



## **ENVIRONMENTAL ASSESSMENT**

**PROPOSED TRITEC AMERICAS, LLC  
N SILVER BROOK SOLAR PROJECT**

**486 FITCH HILL ROAD  
UNCASVILLE (MONTVILLE), CONNECTICUT  
NEW LONDON COUNTY**

**Prepared for:**

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**February 2022**

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# **1 Introduction**

All-Points Technology Corporation, P.C. (“APT”) prepared this Environmental Assessment (“EA”) on behalf of TRITEC Americas, LLC (hereinafter referred to as the “Petitioner”) for the proposed installation and utility interconnection of a solar-based electric generating facility, with output of approximately 1.99 megawatts<sup>1</sup> (“MW”) (collectively, the “Project”) located in the Town of Montville, Connecticut (“Town”). This EA has been completed to support the Petitioner’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 electric generating facility.

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. Further, a review of Connecticut General Statutes § 22a-20a indicates that the proposed Project is neither defined as an “affecting facility”<sup>2</sup> nor located within an “environmental justice community”<sup>3</sup>.

The Project will be located at 486 Fitch Hill Road in the Uncasville section of Montville, Connecticut. The privately owned property in its entirety includes 209.82 acres located on both the east and west sides of Fitch Hill Road north of Raymond Hill Road. The Project will be located on the eastern portion of the parcel, which totals approximately 128.67 acres (referred to herein as the “Site”). The Site contains a residence and multiple outbuildings; agricultural fields are at the center, with a wooded area to the north and a mixture of wooded and cleared land to the south along Raymond Hill Road. Falls Brook flows generally west to east to the south of the agricultural fields. The Site is zoned R80 - Residential.

Figure 1, *Site Location Map*, depicts the location of the Site and the immediate surrounding area.

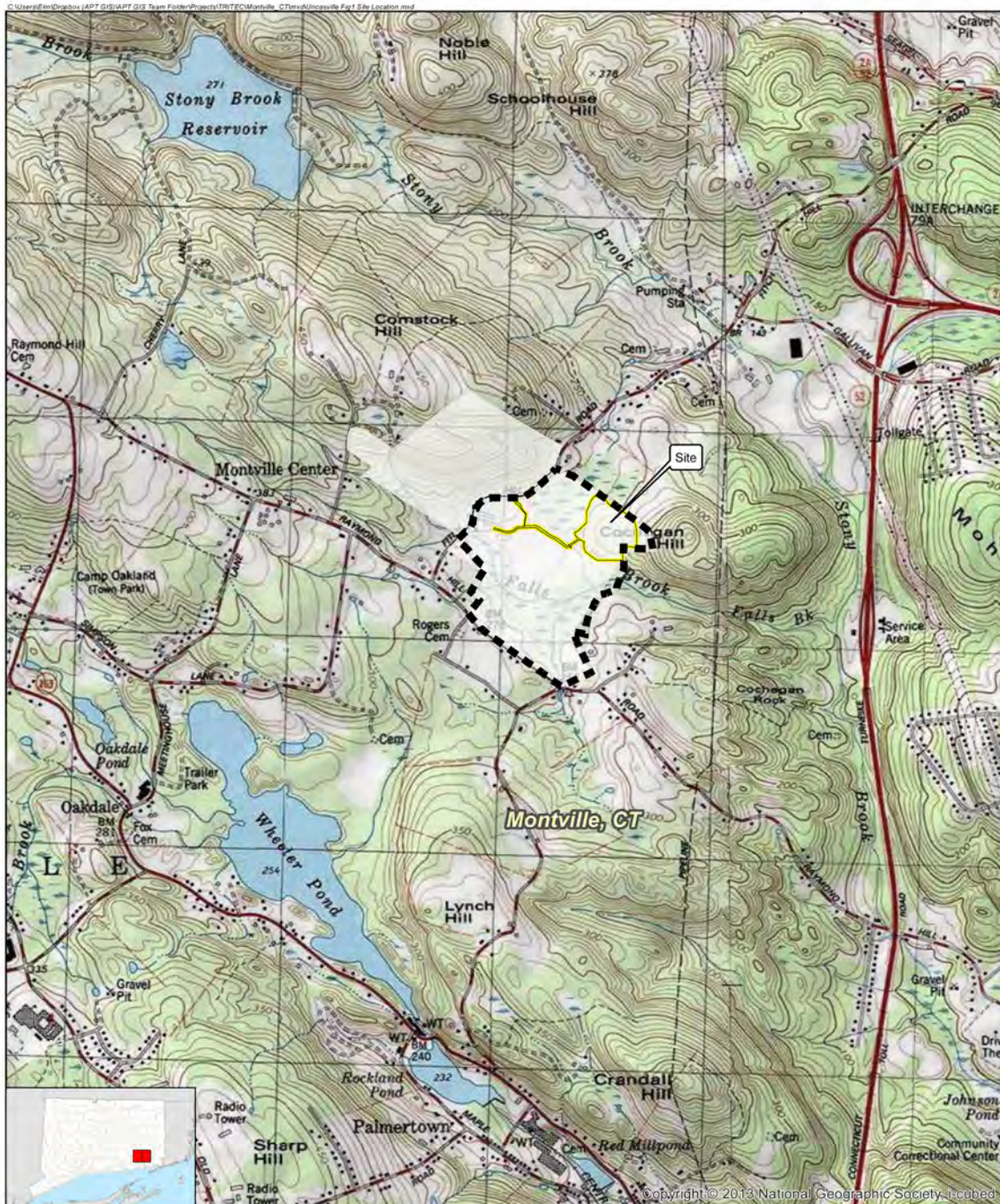
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<sup>1</sup> The output referenced is Alternating Current (AC).

