauna that may be encountered, rare that could be encountered (if possible), typical species behavior, and proper procedures to protect such species if they are encountered. The meeting will further emphasize the non-aggressive nature of these species, the absence of need to destroy such animals and the need to follow Protective Measures as described in Section 4 below. The Contractor will designate one of its workers as the "Project Monitor", who will receive more intense training on the identification and proper handling of herpetofauna.

b. The Contractor will designate a member of its crew as the Project Monitor to be responsible for the daily "sweeps" for herpetofauna within the work zone each morning, during any and all transportation of vehicles along the access drive, and for any ground disturbance work. This individual will receive more intense training from the Environmental Monitor on the identification and protection of herpetofauna in order to perform sweeps. Any herpetofauna discovered will be reported to the Environmental Monitor, photographed if possible, and relocated outside the work zone in the general direction the animal was oriented.

c. The Environmental Monitor will also post caution signs throughout the Project site and maintain them for the duration of construction to provide notice of the environmentally sensitive nature of the work area, the potential for encountering various amphibians and reptiles and precautions to be taken to avoid injury to or mortality of these animals.

d. The Contractor will be provided with the Environmental Monitor's cell phone and email contact information to immediately report any encounters with herpetofauna.

3. Petroleum Materials Storage and Spill Prevention

a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the Project's location in proximity to sensitive wetland resources.

b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the Project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.

c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.
    i. Petroleum and Hazardous Materials Storage and Refueling
        1. Refueling of vehicles or machinery shall take place on an impervious pad with secondary containment designed to contain fuels.
        2. Any refueling drums/tanks or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.

    ii. Initial Spill Response Procedures
        1. Stop operations and shut off equipment.

2. Remove any sources of spark or flame.
3. Contain the source of the spill.
4. Determine the approximate volume of the spill.
5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
6. Ensure that fellow workers are notified of the spill.

iii. Spill Clean Up & Containment

1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
3. Isolate and eliminate the spill source.
4. Contact the appropriate local, state and/or federal agencies, as necessary.
5. Contact a disposal company to properly dispose of contaminated materials.

iv. Reporting

1. Complete an incident report.
2. Submit a completed incident report to local, state and federal agencies, as required.

4. Protective Measures

a. A thorough cover search of the construction area will be performed by the Environmental Monitor for herpetofauna prior to and following installation of erosion control measures/silt fencing barriers to remove any species from the work zone prior to the initiation of construction activities. Any herpetofauna discovered would be relocated outside the work zone in the general direction the animal was oriented. Periodic inspections will be performed by the Environmental Monitor throughout the duration of construction.

b. The Contractor's Project Monitor will inspect the work area each morning and escort initial vehicle access into the site each morning along the access drive to visually inspect for any herpetofauna. Any herpetofauna discovered would be relocated outside the work zone in the general direction the animal was oriented.

c. Any herpetofauna requiring relocation out of the work zone will be captured with the use of a net or clean plastic bag that has been moistened with clean water for careful handling and placement out of the work zone in the general direction it was observed heading.

d. Any stormwater management features, ruts or artificial depressions that could hold water created intentionally or unintentionally by site clearing/construction activities will be properly filled in and permanently stabilized with vegetation to avoid the creation of vernal pool "decoy pools" that could intercept amphibians moving toward the vernal pools. Stormwater management features such as level spreaders will be carefully reviewed in the field to ensure that standing water does not endure for more than a 24-hour period to avoid creation of decoy pools and may be subject to field design changes. Any such proposed design changes will be reviewed by the design engineer to ensure stormwater management functions are maintained.

5. Reporting

a. Inspection reports (brief narrative and applicable photos) will be prepared by the Environmental Monitor documenting each inspection and submitted to Revity Energy LLC for compliance verification. Any non-compliance observations of erosion control measures or evidence of erosion or sediment release will be immediately reported to Revity Energy LLC and its Contractor and included in the reports. Revity Energy LLC is responsible for any notifications to the Connecticut Siting Council.

b. Any observations of rare species will be reported to the Connecticut Department of Energy and Environmental Protection's Natural Diversity Data Base Program.

c. Following completion of the Project, a summary report will be prepared by the Environmental Monitor documenting compliance with this Wetland and Vernal Pool Protection Plan and submitted to Revity Energy LLC, who shall submit a copy to the Connecticut Siting Council.

APPENDIX F

USFWS & NDDB

Compliance Letter

USFWS & NDDB Compliance Determination

Date: March 26, 2020

Re: Proposed Southern Sky Renewable Energy RI, LLC Solar Project
Snake Meadow Road
Plainfield/Sterling, CT
Lat: 41.757865° N
Long: -71.847246° W

On behalf of Southern Sky Renewable Energy RI, LLC ("Southern Sky"), All-Points Technology Corporation, P.C. ("APT") performed an evaluation with respect to possible federally- and state-listed, threatened, endangered or special concern species in order to determine if the proposed referenced large scale photovoltaic solar facility ("Facility") would result in a potential adverse effect to listed species.

The proposed Facility is located along the east side of Snake Meadow Road in Plainfield, Windham County, Connecticut at a former sand and gravel pit. The Site is comprised of two (2) parcels of land. The majority of the Site (±157 acres) is located in the Town of Plainfield. The extreme eastern portion of the Site (consisting of ±8 acres) extends into the adjacent Town of Sterling. Site is accessed from Snake Meadow Road and an existing gravel driveway extends eastward onto the Site from Snake Meadow Road.

USFWS The federal consultation was completed in accordance with Section 10 of the Endangered Species Act ("ESA") through the U.S. Fish and Wildlife Service's ("USFWS") Information, Planning, and Conservation System ("IPaC"). Based on the results of the IPaC review, one federally-listed[1] threatened species is known to occur in the vicinity of the subject property documented as the northern long-eared bat ("NLEB"; *Myotis septentrionalis*). As a result of this preliminary finding, APT performed an evaluation to determine if the proposed referenced Facility would result in a likely adverse effect to NLEB.

The proposed Facility would be located partially within a mixed oak-pine forest that would result in forest clearing to accommodate the Facility and avoid shading impacts. The project is not located near known NLEB hibernacula or maternity roost trees. A review of the Connecticut Department of Energy & Environmental Protection ("CTDEEP") Wildlife Division Natural Diversity Data Base ("NDDB") NLEB habitat map[2] revealed that the proposed Facility is not within 150 feet of a known occupied maternity roost tree and is not within 0.25 mile of a known NLEB hibernaculum. The nearest NLEB habitat resource to the proposed activity is located in East Granby ±47 miles to the northwest. Therefore, the proposed Facility is not anticipated to result in an adverse impact to NLEB.

APT submitted the USFWS's Northern Long Eared Bat final 4(d) rule Streamlined Consultation Form on February 8, 2019 under the consultation framework that allows federal agencies to rely upon the USFWS January 5, 2016, intra-Service Programmatic Biological Opinion ("BO") on the Final 4(d) Rule for the NLEB

[1] Listing under the federal Endangered Species Act

[2] *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance* map. February 1, 2016.

for ESA Section 10 compliance. If the USFWS does not respond within 30 days from submittal of this form (30-day shot clock expired March 8, 2019), one may presume that USFWS determination is informed by the best available information and that Southern Sky's project responsibilities under ESA Section 10 with respect to the NLEB are fulfilled through the USFWS' BO. No response was received from USFWS; therefore, the project will have no effect on NLEB. APT performed an updated IPaC review on March 25, 2020 and again only NLEB was identified in the project vicinity. As a result, updating the previous USFWS NLEB consultation is not required.

In addition, Southern Sky would consider following voluntary NLEB conservation measures as noted below and encouraged by USFWS, as the project schedule allows.

- Conduct tree removal activities outside of the NLEB pup season (June 1-July 31) and/or active season (April 1-October 31) to minimize the chance of impacting unidentified maternity roosts.
- Avoid clearing suitable spring staging and fall swarming habitat within a five-mile radius of known or assumed NLEB hibernacula during the staging and swarming seasons (April 1-May 15 and August 15-November 14, respectively). NOT APPLICABLE.
- Maintain dead trees (snags) and large trees when possible.
- Use herbicides and pesticides only if unavoidable. If necessary, spot treatment is preferred over aerial application.
- Minimize exterior lighting, opting for down-shielded, motion-sensor security lights instead of constant illumination or other light minimization measures.

NDDB No known areas of state-listed species are currently depicted on the most recent CTDEEP NDDB Maps in the location of the proposed Facility or within a 0.25 mile to the proposed development. Please refer to the enclosed NDDB Map which depicts the nearest NDDB buffer ±0.92 mile southeast of the subject property. Since the proposed Facility and subject property are not located within a NDDB buffer area, consultation with DEEP is not required in accordance with their review policy[3]. Also, since the NDDB buffer area is located more than a 0.25-mile away, consultation with DEEP is not require in accordance with the Connecticut Siting Council's review policy.

Therefore, the proposed Southern Sky development is not anticipated to adversely impact any federal or state threatened, endangered or special concern species.

If you have any questions regarding the above-referenced information, please feel free to contact me by telephone at (860) 663-1697 ext. 201 or via email at dgustafson@allpointstech.com.
Sincerely,

Dean Gustafson
Senior Biologist

Enclosure

[3] DEEP Requests for NDDB State Listed Species Reviews. http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323466&deepNav_GID=1628%20

NDDB Map

C:\Users\NicoleCastro\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Revity_Energy\Plainfield_Sterling_CT\mxd\NDDB Attachment A.mxd



Legend

- Site
- Natural Diversity Database (updated Dec 2019)
- Town Line

NDDB Overview Map

Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Map, East Killingly, CT (1974) and Oneco, CT (1970)
Map Scale: 1:24,000
Map Date: March 2020

1,000 500 0 1,000 Feet

REVITY ENERGY

ALL-POINTS TECHNOLOGY CORPORATION

APPENDIX G

Phase IA Cultural Resources Assessment Survey and SHPO Determination Letter

FEBRUARY 2019

PHASE IA CULTURAL RESOURCES ASSESSMENT SURVEY OF A PROPOSED SOLAR FACILITY IN PLAINFIELD AND STERLING, CONNECTICUT

PREPARED FOR:

ALL-POINTS TECHNOLOGY CORPORATION

3 SADDLEBROOK DRIVE,
KILLINGLY, CONNECTICUT 06419

PREPARED BY:

HERITAGE CONSULTANTS

P.O. BOX 310249
NEWINGTON, CONNECTICUT 06131

ABSTRACT

This report presents the results of a Phase IA cultural resources assessment survey for a proposed solar facility in Plainfield and Sterling, Connecticut. Revity Solar, LLC, through its contractor All-Points Technology Corporation, requested that Heritage Consultants, LLC complete a Phase IA cultural resources assessment survey as part of the planning process for the proposed solar energy facility. Heritage conducted a Phase IA cultural resources assessment survey of the portion of the project parcel identified as the limit of work (LOW). The LOW is bordered on the north, east, and south by forested areas, and on the west by a sand and gravel area situated on the eastern side of Snake Meadow Road. Heritage completed the fieldwork for this investigation on behalf of All-Points Technology Corporation in 2018.

A review of historic maps and aerial images of the project parcel and the LOW, an examination of files maintained by the Connecticut State Historic Preservation Office, and pedestrian survey of the proposed solar facility area revealed that the LOW is not located in the immediate vicinity of any National or State Register of Historic Places properties or historic standing structures. Thus, it is anticipated that no historic built resources will be impacted by construction of the solar facility. In terms of archaeological potential, pedestrian survey of the LOW revealed that the western portion has been altered by sand and gravel operations in the past. In addition, there are existing access roads and other disturbed areas in the northern, eastern, and southernmost portions of the LOW. As a result, it was determined that these areas no longer retain intact soil deposits or the potential to yield intact cultural deposits. No additional archaeological examination of these no/low sensitivity areas is recommended prior to construction of the solar facility. In contrast, the central portion of the LOW appears to contain intact soils deposit, low slopes, and proximity to Snake Meadow Brook; thus, this portion of the LOW has been determined to retain a moderate/high potential to produce intact cultural deposits.

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CHAPTER I
INTRODUCTION

This report presents the results of a Phase IA cultural resources assessment survey for a proposed solar facility at 424 Snake Meadow Road in Plainfield, Connecticut (Figure 1). Revity Solar, LLC, working through its contractor, All-Points Technology Corporation, P.C. (All-Points), has requested that Heritage Consultants, LLC (Heritage) complete the current assessment survey as part of the planning process for the proposed solar energy facility. Heritage completed the fieldwork for this investigation in October of 2018. All work associated with this investigation was performed in accordance with National Historic Preservation Act of 1966, as amended; the National Environmental Policy Act of 1969, as amended, and; the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987) promulgated by the Connecticut Historic Commission, State Historic Preservation Office.

Project Description and Methods Overview

The parcel on which the solar facility is planned encompasses 182.3 acres of land; however, much of this area is not suitable for development of the solar facility. The constructible acreage is located in the center and northeastern portions of the large parcel and for the purposes of this investigation is referred to throughout this report as the limit or work (LOW) (Figure 2). The total fenced area for solar modules, including interrow spacing, will be ±58.4 acres, while the total area for the limit of disturbance will be ±83.0 acres of land. While access to the project area is located in Plainfield, a small portion of the project (east) is located in the town of Sterling, Connecticut. The 14.375 MW facility with one service interconnection point will utilize a ground mounted, pile driven, racking system surrounded by a security fence.

The current Phase IA cultural resources assessment survey consisted of the completion of the following tasks: 1) a contextual overview of the area's prehistory, history, and natural setting (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously recorded archaeological sites, as well as National and State Register of Historic Places properties/districts and historic standing structure, in the vicinity of the LOW; 3) a review of readily available historic maps and aerial imagery depicting the project area to identify potential historic resources and/or areas of past disturbance; 4) pedestrian survey and photo-documentation of the LOW to determine its archaeological sensitivity, as well as to record any historic built resources within the project area; and 5) preparation of the current Phase IA assessment survey report.

Project Results and Management Recommendations Overview

During the current Phase IA cultural resources assessment survey, Heritage reviewed historic maps and aerial images of the project parcel and the LOW associated with the proposed undertaking, as well as files maintained by the Connecticut State Historic Preservation Office. Heritage staff also completed pedestrian survey of the proposed solar facility area. The background research and field efforts revealed that there are no National or State Register of Historic Places properties or historic standing structures located in the vicinity of the LOW. Thus, no historic built resources will be impacted by construction of the solar facility.

In order to determine the archaeological potential of the LOW, Heritage staff completed visual reconnaissance of the area and recorded current landscape conditions. The pedestrian survey revealed that the western portion of the LOW has been radically altered by sand and gravel operations in the past. In addition, existing access roads and other disturbed areas were recorded in the northern, eastern, and

southernmost portions of the LOW. These previously disturbed areas no longer retain intact soil deposits or the potential to yield intact cultural deposits, and no additional archaeological examination of them is recommended prior to construction of the solar facility. In contrast, pedestrian survey of the central portion of the LOW revealed the presence of apparently intact soils deposit, low slopes, and proximity to Snake Meadow Brook; thus, this portion of the LOW has been determined to retain a moderate/high potential to produce intact cultural deposits.

Project Personnel

Key personnel for this project included Mr. David R. George, M.A., R.P.A, who acted as Principal Investigator. He was assisted by Mr. Cory Atkinson, M.A., who assisted in the field review portion of the project. Mr. George also was assisted by Mr. Stephen Anderson and Mr. William Keegan, B.A., who provided GIS support services and project mapping. Finally, Ms. Kristen Keegan completed this historic background research of the project and contributed to the final report.

Organization of the Report

The natural setting of the region encompassing the LOW is presented in Chapter II; it includes a review of the geology, hydrology, and soils, of the project region. The prehistory of the project region is outlined in Chapter III. The history of the region encompassing the project area is discussed in Chapter IV, while previously identified cultural resources near the LOW are reviewed in Chapter V. The methods used to complete this investigation are discussed in Chapter VI. Finally, the results of this investigation are presented in Chapter VII, and management recommendations are contained in Chapter VIII.

CHAPTER II
NATURAL SETTING

Introduction

This chapter provides a brief overview of the natural setting of the region containing the proposed solar facility in Plainfield and Sterling, Connecticut. Previous archaeological research throughout southern New England has documented that a few specific environmental factors can be associated with both prehistoric and historic period site selection. These include general ecological conditions, as well as types of fresh water sources, soils, and slopes present in the area. The remainder of this section provides a brief overview of the ecology, hydrological resources, and soils present within the project area and the larger region in general.

Ecoregions of Connecticut

Throughout the Pleistocene and Holocene Periods, Connecticut has undergone numerous environmental changes. Variations in climate, geology, and physiography have led to the "regionalization" of Connecticut's modern environment. It is clear, for example, that the northwestern portion of the state has very different natural characteristics than the coastline. Recognizing this fact, Dowhan and Craig (1976), as part of their study of the distribution of rare and endangered species in Connecticut, subdivided the state into various ecoregions. Dowhan and Craig (1976:27) defined an ecoregion as:

> "an area characterized by a distinctive pattern of landscapes and regional climate as expressed by the vegetation composition and pattern, and the presence or absence of certain indicator species and species groups. Each ecoregion has a similar interrelationship between landforms, local climate, soil profiles, and plant and animal communities. Furthermore, the pattern of development of plant communities (chronosequences and toposequences) and of soil profile is similar in similar physiographic sites. Ecoregions are thus natural divisions of land, climate, and biota."

Dowhan and Craig defined nine major ecoregions for the State of Connecticut. They are based on regional diversity in plant and animal indicator species (Dowhan and Craig 1976). Only one of the ecoregions is germane to the current investigation: Northeast Hills Ecoregion. A summary of this ecoregion is presented below. It is followed by a discussion of the hydrology and soils found in and adjacent to the project area.

Northeast Hills Ecoregion

The Northeast Hills ecoregion consists of a hilly upland terrain located between approximately 40.2 and 88.5 km (25 and 55 mi) to the north of Long Island Sound (Dowhan and Craig 1976). It is characterized by streamlined hills bordered on either side by local ridge systems, as well as broad lowland areas situated near large rivers and tributaries. Physiography in this region is composed of a series of north-trending ridge systems, the western-most of which is referred to as the Bolton Range and the eastern-most as the Mohegan Range (Bell 1985:45). Elevations in the Northeast Hills range from 121.9 to 243.8 m (400 to 800 ft) above sea level, reaching a maximum of nearly 304.8 m (1,000 ft) above sea level near the Massachusetts border (Bell 1985). The bedrock of the region is composed of Schist and gneiss created during the Paleozoic as well as gneiss and granite created during the Precambrian period (Bell 1985). Soils in uplands areas have been deposited on top of glacial till and in the valley they consist of stratified deposits of sand, gravel, and silt (Dowhan and Craig 1976).

Hydrology of the Study Region

The LOW is located within close proximity to several streams, ponds and wetlands. These fresh water sources include Snake Meadow Brook, which runs from north to south through the western portion of the project parcel, Tenant Brook to the north, Half Hill Brook to the west, and Wood Brook to the southern, as well as a number of unnamed wetlands and stream in the larger region. Previously completed archaeological investigations in Connecticut have demonstrated that streams, rivers, and wetlands were focal points for prehistoric occupations because they provided access to transportation routes, sources of freshwater, and abundant faunal and floral resources. These water sources also provided the impetus for the construction of water powered mill facilities during the eighteenth and nineteenth centuries.

Soils Comprising the LOW

Soil formation is the direct result of the interaction of several variables, including climate, vegetation, parent material, time, and organisms present (Gerrard 1981). Once archaeological deposits are buried within the soil, they are subject to many diagenic processes. Different classes of artifacts may be preferentially protected, or unaffected by these processes, whereas others may deteriorate rapidly. Cyclical wetting and drying, freezing and thawing, and compression can accelerate chemically and mechanically the decay processes for animal bones, shells, lithics, ceramics, and plant remains. Lithic and ceramic artifacts are largely unaffected by soil pH, whereas animal bones and shells decay more quickly in acidic soils such as those that are present in within the current project area. In contrast, acidic soils enhance the preservation of charred plant remains.

A review of the soils within the LOW is presented below. It is characterized by four soil types, including Ridgebury, Leicester, and Whitman; Hinckley; Canton and Charlton; and Charlton-Chatfield soils (Figure 3). The profiles of these soil types are described briefly below. Data regarding them was collected from the National Resources Conservation Service (https://soilseries.sc.egov.usda.gov)

<u>Ridgebury, Leicester, and Whitman Soils</u>:

A typical soil profile for Ridgebury, Leicester, and Whitman contains the following profile: **A**--0 to 13 cm; black (N 2/0) fine sandy loam; weak medium and coarse granular structure; friable; many very fine, fine and medium tree roots; 5 percent gravel and 5 percent cobbles; very strongly acid; abrupt smooth boundary; **Bw**--13 to 23 cm; brown (10YR 4/3) sandy loam; weak medium subangular blocky structure; friable; few fine tree roots; 5 percent gravel and 5 percent cobbles; very strongly acid; abrupt wavy boundary; **Bg**--23 to 46 cm; dark gray (10YR 4/1) gravelly sandy loam; massive; friable; 10 percent gravel and 5 percent cobbles; common fine prominent yellowish brown (10YR 5/6) and common medium distinct reddish brown (5YR 4/4) masses of iron accumulation; very strongly acid; gradual wavy boundary; and **Cd**--46 to 165 cm; gray (5Y 5/1) gravelly sandy loam; massive; firm; 10 percent gravel and 5 percent cobbles; common fine prominent reddish yellow (7.5YR 6/8) masses of iron accumulation; very strongly acid**.**

<u>Hinckley:</u>

A typical soil profile for Hinckley contains the following profile: **Oe** -- 0 to 3 cm; moderately decomposed plant material derived from red pine needles and twigs; **Ap** -- 3 to 20 cm; very dark grayish brown (10YR 3/2) loamy sand; weak fine and medium granular structure; very friable; many fine and medium roots; 5 percent fine gravel; very strongly acid; abrupt smooth boundary; **Bw1** -- 20 to 28 cm; strong brown (7.5YR 5/6) gravelly loamy sand; weak fine and medium granular structure; very friable; common fine and medium roots; 20 percent gravel; very strongly acid; clear smooth boundary; **Bw2** -- 28 to 41 cm; yellowish brown (10YR 5/4) gravelly loamy sand; weak fine and medium granular structure; very friable; common fine and medium roots; 25 percent gravel; very strongly acid; clear irregular boundary; BC -- 41 to 48 cm; yellowish brown (10YR 5/4) very gravelly sand; single grain; loose; common fine and medium roots; 40 percent gravel; strongly acid; clear smooth boundary; and **C** -- 48 to 165 cm; light olive brown (2.5Y 5/4) extremely gravelly sand consisting of stratified sand,

gravel and cobbles; single grain; loose; common fine and medium roots in the upper 20 cm and very few below; 60 percent gravel and cobbles; moderately acid.

Canton and Charlton Soils:
A typical soil profile for Canton and Charlton soils contains the following profile: Oi-- 0 to 5 cm; slightly decomposed plant material; **A**-- 5 to 13 cm; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; friable; common fine roots; 5 percent gravel; very strongly acid; **Bw1**-- 13 to 30 cm; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 5 percent gravel; very strongly acid (pH 4.6); clear smooth boundary; **Bw2**-- 30 to 41 cm; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 5 percent gravel; strongly acid (pH 5.1); clear smooth boundary; **Bw3**-- 41 to 56 cm; yellowish brown (10YR 5/4) gravelly fine sandy loam; weak medium subangular blocky; friable; common fine and medium roots; 15 percent gravel; strongly acid (pH 5.1); abrupt smooth boundary; **2C**-- 56 to 170 cm; grayish brown (2.5Y 5/2) gravelly loamy sand; massive; friable; 25 percent gravel; moderately acid (pH 5.6).

Charlton-Chatfield Soils:
A typical soil profile for Charlton-Chatfield soils contains the following profile: **Oi** -- 0 to 3 cm, slightly decomposed leaf, needle, and twig litter; extremely acid, pH 4.2; **A** -- 3 to 5 cm, very dark gray (10YR 3/1) fine sandy loam, gray (10YR 5/1), dry; weak fine subangular blocky structure; friable; many fine and medium roots throughout; 5 percent mixed gravel and cobbles; very strongly acid, pH 4.5; abrupt smooth boundary; **Bw1**-- 5 to 33 cm, strong brown (7.5YR 5/6) gravelly fine sandy loam; weak fine subangular blocky structure; friable; common fine roots throughout and common medium roots throughout; 15 percent mixed gravel and cobbles; very strongly acid, pH 4.5; abrupt wavy boundary; **Bw2** -- 33 to 76 cm, strong brown (7.5YR 5/6) gravelly fine sandy loam; moderate medium subangular blocky structure; friable; few fine roots throughout; 20 percent mixed rock fragments; very strongly acid, pH 4.5; abrupt irregular boundary; and **2R** -- 76 cm; fractured slightly-weathered schist bedrock.

Summary
A review of mapping, geological data, ecological conditions, soils, slopes, and proximity to freshwater, suggests that portions of the LOW appear to be favorable to both prehistoric and historic period occupations. This includes areas of low to moderate slopes with well drained soils located near freshwater sources. The types of Native American sites that may be contained in these areas include task specific, temporary, or seasonal base camps, which may include areas of lithic tool manufacturing, hearths, post-molds and storage pits.

CHAPTER III
PREHISTORIC SETTING

Introduction

Prior to the late 1970s and early 1980s, very few systematic archaeological surveys of large portions of the state of Connecticut had been undertaken. Rather, the prehistory of the region was studied at the site level. As a result, a skewed interpretation of the prehistory of Connecticut was developed. It was suggested that the upland portions of the state, i.e., the northeastern and northwestern hills ecoregions, were little used and rarely occupied by prehistoric Native Americans, while the coastal zone, i.e., the eastern and western coastal and the southeastern and southwestern hills ecoregions, were the focus of settlements and exploitation in the prehistoric era. This interpretation remained unchallenged until the 1970s and 1980s when several town-wide and regional archaeological studies were completed. These investigations led to the creation of several archaeological phases that subsequently were applied to understand the prehistory of Connecticut. The remainder of this chapter provides an overview of the prehistoric setting of the region encompassing the current project area.

Paleo-Indian Period (12,000-10,000 B.P.)

The earliest inhabitants of the area encompassing the State of Connecticut, who have been referred to as Paleo-Indians, arrived in the area by ca. 12,000 B.P. (Gramly and Funk 1990; Snow 1980). Due to the presence of large Pleistocene mammals at that time and the ubiquity of large fluted projectile points in archaeological deposits of this age, Paleo-Indians often have been described as big-game hunters (Ritchie and Funk 1973; Snow 1980); however, as discussed below, it is more likely that they hunted a broad spectrum of animals.

While there have been numerous surface finds of Paleo-Indian projectile points throughout the State of Connecticut, only two sites, the Templeton Site (6-LF-21) in Washington, Connecticut and the Hidden Creek Site (72-163) in Ledyard, Connecticut, have been studied in detail and dated using the radiocarbon method (Jones 1997; Moeller 1980). The Templeton Site (6-LF-21) is in Washington, Connecticut and was occupied between 10,490 and 9,890 years ago (Moeller 1980). In addition to a single large and two small fluted points, the Templeton Site produced a stone tool assemblage consisting of gravers, drills, core fragments, scrapers, and channel flakes, which indicates that the full range of stone tool production and maintenance took place at the site (Moeller 1980). Moreover, the use of both local and non-local raw materials was documented in the recovered tool assemblage, suggesting that not only did the site's occupants spend some time in the area, but they also had access to distant stone sources, the use of which likely occurred during movement from region to region.

The only other Paleo-Indian site studied in detail in Connecticut is the Hidden Creek Site (72-163) (Jones 1997). The Hidden Creek Site is situated on the southeastern margin of the Great Cedar Swamp on the Mashantucket Pequot Reservation in Ledyard, Connecticut. While excavation of the Hidden Creek Site produced evidence of Terminal Archaic and Woodland Period components (see below) in the upper soil horizons, the lower levels of the site yielded artifacts dating from the Paleo-Indian era. Recovered Paleo-Indian artifacts included broken bifaces, side-scrapers, a fluted preform, gravers, and end-scrapers. Based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden Creek Site represented a short-term occupation, and that separate stone tool reduction and rejuvenation areas were present.

While archaeological evidence for Paleo-Indian occupation is scarce in Connecticut, it, combined with data from the West Athens Road and King's Road Site in the Hudson drainage and the Davis and Potts Sites in northern New York, supports the hypothesis that there was human occupation of the area not long after ca. 12,000 B.P. (Snow 1980). Further, site types currently known suggest that the Paleo-Indian settlement pattern was characterized by a high degree of mobility, with groups moving from region to region in search of seasonally abundant food resources, as well as for the procurement of high quality raw materials from which to fashion stone tools.

Archaic Period (10,000 to 2,700 B.P.)

The Archaic Period, which succeeded the Paleo-Indian Period, began by ca., 10,000 B.P. (Ritchie and Funk 1973; Snow 1980), and it has been divided into three subperiods: Early Archaic (10,000 to 8,000 B.P.), Middle Archaic (8,000 to 6,000 B.P.), and Late Archaic (6,000 to 3,400 B.P.). These periods were devised to describe all non-farming, non-ceramic producing populations in the area. Regional archeologists recently have recognized a final "transitional" Archaic Period, the Terminal Archaic Period (3,400-2,700 B.P.), which was meant to describe those groups that existed just prior to the onset of the Woodland Period and the widespread adoption of ceramics into the toolkit (Snow 1980; McBride 1984; Pfeiffer 1984, 1990; Witthoft 1949, 1953).

Early Archaic Period (10,000 to 8,000 B.P.)

To date, very few Early Archaic sites have been identified in southern New England. As a result, researchers such as Fitting (1968) and Ritchie (1969) have suggested a lack of these sites likely is tied to cultural discontinuity between the Early Archaic and preceding Paleo-Indian Period, as well as a population decrease from earlier times. However, with continued identification of Early Archaic sites in the region, and the recognition of the problems of preservation, it is difficult to maintain the discontinuity hypothesis (Curran and Dincauze 1977; Snow 1980).

Like their Paleo-Indian predecessors, Early Archaic sites tend to be very small and produce few artifacts, most of which are not temporally diagnostic. While Early Archaic sites in other portions the United States are represented by projectile points of the Kirk series (Ritchie and Funk 1973) and by Kanawha types (Coe 1964), sites of this age in southern New England are identified recognized on the basis of a series of ill-defined bifurcate-based projectile points. These projectile points are identified by the presence of their characteristic bifurcated base, and they generally are made from high quality raw materials. Moreover, finds of these projectile points have rarely been in stratified contexts. Rather, they occur commonly either as surface expressions or intermixed with artifacts representative of later periods. Early Archaic occupations, such as the Dill Farm Site and Sites 6LF64 and 6LF70 in Litchfield County, and are represented by camps that were relocated periodically to take advantage of seasonally available resources (McBride 1984; Pfeiffer 1986). In this sense, a foraging type of settlement pattern was employed during the Early Archaic Period.

Middle Archaic Period (8,000 to 6,000 B.P.)

By the onset of the Middle Archaic Period, essentially modern deciduous forests had developed in the region (Davis 1969). It is at this time that increased numbers and types of sites are noted in Connecticut (McBride 1984). The most well-known Middle Archaic site in New England is the Neville Site, which is in Manchester, New Hampshire and studied by Dincauze (1976). Careful analysis of the Neville Site indicated that the Middle Archaic occupation dated from between ca. 7,700 and 6,000 years ago. In fact, Dincauze (1976) obtained several radiocarbon dates from the Middle Archaic component of the Neville Site. The dates, associated with the then-newly named Neville type projectile point, ranged from 7,740±280 and 7,015±160 B.P. (Dincauze 1976).

In addition to Neville points, Dincauze (1976) described two other projectile point styles that are attributed to the Middle Archaic Period: Stark and Merrimac projectile points. While no absolute dates

were recovered from deposits that yielded Stark points, the Merrimac type dated from 5,910±180 B.P. Dincauze argued that both the Neville and later Merrimac and Stark occupations were established to take advantage of the excellent fishing that the falls situated adjacent to the site area would have afforded Native American groups. Thus, based on the available archaeological evidence, the Middle Archaic Period is characterized by continued increases in diversification of tool types and resources exploited, as well as by sophisticated changes in the settlement pattern to include different site types, including both base camps and task-specific sites (McBride 1984:96)

Late Archaic Period (6,000 to 3,700 B.P.)

The Late Archaic Period in southern New England is divided into two major cultural traditions that appear to have coexisted. They include the Laurentian and Narrow-Stemmed Traditions (Funk 1976; McBride 1984; Ritchie 1969a and b). Artifacts assigned to the Laurentian Tradition include ground stone axes, adzes, gouges, ulus (semi-lunar knives), pestles, atlatl weights, and scrapers. The diagnostic projectile point forms of this time period in southern New England include the Brewerton Eared-Notched, Brewerton Eared and Brewerton Side-Notched varieties (McBride 1984; Ritchie 1969a; Thompson 1969). In general, the stone tool assemblage of the Laurentian Tradition is characterized by flint, felsite, rhyolite and quartzite, while quartz was largely avoided for stone tool production.

In terms of settlement and subsistence patterns, archaeological evidence in southern New England suggests that Laurentian Tradition populations consisted of groups of mobile hunter-gatherers. While a few large Laurentian Tradition occupations have been studied, sites of this age generally encompass less than 500 m^2 (5,383 ft^2). These base camps reflect frequent movements by small groups of people in search of seasonally abundant resources. The overall settlement pattern of the Laurentian Tradition was dispersed in nature, with base camps located in a wide range of microenvironments, including riverine as well as upland zones (McBride 1978, 1984:252). Finally, subsistence strategies of Laurentian Tradition focused on hunting and gathering of wild plants and animals from multiple ecozones.

The second Late Archaic tradition, known as the Narrow-Stemmed Tradition, is unlike the Laurentian Tradition, and it likely represents a different cultural adaptation. The Narrow-Stemmed tradition is recognized by the presence of quartz and quartzite narrow stemmed projectile points, triangular quartz Squibnocket projectile points, and a bipolar lithic reduction strategy (McBride 1984). Other tools found in Narrow-Stemmed Tradition artifact assemblages include choppers, adzes, pestles, antler and bone projectile points, harpoons, awls, and notched atlatl weights. Many of these tools, notably the projectile points and pestles, indicate a subsistence pattern dominated by hunting and fishing, as well the collection of a wide range of plant foods (McBride 1984; Snow 1980:228; Wiegand 1978, 1980).

The Terminal Archaic Period (3,700 to 2,700 B.P.)

The Terminal Archaic, which lasted from ca. 3,700 to 2,700 BP, is perhaps the most interesting, yet confusing of the Archaic Periods in southern New England prehistory. Originally termed the "Transitional Archaic" by Witthoft (1953) and recognized by the introduction of technological innovations, e.g., broadspear projectile points and soapstone bowls, the Terminal Archaic has long posed problems for regional archeologists. While the Narrow-Stemmed Tradition persisted through the Terminal Archaic and into the Early Woodland Period, the Terminal Archaic is coeval with what appears to be a different technological adaptation, the Susquehanna Tradition (McBride 1984; Ritchie 1969b). The Susquehanna Tradition is recognized in southern New England by the presence of a new stone tool industry that was based on the use of high quality raw materials for stone tool production and a settlement pattern different from the "coeval" Narrow-Stemmed Tradition.

The Susquehanna Tradition is based on the classification of several Broadspear projectile point types and associated artifacts. There are several local sequences within the tradition, and they are based on projectile point type chronology. Temporally diagnostic projectile points of these sequences include the

Snook Kill, Susquehanna Broadspear, Mansion Inn, and Orient Fishtail types (Lavin 1984; McBride 1984; Pfeiffer 1984). The initial portion of the Terminal Archaic Period (ca., 3,700-3,200 BP) is characterized by the presence of Snook Kill and Susquehanna Broadspear projectile points, while the latter Terminal Archaic (3,200-2,700 BP) is distinguished by the use Orient Fishtail projectile points (McBride 1984:119; Ritchie 1971).

In addition, it was during the late Terminal Archaic that interior cord marked, grit tempered, thick walled ceramics with conoidal (pointed) bases made their initial appearance in the Native American toolkit. These are the first ceramics in the region and they are named Vinette I (Ritchie 1969a; Snow 1980:242); this type of ceramic vessel appears with much more frequency during the ensuing Early Woodland Period. In addition, the adoption and widespread use of soapstone bowls, as well as the implementation subterranean storage, suggests that Terminal Archaic groups were characterized by reduced mobility and longer-term use of established occupation sites (Snow 1980:250).

Finally, while settlement patterns appeared to have changed, Terminal Archaic subsistence patterns were analogous to earlier patterns. The subsistence pattern still was diffuse in nature, and it was scheduled carefully. Typical food remains recovered from sites of this period consist of fragments of white-tailed deer, beaver, turtle, fish and various small mammals. Botanical remains recovered from the site area consisted of *Chenopodium* sp., hickory, butternut and walnut (Pagoulatos 1988:81). Such diversity in food remains suggests at least minimal use of a wide range of microenvironments for subsistence purposes.

Woodland Period (2,700 to 350 B.P.)

Traditionally, the advent of the Woodland Period in southern New England has been associated with the introduction of pottery; however, as mentioned above, early dates associated with pottery now suggest the presence of Vinette I ceramics appeared toward the end of the preceding Terminal Archaic Period (Ritchie 1969a; McBride 1984). Like the Archaic Period, the Woodland Period has been divided into three subperiods: Early, Middle, and Late Woodland. The various subperiods are discussed below.

Early Woodland Period (ca., 2,700 to 2,000 B.P.)

The Early Woodland Period of the northeastern United States dates from ca. 2,700 to 2,000 B.P. and it has thought to have been characterized by the advent of farming, the initial use of ceramic vessels, and increasingly complex burial ceremonialism (Griffin 1967; Ritchie 1969a and 1969b; Snow 1980). In the Northeast, the earliest ceramics of the Early Woodland Period are thick walled, cord marked on both the interior and exterior, and possess grit temper.

Careful archaeological investigations of Early Woodland sites in southern New England have resulted in the recovery of narrow stemmed projectile points in association with ceramic sherds and subsistence remains, including specimens of White-tailed deer, soft and hard-shell clams, and oyster shells (Lavin and Salwen: 1983; McBride 1984:296-297; Pope 1952). McBride (1984) has argued that the combination of the subsistence remains and the recognition of multiple superimposed cultural features at various sites indicates that Early Woodland Period settlement patterns were characterized by multiple re-use of the same sites on a seasonal basis by small co-residential groups.

Middle Woodland Period (2,000 to 1,200 B.P.)

The Middle Woodland Period is marked by an increase in the number of ceramic types and forms utilized (Lizee 1994a), as well as an increase in the amount of exotic lithic raw material used in stone tool manufacture (McBride 1984). The latter suggests that regional exchange networks were established, and that they were used to supply local populations with necessary raw materials (McBride 1984; Snow 1980). The Middle Woodland Period is represented archaeologically by narrow stemmed and Jack's Reef projectile points; increased amounts of exotic raw materials in recovered lithic assemblages, including

chert, argillite, jasper, and hornfels; and conoidal ceramic vessels decorated with dentate stamping. Ceramic types indicative of the Middle Woodland Period includes Linear Dentate, Rocker Dentate, Windsor Cord Marked, Windsor Brushed, Windsor Plain, and Hollister Stamped (Lizee 1994a:200).

In terms of settlement patterns, the Middle Woodland Period is characterized by the occupation of village sites by large co-residential groups that utilized native plant and animal species for food and raw materials in tool making (George 1997). These sites were the principal place of occupation, and they were positioned close to major river valleys, tidal marshes, estuaries, and the coastline, all of which would have supplied an abundance of plant and animal resources (McBride 1984:309). In addition to villages, numerous temporary and task-specific sites were utilized in the surrounding upland areas, as well as in closer ecozones such as wetlands, estuaries, and floodplains. The use of temporary and task-specific sites to support large village populations indicates that the Middle Woodland Period was characterized by a resource acquisition strategy that can best be termed as logistical collection (McBride 1984:310).

Late Woodland Period (ca., 1,200 to 350 B.P.)

The Late Woodland Period in southern New England dates from ca., 1,200 to 350 B.P., and it is characterized by the earliest evidence for the use of corn in the lower Connecticut River Valley (Bendremer 1993; Bendremer and Dewar 1993; Bendremer et al. 1991; George 1997; McBride 1984); an increase in the frequency of exchange of non-local lithics (Feder 1984; George and Tryon 1996; McBride 1984; Lavin 1984); increased variability in ceramic form, function, surface treatment, and decoration (Lavin 1980, 1986, 1987; Lizee 1994a, 1994b); and a continuation of a trend towards larger, more permanent settlements in riverine, estuarine, and coastal ecozones (Dincauze 1974; McBride 1984; Snow 1980; Wiegand 1983).

Stone tool assemblages associated with Late Woodland occupations, especially village-sized sites, are functionally variable and they reflect plant and animal resource processing and consumption on a large scale. Finished stone tools recovered from Late Woodland sites include Levanna and Madison projectile points; drills; side-, end-, and thumbnail scrapers; mortars and pestles; nutting stones; netsinkers; and celts, adzes, axes, and digging tools. These tools were used in activities ranging from hide preparation to plant processing to the manufacture of canoes, bowls, and utensils, as well as other settlement and subsistence-related items (McBride 1984; Snow 1980). Finally, ceramic assemblages recovered from Late Woodland sites are as variable as the lithic assemblages. Ceramic types identified include Windsor Fabric Impressed, Windsor Brushed, Windsor Cord Marked, Windsor Plain, Clearview Stamped, Sebonac Stamped, Selden Island, Hollister Plain, Hollister Stamped, and Shantok Cove Incised (Lavin 1980, 1988a, 1988b; Lizee 1994a; Pope 1953; Rouse 1947; Salwen and Ottesen 1972; Smith 1947). These types are more diverse stylistically than their predecessors, with incision, shell stamping, punctation, single point, linear dentate, rocker dentate stamping, and stamp and drag impressions common (Lizee 1994a: 216).

Summary of Connecticut Prehistory

In sum, the prehistory of Connecticut spans from ca. 12,000 to 350 B.P., and it is characterized by numerous changes in tool types, subsistence patterns, and land use strategies. For most of the prehistoric era, local Native American groups practiced a subsistence pattern based on a mixed economy of hunting and gathering wild plant and animal resources. It is not until the Late Woodland Period that incontrovertible evidence for the use of domesticated species is available. Further, settlement patterns throughout the prehistoric era shifted from seasonal occupations of small co-residential groups to large aggregations of people in riverine, estuarine, and coastal ecozones. In terms of the region containing the proposed project area, a variety of prehistoric site types may be expected. These range from seasonal camps utilized by Archaic populations to temporary and task-specific sites of the Woodland era.

CHAPTER IV
HISTORIC OVERVIEW

As discussed in Chapter I of this report, the project parcel fronts on the eastern side of Snake Meadow Road on the town line between Plainfield and Sterling in Windham County, Connecticut, while the LOW is located to the east. Since the vast majority of the project parcel lies in Plainfield, this chapter focuses om the history of that town and the developments that occurred there and may have had influences on the development of the LOW over time.

Native American History of Plainfield

Plainfield was at one time known as the Quinebaug Country, a name that is still attached to the region's main river. The Quinebaug people once occupied the present-day areas of Canterbury and Plainfield, "caught fish in the river, grew corn along the banks, and hunted animals in the forests" (Bickford 1999:3). Prominent locations in Quinebaug Country had many different names, which were recorded by the colonists. Some names survived, such as Quinebaug, Moosup, and Egunk, while most others were transformed into English names like Cedar Swamp and Snake Meadow. In November of 1653, the Quinebaug sachem, a man named Hyems, sold all his land at "Pauteuxett" on both sides of the Quinebaug River to John Winthrop, Jr. While colonization of the area came later; the timing of this land purchase by the English sale was a political action because both Hyems and Winthrop distrusted Uncas and his Mohegan tribe, who were a major threat to the Quinebaug people in eastern Connecticut (Bickford 1999).

Other sales from the local tribes did not occur, because after King Philip's War in 1675-1676, the Mohegan tribe – allies of the colonial governments – successfully used the foreign English legal system to claim ownership of most of northeastern Connecticut either by inheritance or by virtue of their assistance in the 1637-1638 conquest of the Pequots. The portion of the region that would become Plainfield was part of the eastern end of the supposedly inherited section. Upon Uncas's death, his son Owaneco received the eastern half of the inherited lands and all of the conquered part. In 1680, and again in 1684, however, Owaneco deeded all his property to one of his English friends, a man name Captain James Fitch. Fitch's claim conflicted with Winthrop's earlier purchase, and legal disputes over this and other claims of Fitch and others lasted for decades thereafter (Bushman 1967). All of this took place without regard for the rights of the Native Americans who actually lived in the territory.

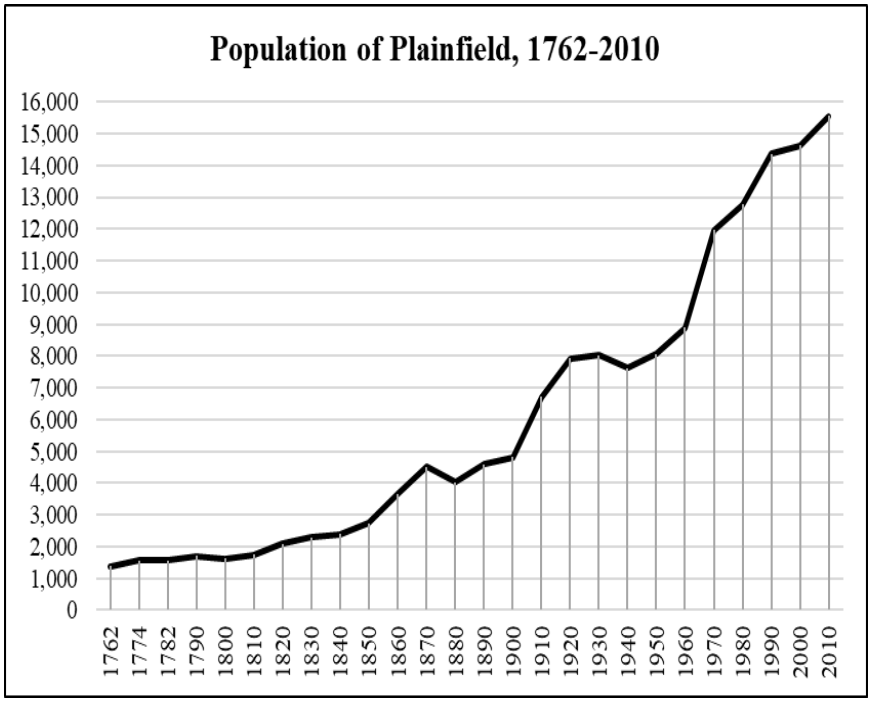
There were 400 or 500 Native Americans living in Plainfield when it was first colonized in ca., 1700, and they continued to live alongside the English for many years. According to a nineteenth-century source, "[t]hey ever lived peaceably with the English, and about the year 1745, in the time of the great awakening and reformation in New England, they became greatly affected with the truths of the Gospel, professed Christianity, and gave the strongest evidence of a real conversion to God" (Barber 1837:434-435). As of 1774, however, there were only 25 Native Americans remaining in Plainfield, and by the early 1850s one authority stated that all of them had moved from Windham and Tolland counties (De Forest 1852). Over this time, the colonial population of the region expanded greatly, ignoring Native Americans' rights and making their traditional lifeways difficult or impossible. As a result, by the end of the eighteenth century most native people relocated to less contested regions.

Colonial Era History of Plainfield (to 1790)

While there were a few colonial families living in the area of Quinebaug Country at the time of the purchase from Owaneco, official colonization did not actually begin there until 1689. This is when a number of people, most of them from Massachusetts, made a purchase from John Winthrop, Jr., and

began to settle the northern portion of the tract (Barber 1836). The new settlers came from many different towns in Connecticut and Massachusetts (Bickford 1999). The town was named Plainfield by the legislature in 1700; it was one of the last towns created in Connecticut in the seventeenth century. Only a few years later, in 1703, the western side of Plainfield split off to form Canterbury (Crofut 1937). The first division of the town's land among its inhabitants was undertaken in 1704, with a total of eight divisions, most of which were made by 1710. The local Congregational meeting house, already built on Black Hill beside the Quinebaug River, was improved in 1703, and then in 1717 the town agreed to build a new, more central meeting house, a project that was completed in 1720. In 1706, the town received a formal patent from the colony government, confirming its existence as legal entity as well as its boundaries. In 1712, the General Assembly ordered the town to build a highway across the municipality, and when it was finished in 1714 it greatly improved the journey from Providence to Hartford (Bickford 1999).

The religious controversies of the 1740s in New England resulted in the formation of a "Separate" Congregationalist church in Plainfield in 1746. Disputes between the members of the new and old churches in town continued until 1760, when the voters agreed to divide the town into two ecclesiastical societies, the governing and taxing authority of the colony's official Congregational church system. The legislature agreed to the plan, which led to the unusual situation of Plainfield having two societies based on church membership rather than geography. It was after this, however, that the new Baptist church in town began to grow in membership. The town's population reached 1,338 residents in 1762, according to a census taken in that year; among the residents were 50 African-Americans; however, no Native Americans were reported. This total represented a decline from the 1756 population of 1,800, a 23 percent drop, which is thought to have resulted from the migration of westward of many young families (Bickford 1999). In 1774, the total population of the town was 1,562 residents, showing some recovery from previous years (see the population chart below; Keegan 2012).



During the American Revolution, the town of Plainfield offered substantial moral, financial, and military support to the cause of independence. In January 1775, the town voted to boycott East India tea, and sent flocks of sheep to relieve the blockaded City of Boston. The Lexington alarm in April 1775 resulted in the

sending of 55 men from Plainfield on the march to Boston. During the ensuing war, General Rochambeau's army, marching from Providence to the battle of Yorktown, camped in Plainfield in June 1781 and again on their return to Boston.

After the close of the American Revolution and during the fledgling years of the nation, transportation was vastly improved. It was at this time that Plainfield improved its own transportation system, including the construction of turnpike road by the New London and Windham County Society. This road followed the Quinebaug River northward to Plainfield village, then turned eastward to cross Sterling. It remained a toll road until at least 1849 (Wood 1919). During this era of post-Revolutionary War development, Plainfield had "two attorneys, three doctors, three tavern keepers, four blacksmiths, three tanners, two carpenters, one cabinet maker, one saddler, and six operators of various corn, saw, and fulling mills," all of which undoubtedly prospered due to the installation of the toll road (Bickford 1999:59). Nevertheless, two-thirds of the total grand list value in 1798 was related to agricultural activity, reflecting the townspeople's continuing dependence on farming, generally for little more than a subsistence living. Luxury goods were rare in the town; only six chaises were owned by townspeople, no carriages, and only 124 ounces of silver plate could be found for taxing. Although the town did have a clockmaker (somehow omitted from the grand list), there were only 33 tall clocks and 20 silver watches counted there, so that less than one in six families owned one, assuming only one per family (Bickford 1999).