<sup>2</sup> “Affecting facility” is defined, in part, as any electric generating facility with a capacity of more than ten megawatts.

<sup>3</sup> “Environmental justice community” means (A) a United States census block group, as determined in accordance with the most recent United States census, for which thirty per cent or more of the population consists of low income persons who are not institutionalized and have an income below two hundred per cent of the federal poverty level, or (B) a distressed municipality, as defined in subsection (b) of § 32-9p.





#### Legend

Overall Property Boundary

Site

Project Area

**Map Notes:**  
 Base Map Source: USGS 7.5 Minute Topographic  
 Quadrangle Maps, Montville, CT (1970) and Uncasville, CT (1970)  
 Map Scale: 1 inch = 2,000 feet  
 Map Date: December 2021



#### Figure 1 Site Location Map

N Silver Brook Solar Facility  
 486 Fitch Hill Road  
 Uncasville, CT 06382



## **2 Proposed Project**

### **2.1 Project Setting**

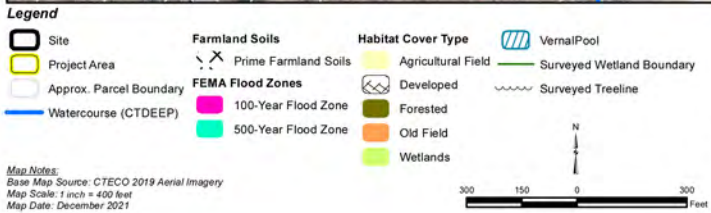