Industrializing and Modern Era History of Plainfield (to the present)

Small industrial facilities developed in Plainfield and other Connecticut towns during the early nineteenth century. Textile mills worked imported cotton from the South, while woolen mills used more local raw materials. As in other small mill villages in southern New England at this time, families typically lived in mill housing and worked together in the same mill. The town enjoyed the prosperity of the mills; even the farmers, who did not share in the wealth and barely made a living, continued to fish in the rivers on which the mills were located. Between 1810 and 1860, industry grew to the point that Plainfield factory workers outnumbered farmers and multiple industrial villages appeared (Bickford 1999). An 1813 map of the state identified two cotton mills on the Moosup River in Plainfield, as well as a third in the southwest corner of town and others in the town of Sterling (Warren and Gillett 1813). According to an 1833 map, the bends of the river sported four different spinning mills: the White, Union, and Gladding cotton factories, as well as Lawton's woolen factory; the area near the Union mill (2,823 spindles) was called Unionville. The 1833 map shows Snake Meadow Brook passing through the western end of the project parcel. This watercourse powered multiple small mills to the north and to the south of the LOW. These included three saw mills, two grist mills, and a single woolen mill (labeled "w.m."). There was also a fourth sawmill situate to the west of the project parcel, but none within or adjacent to the LOW. It should be noted that the roads depicted on this map are very different from those shown in later maps and existing in the present day (Figure 4; Lester 1833).

By the 1830s, cloth production had switched from the piecework system to mechanical looms in the factory. Numerous other factories followed, with increasing amounts of machinery and numbers of workers (Bickford 1999). In 1856, a county map shows that the Plainfield area contained three clusters of factories and associated housing. These were identified as Almyville, Gladdinville, and Uniondale. To the east, in Sterling, a number of factories had also been built along the Moosup River. The map did not depict such activity near the LOW, although small saw mills and grist mills were still present in the region. This map showed no buildings within the LOW. The closest building was located on the far side of Snake Meadow Road; it was labeled "A. Hill" (Figure 5; Woodford 1856). The 1869 map of Plainfield shows much the same situation, except a new path and a building labeled "B. Doven" are depicted just south of the LOW (Figure 6; Gray 1869).

The population figures shown in the chart above elucidate the effect of industrial development on Plainfield's population. Where the total had hovered under 2,000 people from 1774 to 1810, it reached

2,097 residents in 1820 and more than doubled over the next 50 years, to 4,521 residents in 1870 (Keegan 2012). The Almyville section was home to 300 people in 1848, half of them working for the woolen and cotton mills. A further important development at this time was the construction of the through the project region (Figure 6; Woodford 1856). First was the Norwich & Worcester railroad, which followed the Quinebaug River north to Massachusetts; it opened in 1839. The second, the Hartford, Providence & Fishkill Railroad, was formed as a company in 1849 and provided service all the way to Providence in 1854 (Bickford 1999).

By 1890, Plainfield's population had mostly recovered from a substantial decline between 1870 and 1880, and after 1900 began a swift rise to nearly 8,000 people in 1920 – almost doubling again (see the population chart above; Keegan 2012). The financial Panic of 1873 and a series of strikes, as well as abusive employment conditions, were the forces behind the late nineteenth century population decline, but new factories were built in the 1880s, apparently with improved working conditions. This revitalized the town's industrial economy (Bickford 1999). An 1892 map of Plainfield, though of poor spatial accuracy, continued to reflect a lack of development in this corner of the town. The Doven place south of the LOW is not shown on this map, and the house across the road from it was labeled "Frank C. Tillinghast." It also depicts the streams and forest cover of the region (Figure 7; Baldwin 1892). A book of biographies from 1889 reported that Tillinghast was from neighboring Sterling, and in 1888 got married and bought a 190-acre farm in Plainfield from Alexander Hill (Bayles 1889).

There were other, deeper reasons for the success of manufacturing in the northeast corner of Connecticut. During the mid to late nineteenth century, farming became an increasingly uneconomical proposition in Connecticut. Most farmers switched from meat and grains, which could be purchased more cheaply from the Midwest, to butter and cheese, which did not travel well and were best sold locally. In the 1880s, refrigerated railroad cars were developed, which allowed the production of fresh milk to become important as well. Overall, however, the farming population declined and marginal lands were abandoned. Towns with industrial activity managed to keep their populations stable, while those based mostly on agriculture lost population through the 1930s. The number of farms in the state continued to fall through the twentieth century (Rossano 1997). As of the early 1930s, Plainfield's economy still rested on agriculture, the manufacture of cotton and woolen textiles, and also that of wooden goods and carriages (Connecticut 1932). The population had grown, and then stabilized between 1920 and 1930, despite the problems with agriculture, indicating that Plainfield's industries remained reasonably successful (Keegan 2012). The Great Depression, combined with general economic trends of moving factories southward, then led to a new decline in the town's population between 1930 and 1940 (Bickford 1999).

A 1934 aerial photograph shows that the area containing the LOW was mostly wooded, with a few farms and millponds breaking up the tree cover. Part of this farm area was in the western end of the project parcel, especially between the road and Snake Meadow Brook. There was also, however, a farm road extending eastward into the LOW, with a group of fields near but not beside the brook, while the western end of the parcel remained forested. A few buildings were located on the east side of Snake Meadow Road, at the western edge of the project parcel. These were probably associated with the Hill/Tillinghast farmstead on the opposite side of the road (Figure 8; Fairchild 1934).

After 1940, the population of Plainfield and many other Connecticut towns began to rise again. In Plainfield, this was partly due to suburbanization, as automobiles made living outside the cities practicable for many workers and their families. The town's population reached 12,000 people by 1970, almost three times its size in 1870, and continued growing at varying rates through 2010, when it was recorded as 15,555 residents (see the population chart above; Keegan 2012). Some of this growth was not just because of commuting, however. According to commuting statistics from 2000, Plainfield was not a typical bedroom town. Most of its workers were employed inside the town, with sizable numbers coming

into town from nearby places. The town's economic structure in 2005 suggests a partial reason: while agricultural activity had fallen to 3.8 percent of establishments and 1.5 percent of employment, manufacturing activity was a relatively substantial 8 percent of firms and 16.7 percent of employment -- the remainder of the activity being in the tertiary sector, especially in trade (22.6 percent of employment) and services (40.4 percent of employment) (CERC 2008).

The aerial photographs taken after 1940 indicate that Plainfield's population growth had little effect in the vicinity of the LOW. A 1941 aerial photograph suggests that the adjacent farm was prospering, with several more buildings in place along Snake Meadow Road, and much the same arrangement of fields (Figure 9; USGS 1941). In the 1951 aerial photograph, the farm and its buildings were still in place, and there was still no sign of housing or commercial development in the general area (Figure 10; USDA 1951). A 1959 aerial photograph annotated by town personnel indicates that some of the field areas were abandoned, but there were still substantial areas being farmed or grazed. The clarity of this photograph makes it possible to say that there was a complex of six barns and sheds on the east side of the road, across from the LOW. Another building or shed stood on the road leading to the back fields. Near and in the northwestern corner, there were also two areas of possible sand and gravel excavation (Figure 11; Plainfield 1959). As of 1970, the southwestern corner of the farm had certainly been abandoned, and perhaps was also being excavated for sand and gravel. The northwestern end of the parcel, however, was still being farmed, and some farm buildings remained by the road. Despite the town's rising population there was no sign of housing development in the area (Figure 12; USGS 1970). By 1985, however, many of the fields were reforesting, although some were still clear and it appears that some of the buildings near the road were still in place (Figure 13; CT DEP 1985). In the 2008 aerial, however, it is clear that only one barn was still standing on the east side of the road, and the farm house and other buildings on the west side of the road were gone. There was also a small new structure in the northwest corner of the parcel. In addition, a substantial part of the fields on the east side of the brook had been converted to a sand and gravel operation, with associated buildings nearby. The remainder of the parcel was still wooded, and there were finally noticeable signs of new housing development to the east of this area (Figure 14; CT DOT 2008). As of 2016, the aerial photograph suggests that the sand and gravel operations had been suspended for some time, and the only farming was probably hay cutting in the remaining fields. The one barn was still standing, as was the other structure in the northwest corner, and one of the mining operation buildings (Figure 15; CRCG 2016).

Conclusions

The documentary record regarding this parcel suggests varying but generally low to moderate levels of sensitivity for historical remains in the LOW. The aerial photographs indicate that some areas appear to have been subjected to sand and gravel excavation; these places can be expected to have no historically significant deposits. Further, other sections of the parcel have been wooded since at least 1934. Finally, some sections of the eastern end of the parcel were used for farming probably from at least the nineteenth century and into the twentieth.

CHAPTER V
PREVIOUS INVESTIGATIONS

Introduction

This chapter presents the results of a cultural resources literature review for the proposed project region. (Figures 16 and 17). Personnel from Heritage visited the Connecticut State Historic Preservation Office in Hartford, Connecticut, as well as searched Heritage's corporate files, in an attempt to identify all previously identified cultural resources situated within 1.6 km (1 mi) of the LOW, including known archaeological sites, historic standing structures, and National/State Register of Historic Places that may be effected by the proposed undertaking. This review resulted in the identification of a single archaeological site (69-36) and one historic standing structure (325 Snake Meadow Road), both of which are situated at a distance of just over 1.6 km (1 mi) from the LOW. These two resources are discussed below.

Site 69-36

Site 69-36, also known as the Snake Meadow Road Site was recorded by Jeanne Ward of John Milner Associates, Inc., in 1989 (Figure 16). It is described as an industrial site dating from the nineteenth century. Pedestrian survey of the site area by Ward resulted in the identification of above-ground features consisting of the remains of a mill foundation, a dam, and an associated raceway. Ward interpreted the site as the remains of a sawmill or a gristmill. The Snake Meadow Road Site was reported as in good condition as of 1989; however, no subsurface testing was conducted in the vicinity of the stone features; thus, the depositional integrity of the site area remains unknown. This archaeological site has not been assessed applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]), and it will not be impacted by the proposed solar facility.

325 Snake Meadow Road

The historic standing structure located at 325 Snake Meadow Road consists of a residence that was constructed in ca., 1760 (Figure 17). This residence contains two-stories, 12 over 12 paned windows, and a gable roof covered with asphalt shingles. The main part of the house is built in the Colonial Style, but it has an addition on the south side of the house. Based on the size of its chimney and gable end location, it appears that the addition was added in the late nineteenth century. Both portions of the residence are currently sheathed in wood clapboarding. The main part of the residence rests upon a fieldstone foundation; however the foundation type for the addition has not been specified. This residence is located just over 1.6 km (1 mi) from the LOW and it will not be impacted directly by the proposed construction. Finally, due to its distance from the LOW and intervening topographical changes and vegetation, the viewshed of the residence at 325 Snake Meadow Road also will not be altered by construction of the proposed solar facility.

Summary

The review of previously identified cultural resources on file with the Connecticut State Historic Preservation office suggests that there are only a few known items in the larger project region. Both cultural resources discussed above date from the historic period, and neither will be impacted by the propose project. The low number recorded cultural resources in the region to date is mostly likely related to a lack of professional cultural resources surveys having been completed in the area rather than actual absence of cultural resources there. Based on the general knowledge and history of the project region, it may be expected that other archaeological and historical resources may be located near or within undisturbed portions of the LOW.

CHAPTER VI
METHODS

Introduction

This chapter describes the research design and field methodology used to complete the Phase IA cultural resources assessment survey of the project area in Plainfield and Sterling, Connecticut. The following tasks were completed during this investigation: 1) study of the region's prehistory, history, and natural setting, as presented in Chapters II through IV; 2) a literature search to identify and discuss previously completed cultural resources surveys and all previously recorded cultural resources in the area encompassing the project area; 3) a review of historic maps, topographic quadrangles, and aerial imagery depicting the project area in order to identify potential historic resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the project area in order to determine its archaeological sensitivity. These methods are in keeping with those required by the Connecticut State Historic Preservation Office in the document entitled: *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987).

Research Framework

The current Phase IA cultural resources assessment survey was designed to assess the historical and archaeological sensitivity of the proposed project area, as well as to visually examine the LOW and record any prehistoric or historic resources noted during pedestrian survey. The undertaking was comprehensive in nature, and project planning considered the distribution of previously recorded cultural resources located within and near the project area, and a visual assessment of the LOW. The methods used to complete this investigation were designed to provide coverage of all portions of the LOW. The fieldwork portion of this undertaking entailed pedestrian survey, photo-documentation, and project area mapping (see below).

Archival Research & Literature Review

Background research for this project included a review of a variety of historic maps depicting the proposed project parcel; an examination of USGS 7.5' series topographic quadrangles; an examination of aerial images dating from 1934 through 2016; and a review of all National and State Register of Historic Places properties and previously identified archaeological sites on file with the Connecticut State Historic Preservation Office, as well as electronic cultural resources data maintained by Heritage. The intent of this review was to identify all previously recorded cultural resources situated in and adjacent to the LOW and to provide a natural and cultural context for the proposed project area. This information then was used to develop the archaeological context of the LOW, and to assess its sensitivity with respect to producing intact cultural resources.

Background research materials, including historic maps, aerial imagery, and information related to previous archaeological investigations, were gathered from the Plainfield and Sterling Public Libraries, Plainfield and Sterling Town Halls, the Connecticut State Library, the Homer Babbidge Library on the Storrs Campus of the University of Connecticut, and the Connecticut State Historic Preservation Office. Finally, electronic databases and Geographic Information System files maintained by Heritage were employed during this project, and they provided valuable data related to the project area, as well as data concerning previously identified archaeological sites within the general vicinity of the LOW.

Field Methodology and Data Synthesis

Heritage also performed fieldwork for the Phase IA cultural resources assessment survey of the project area associated with the proposed solar project in Plainfield and Sterling, Connecticut. This included pedestrian survey, photo-documentation, and mapping of the LOW. During the completion of the pedestrian survey, representatives from Heritage visually reconnoitered and photo-documented the LOW using digital media. Heritage also obtained GIS files depicting the proposed solar development from All-Points, contractor for the project sponsor, Revity Solar, LLC. The digital files were imported into ESRI's ArcGIS 10.2, the geographic information system (GIS) employed by Heritage. The inclusion of the digital files in the project GIS streamlined the research process and it ensured that all portions of the project area that may be impacted by the proposed solar project were examined during the investigation and mapped accurately. Finally, the GIS files were employed to output the maps and drawings included in this report.

Curation

Following the completion and acceptance of the final report, all cultural material, drawings, maps, photographs, and field notes will be curated with:

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CHAPTER VII
RESULTS OF THE INVESTIGATION

Introduction

As mentioned in Chapter I, the current Phase IA cultural resources assessment survey consisted of the completion of the following tasks: 1) a contextual overview of the area's prehistory, history, and natural setting (e.g., soils, ecology, hydrology, etc.); 2) a literature search to identify and discuss previously completed cultural resources surveys and previously recorded archaeological sites, National and State Register of Historic Places properties/districts, and historic standing structures more than 50 years in age within the region encompassing the LOW; 3) a review of readily available historic maps and aerial imagery depicting the LOW to identify potential cultural resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the LOW to determine its archaeological sensitivity, as well as to record any prehistoric historic built resources. Tasks 1 and 2 of this list were completed and presented in Chapters II through V. The results of Tasks 3 and 4 are presented below.

Results of Pedestrian Survey and Photo-Documentation of the Project Items

As discussed throughout the report, the proposed solar center will be built in Plainfield and Sterling, Connecticut. The project area is bound by forested areas to the north, east, and south, as well as Snake Meadow Brook to the west. Heritage completed the pedestrian survey and photo documentation of the proposed LOW in October of 2018. The pedestrian survey involved a walkover of the entire site and included photo documentation of existing conditions, buildings, and landforms.

The larger project parcel in consists of a roughly 182.3 acre parcel of land, of which 83 acres will be impacted by the proposed solar facility. Pedestrian survey of the area revealed that the western portion of the proposed construction areas has already been impacted heavily by the mining of sand and gravel from the area (see Figure 18). This is clear due to abrupt changes in grade and topography, as well as a the presence of numerous soil piles and tailings present. This area currently consists of a mixture of forested lands, a former sand and gravel operation, and other open areas (Figures 19 and 20). Immediately to the east of the areas disturbed by sand and gravelling, there is a relatively large open field. The southern portion of this field also appears to have been disturbed in the past, and it, as well as the area of sand and gravelling appear to no longer retain any potential to yield intact archaeological deposits. There is also and east to west trending cleared areas along the northern edge of the project parcel (see Figure 21 and 22) This area has been logged in the past and disturbed; it too no longer retains the potential to contain intact archaeological deposits. Finally, the eastern and southern edges of the LOW also have been impacted in the past by the construction and ongoing uses of access roads that were put in place recover sand and gravel in the easternmost portion of the project parcel, which is located Sterling, Connecticut.

In contrast, the center portion of the LOW is forested contains low to moderate slopes, and does not appear to have been disturbed in the past. In fact, a review of the area in shown in aerial images dating from 1934 to 2016 (Figures 23 through 25). demonstrate that this area remained forested throughout the twentieth century. The historic maps dating from 1833 to 1892 also suggested that this parcel may have been an outlying parcel of land historically since no structures or uses are recorded on the maps (Figures 4 through 7). Based on a lack of obvious previous disturbance, as well as the presence of low to moderate

slopes, and soils that are sandy and well drained, the central portion of the LOW appears to possess moderate/high sensitivity for producing intact archaeological deposits.

Overall Sensitivity of the Proposed Project area and Project Recommendations

In addition to the above-referenced research, the field data collected during the pedestrian survey was used in conjunction with the analysis of topographic and soils mapping to stratify the LOW into zones of no/low and moderate/high archaeological sensitivity. As seen above, historic sites are generally easy to find on the landscape because the features associated with them tend to be relatively permanent above-ground constructions (e.g., building foundations, wells, pens, etc.). Prehistoric sites, on the other hand, are less often identified during pedestrian survey, and predicting their locations relies more on environmental factors that would have informed Native American site choices. Portions of the study areas have been impacted by sand and gravelling operations in the past, as well as by the construction and continued use of access roads that ring the LOW. The central portion of the LOW, however, does not appear to have been altered dramatically in the past, and even though it appears to have been an outlying parcel of land historically, it has the potential to contain historic cultural deposits such as historic trash pits, buried foundations, wells, and other architectural features that may relate to the historic use of the property.

With respect to the potential for identifying prehistoric archaeological sites, the project area was divided into areas of no/low or moderate/high archaeological potential by analyzing landform types, slope, aspect, soils, and distance to water. In general, areas located less than 300 m (1,000 ft) and no more than 600 m (2,000 ft) from a freshwater source and that contain slopes of less than 8 percent and well-drained soils possess a moderate/high potential for producing prehistoric archaeological deposits. This is in keeping with broadly based interpretations of prehistoric settlement and subsistence models that are supported by decades of previous archaeological research throughout the region. It is also expected that there may be variability of prehistoric site types found in the moderate/high sensitivity zones. For example, large Woodland period village sites and Archaic period seasonal camps may be expected along large river floodplains, on upland terraces, and near stream/river confluences. Smaller temporary or task specific sites may be expected on level areas with well-drained soils that are situated more than 300 m (1,000 ft) but less than 600 m (2,000 ft) from a water source. Finally, steeply sloping areas, poorly drained soils, or areas of previous disturbance are deemed to retain a no/low archaeological sensitivity. Based on natural features (e.g., well drained soils, low slopes, and proximity to freshwater), the central portion of the LOW, which appears to have not been disturbed greatly, also may yield occupations dating from Connecticut's prehistoric era. The remainder of the LOW has been impacted by sand and gravelling, as well as construction and use of access roads. These areas, shown in yellow in Figure 26, no longer retain the potential to yield intact cultural deposits.

CHAPTER VIII
SUMMARY AND MANAGEMENT RECOMMENDATIONS

The review of historic maps and aerial images of the project parcel and LOW, an examination of files maintained by the Connecticut State Historic Preservation Office, and pedestrian survey of the proposed solar facility area revealed that the LOW is not located in the immediate vicinity of any National or State Register of Historic Places properties or historic standing structures. Thus, it is anticipated that no historic built resources will be impacted by construction of the solar facility. In terms of archaeological potential, pedestrian survey of the LOW revealed that the western portion has been altered by sand and gravel operations in the past. In addition, there are existing access roads and other disturbed areas in the northern, eastern, and southernmost portions of the LOW. As a result, it was determined that these areas no longer retain intact soil deposits or the potential to yield intact cultural deposits. No additional archaeological examination of these no/low sensitivity areas is recommended prior to construction of the solar facility. In contrast, the central portion of the LOW appears to contain intact soils deposit, low slopes, and proximity to Snake Meadow Brook; thus, this portion of the LOW has been determined to retain a moderate/high potential to produce intact cultural deposits.

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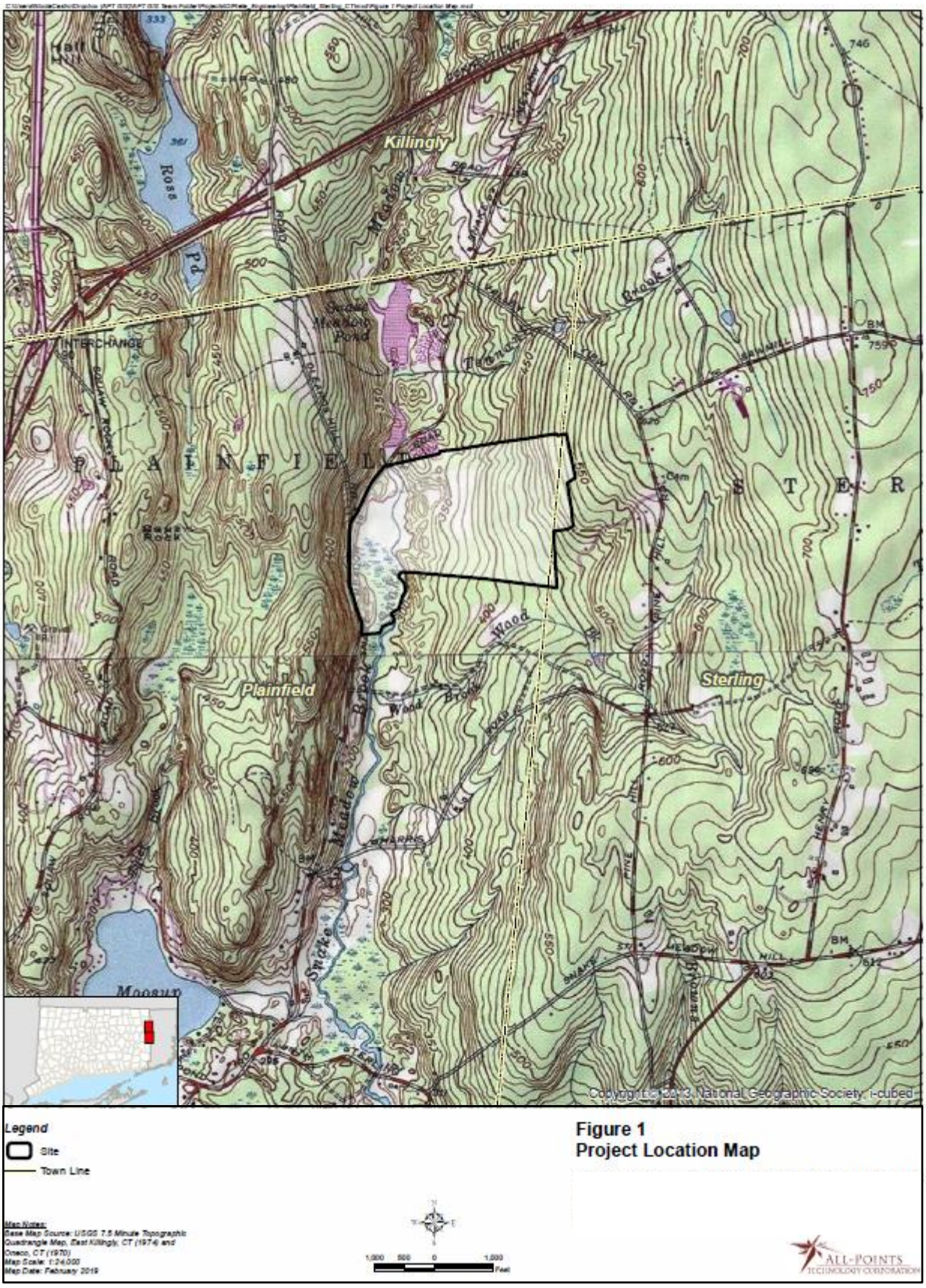


Figure 1. Digital map showing the location of the proposed development parcel in Plainfield and Sterling, Connecticut.

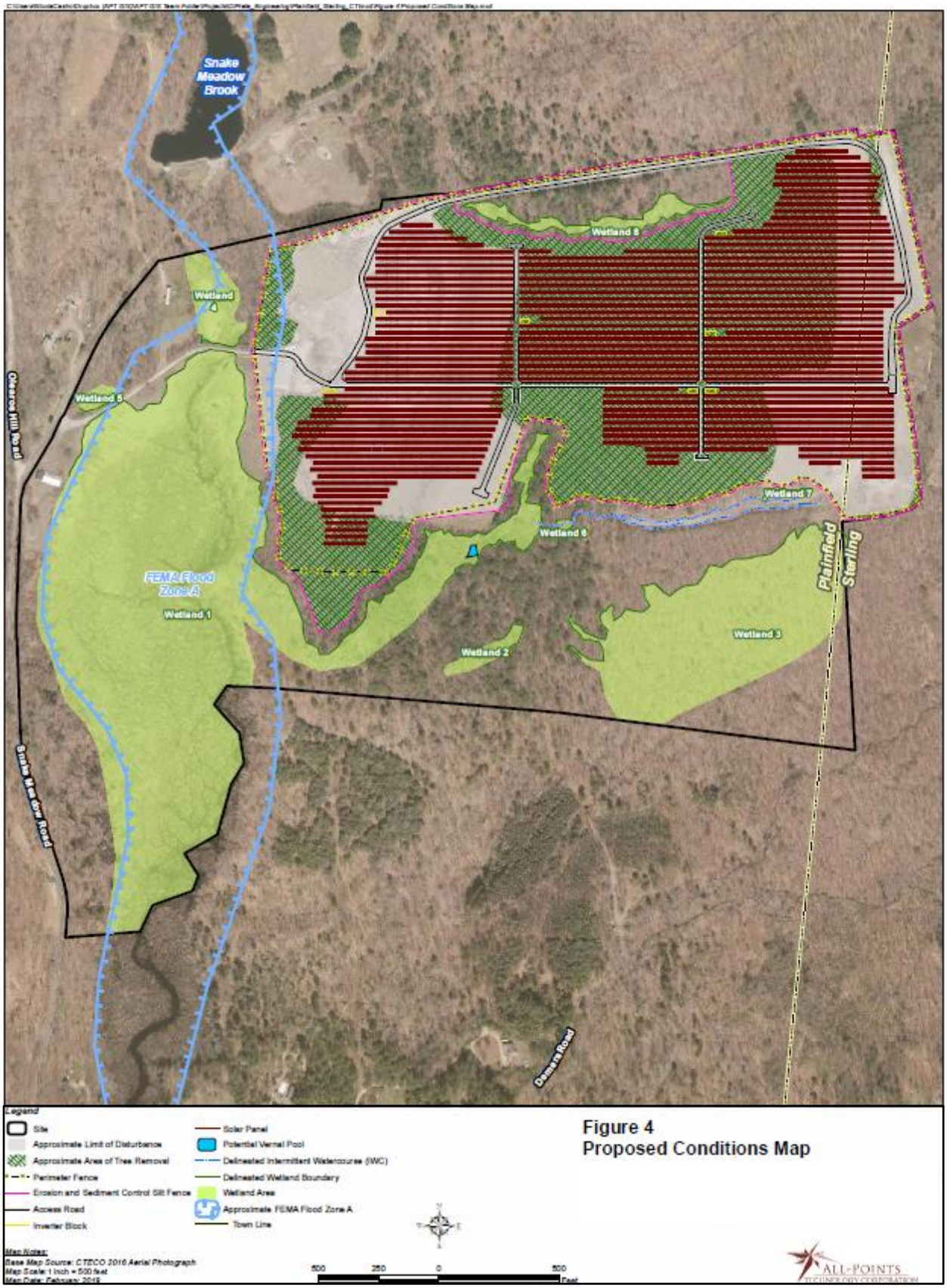


Figure 2. Excerpt from a 2016 aerial showing the location of the solar facility in Plainfield and Sterling, Connecticut.

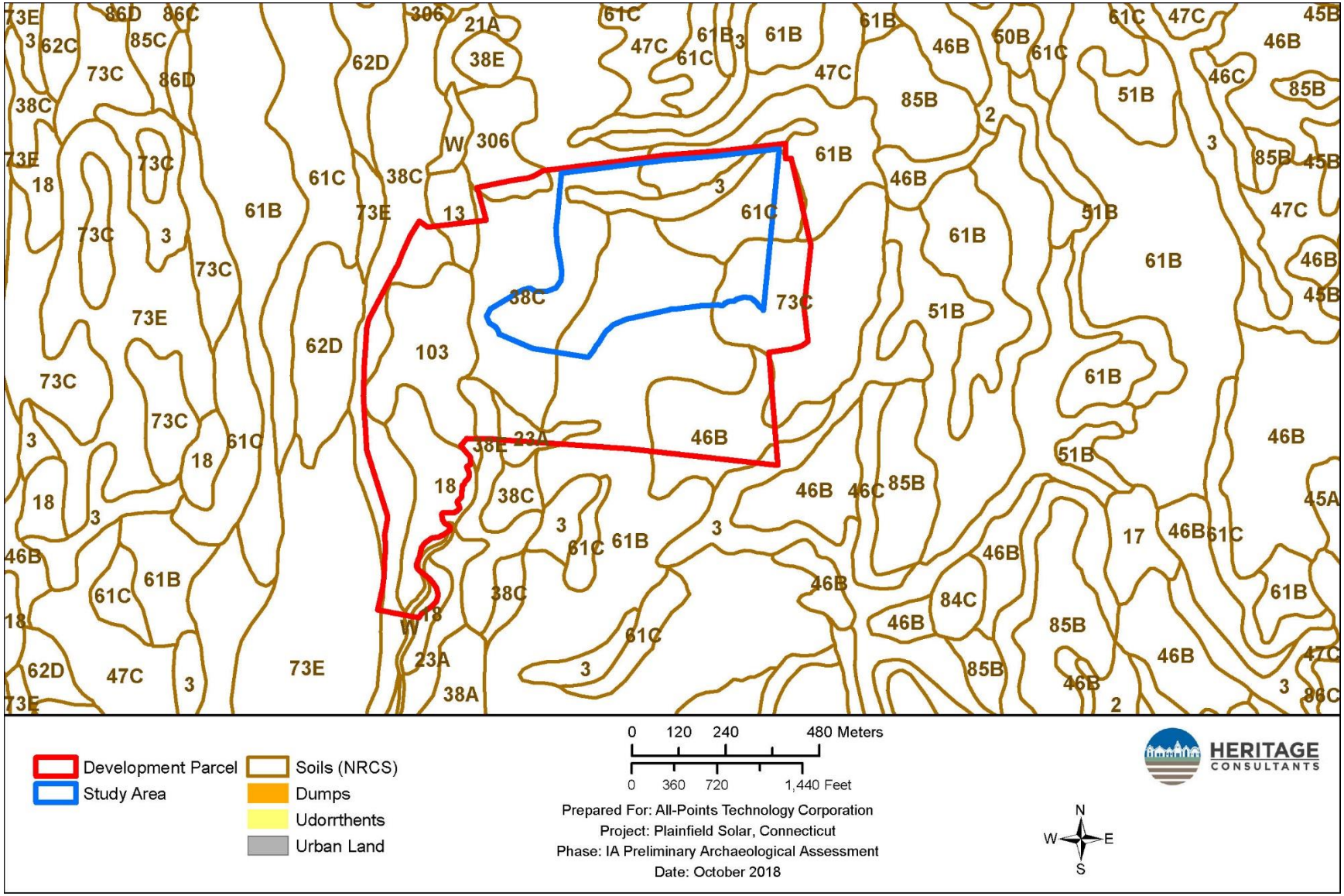


Figure 3. Digital map depicting the soil types present in the vicinity of proposed development parcel in Plainfield and Sterling, Connecticut.

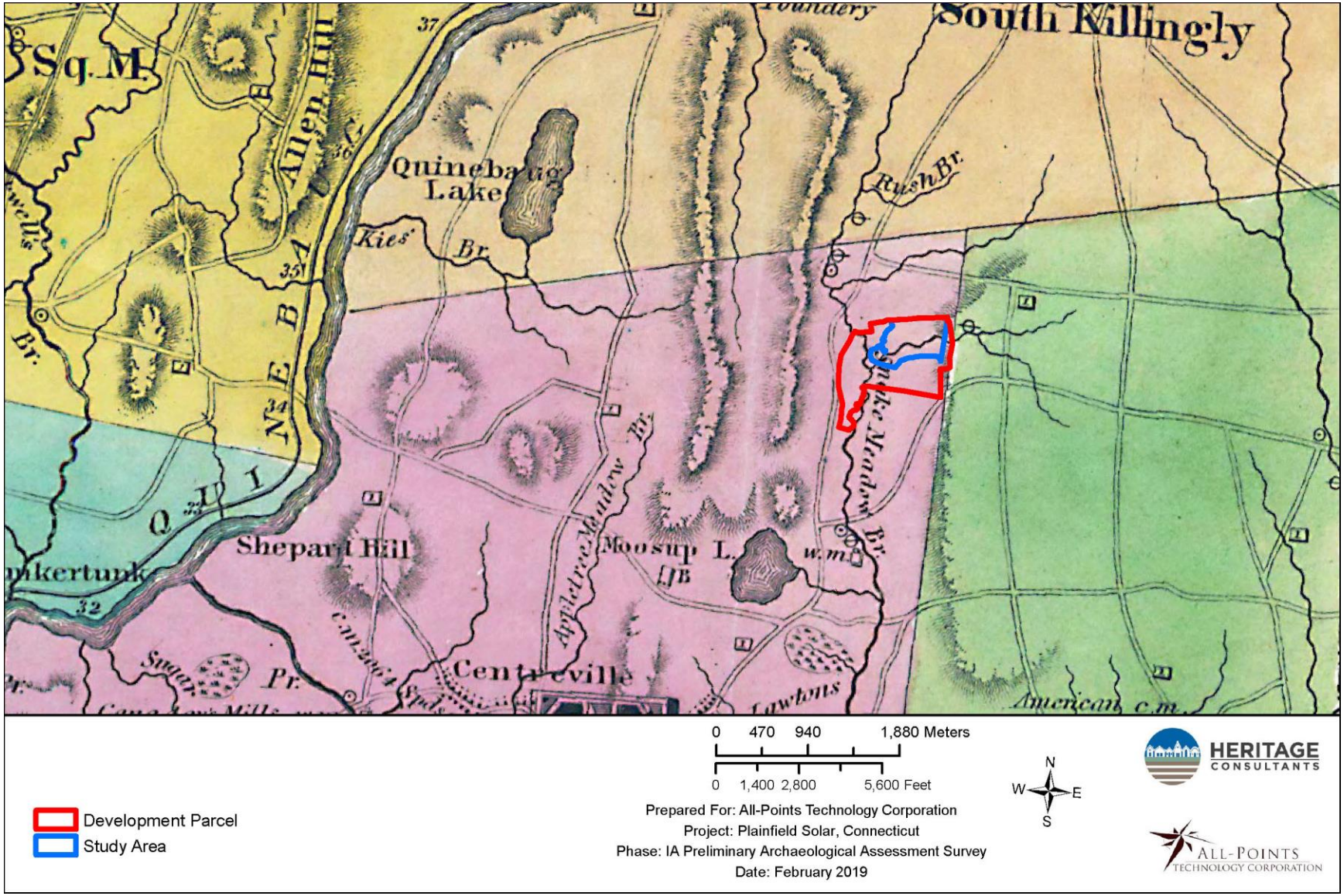


Figure 4. Excerpt from an 1833 map showing proposed development parcel in Plainfield and Sterling, Connecticut.

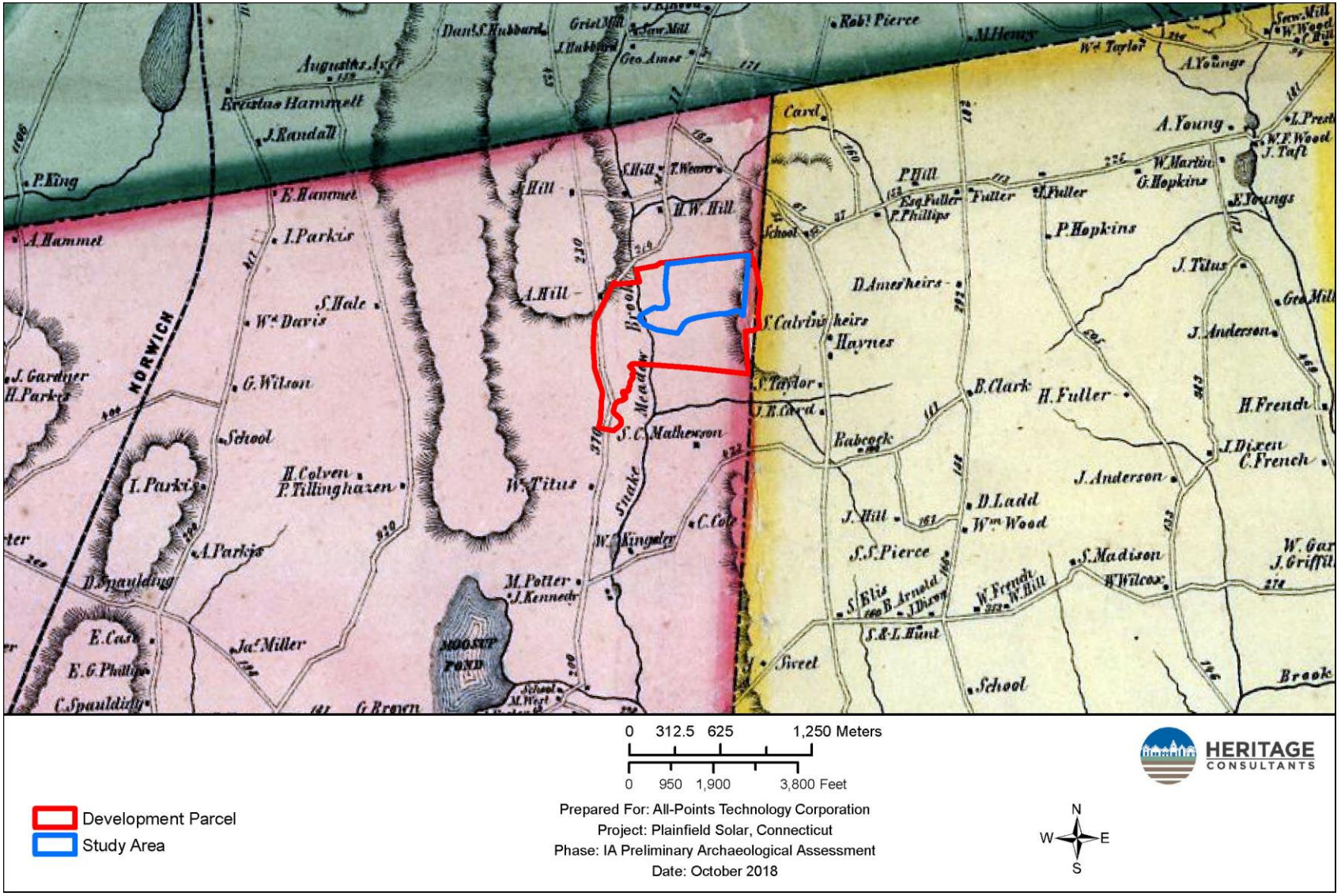


Figure 5. Excerpt from an 1856 map showing proposed development parcel in Plainfield and Sterling, Connecticut.

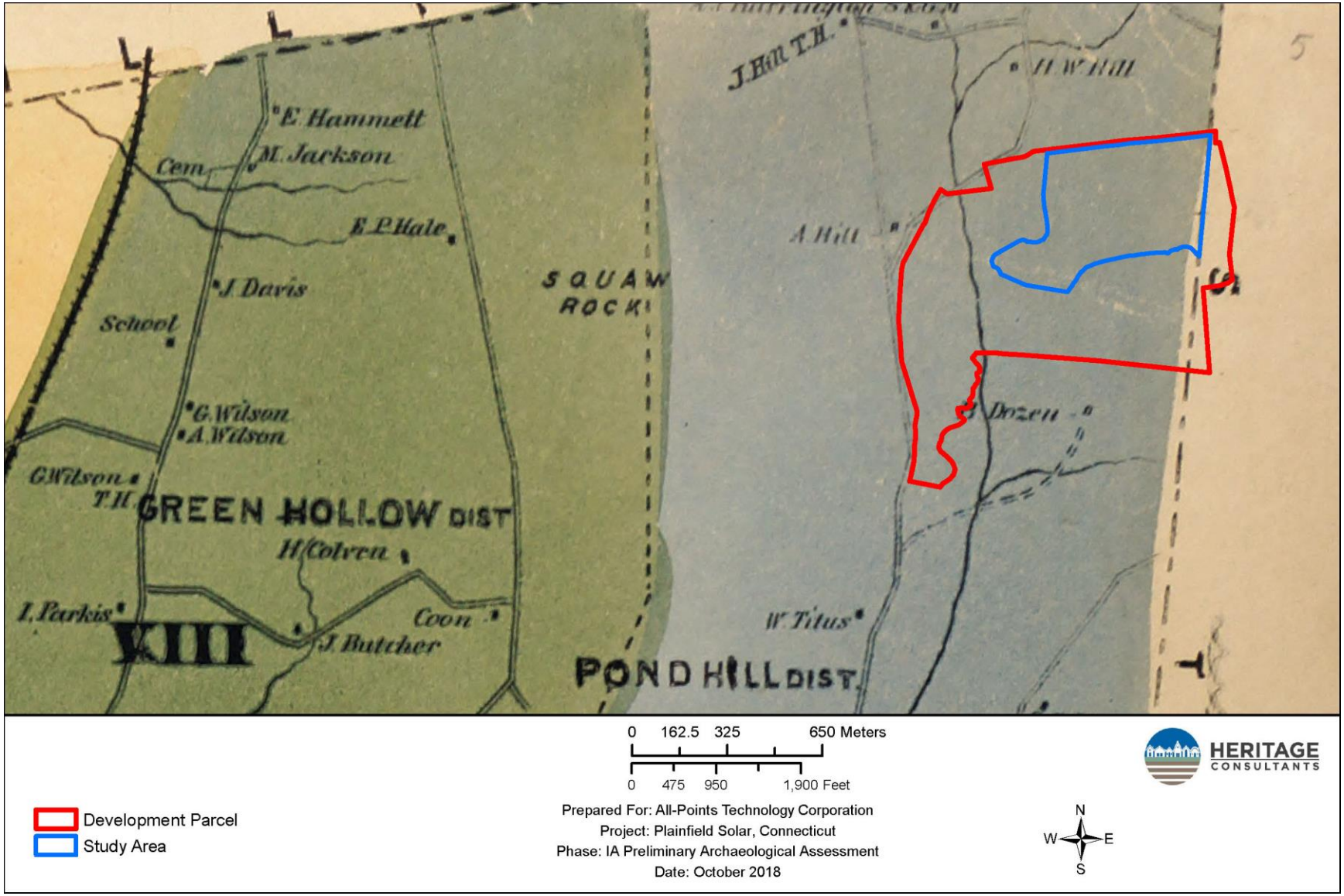


Figure 6. Excerpt from an 1869 map showing proposed development parcel in Plainfield and Sterling, Connecticut.

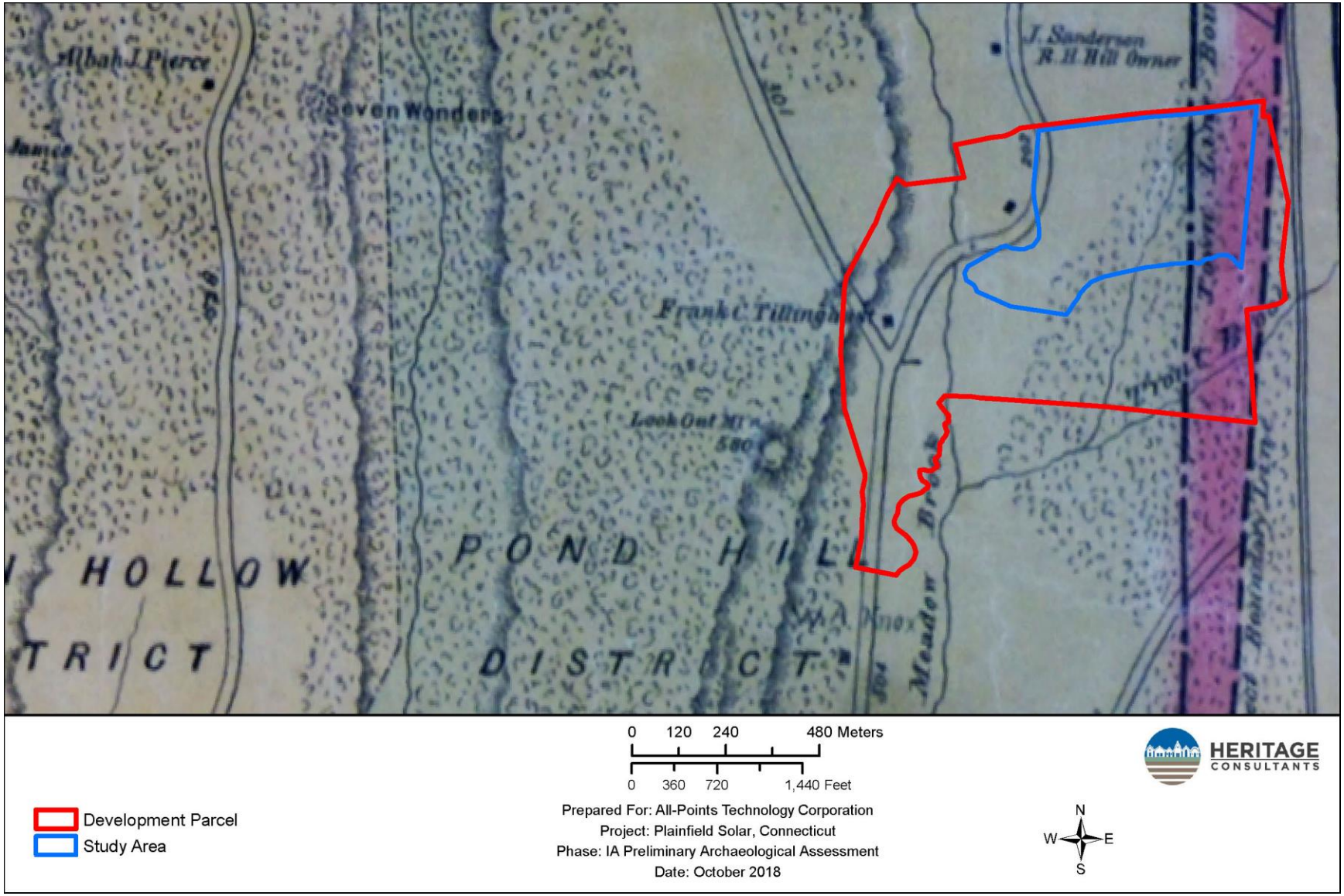


Figure 7. Excerpt from an 1892 map showing proposed development parcel in Plainfield and Sterling, Connecticut.

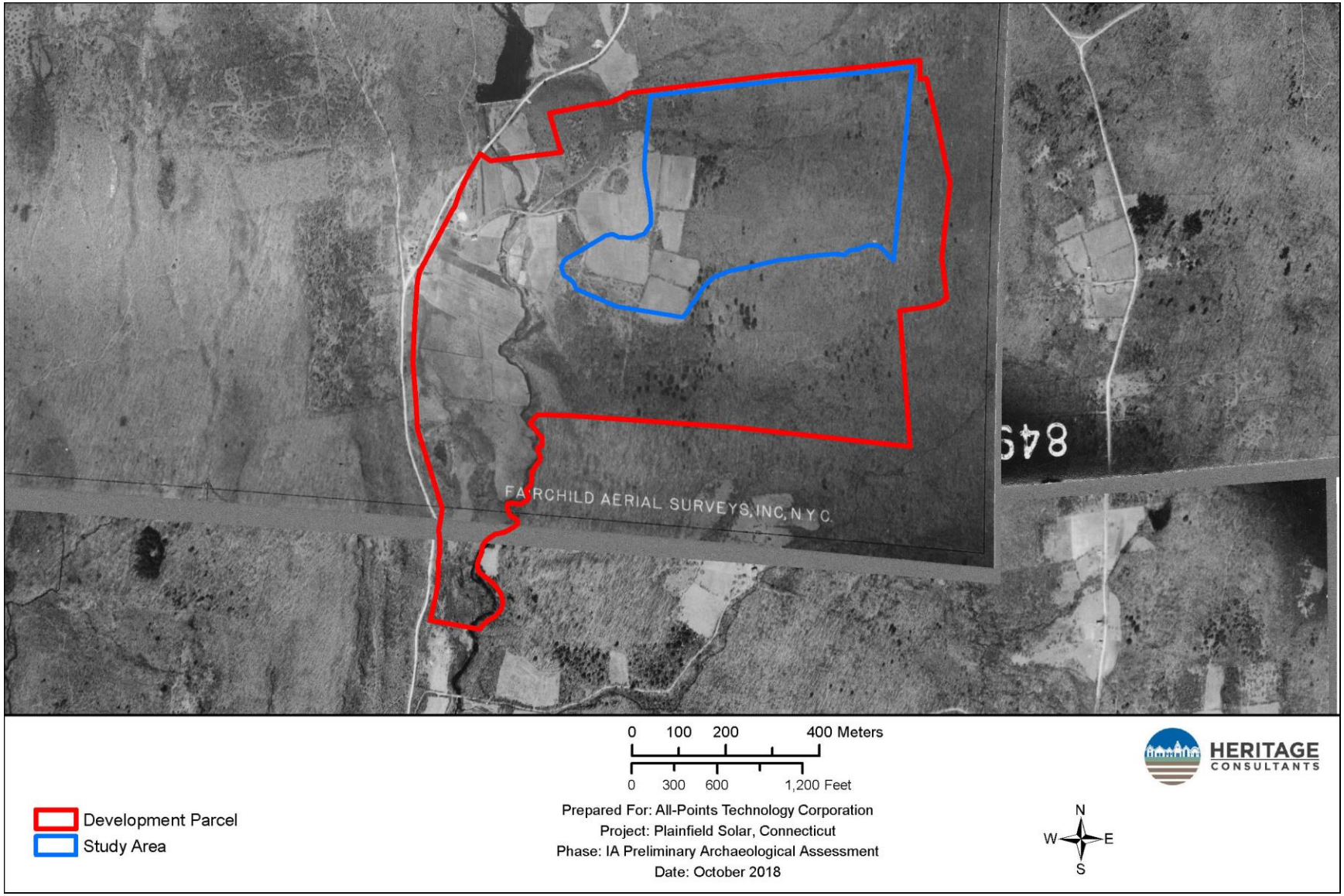


Figure 8. Excerpt from a 1934 aerial photograph showing proposed development parcel in Plainfield and Sterling, Connecticut.