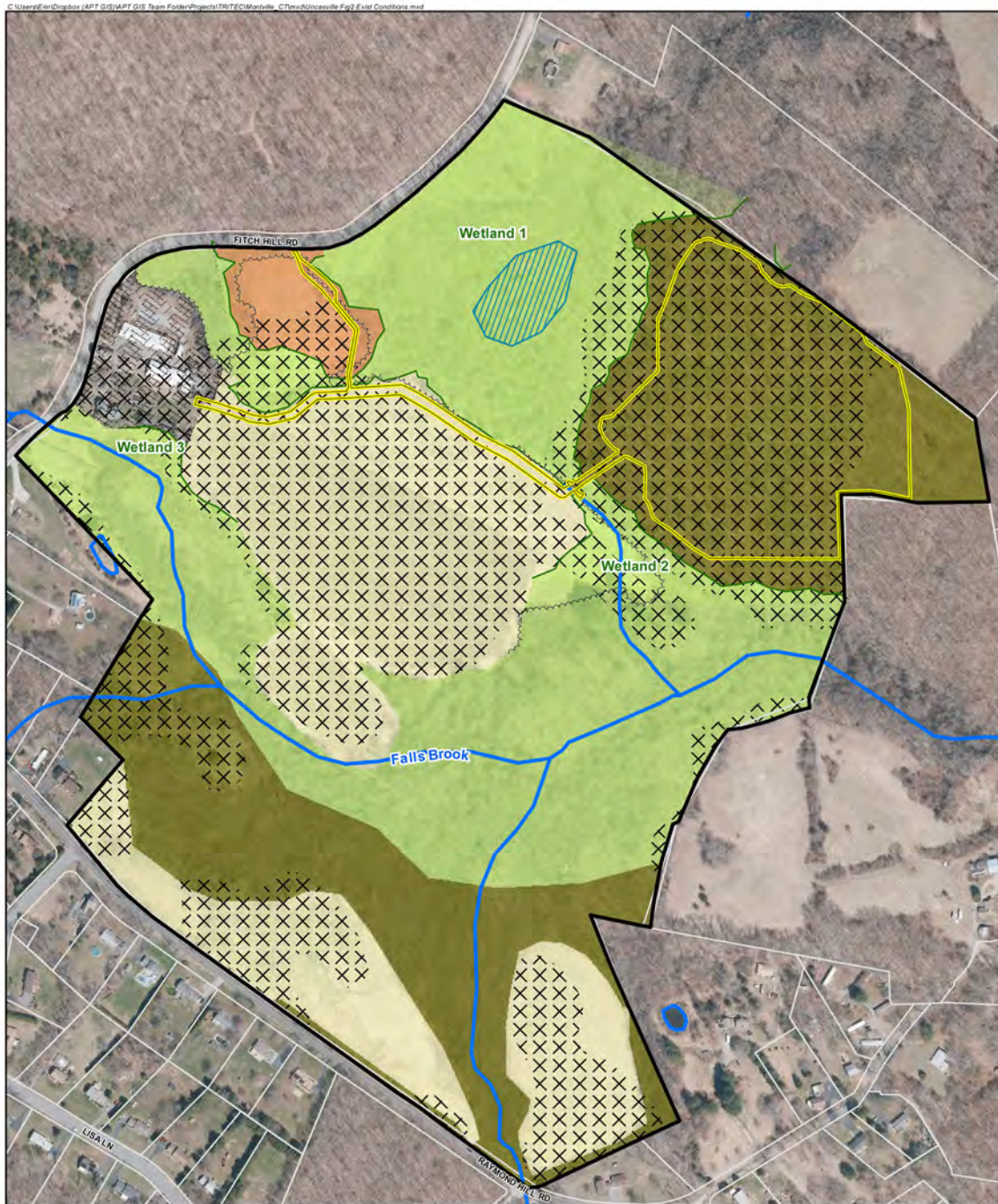
The Project will occupy  $\pm 15.25$  acres in the northern portion of the Site (the “Project Area”). The majority of the Project Area, representing the solar field, will lie within a forested area in the Site’s northeast corner. The electrical service interconnection line will extend generally westward through the Site to Fitch Hill Road. The access drive will follow the interconnection route before veering to the southwest toward the farm’s main entrance off Fitch Hill Road.

The Site’s existing topography varies, ranging from approximately 315 feet above mean sea level (“AMSL”) to 239 feet AMSL. Grades within the Project Area slope gently from the east to the southwest, with ground elevations ranging from approximately 279 feet AMSL to 244 feet AMSL.

Figure 2, *Existing Conditions*, depicts current conditions on the Site.

The surrounding land use includes residential development along Fitch Hill Road and to the south, with agricultural fields and undeveloped, wooded land to the north, east, and west.