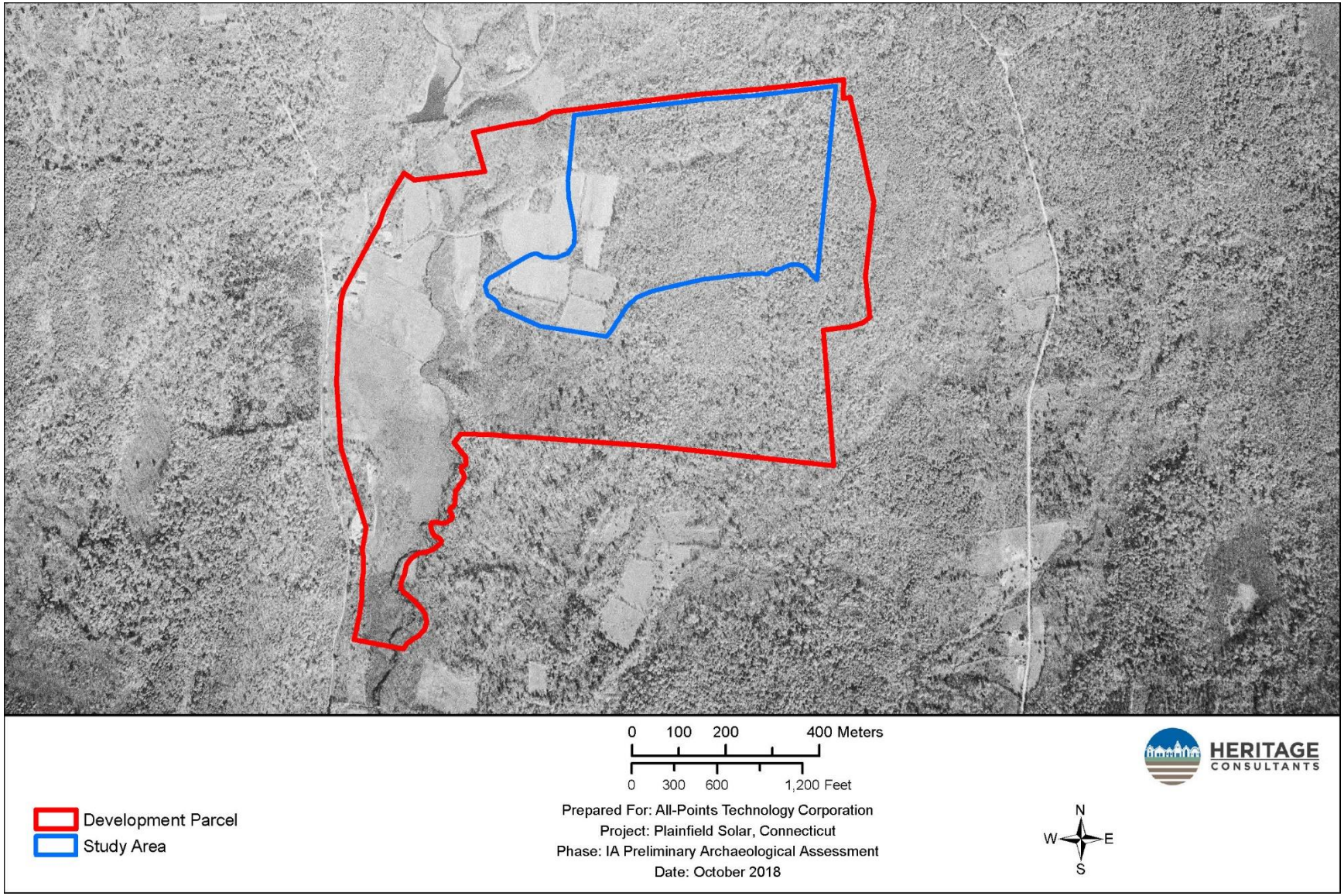


Figure 9. Excerpt from a 1941 aerial photograph showing proposed development parcel in Plainfield and Sterling, Connecticut.

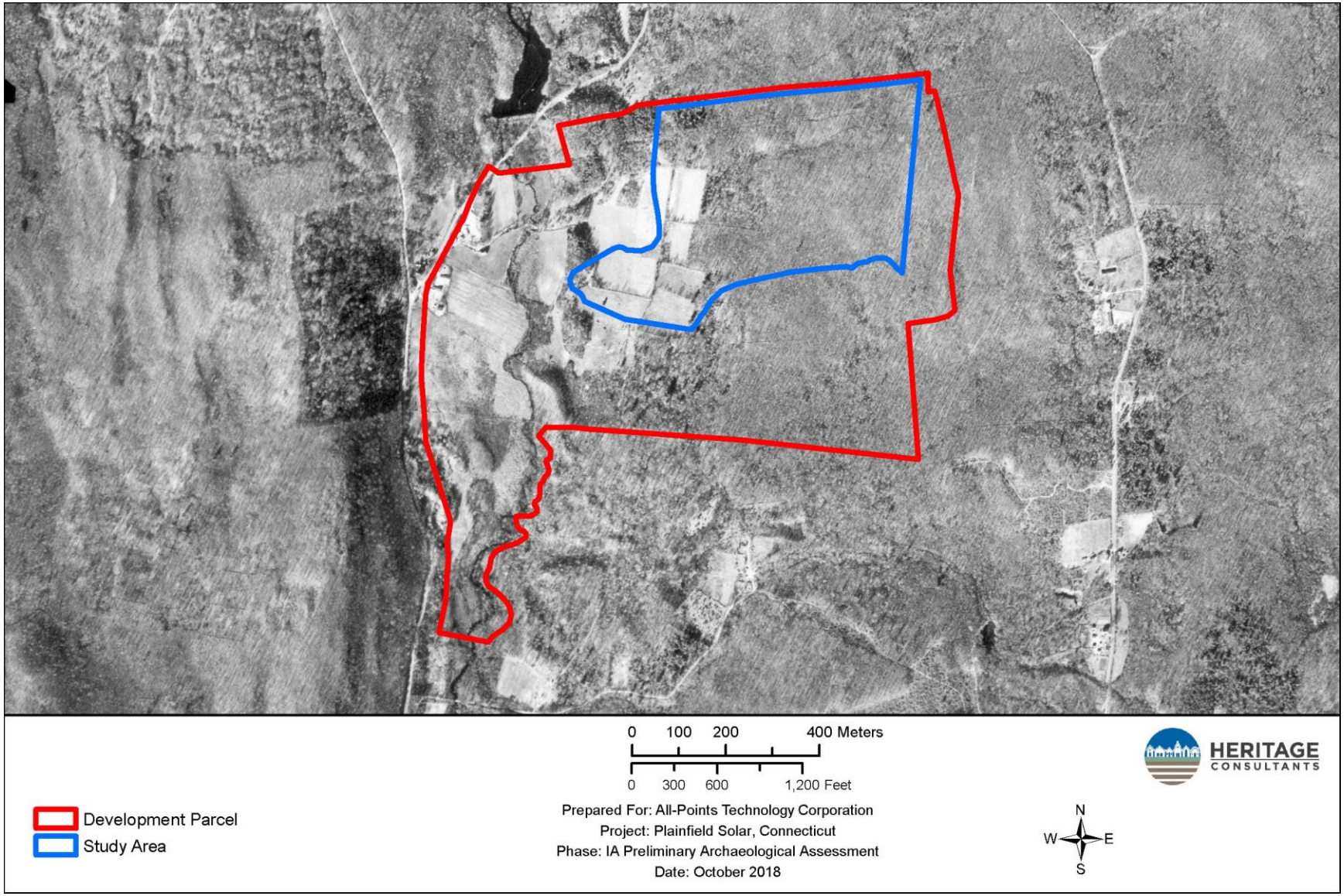


Figure 10. Excerpt from a 1951 aerial photograph showing proposed development parcel in Plainfield and Sterling, Connecticut.

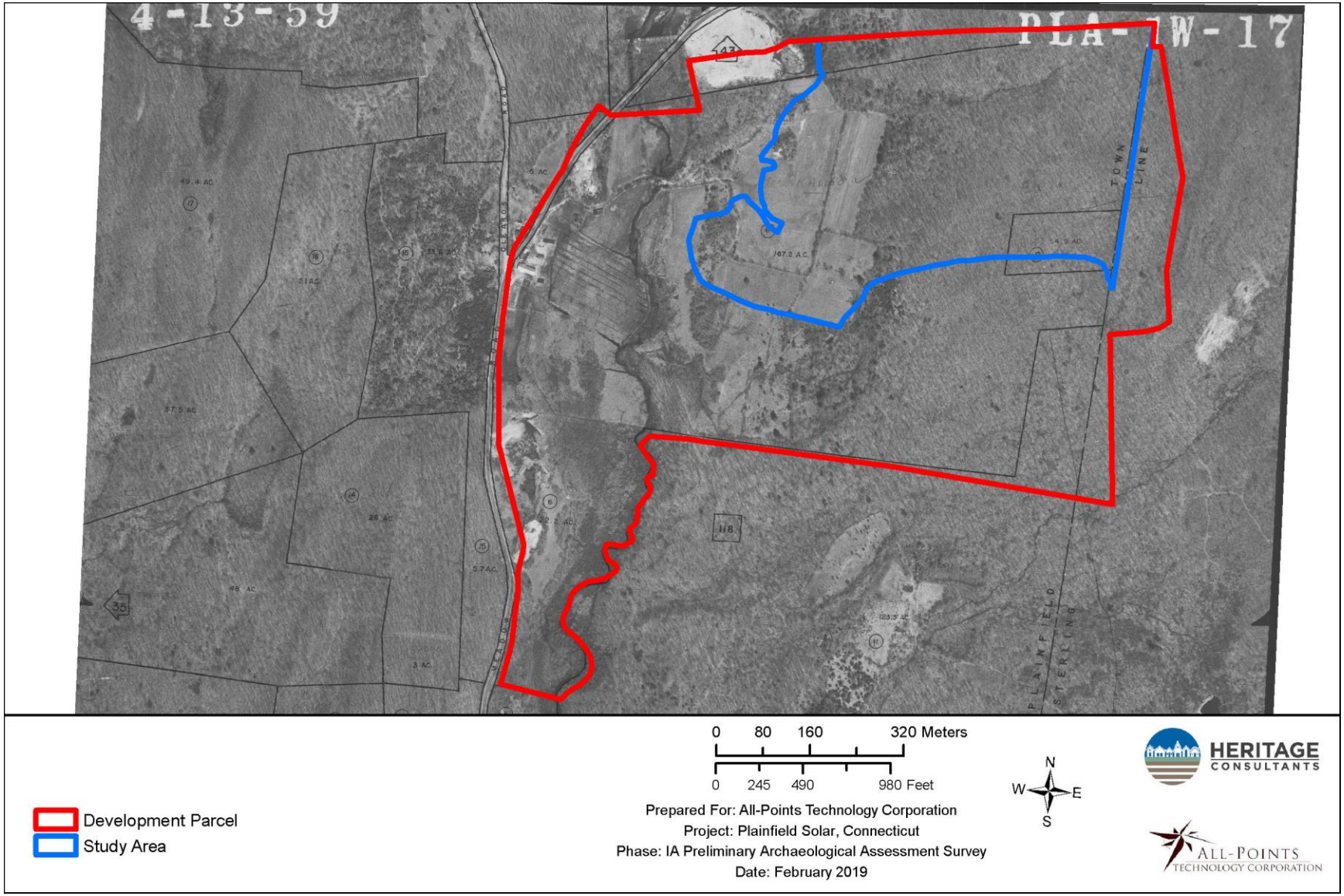


Figure 11. Excerpt from a 1959 aerial photograph showing proposed development parcel in Plainfield and Sterling, Connecticut.

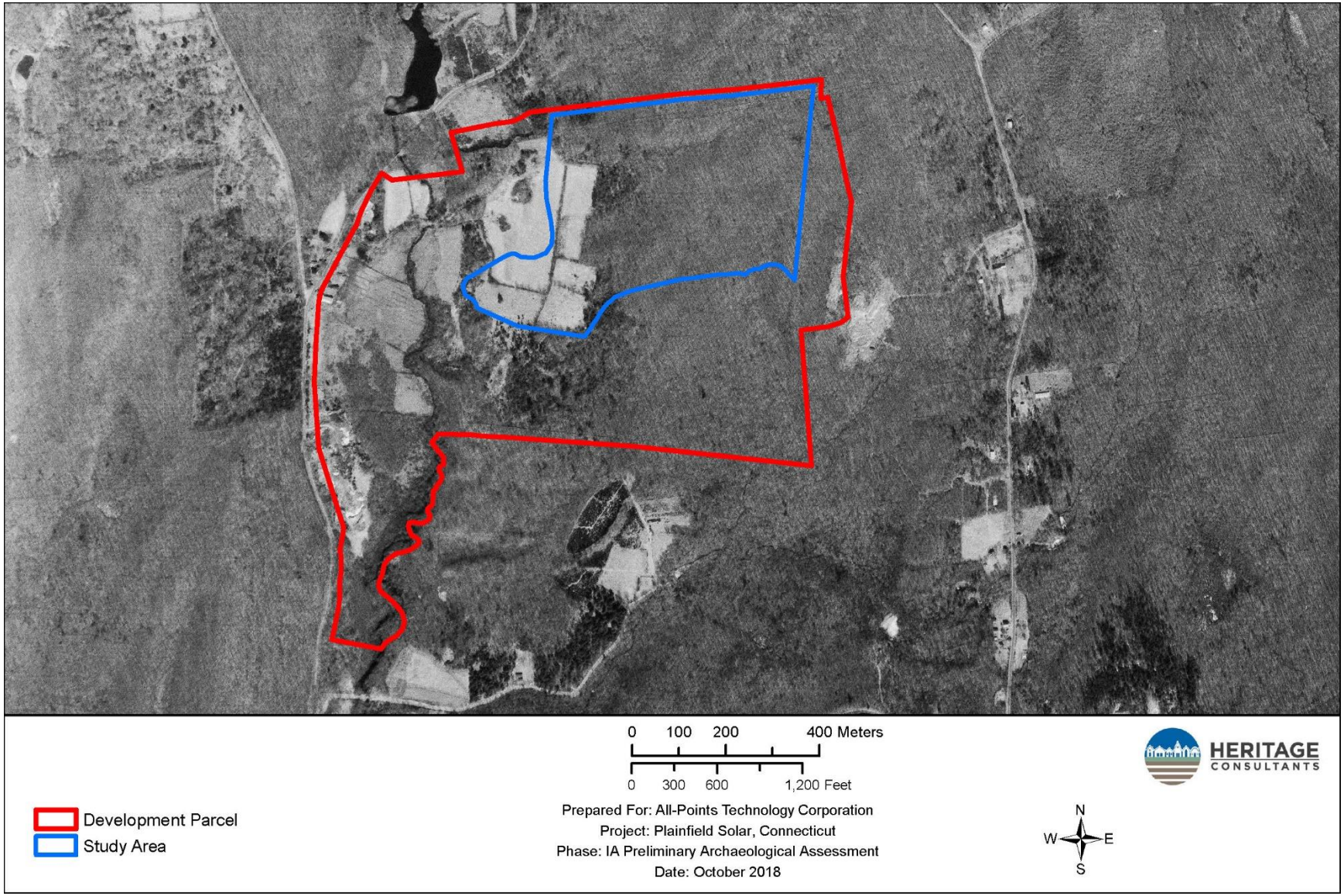


Figure 12. Excerpt from a 1970 aerial photograph showing proposed development parcel in Plainfield and Sterling, Connecticut.

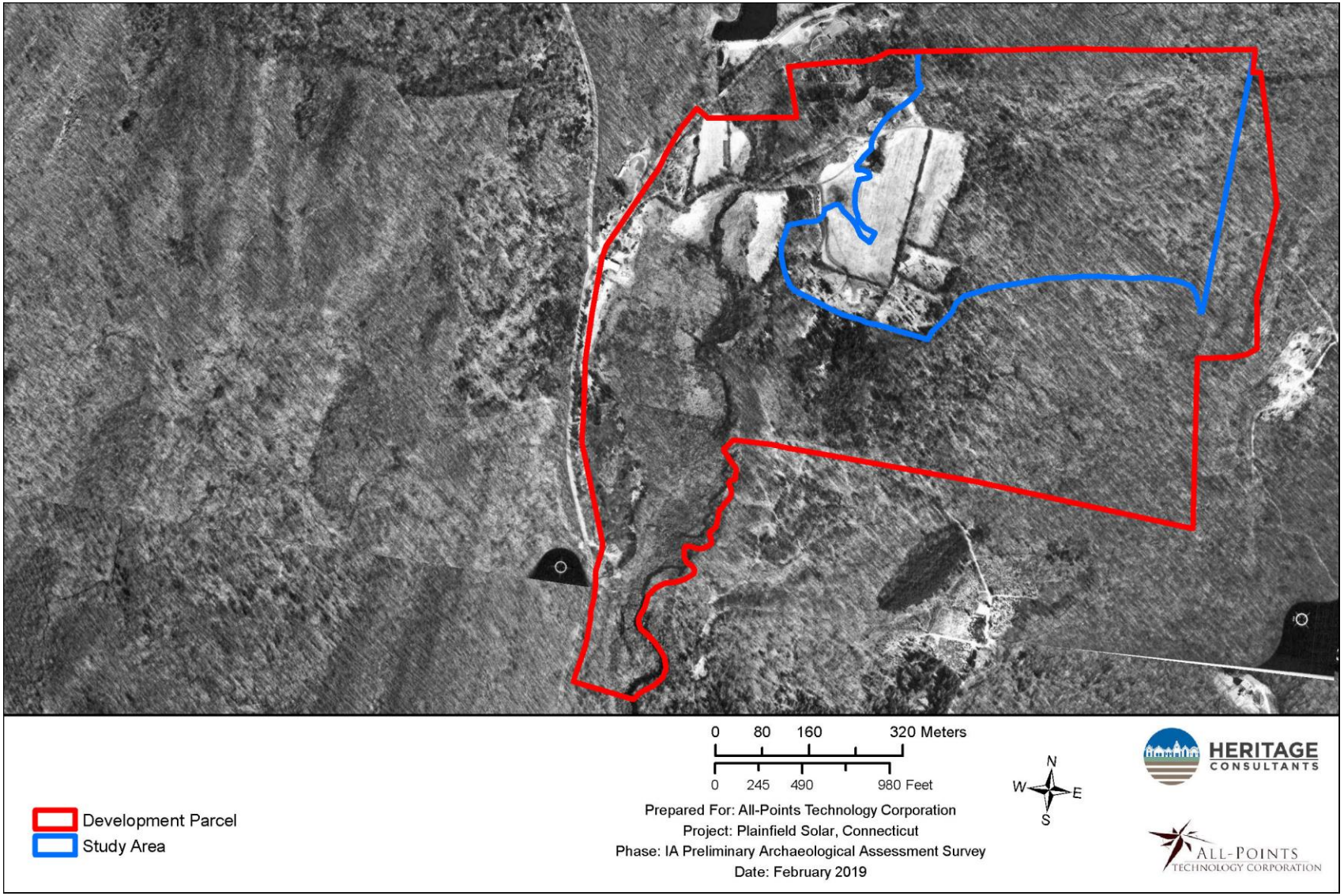


Figure 13. Excerpt from a 1985 aerial photograph showing proposed development parcel in Plainfield and Sterling, Connecticut.

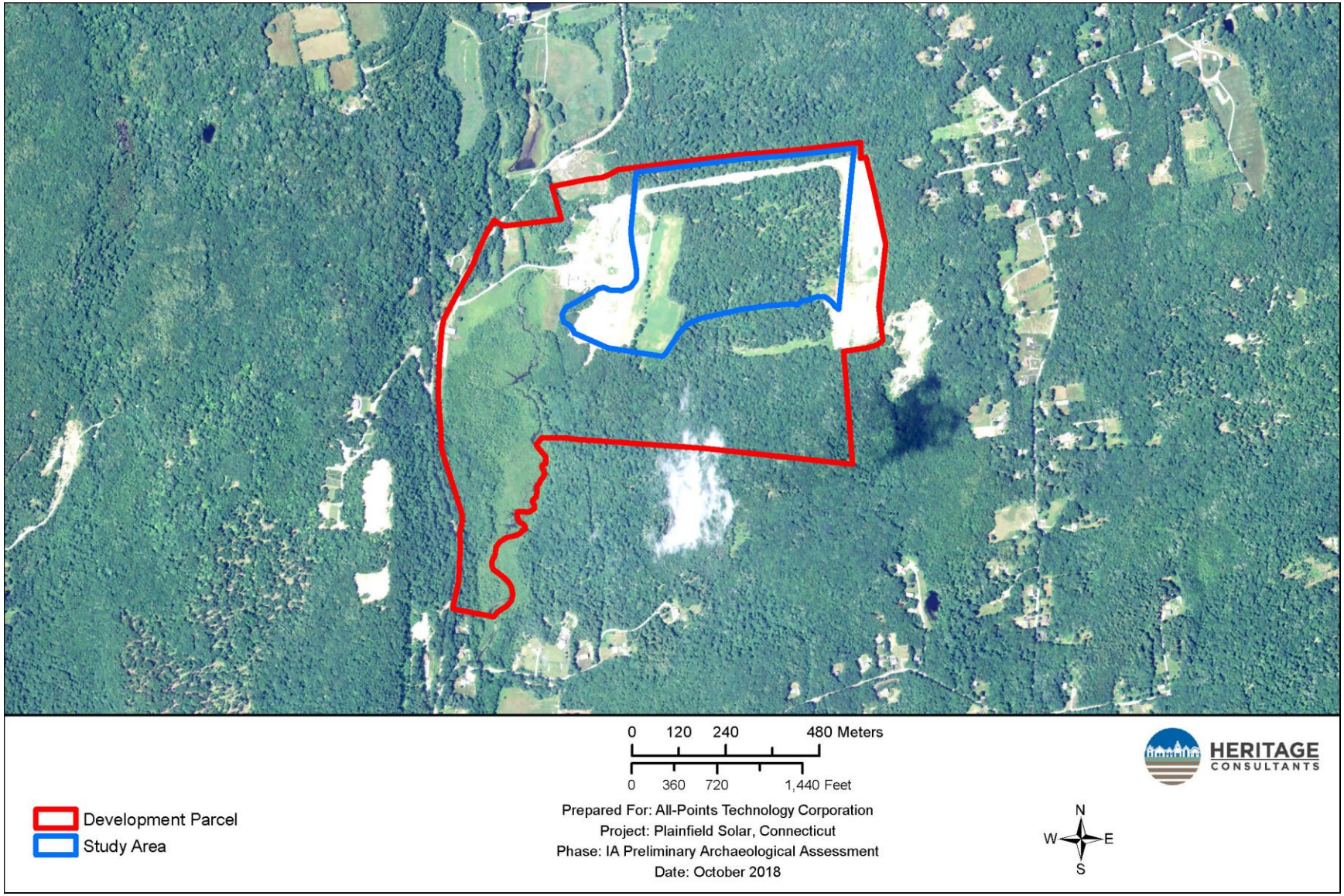


Figure 14. Excerpt from a 2008 aerial photograph showing proposed development parcel in Plainfield and Sterling, Connecticut.

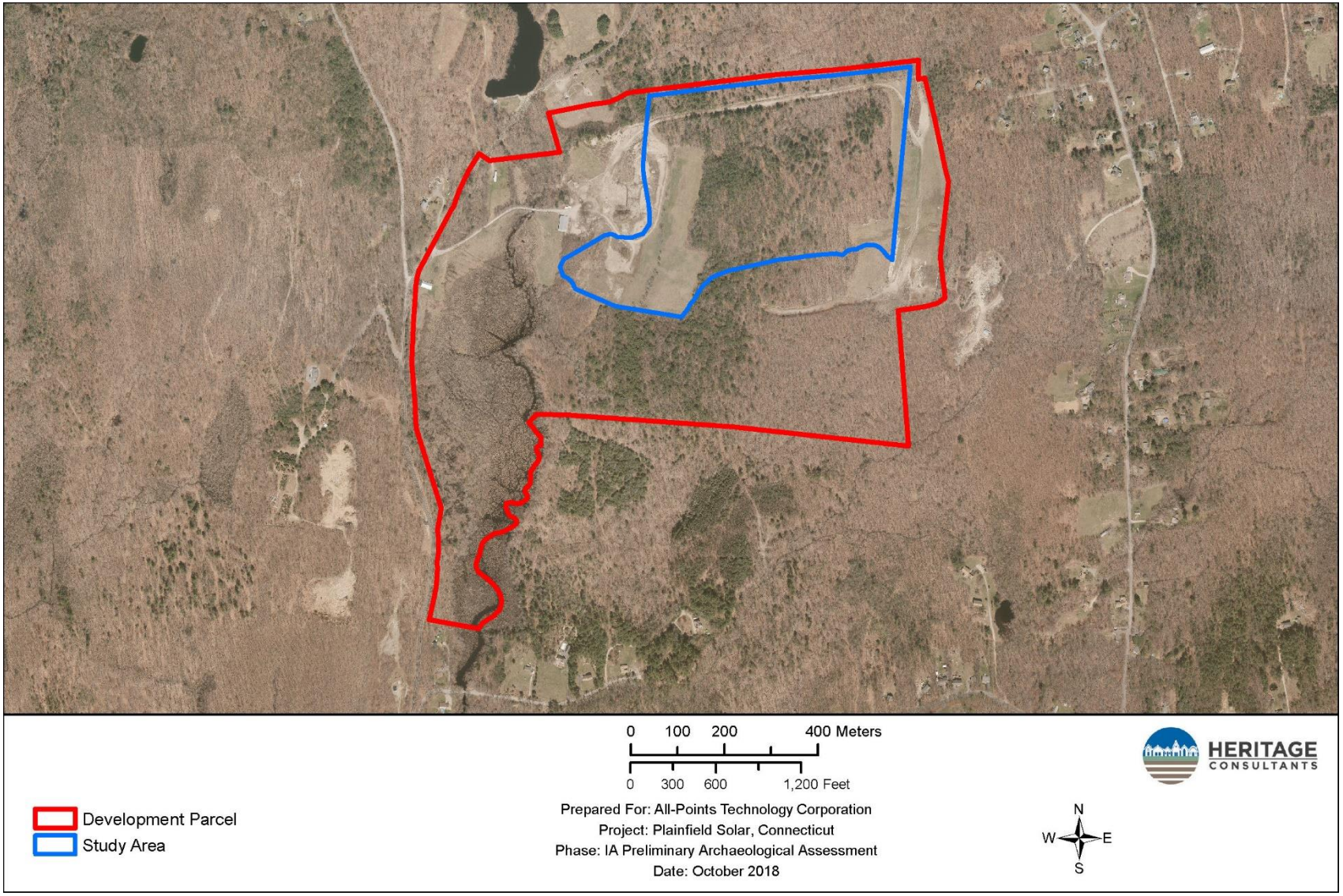


Figure 15. Excerpt from a 2016 aerial photograph showing proposed development parcel in Plainfield and Sterling, Connecticut.

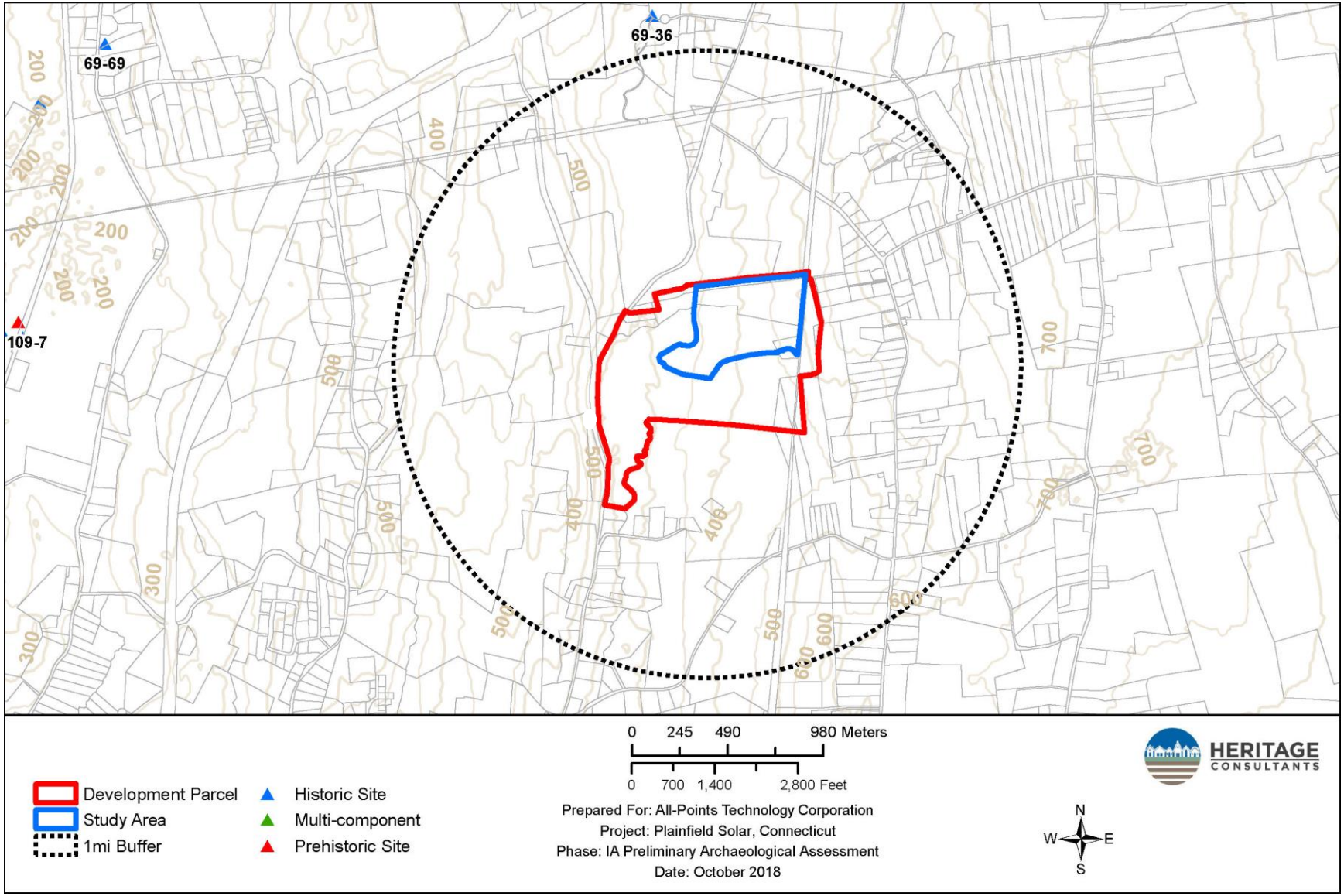


Figure 16. Digital map depicting the locations of previously identified archaeological sites in the vicinity of the proposed development parcel in Plainfield and Sterling, Connecticut.

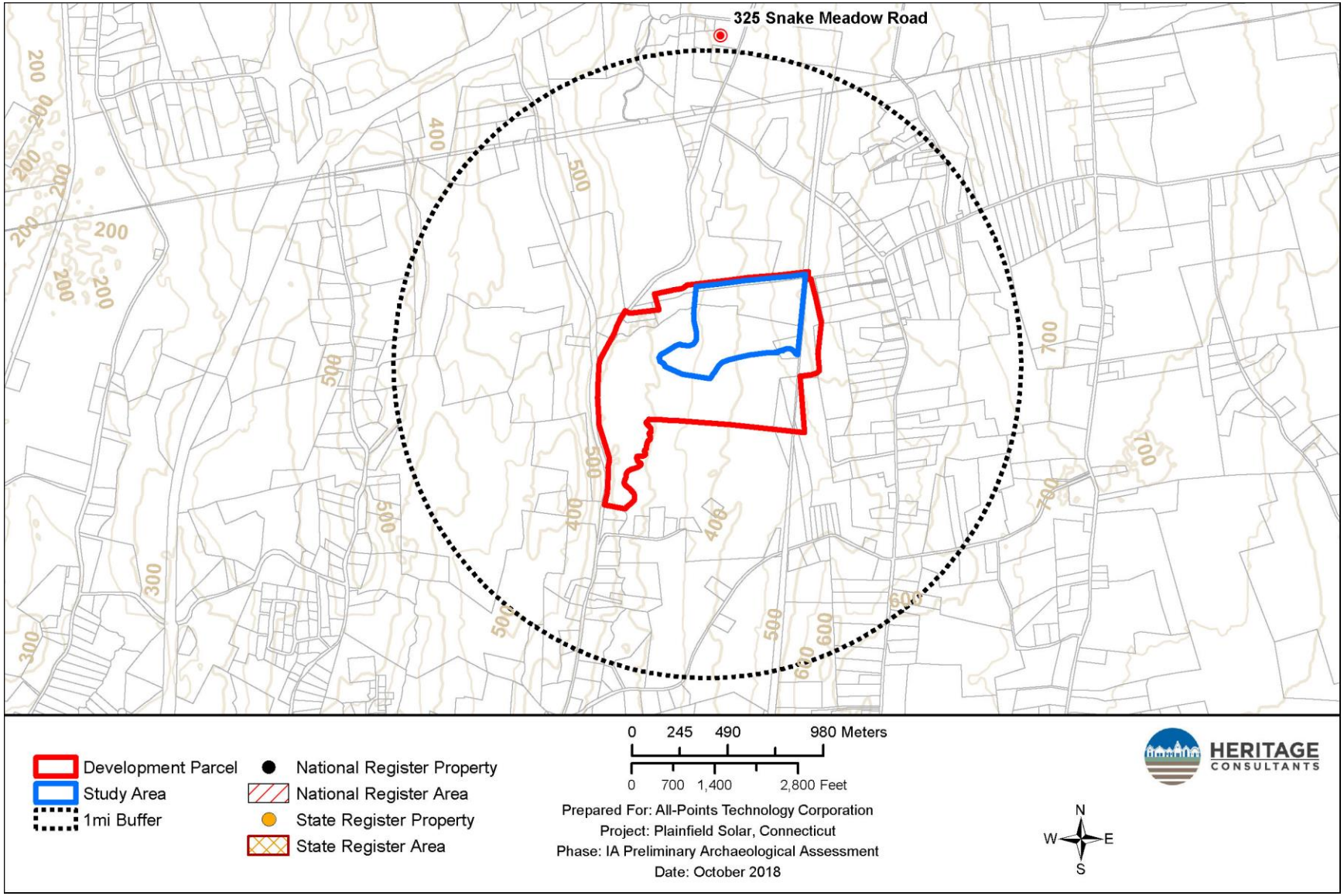


Figure 17. Digital map depicting the locations of previously identified National Register of Historic Places properties in the vicinity of the proposed development parcel in Plainfield and Sterling, Connecticut.



Figure 18. Overview of western portion the LOW where sand and gravelling has taken place, facing north.



Figure 19. Overview of southwestern portion the LOW where sand and gravelling has taken place, facing northeast.



Figure 20. Overview of field area to the east of the sand and gravel pits facing east.



Figure 21. Overview access road along the northern edge of the LOW, facing west.



Figure 22. Overview access road along the northern edge of the LOW, facing northwest.



Figure 23. Overview of the center portion of the LOW facing northeast.



Figure 24. Overview of the center portion of the LOW facing west.



Figure 25. Overview of the center portion of the LOW facing south.

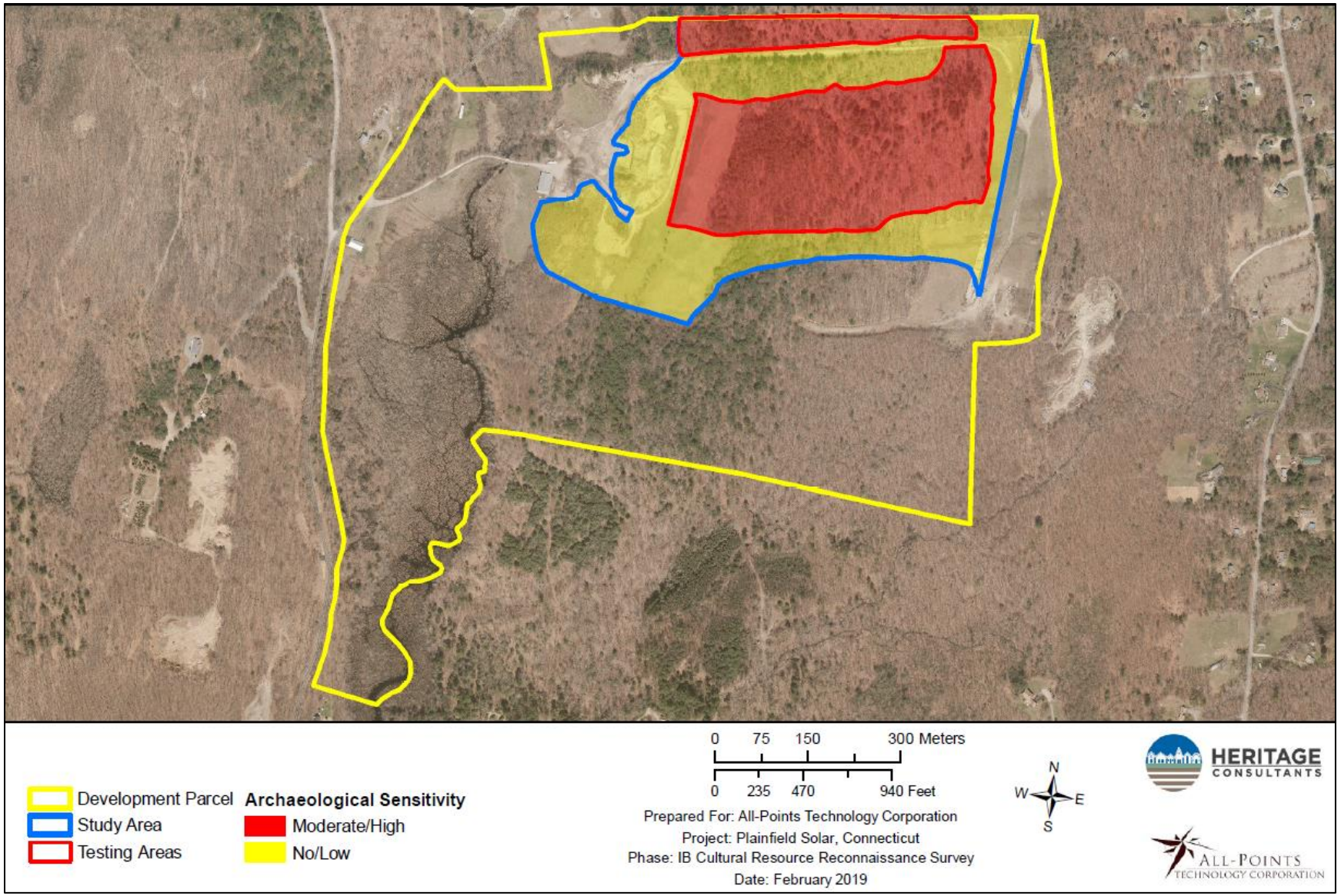


Figure 26. Excerpt from a 2016 aerial imaged depicting the no/low and moderate/high archeological sensitivity areas associated with the LOW in Plainfield and Sterling, Connecticut.

Connecticut
still revolutionary

Department of Economic and Community Development

State Historic Preservation Office

March 15, 2019

Mr. David R. George
Heritage Consultants
PO Box 310249
Newington, CT 06131

Subject: Phase IA Cultural Resources Assessment Survey
Proposed Solar Facility
Snake Meadow Road
Plainfield and Sterling, Connecticut

Dear Mr. George:

The State Historic Preservation Office (SHPO) has reviewed the archeological survey report prepared by Heritage Consultants, LLC (Heritage), dated February 2019. The proposed activities are under the jurisdiction of the Connecticut Siting Council and are subject to review by this office pursuant to the Connecticut Environmental Policy Act (CEPA). The proposed facility is located within a 182.3 acre study area, roughly bounded to the north, east, and south by forested areas, and to the west by a sand and gravel area, located on the eastern side of Snake Meadow Road.

The proposed facility includes photovoltaic (PV) solar panels, racking, access roads, and related ancillary equipment. The reconnaissance survey consisted of a contextual overview of the area's prehistory, history, and natural setting, literature to identify previously completed cultural resource surveys and recorded sites, review of historic maps, pedestrian survey of the study area, and preparation of a current archaeological assessment report.

The Phase IA assessment survey identified that out of 182.3 acres, approximately 83 acres will be impacted by the proposed facility. While the western, southern, norther, and eastern portions of the project area has been substantially disturbed by sand and gravel mining, the central portion has remained undisturbed, characterized by low to moderate sloping terrain and well drained soils, and adjacent to several freshwater sources, including Snake Meadow Brook. This type of setting retains a moderate to high degree to contain intact archaeological deposits.

We therefore concur that a Phase IB professional cultural resources assessment and reconnaissance survey that includes subsurface testing techniques be completed in areas identified as having moderate to high archaeological sensitivity and will be impacted by the proposed solar project prior to construction. All work should be in compliance with our *Environmental Review Primer for Connecticut's Archaeological Resources* and no construction or other project-related ground disturbance should be initiated until SHPO has had an opportunity to review and comment upon the requested survey.

Connecticut
still revolutionary

Department of Economic and Community Development

State Historic Preservation Office

This office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act. For additional information, please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or marena.wisniewski@ct.gov.

Sincerely,

Mary B. Dunne
State Historic Preservation Officer

APPENDIX H

Noise Evaluation Report

SAGE
ENVIRONMENTAL

April 9, 2019

Mr. Ralph A. Palumbo
Revity Energy, LLC
117 Metro Center Boulevard
Suite 1007
Warwick, RI 02886
Sent via email to: Ralph@revityenergy.com

RE: ***Pre-Installation Noise Assessment***
A Proposed Solar Farm Development
424 Snake Meadow Road
Plainfield & Sterling, Connecticut
SAGE Project No. M828

Dear Mr. Palumbo:

This correspondence presents the findings of a noise assessment conducted for a proposed 12.25-megawatt (AC) solar photovoltaic (SPV) electric generating facility located at 424 Snake Meadow Road, Plainfield, Connecticut (Assessor's Map 36, Lot 6) and a small portion located in Sterling, Connecticut (Assessor's Map 4415, Lot 11). The pre-installation noise assessment estimates the sound emitted from 49 inverters and 7 transformers that are part of the proposed SPV. The proposed SPV groups the inverters and transformers into "islands", such that there are 7 islands located at the site. Seven islands consist of 1 transformer and 3 to 10 inverters. **Attachment 1** provides a map displaying the location of the "islands" and the closest distance (in feet) to the property line.

The Towns of Plainfield and Sterling do not have specified noise standards, however the State of Connecticut's Department of Energy and Environmental Protection (CT DEEP) have Noise Control Regulations (RCSA Section 22a-69-1 to 22a-69-7.4). The Site is located in a Class A Land Use Category (i.e. residential), as defined by CT DEEP's Noise Control Regulations. Solar equipment only emits sound during the day, thus the daytime noise standard of 55 dB is the threshold evaluated for this assessment (RCSA Section 22a-69-3.5).

The sound calculations performed assume a "conservative" evaluation relative to noise propagation, such that the spread of sound was spread equally in all directions in a free field (i.e. no obstruction). It is likely that the combination of environmental (e.g. trees and shrubs) and site-specific features will serve to dampen additive noise levels. The proposed transformers do not have fans, however, SAGE assumed fans to provide a more conservative calculation.

Attachment 2 provides a map displaying the total sound emitted from each inverter and transformer (i.e. 56 sound emitting objects) for the proposed Snake Meadow Road solar development. **Table 1** provides common noise sources and the associated decibel (dB) sound level, for example sounds between 60 dB and 65 dB would be comparable to typical conversational sound.

Table 1
Common Sounds with Associated Decibel (dB) Levels

Min (dB)	Max (dB)	Description
20	25	rustling leaves
25	30	quiet rural nighttime
30	35	whisper
35	40	ambient wilderness/quiet suburban nighttime
40	45	computer/quite urban nighttime
45	50	birds/light traffic
50	55	fan/campfire
55	60	refrigerator/dishwasher
60	65	typical conversation/ air conditioner
65	70	vacuum cleaner
70	75	busy traffic/noisy urban area
75	80	leaf blower/garbage disposal
80	85	kitchen blender
85	120	motorcycle/MRI machine

Source: Berger, Elliott H., Rick Neitzel, and Cynthia A. Kladden. Noise Navigator Sound Level Database. 3M Personal Safety Division, E•A•RCAL Laboratory, Univ. of Michigan, Dept. of Environmental Health Science, 26 June 2015. Version 1.8.
Fox, Sarinne. "Noise Level Chart." Noise Help. N.p., 2017. Web. 2018.
Technical Noise Supplement (TeNS), California Department of Transportation, November 2009

This assessment notes that sound emitted from the proposed project does not exceed 55 dB at any location along the property line. The maximum sound observed at the property boundary is 51 dB, which is comparable to the sound a household humidifier would make. Thus, the sound emitted from the solar equipment would be considered permissible sound, per CT DEEP's Noise Control Regulations.

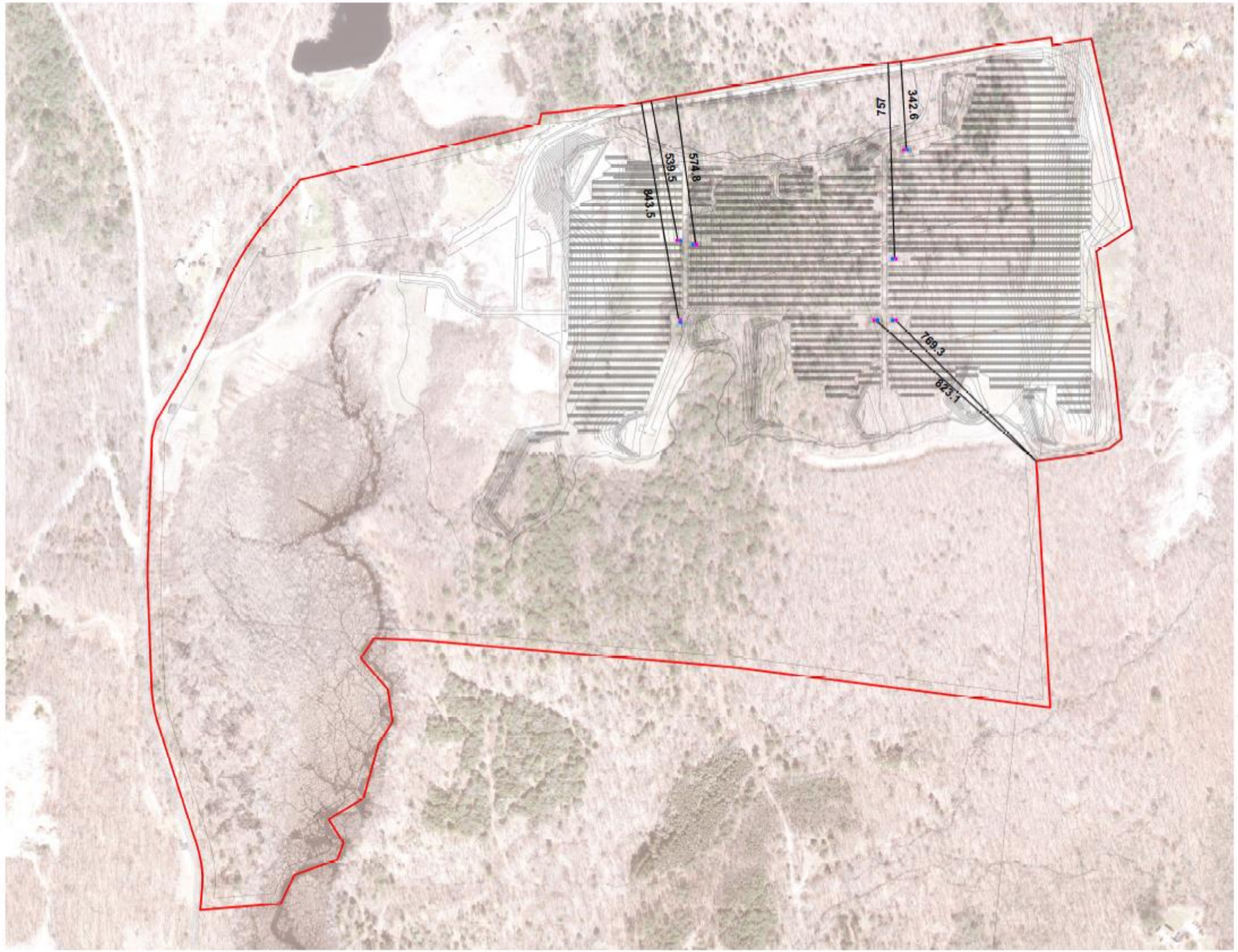
In conclusion, noise emitted from this proposed project is considered permissible sound and would not be considered a noise disturbance, according to CT DEEP's Noise Control Regulations (RCSA Section 22a-69-1 to 22a-69-7.4). Should you have any questions or concerns, please do not hesitate to contact me.

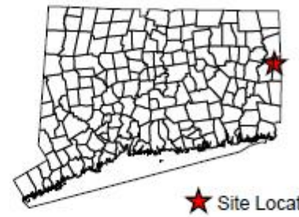
Sincerely,
SAGE Environmental, Inc.