**Figure 2**  
**Existing Conditions**  
 N Silver Brook Solar Facility  
 486 Fitch Hill Road  
 Uncasville, CT 06382



## 2.2 Project Development and Operation

Upon its completion, the solar electric energy generating facility (the "Facility") will consist of a total of 4,905 photovoltaic modules ("panels"), 1,755 400W and 3,150 570W models; 16 inverters; eight (8) pad mounted switchgears; and eight (8) 300 kVA transformers. A ground-mounted racking system will be used to secure the panel arrays. The perimeter of the Facility will be surrounded by a seven (7)-foot tall chain link fence. The Project will also require eight (8) electrical service interconnections that will extend from the existing Eversource distribution system along Fitch Hill Road. The interconnection route will run overhead generally south-southeast from Fitch Hill Road and transition to underground at the access drive where it will continue west to the Facility. Once complete, the fenced Facility will occupy approximately 8.2 acres of the Site with an additional  $\pm 7.05$  acres of improvements beyond the fenced limits, for a total Project Area of  $\pm 15.25$  acres.

Proposed development drawings are provided in Appendix A, *Project Plans*.

The leading edge of the panels will be approximately thirty-six (36) inches above the existing ground surface, which will provide 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. The Petitioner does not envision requiring any "snow removal" operations; rather, the snow will be allowed to melt or slide off.

Construction activities within the Project Area will require the following:

- tree clearing;
- grading;
- installing erosion and sedimentation control measures;
- creating five (5) water quality volume basins and three (3) water quality swales;
- installing racking and modules;
- trenching for electrical service; and,
- installing new overhead utility poles for interconnection to the existing electrical distribution system along Fitch Hill Road.

Earthwork is required to allow the Project development to comply with DEEP's *Appendix I, Stormwater Management at Solar Array Construction Projects*. ("Appendix I"), including creation of the access drive, regrading (cuts/fills), and construction of the water quality features.

The Facility is unstaffed; after construction is complete and the Facility 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 one (1) time per year. Annual maintenance will typically involve two (2) technicians for a day. Repairs will be made on an as-needed basis.

### **2.2.1 Access**

The Facility will be accessed from Fitch Hill Road via an existing gravel drive for a distance of approximately 195 feet. A new 16-foot-wide gravel drive will extend east from the existing drive along the northern edge of cleared land, and then northeast into the Facility, a total distance of approximately 2,120 feet. A 16-foot-wide gate will be located at the western end of the Facility.

### **2.2.2 Public Health and Safety**

The Project will meet applicable local, state, national and industry health and safety standards and requirements related 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 seven (7)-foot tall chain link fence. The entrance to the Facility will be gated, limiting access to authorized personnel only. All Town emergency response personnel will be provided access via a Knox padlock. The Facility will be remotely monitored and will have the ability to remotely de-energize in the case of an emergency.

### **2.2.3 Land Use Plans**

The Project is consistent with state and federal policies and will support the state's energy goals 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 the Town's land use regulations, to the extent feasible. The Site is located in the Town's Single-Family Residence/farm (R-80) zone. Both the Zoning Regulations, dated November

15, 2021, and the proposed Plan of Conservation and Development 2021 Update are silent as to renewable energy facilities.<sup>4</sup>

The Petitioner believes the Project will benefit the local community by improving electrical service for existing and future development through the availability of enhanced local, renewable generating capacity.

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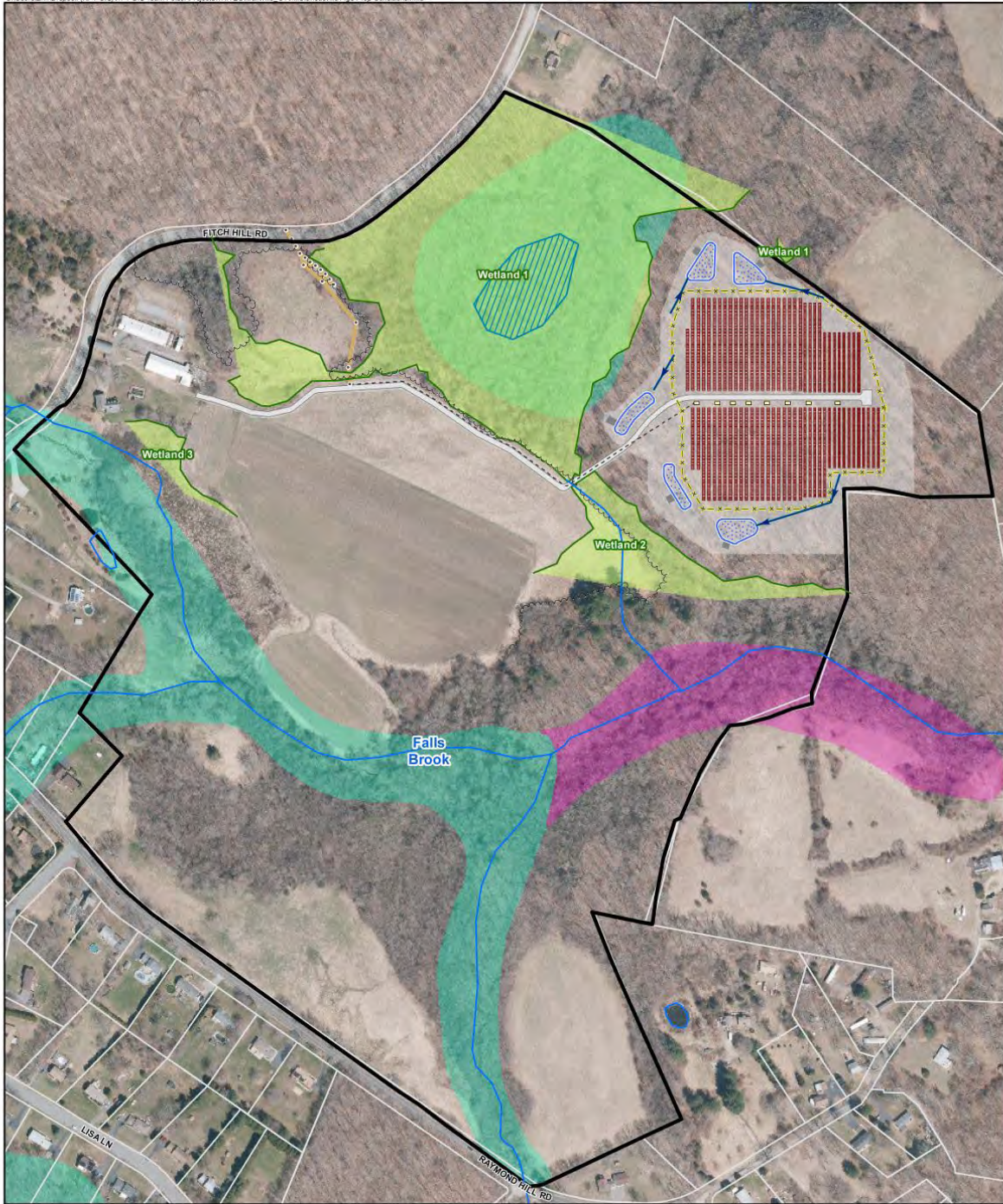
<sup>4</sup> The Plan of Conservation and Development 2010 references renewable energy only as a goal within the Housing Opportunity Development Zone, which addresses development of affordable housing and is not applicable to the Project.

### **3 Environmental Conditions**

This section provides an overview of the current environmental conditions at the Site and an evaluation of the Project's potential impacts on the environment. The results of this assessment demonstrate that the Project will comply with the DEEP air and water quality standards and will not have an undue adverse effect on the existing environment and ecology.

Please refer to Figure 3, *Proposed Conditions* for a depiction of the Project and its relationship with the resources discussed herein.