Nicole Mulanaphy, P.E.
Senior Project Manager
Attachments:

Attachment 1: Location of Inverters and Transformer Islands and Distance to Property Line
Attachment 2: Total Sound Emitted from Each Inverter and Transformer

Attachment 1: Location of Inverters and Transformer Islands and Distance to Property Line





Legend

- Inverter
- Transformer
- Distance to Property Line (Feet)

2016 Orthoimagery Provided by CTDEEP

N

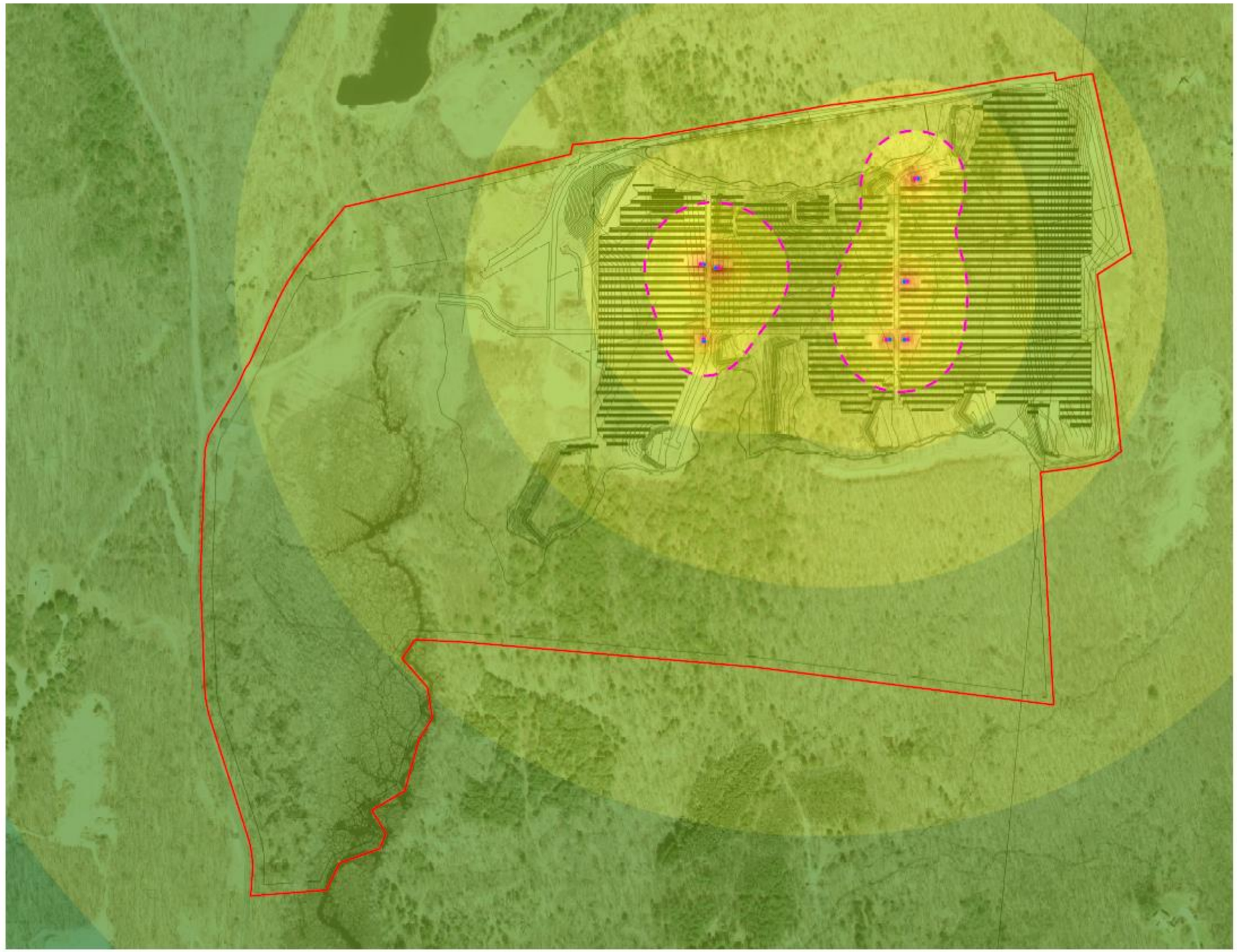
0 125 250 500 Feet

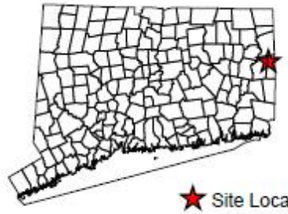
Location of Inverters & Transformer Islands & Distance to Property Line

Proposed Plainfield Solar Center
Snake Meadow Road
Plainfield and Sterling, Connecticut

Date: 4/03/2020	**Figure**
Job #: M828	
Created By: ALM	

SAGE Environmental, Inc.
172 Armistice Boulevard
Pawtucket, Rhode Island





Legend

- *Inverter*
- *Transformer*
- *55 dB Contour*

	Max dB		Description
	30	35	Whisper
	35	40	Ambient Wilderness/ Quiet Suburban Nighttime
	40	45	Computer/ Quiet Urban Nighttime
	45	50	Birds/ Light Traffic
	50	55	Fan/ Campfire
	55	60	Refrigerator/ Dishwasher
	60	65	Typical Conversation/ Air Conditioner
	65	70	Vacuum Cleaner
	70	75	Busy Traffic/Noisy Urban Area
	75	80	Kitchen Blender
	80	120	Motorcycle/MRI Machine

2016 Orthoimagery Provided by CTDEEP

Plainfield & Sterling, CT Property Lot Lines Provided by Plainfield & Sterling, CT

N

Sound Measurement Locations

Proposed Plainfield Solar Center
Snake Meadow Road
Plainfield and Sterling, Connecticut

Date: 04/03/2020
Job #: M828
Created By: ALM

Figure

SAGE Environmental, Inc.
172 Armistice Boulevard
Pawtucket, Rhode Island

APPENDIX I

Photo Simulation and Viewshed Analysis



EXISTING



PROPOSED

ALL-POINTS
TECHNOLOGY CORPORATION

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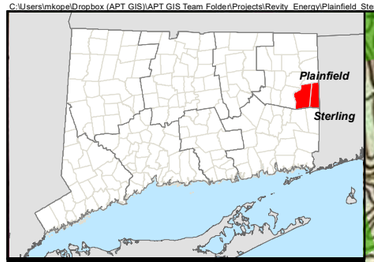
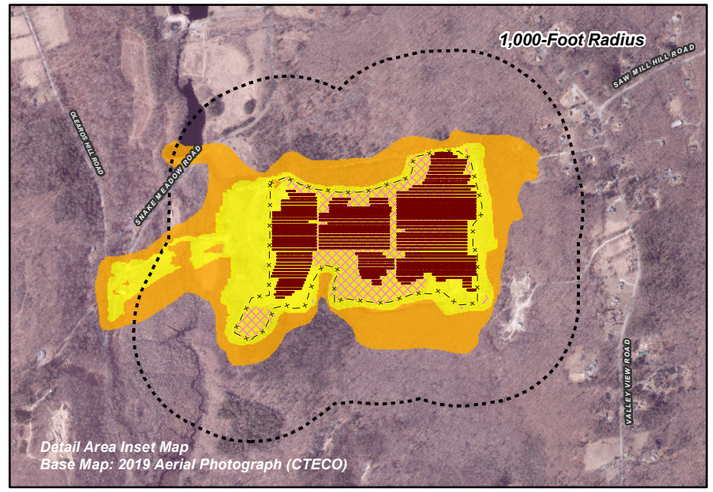


Statewide and Regional Overview Map



Viewshed Analysis Map

Proposed Solar Facility
Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Proposed solar panels to be mounted on approximate 10' AGL support structures.
Forest canopy height and topographic contours are derived from LiDAR data.
Study area encompasses a 1-mile radius and includes 2,343 acres.
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Maps, East Killingly, CT (1974) and Oneco, CT (1970)
Map Date: March 2020

Legend

- Site
- Study Area (1-Mile Radius)
- Proposed Solar Panel
- Proposed Perimeter Fence
- Approximate Area of Proposed Tree Removal
- Predicted Year-Round Visibility (90 Acres)
- Areas of Potential Seasonal Visibility (62 Acres)
- Municipal Boundary
- Trail
- Scenic Highway
- DEEP Boat Launches
- Municipal and Private Open Space Property
- State Forest/Park

Protected Open Space Property

- Federal
- Land Trust
- Municipal
- Private
- State

Data Sources:

Physical Geography / Background Data

A digital surface model (DSM) was created from the State of Connecticut 2016 LiDAR LAS data points. The first return LiDAR LAS values, associated with the highest feature in the landscape (such as a treetop or top of building), were used to capture the natural and built features on the Earth's surface beyond the approximate limits of clearing associated with the proposed solar facility. The "bare-earth" return values were utilized to reflect proposed conditions where vegetative clearing associated with the proposed solar facility would occur.

Municipal Open Space, State Recreation Areas, Trails, County Recreation Areas, and Town Boundary data obtained from CT DEEP. Scenic Roads: CTDOT State Scenic Highways (2015); Municipal Scenic Roads (compiled by APT)

Dedicated Open Space & Recreation Areas

Connecticut Department of Energy and Environmental Protection (DEEP): DEEP Property (May 2007; Federal Open Space (1997); Municipal and Private Open Space (1997); DEEP Boat Launches (1994)

Connecticut Forest & Parks Association, Connecticut Walk Books East & West

Other

CTDOT Scenic Strips (based on Department of Transportation data)

Notes

***Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.*

Limitations

This map depicts areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy and structures. This analysis may not account for all visible locations, as it is based on the combination of computer modeling, incorporating the DSM, 2019 digital aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties beyond the Host Property was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur, it is intended to provide a representation of those areas where the Facility is likely to be seen.

0 0.125 0.25 0.5 Miles

REVITY ENERGY

ALL-POINTS TECHNOLOGY CORPORATION

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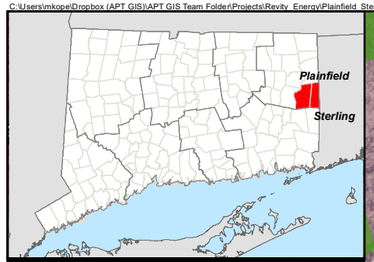
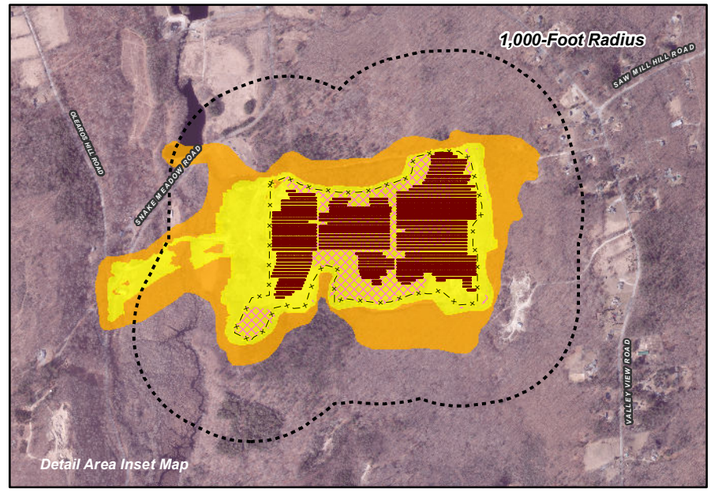


Statewide and Regional Overview Map



Detail Area Inset Map

Viewshed Analysis Map

Proposed Solar Facility
Revity Energy, LLC
Snake Meadow Road Solar Project
Plainfield and Sterling, Connecticut

Proposed solar panels to be mounted on approximate 10' AGL support structures.
Forest canopy height and topographic contours are derived from LiDAR data.
Study area encompasses a 1-mile radius and includes 2,343 acres.
Base Map Source: 2019 Aerial Photograph (CTECO)
Map Date: March 2020

Legend

- Site
- Study Area (1-Mile Radius)
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- Proposed Perimeter Fence
- Approximate Area of Proposed Tree Removal
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0 0.125 0.25 0.5 Miles

REVITY ENERGY

ALL-POINTS TECHNOLOGY CORPORATION

Exhibit C – Decommissioning Plan

Decommissioning Plan

for a 12.25 MW AC Ground-mounted Solar Photovoltaic Electric Generating Facility

Located 424 Snake Meadow Road, Plainfield

I. Summary:

The Project is a photovoltaic ("PV") renewable energy generation facility that will be located at 424 Snake Meadow Road, Plainfield and will be on the customer side of an Eversource owned meter. The design service life of the Project is roughly 25 years.

The decommissioning of the Project includes the removal of all the associated components and the restoration of the Project Site as close to its pre-Project condition as possible. The decommissioning will begin by de-energizing the Project. After that, various components will be removed, including the panels, racking, driven steel foundations, concrete pads, conduit and conductors, inverters and transformers. Finally, the chain-link security fence will be removed, and where necessary, the Site will be revegetated.

A majority of the Project components such as the electrical components, steel structures, panels and conductors will be recycled. All aspects of the decommissioning of the Project will be in compliance with all applicable federal, state and local laws. Revity will be responsible for the decommissioning of the Project in accordance with this scope of this Decommissioning Plan.

Revity will remove all components associated with the Project within approximately eighteen (18) months. Pending permanent removal, any debris or recyclable material will be placed in temporary storage locations at the Site. Almost all of these materials will be recyclable and such materials will be transported to the appropriate recycling facilities. Any non-recyclable material will be transported and properly disposed of in

accordance with state and federal law. Typical activities during a solar energy facility decommissioning and site reclamation phase include the following:

1. System de-energization.
2. PV module removal.
3. Dismantling and demolition of above grade structures.
4. Dismantling and removal of all aboveground and belowground utilities.
5. Debris management including hauling.
6. Temporary erosion control.
7. Removal of access road materials that are not maintained for other uses.
8. Removal of security fencing.
9. Regrading and revegetation.

II. Facility Materials:

PV generating facilities are constructed using the same basic materials and methods of installation common to their application (i.e., metal, concrete, PV cells, glass, and plastics).

Metals: Steel from pier foundations, racking, conduits, electrical enclosures, fencing, equipment buildings, and storage containers; aluminum from racking, module frames, electrical wire, and transformers; stainless steel

from fasteners, electrical enclosures, and racking; copper from electrical wire, transformers, and inverters.

Concrete: Equipment pads and footings.

PV Cells: PV modules are typically constructed of glass front sheets (some use glass back sheets as well), plastic back sheets and laminates, semiconductor rigid or thin film silicon cells, internal electrical conductors (aluminum or copper), silver solder, plus a variety of micro materials. The semiconductor PV cell materials represent a very small part of a PV module's weight, between 1 and 2%. As manufacturers pursue lower cost modules, thinner layers of semiconductor materials are used which reduces this percentage. The most commonly used semiconductor material for the construction of PV modules is silicon. Please note however, that poly/mono crystaline silicate panels and thin films panels may contain other metals and materials. Glass, aluminum, and copper are easily recyclable materials, and silicon can be recycled by specialty electronics recyclers.

Glass: Most PV modules are approximately 80% glass by weight. There are certain modules, which use plastic and/or metal sheets for their foundations, however these are very specialized in their application and are generally not used for ground mounted projects.

Plastics: A limited amount of plastic materials are used in PV systems due to a system's continuous exposure to the elements and long operational lifetime. Plastics typically are found in PV facilities as wire insulation, electrical enclosures, control and monitoring equipment, and inverter components. Additionally plastic laminate films are used in most PV module assemblies.

It is generally agreed that the metals in a PV facility will be highly valued as recycled materials when these facilities are deconstructed. In the limited number of facility deconstruction projects performed to date, the revenue from the recycling of these materials was found to cover a majority of the removal and transportation costs of these materials. If a facility is operational at the time of decommissioning and the PV modules are producing within specifications, there is a likely outlet for the used PV modules into a secondary market. It is generally accepted that the existing global market for used solar PV panels will be even more robust in the future.

III. Decommissioning Process:

The following sequence for the removal of the components will be used:

PV Site:

- Disconnect PV facility from the utility power grid.

- Disconnect all aboveground wirings, cables and electrical interconnections and recycle offsite by an approved recycling facility.
- Remove concrete foundations (if required). Electric rooms and their foundations will be removed and recycled off-site by a concrete recycler.
- Remove PV modules and ship to recycling facilities for recycling and material reuse.
- Remove all waste.
- Remove the perimeter fence and recycle off-site by an approved metal recycler.

Inverters/Transformer:

- Disconnect all electrical equipment.
- Remove all on site inverters, transformers, meters, fans, lighting fixture and other electrical components and recycle off-site by an approved recycler.
- Remove all waste.

Access Roads:

- Consult with landowner to determine if access roads should be left in place for their continued use.
- If access roads are deemed unnecessary, remove access road surface materials and restore access road location as near as practical to its original condition.

Below-Ground Structure Decommissioning:

- Disconnect and remove all underground cables and transmission lines to a depth of 36” below grade and recycle off-site by an approved recycling facility.
- Removal of steel rack foundations.

IV. Site Restoration:

Once the on-site equipment is removed, it is expected that the Site will be returned to its pre-Project condition. Some minor Site grading may be required and Site restoration activities will be undertaken with the input of the landowner.

The access roads will be left at landowner’s requests or graded to restore terrain profiles (as much as possible). If removed, filter fabric will need to be bundled and disposed of in accordance with all applicable regulations. The former road areas may need to be backfilled and restored to meet existing grade. This material may come from existing long term berm, stockpile, or nearby soils.

V. Decommissioning Conditions and Timeframe:

The Project and all components described above shall be physically removed from the Site no later than eighteen (18) months following a notice to the Towns of the Project’s discontinuation of operations. This decommissioning plan is based on current procedures and experience. These procedures may be subject to revision based on new experiences and requirements over time.

Exhibit D – Carbon Debt Analysis

SAGE
ENVIRONMENTAL

April 9, 2020

Mr. Ralph A. Palumbo
Revity Energy, LLC
117 Metro Center Boulevard
Suite 1007
Warwick, RI 02886
Sent via email to: Ralph@revityenergy.com

RE: Carbon Footprint Assessment
Snake Meadows Solar Development
Sterling, CT / Plainfield, CT
SAGE Project No. M828

Dear Mr. Palumbo:

This correspondence presents the findings of an assessment evaluating the carbon footprint associated with the development of a 12.25-megawatt (AC) solar photovoltaic (SPV) electric generating facility located at 424 Snake Meadow Road, Plainfield, Connecticut (Assessor's Map 36, Lot 6) and a small portion located in Sterling, Connecticut (Assessor's Map 4415, Lot 11). The assessment evaluates greenhouse gas emissions related to the SPV facility to determine the net benefit of SPV energy related to CO_2 (carbon dioxide) emissions. The CO_2 net benefit is the amount of CO_2 that will **not** be emitted to the atmosphere because of energy produced by the SPV facility.

The net benefit of the SPV facility evaluates the difference between the overall CO_2 emissions from the SPV facility and the amount of CO_2 that would have been emitted if the energy generation was from a fossil fuel instead of solar energy. The overall CO_2 emissions from the SPV facility includes the life cycle of SPV energy (i.e. CO_2 emissions from manufacturing of equipment utilized in the SPV facility, materials transportation, etc.) and CO_2 not absorbed from trees that will be cleared as part of the SPV facility development.

The CO_2 net benefit for this solar photovoltaic electric generating facility is estimated to be 28.0 million lbs CO_2 per year, this means there is the potential of 28.0 million lbs of CO_2 that will not be emitted each year because of sunlight that has been converted into energy. To put this into prospective, approximately 189,000 trees would have to be planted to absorb the equivalent

amount of CO_2 that will not be emitted because of the proposed SPV facility. **Attachment 1** provides the detailed description of the SPV energy carbon footprint calculations.

Should you have any questions or concerns, please do not hesitate to contact me.

Sincerely,
SAGE Environmental, Inc.

Nicole Mulanaphy, P.E.
Senior Project Manager

Attachments

Attachment 1: Detailed Description of the Carbon Footprint Calculation for the Proposed Solar Photovoltaic (SPV) Electric Generating Facility

Greenhouse gas emissions are a mixture of various gases such as CO_2 (carbon dioxide), CH_4 (methane) and N_2O (Nitrous Oxide). To compare emissions, the global warming potential (GWP) of greenhouse gases are determined, this is commonly expressed as CO_2eq (carbon dioxide equivalents). CO_2 is the principal human caused greenhouse gas that affects the Earth's radiative balance, it is the reference gas against which other greenhouse gases are measured and therefore has a Global Warming Potential of 1. What this means is when values refer to CO_2eq they include other greenhouse gases, whereas CO_2 emissions are CO_2 only and do not include other greenhouse gases.

To compare the carbon footprint from the SPV facility to that of other fossil fuel power generation methods (e.g. coal, petroleum, natural gas) CO_2 and CO_2eq emissions are compared. Data for fossil fuel is only available as CO_2 and data for SPV energy is only available as CO_2eq. Thus, SPV energy emissions are conservative as they also include other greenhouse gases that affect the Earth's radiative balance.

The U.S. Energy Information Administration provides annual operating data for power plants in the United States[1]. This operating data provides CO_2 emissions per KWh (kilowatt-hour) by various fuel sources (coal, petroleum and natural gas) for the past 11 years. The U.S. Energy Information Administration also provides state energy consumption estimates. In the state of Connecticut, the distribution of fossil fuel consumed is[2]: 54.5% petroleum; 45.0% natural gas; and 0.5% coal.

The generation of energy from a SPV facility does not generate global warming emissions. However, there are emissions associated with the life cycle of solar energy, such as manufacturing of equipment utilized in the SPV facility, materials transportation, installation, maintenance and decommissioning and dismantling the system. The estimated life cycle emissions for SPV energy are between 0.07 and 0.18 pounds of CO_2eq per KWh[3].

The power generated by the proposed SPV facility is 12.25 MW (AC). CO_2 emission rates for the fossil fuel and SPV energy life cycle are provided by energy generated (kilowatt-hour) not power. The estimated energy generated per year of production is expected to be 20,086,751KWh, as provided by Serdar Soytok, the Head of Engineering and Development at Captona Partners. The quantity of energy generation by the proposed SPV facility is used to determine what the emissions would be if the fuel source was from fossil fuel instead of solar. Emissions from fossil fuel consumption in Connecticut is estimated to be 30.5 million lbs of CO_2 per year for fossil fuel, compared to 1.61 million lbs of CO_2 per year for the life cycle of the SPV facility. **Table 1** provides a summary of CO_2 emissions per KWh for fossil fuel consumed in Connecticut compared solar photovoltaic energy.

To fully understand the carbon footprint of the proposed SPV facility, the loss of CO_2 absorbed from trees that would be cleared as part of the development must be incorporated. All-Points Technology

[1] U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor form(s) including U.S. Energy Information Administration, Form EIA-906, "Power Plant Report;" and Form EIA-920, "Combined Heat and Power Plant Report;" Form EIA-860, "Annual Electric Generator Report."

[2] U.S. Energy Information Administration, State Energy Data System, https://www.eia.gov/state/?sid=CT#tabs-1

[3] Union of Concerned Scientist, "Environmental Impacts of Solar Power", https://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html

Corporation (APT) provided tree density throughout the site as well as a listing of tree species found at the Site (**Table 2**). APT estimated that there are approximately 147 trees per acre and approximately 37 acres would require clearing for the SPV facility development. The tree density assessment was used to determine the total number of trees cleared. The estimated total number of trees to be cleared is 5,423 trees. The U.S. Energy Information Administration has evaluated the carbon sequestrated by trees[4], which vary by tree species. The carbon sequestrated from 30 year old trees range from 62 lbs of CO_2 per year for a slow growing hardwood (e.g. White Oak, *Quercus alba*) to 242 lbs of CO_2 per year for a fast growing hardwood (Red Oak, *Quercus rubra*). Based on the variation of tree species found on the site the average carbon sequestrated from 30 year old trees is 148 lbs of CO_2 per year at this Site. This equates to a total of 0.80 million lbs CO_2 that would not be absorbed each year due to the tree clearing. Thus, the overall carbon footprint of the proposed SPV facility would be 2.41 million lbs of CO_2 per year (i.e. CO_2 life cycle emissions + CO_2 not absorbed from trees).

To evaluate the net benefit of the SPV facility the difference between the overall CO_2 emissions from the SPV facility and the amount of CO_2 that would have been emitted if the energy generation was a fossil fuel instead of solar energy is determined. This CO_2 net benefit provides the amount of CO_2 emissions that are not being emitted because the energy is generated by the proposed SPV facility. The CO_2 net benefit is estimated at 28.0 million lbs CO_2 per year. To put this into prospective of number of trees, approximately 189,000 trees would have to be planted to absorb the equivalent amount of CO_2 that will not be emitted because of the proposed SPV facility.

Table 1
Summary of CO_2 Net Benefit

	CT Fossil Fuel Consumption	Proposed SPV Facility[b]
lbs of CO_2 per KWh[a]	1.52	0.07 to 0.18
Million of lbs CO_2 produced per year[c]	30.5	1.61
Million of lbs CO_2 Not Absorbed per year from Cleared Trees	0.80	
Million of lbs CO_2 emitted per year with SPV Facility Production Offset (Net benefit)[d]	28.0	-
Additional Trees Required to Achieve Net Zero CO_2 Emissions (thousands of trees)	189	-

a - Based on power plant operation year of 2018 and CT 2017 energy consumption estimates.
b - Emissions are CO_2eq. Lbs per KWh are for life cycle of the SPV system
c - Based on 20,086,751 KWh
d - Net benefit = lbs produced from fossil fuel - (lbs not absorbed by cleared trees + lbs from SPV facility life cycle)

[4] U. S. Energy Information Administration, Voluntary Reporting of Greenhouse Gases Program, "Method for Calculating Carbon Sequestration by Trees in Urban and Suburban Settings", April 1998.