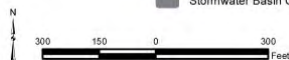




**Legend**

- |  |  |  |  |
|--|--|--|--|
| <ul style="list-style-type: none"> <li>Site</li> <li>Approx. Parcel Boundary</li> <li>Surveyed Wetland Boundary</li> <li>Delineated Wetland Area</li> <li>Vernal Pool</li> </ul> | <ul style="list-style-type: none"> <li>Watercourse</li> <li><b>FEMA Flood Zones</b> <ul style="list-style-type: none"> <li>100-Year Flood Zone</li> <li>500-Year Flood Zone</li> <li>Floodway*</li> <li>Surveyed Treeline</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>Solar Modules</li> <li>Concrete Pad</li> <li>Gravel Access Road</li> <li>Perimeter Fence</li> <li>Limit of Disturbance</li> </ul> | <ul style="list-style-type: none"> <li>Interconnection Path (Underground)</li> <li>Interconnection Path (OVH)</li> <li>Interconnection Utility Pole</li> <li>Stormwater Swale</li> <li>Stormwater Basin</li> <li>Stormwater Basin Outlet Gravel</li> </ul> |
|--|--|--|--|

**Map Notes:**  
 Base Map Source: CTECO 2019 Aerial Imagery  
 Map Scale: 1 inch = 400 feet  
 Map Date: December 2021



**Figure 3**  
**Proposed Conditions**  
 N Silver Brook Solar Facility  
 486 Fitch Hill Road  
 Uncasville, CT 06382





## 3.1 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 be mitigated using available measures, including, limiting idling times 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.

## 3.2 Water Resources

### 3.2.1 Wetlands and Watercourses

APT Registered Soil Scientists identified portions of three (3) wetlands on or proximate to the Site during field inspections and wetland delineations completed on March 30, 2021. The results of the field delineation are summarized below. The locations of these resources are depicted on Figure 2, *Existing Conditions*.

**Wetland 1** consists of a broad forested swamp characterized by interior areas of seasonally flooding and associated intermittent watercourses. This large wetland complex is located on a drainage divide and generally occurs in the northwest corner of the Site. Western and southern areas of this wetland drain east through cleared old field/agricultural areas via sheet flow and a narrow intermittent watercourse. Areas within routinely managed agricultural areas consist of disturbed scrub/shrub and emergent vegetation classes. Western and southern areas of the wetland transition to a larger interior wetland area to the east and north consisting of a broad seasonally flooded organic swamp characterized by hummock/hollow topography and transitional feeder seep systems. Depths of inundation within this wetland segment ranged from 8 to 14 inches at the time of inspection. Dominant vegetation includes red maple, greenbrier, multiflora rose, sweet pepperbush (*Clethra alnifolia*), highbush blueberry, sphagnum sp., common reed (*Phragmites*), spicebush (*Lindera benzoin*), cinnamon fern (*Osmunda cinnamomea*), skunk cabbage (*Symplocarpus foetidus*), and marsh marigold (*Caltha palustris*). Generally, a majority

of Wetland 1 consists of dense mature hardwood forest with a dense scrub/shrub understory. Interior seasonally flooded areas consist of more open canopy, scrub/shrub and emergent dominant cover types. A second shallow intermittent watercourse drains westerly from the eastern portion of Wetland 1 along the edge of the agricultural field, ultimately flowing into Wetland 2 in the vicinity of the existing culvert crossing. The transition between these two wetlands occurs within a narrow wetland corridor where an existing farm road crosses, providing access from the agricultural field to woodlands. Areas proximate to this farm road crossing have experienced historical and routine clearing resulting in the establishment of dominant emergent and wet meadow species.

**Wetland 2** consists of a narrow transitioning to broad seep system which drains via an intermittent watercourse tributary to Falls Brook in the southern portion of the Site. Generally, Wetland 2 consists of vegetated cover types and species diversity similar to Wetland 1. The notable exception is the northwesternmost extent, where the wetland occurs within a hayfield.

**Wetland 3** consists of a broad emergent marsh with deep organics. This wetland forms the riparian corridor of Falls Brook, an interior perennial watercourse system. Dominant vegetation includes broadleaf cattail (*Caltha palustris*), tussock sedge (*Carex stricta*), elderberry (*Sambucus canadensis*), speckled alder (*Alnus incana*), and buttonbush (*Cephalanthus occidentalis*). The delineated boundary of this resource is generally defined by a historic fill edge associated with the Site's agricultural activities. Wetland 3 is characterized by shallow seasonal flooding and interior intermittently flooded areas associated with the active floodplain of Falls Brook.