Table 2

Tree Species Present

Tree Species[a]	Tree Type[b]	Growth Rate[b]
White oak (*Quercus alba*)	Hardwood	Slow
Red maple (*Acer rubrum*)	Hardwood	Moderate
Black oak (*Quercus velutina*)	Hardwood	Moderate
Black birch (*Betula lenta*)	Hardwood	Moderate
Hickories (*Carya spp*.)	Hardwood	Moderate
Red oak (*Quercus rubra*)	Hardwood	Fast
White pine (*Pinus strobus*)	Conifer	Fast

Source:

a- All-Points Technology Corporation

b - U. S. Energy Information Administration, Voluntary Reporting of Greenhouse Gases Program, "Method for Calculating Carbon Sequestration by Trees in Urban and Suburban Settings", April 1998.

Exhibit E – Spec. Sheets

powered by Q.ANTUM DUO

DRAFT



Q.PEAK DUO XL-G9.3
440-460

ENDURING HIGH PERFORMANCE



BREAKING THE 20% EFFICIENCY BARRIER
Q.ANTUM Technology combined with zero gap cell layout boosts module efficiency up to 20.8% absolute.

LOW ELECTRICITY GENERATION COSTS
Higher yield per surface area, lower BOS costs and up to 30 watts more power per module.

ENDURING HIGH PERFORMANCE
Long-term yield security with Anti LID Technology, Anti PID Technology[1], Hot-Spot Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING
High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).

A RELIABLE INVESTMENT
Inclusive 12-year product warranty and 25-year linear performance warranty[2].

STATE OF THE ART MODULE TECHNOLOGY
Q.ANTUM DUO combines cutting edge cell separation and innovative 12-busbar design with Q.ANTUM Technology.

[1] APT test conditions according to IEC/TS 62804-1:2015, method B (–1500 V, 168 h)
[2] See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:

Rooftop arrays on commercial / industrial buildings

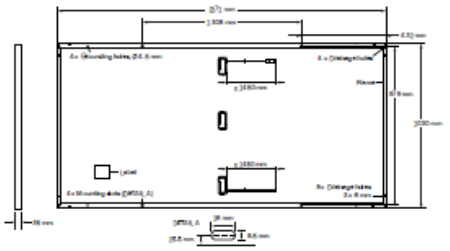
Ground-mounted solar power plants

Engineered in Germany

Q CELLS

MECHANICAL SPECIFICATION

Format	2171 mm × 1030 mm × 35 mm (including frame)
Weight	26.0 kg
Front Cover	3.2 mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodised aluminium
Cell	6 × 26 monocrystalline Q.ANTUM solar half cells
Junction box	53-101 mm × 32-60 mm × 15-18 mm Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥1450 mm, (−) ≥1450 mm
Connector	Stäubli MC4-Evo2, Hanwha Q CELLS HQC4, Amphenol UTX, Renhe 05-8, JMTHY JM601A, Tongling Cable01S-F; IP68 or Friends PV2e; IP67

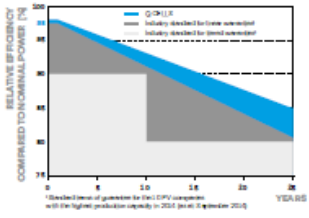


ELECTRICAL CHARACTERISTICS

POWER CLASS				440	445	450	455	460
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / −0 W)								
Minimum	Power at MPP[1]	P_{MPP}	[W]	440	445	450	455	460
	Short Circuit Current[1]	I_{SC}	[A]	10.55	10.57	10.60	10.62	10.65
	Open Circuit Voltage[1]	V_{OC}	[V]	53.13	53.17	53.20	53.24	53.27
	Current at MPP	I_{MPP}	[A]	10.02	10.07	10.12	10.16	10.21
	Voltage at MPP	V_{MPP}	[V]	43.92	44.21	44.49	44.76	45.04
	Efficiency[1]	η	[%]	≥19.7	≥19.9	≥20.1	≥20.3	≥20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]								
Minimum	Power at MPP	P_{MPP}	[W]	329.5	333.2	337.0	340.7	344.5
	Short Circuit Current	I_{SC}	[A]	8.50	8.52	8.54	8.56	8.58
	Open Circuit Voltage	V_{OC}	[V]	50.10	50.13	50.17	50.20	50.24
	Current at MPP	I_{MPP}	[A]	7.88	7.92	7.97	8.01	8.05
	Voltage at MPP	V_{MPP}	[V]	41.81	42.06	42.30	42.53	42.77

[1] Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25±2 °C, AM 1.5 according to IEC 60904-3 • [2] 800 W/m², NMOT, spectrum AM 1.5

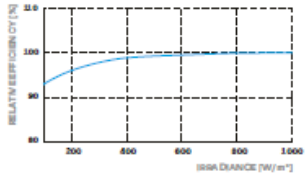
Q CELLS PERFORMANCE WARRANTY



At least 98 % of nominal power during first year. Thereafter max. 0.54 % degradation per year. At least 93.1 % of nominal power up to 10 years. At least 85 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS							
Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	−0.27
Temperature Coefficient of P_{MPP}	γ	[%/K]	−0.35	Normal Module Operating Temperature	NMOT	[°C]	43±3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V_{SYS}	[V]	1500 (IEC) / 1500 (UL)	Safety Class			II
Maximum Reverse Current	I_R	[A]	20	Fire Rating based on ANSI / UL 1703			C / TYPE 1
Max. Design Load, Push / Pull		[Pa]	3600 / 1600	Permitted Module Temperature on Continuous Duty			−40 °C – +85 °C
Max. Test Load, Push / Pull		[Pa]	5400 / 2400				

QUALIFICATIONS AND CERTIFICATES

IEC 61215:2016; IEC 61730:2016, Application Class II;
This data sheet complies with DIN EN 50380.

PACKAGING INFORMATION

Number of Modules per Pallet	29
Number of Pallets per Trailer (24 t)	24
Number of Pallets per 40' HC-Container (26 t)	20
Pallet Dimensions (L × W × H)	2241 × 1150 × 1220 mm
Pallet Weight	814 kg

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS GmbH
Sonnenallee 17-21, 06766 Bitterfeld-Wolfen, Germany | **TEL** +49 (0)3494 66 99-23444 | **FAX** +49 (0)3494 66 99-23000 | **EMAIL** sales@q-cells.com | **WEB** www.q-cells.com

Specifications subject to technical changes © Q CELLS Q.PEAK DUO XL-G9.3_440-460_2019-08_Rev01_EN

Engineered in Germany

SG250HX-US New

Multi-MPPT String Inverter for 1500 Vdc System

SUNGROW
Clean power for all



HIGH YIELD

- 12 MPPTs with max. efficiency 99%
- Compatible with bifacial module
- Built-in Anti-PID and PID recovery function

SMART O&M

- Touch free commissioning and remote firmware upgrade
- Online IV curve scan and diagnosis*
- Fuse free design with smart string current monitoring

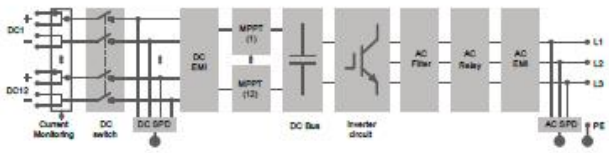
LOW COST

- Compatible with Al and Cu AC cables
- DC 2 in 1 connection enabled
- Power line communication (PLC)
- Reactive power at night function

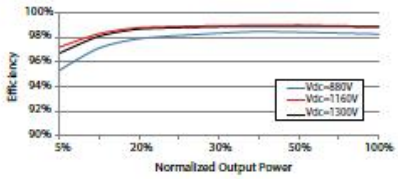
PROVEN SAFETY

- Integrated Arc fault circuit protection
- NEMA 4X protection and C5 anti-corrosion grade
- Type II SPD for both DC and AC

CIRCUIT DIAGRAM



EFFICIENCY CURVE



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Type designation	SG250HX-US
Input (DC)	
Max. PV input voltage	1500 V
Min. PV input voltage / Startup input voltage	600 V / 600 V
Nominal PV input voltage	1080 V
MPP voltage range	600 V – 1500 V
MPP voltage range for nominal power	860 V – 1300 V
No. of independent MPP inputs	12
Max. PV input current	26 A * 12
Max. current for input connector	30 A
Max. DC short-circuit current	50 A * 12
Output (AC)	
AC output power	250 kVA @ 30 ℃ / 225 kVA @40 ℃/200 KVA @50℃
Max. AC output current	180.5 A
Nominal AC voltage	3 / PE, 800 V
AC voltage range	680 – 880V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / connection phases	3 / 3
Efficiency	
Max. efficiency	99.0 %
CEC efficiency	98.5 %
Protection	
DC reverse connection protection	Yes
AC short circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
Ground fault monitoring	Yes
DC switch	Yes
AC switch	No
Arc fault circuit interrupter (AFCI)	Yes
PV String current monitoring	Yes
Reactive powe at night function	Yes
PID protection	An-ti PID or PID recovery
Overvoltage protection	DC Type II and AC Type II
General Data	
Dimensions (W*H*D)	1051*660*363 mm (41.4''*26''*14.3'')
Weight	95kg (209.4 lbs)
Isolation method	Transformerless
Ingress protection rating	NEMA 4X
Night power consumption	< 2 W
Operating ambient temperature range	'-30 to 60 ℃ ('-22 to 140 ℉)
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m der ating) 13123 ft (> 9843 ft derating)
Display	LED, Bluetooth+APP
Communication	RS485 / PLC
DC connection type	Amphenol UTX (Max. 6 mm² 10AWG)
AC connection type	OT terminal (Max. 300 mm² 600 Kcmil)
Compliance	UL1741, UL1741SA, IEEE1547, IEEE1547.1, CSA C22.2 107.1-01-2001, FCC Part15 Sub-part B Class A Limits, California Rule 21,UL 1699B
Grid Support	Reactive power at night function, LVRT, HVRT,active & reactive power control and power ramp rate control, Volt/Watt, Frequency/Watt

*: Only compatible with Sungrow logger and iSolarCloud

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TRANSFORMER
AC PANELBOARD
STRING INVERTERS

Exhibit F – Municipal Letters of Support

Town of Sterling

Town Hall
1183 Plainfield Pike
P.O. Box 157
Oneco, Connecticut 06373-0157

Assessor:	860-564-3030
Building Official:	860-564-2275
Economic Development:	860-564-4752
Library:	860-564-2692
Recreation:	860-564-2136
Registrar of Voters:	860-564-2654
Revenue Collector:	860-564-7563
Selectmen:	860-564-2904
Town Clerk:	860-564-2657
Treasurer:	860-564-8488
Wetlands Agent:	860-564-2275
Zoning Official:	860-564-2275

March 5, 2020

Ms. Melanie Bachman, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Snake Meadow Solar Facility

Dear Attorney Bachman:

The Town of Sterling and its Economic Development Commission has been working closely with the Revity Energy, LLC (Revity Energy) in their plans to redevelop a former sand and gravel operation into a solar power generation facility. The Town and Revity Energy have held one public meeting attended by members of the applicable boards and commissions, key staff, and the public, which has afforded those attending with the opportunity to view and comment on these plans. The Town has appreciated Revity Energy collaborative outreach efforts.

The plans included with the petition to site this facility are consistent with the overall intent of our Plan of Conservation and Development, make productive use of the Town's land resources, protect wetlands and other natural resources, and preserve the character of the Town.

The Town of Sterling is very comfortable in taking the position that this project is in the best interest of the Town and will provide significant fiscal and conservation benefits. If the project is approved, it will deliver additional tax revenue to the Town, create both short and long term employment opportunities, and encourage the development of and significantly contribute to Connecticut's clean energy future.

Therefore, the Town is in support of this facility pending Connecticut Siting Council review and approval.

Sincerely,

Russell M. Gray

Russell M. Gray
First Selectman

"This institution is an equal opportunity provider and employer."

THE PLAINFIELD TOWN HALL

PLAINFIELD - CENTRAL VILLAGE - MOOSUP - WAUREGAN

Town Hall
8 Community Avenue
Plainfield, CT 06374

Telephone (860) 230-3001
Fax (860) 230-3033

SELECTMAN'S OFFICE

January 14, 2020

Ms. Melanie Bachman, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Snake Meadow Solar Facility

Dear Attorney Bachman:

The Town of Plainfield has been working closely with the Southern Revity Energy, LLC (Revity) in their plans to redevelop a former sand and gravel operation into a solar power generation facility. The Town and Revity have held two public meetings attended by members of the applicable boards and commissions, key staff, and the public, which has afforded those attending with the opportunity to view and comment on these plans. The Town has appreciated Revity's collaborative outreach efforts.

The plans included with the petition to site this facility are consistent with the overall intent of our Plan of Conservation and Development, make productive use of the Town's land resources, protect wetlands and other natural resources, and preserve the character of the Town.

The Town of Plainfield is very comfortable in taking the position that this project is in the best interest of the Town and will provide significant fiscal and conservation benefits. If the project is approved, it will deliver additional tax revenue to the Town, create both short and long term employment opportunities, and encourage the development of and significantly contribute to Connecticut's clean energy future.

Therefore, the Town is in support of this facility pending Connecticut Siting Council review and approval.

Sincerely,

First Selectman
Kevin Cunningham

Exhibit G-1 – Abutters List

ADDRESS	OWNER NAME	MAILING ADDRESS
Demers Rd., Plainfield, CT	Cathie Haggerty and Carla Demers	406 Canterbury Rd., Brooklyn, CT 06234
14 Demers Rd., Plainfield, CT	Lawrence and Mary Ann Keeler	14 Demers Road, Moosup, CT 06354
323 Snake Meadow Rd., Plainfield, CT	Charles W. Corson Jr.	160 Sterling Rd. Sterling, CT 06377
401 Snake Meadow Rd., Plainfield, CT	Rudolph and Jane Bawza	401 Snake Meadow Rd. Moosup, CT 06354
433 Snake Meadow Rd., Plainfield, CT	Joseph R. Vinagro	2208 Plainfield Pike Johnston, RI 02919
435 Snake Meadow Rd., Plainfield, CT	Harvey Malbaurn	435 Snake Meadow Rd., Moosup, CT 06354
561 Snake Meadow Rd., Plainfield, CT	Snake Meadow Club	PO Box 236, Central Village, CT 06332-0236
0 Snake Meadow Rd., Plainfield, CT	Snake Meadow Club	PO Box 236, Central Village, CT 06332-0236
45 Valley View Rd., Plainfield, CT	Everson John E. Est. of Dustin J. Everson	276 Valley View Rd., Danielson, CT 06239
466 Snake Meadow Rd., Plainfield, CT	Eileen Rovero	47 Maple Court Danielson, CT 06239
Valley View Rd., Sterling, CT	Rich McGarry	143 Sawmill Hill Rd., Sterling, CT 06377
163 Valley View Rd., Sterling, CT	Cory Johnson and Breanna Hill	163 Valley View Rd., Sterling, CT 06377
163 Valley View Rd., Sterling, CT	John C Rust and Rebecca J Bowes	163 Valley View Rd., Sterling, CT 06377
165 Valley View Rd., Sterling, CT	Elizabeth L. Nayman	165 Valley View Rd., Sterling, CT 06377
179 Valley View Rd., Sterling, CT	Michael Habershaw and Sarah Mulhearn	179 Valley View Rd., Sterling, CT 06377
179 Valley View Rd., Sterling, CT	Richard J and Jane W Johnson	179 Valley View Rd., Sterling, CT 06377
Valley View Rd., Sterling, CT	DSD Development LLC	203 Grays Bridge Road Brookfield, CT 06804
Valley View Rd., Sterling, CT	Pine Hill Road Realty LLC	46 Union Ave, Sudbury MA 01776
242 Harris Rd., Sterling, CT	Patricia Soriero	242 Harris Rd., Sterling, CT 06377

ADDRESS	OWNER NAME	MAILING ADDRESS
222 Harris Rd., Sterling, CT	Gordon Malouf	222 Harris Rd., Sterling, CT 06377
222 Harris Rd., Sterling, CT	Stephanie Leduc and Taylor Greene	394 Mount Pleasant Rd., Harrisville, RI 02830
217 Harris Rd., Sterling, CT	Michael Vieira	217 Harris Rd., Sterling, CT 06377
209 Harris Rd., Sterling, CT	John M Jr. and Joanne R Joslyn	209 Harris Rd., Sterling, CT 06377
205 Harris Rd., Sterling, CT	Robert Rosario Dumas	205 Harris Rd., Sterling, CT 06377

Exhibit G-2 – Federal, State, and Local Agencies and Officials List

Town of Plainfield

Kevin Cunningham, First Selectman
Town of Plainfield
8 Community Avenue
Plainfield, CT 0637

Mary Ann Chinatti
Planning & Zoning Supervisor
8 Community Avenue
Plainfield, CT 06374

Louisa Trakas, Town Clerk
Town of Plainfield
8 Community Avenue
Plainfield, CT 06374

Ronald Desjardins, Chairman
Plainfield IWWC
8 Community Avenue
Plainfield, CT 06374

Town of Sterling

Russell M. Gray
First Selectman
Sterling Connecticut Town Hall
1183 Plainfield Pike
P.O. Box 157
Oneco, CT 06373-0157

Demian A. Sorrentino
Zoning Enforcement Officer
Zoning Department
Sterling Connecticut Town Hall
1183 Plainfield Pike
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State and Federal Officials

Attorney General William Tong
Office of the Attorney General
55 Elm Street
Hartford, CT 06106

Deputy Attorney General Margaret Q. Chapple
Office of the Attorney General
Ten Franklin Square
New Britain, CT 06051

Consumer Counsel Richard Sobolewski
Office of Consumer Counsel
Ten Franklin Square
New Britain, CT 06051

Bryan P. Hurlburt, Commissioner
Connecticut Department of Agriculture
450 Columbus Boulevard, Suite 701
Hartford, CT 06103

David Lehman, Commissioner
Economic & Community Development
Department
450 Columbus Boulevard
Hartford, CT 06103

James C. Rovella, Commissioner
Department of Emergency Services and Public Protection
1111 Country Club Road
Middletown, CT 06457

Katie Dykes, Commissioner
Connecticut Department of Energy and
Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Susan D. Merrow, Chair
Connecticut Council on Environmental Quality
79 Elm Street
Hartford, CT 06106

Melissa McCaw, Secretary
Office of Policy and Management
450 Capitol Avenue
Hartford, CT 06106

Dr. Renée D. Coleman-Mitchell, Commissioner
Department of Public Health
410 Capitol Ave.
Hartford CT, 06134

Marissa Paslick Gillett, Chairman
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Ten Franklin Square
New Britain, CT 06051

Joseph Giulietti, Commissioner
Department of Transportation
2800 Berlin Turnpike
Newington, CT 06111

Randy Fiveash, Director
Connecticut Office of Tourism
450 Columbus Blvd.
Suite 5
Hartford, CT 06103

U.S. Army Corps of Engineers
New England District, Regulatory Division
696 Virginia Avenue
Corcord, MA 01742-2751
Attn: Susan Lee, Permit Project Manager

Kurt Westby, Commissioner
Connecticut Department of Labor
200 Folly Brook Boulevard
Wethersfield, CT 06109

Michelle H. Seagull, Commissioner
Department of Consumer Protection
450 Columbus Boulevard
Suite 901
Hartford, CT 06103-1840

Josh Geballe, Commissioner
Department of Administrative Services
Office of the Deputy Commissioner
450 Columbus Boulevard
Hartford, CT 06103

Northeastern Connecticut
Council of Governments
125 Putnam Pike, P.O. Box 759
Dayville, CT 06241-0759

U.S. Army Corps of Engineers
New England District, Regulatory Division
696 Virginia Avenue
Corcord, MA 01742-2751
Attn: Susan Lee, Permit Project Manager

State Elected Officials

Representative Anne Dauphinais
Legislative Office Building, Room 4200
300 Capitol Avenue
Hartford, CT 06106

Representative Brian Lanoue
Legislative Office Building, Room 4200
300 Capitol Avenue
Hartford, CT 06106

Senator Heather Somers
Legislative Office Building, Room 3104
300 Capitol Avenue
Hartford, CT 06106

Exhibit H – Affidavits

AFFIDAVIT OF SERVICE OF NOTICE UPON
ABUTTING PROPERTY OWNERS

STATE OF CONNECTICUT)
) ss. New Haven
COUNTY OF NEW HAVEN)

Pursuant to section 16-50l(b) of the Connecticut General Statutes, I hereby certify that on or before April 17, 2020, I caused notice of the intent of Revity Energy LLC ("Revity") to file a petition with the Connecticut Siting Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is necessary for the installation of a 12.25-megawatt (AC) ground mounted solar photovoltaic system, a 23kV electrical interconnection, and associated equipment (collectively, the "Project") at 424 Snake Meadow Road, Plainfield, Connecticut (the "Property") to be sent to abutting property owners of the Property with a letter describing the Project. The list of the abutting property owners who were notified and a sample notification letter, which was sent to these abutting property owners, are found on Attachment A.

Samuel R. Volet

On this 16th day of April, 2020, before me, the undersigned officer, personally appeared, Samuel R. Volet, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In Witness Whereof, I hereunto set my and office seal.

Officer of the Superior Court
Sara Selmanaj

Attachment A

ADDRESS	OWNER NAME	MAILING ADDRESS
Demers Rd., Plainfield, CT	Cathie Haggerty and Carla Demers	406 Canterbury Rd., Brooklyn, CT 06234
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205 Harris Rd., Sterling, CT	Robert Rosario Dumas	205 Harris Rd., Sterling, CT 06377

BRUCE L. MCDERMOTT
203.772.7787 DIRECT TELEPHONE
860.240.5723 DIRECT FACSIMILE
BMCDERMOTT@MURTHALAW.COM

April 17, 2020

VIA UPS

[INSERT
NAME
AND ADRESS]

Re: Notice to Owners of Property Abutting Proposed Solar Project

Dear [INSERT NAME]:

Revity Energy LLC ("Revity") is undertaking a project that involves the installation of a 12.25-megawatt (AC) ground mounted solar photovoltaic system, a 23kV electrical interconnection, and associated equipment (collectively, the "Project") located at 424 Snake Meadow Road, Plainfield, Connecticut (the "Property").

Since the Project abuts your property, Revity is committed to keeping you informed.

This letter is to provide you notice that on or about April 17, 2020, Revity intends to submit to the Connecticut Siting Council a petition for a declaratory ruling, pursuant to Connecticut General Statutes Sections 4-176 and 16-50k, for the proposed construction, maintenance, and operation of the Project. The Council will undertake a thorough review of the proposed Project and consider input from interested stakeholders. If the Project is approved by the Council, Revity anticipates starting construction in the first quarter of 2021, with completion in 2022. This schedule is approximate and subject to change. Please note this work will not interrupt electric service to homes or businesses.

If you would like more information concerning the proposed Project, please visit the Project website at https://www.ct.gov/csc/site/default.asp or you may email Revity at Info@RevityEnergy.com or call (401) 922-5955.

Sincerely,



Bruce L. McDermott

AFFIDAVIT OF SERVICE OF PETITION

STATE OF CONNECTICUT)
) ss. New Haven
COUNTY OF NEW HAVEN)

Pursuant to section 16-50l(b) of the Connecticut General Statutes, I hereby certify that on or before April 17, 2020, I caused a copy of Revity Energy LLC's petition to the Connecticut Siting Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is necessary for the installation of a 12.25-megawatt (AC) ground mounted solar photovoltaic system, a 23kV electrical interconnection, and associated equipment (collectively, the "Project") at 424 Snake Meadow Road, Plainfield, Connecticut (the "Property") to be served upon the individuals and agencies set forth on Attachment A.

Samuel R. Volet

On this 16th day of April, 2020, before me, the undersigned officer, personally appeared, Samuel R. Volet, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In Witness Whereof, I hereunto set my and office seal.

Officer of the Superior Court
Sara Selmanaj

Attachment A

Town of Plainfield

Kevin Cunningham, First Selectman
Town of Plainfield
8 Community Avenue
Plainfield, CT 0637

Mary Ann Chinatti
Planning & Zoning Supervisor
8 Community Avenue
Plainfield, CT 06374

Barbi Gardiner, Town Clerk
Town of Plainfield
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Plainfield, CT 06374

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Connecticut Office of Tourism
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Senator Heather Somers
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BRUCE L. MCDERMOTT
203.772.7787 DIRECT TELEPHONE
860.240.5723 DIRECT FACSIMILE
BMCDERMOTT@MURTHALAW.COM

VIA UPS

April 17, 2020

To: Federal, State and Local Government Agencies and Officials Referred to in §16-50*l*(b) of the Connecticut General Statutes

Re: Petition of Revity Energy LLC to the Connecticut Siting Council for a 12.25-megawatt solar based electric generating facility Project in the Towns of Plainfield and Sterling, Connecticut

Revity Energy LLC ("Revity") is undertaking a project that will involve the installation of a 12.25-megawatt (AC) ground mounted solar photovoltaic system, a 23 kV electrical interconnection, and associated equipment (collectively, the "System") located at 424 Snake Meadow Road, Plainfield, Connecticut (the "Property"). Revity will be seeking a petition for a declaratory ruling from the Connecticut Siting Council ("Council") that no Certificate of Environmental Compatibility and Public Need is necessary for the installation of the System within the Property.

The purpose of this letter is to provide you with notice of the intent of Revity to file its Petition with the Council. The Petition will be submitted on or after April 17, 2020. Section 16-50n(a) of the Connecticut General Statutes provides that each person entitled to receive a copy of a Petition under § 16-50*l* may become a party to the proceeding by giving the Council a notice of intent to be a party. The Council's address is: Connecticut Siting Council, 10 Franklin Square, New Britain, CT 06051.

Respectfully submitted,



Bruce L. McDermott