### **3.2.2 Vernal Pool**

A single vernal pool is present on the Site, embedded within the central portion of Wetland 1. A vernal pool survey conducted on March 30, 2021 was limited to the outer edges of the resource due principally to physical access restrictions and safety concerns caused by the deep organic soils within this seasonally inundated wetland area. Survey methods included audial surveys to record chorusing frogs, visual surveys to search for adults, egg masses and larvae, and dip-netting within accessible areas to identify species within the water column and benthic material. Egg mass searches were conducted by slowly and methodically wading along the perimeter of accessible open water areas using polarized sunglasses under generally sunny skies.

The vernal pool was found to support two indicator species, the wood frog (*Lithobates sylvaticus*) and spotted salamander (*Ambystoma maculatum*). Both species generally occur statewide across all ecoregions and are two of the most common vernal pool indicator species. Both wood frog and spotted salamander egg masses were observed within the vernal pool. The egg masses were located on coarse woody debris attachment sites and the bottom of the pool. The maximum observed water depth was approximately 6 to 14 inches; inaccessible interior areas likely support deeper water. The vernal pool generally consists of cryptic style habitat located in diffuse depressional pockets in deep interior areas of Wetland 1. These interconnected cryptic “pools” are characterized by high hummock/hollow topography with mounds dominated by high-bush blueberry and sphagnum mosses interspersed with areas of inundation. Pool bottoms consist of deep accumulated detritus and organics.

Due to the accessibility limitations, the boundary of the vernal pool was approximated using field observations and remote sensing (e.g., aerial photographs and ESRI ArcMap software).

Construction and operation of the Facility would not result in a direct physical impact to the vernal pool. It is widely documented that vernal pool dependent amphibians are not solely reliant upon the actual vernal pool habitat for breeding (i.e., egg and larval development) but do 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.<sup>5</sup>

### **Vernal Pool Analysis**

In order to evaluate potential impacts to VP1 and its surrounding upland habitat, the resource was assessed using methodology developed by Calhoun and Klemens (2002) in combination with the US Army Corps of Engineers New England District's *Vernal Pool Best Management Practices (BMPs)* (January 2015)<sup>6</sup>. Collectively, these methodologies assess vernal pool ecological significance based on two (2) 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 the abundance and diversity of vernal pool indicator species. The terrestrial habitat is assessed based on the integrity of the vernal pool envelope (“VPE” - within 100 feet of the

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<sup>5</sup> 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.

<sup>6</sup> <https://www.nae.usace.army.mil/Portals/74/docs/regulatory/VernalPools/VPBMPsJan2015.pdf>

pool's edge) and the critical terrestrial habitat ("CTH" - within 100-750 feet of the pool's edge). Based on these observations, intact forest represents the highest value habitat within both of these conservation zones to support breeding opportunities for the various obligate vernal pool indicator species that rely on forested habitat (e.g., wood frog and spotted salamander). Based on the field observations, this vernal pool meets the biological criteria for a Tier 1 pool.

The landscape condition of the vernal pool was then evaluated to determine the existing and proposed quality of the terrestrial (non-breeding) habitat. When assessing potential impacts on a vernal pool's CTH, the goal is to maintain a percentage of 25% or less development (including site clearing, grading and construction).

The results of the landscape analysis show that the Project would not result in a degradation of the existing tier rating or terrestrial habitat integrity of the vernal pool.

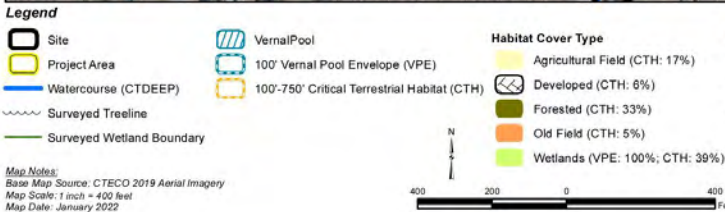
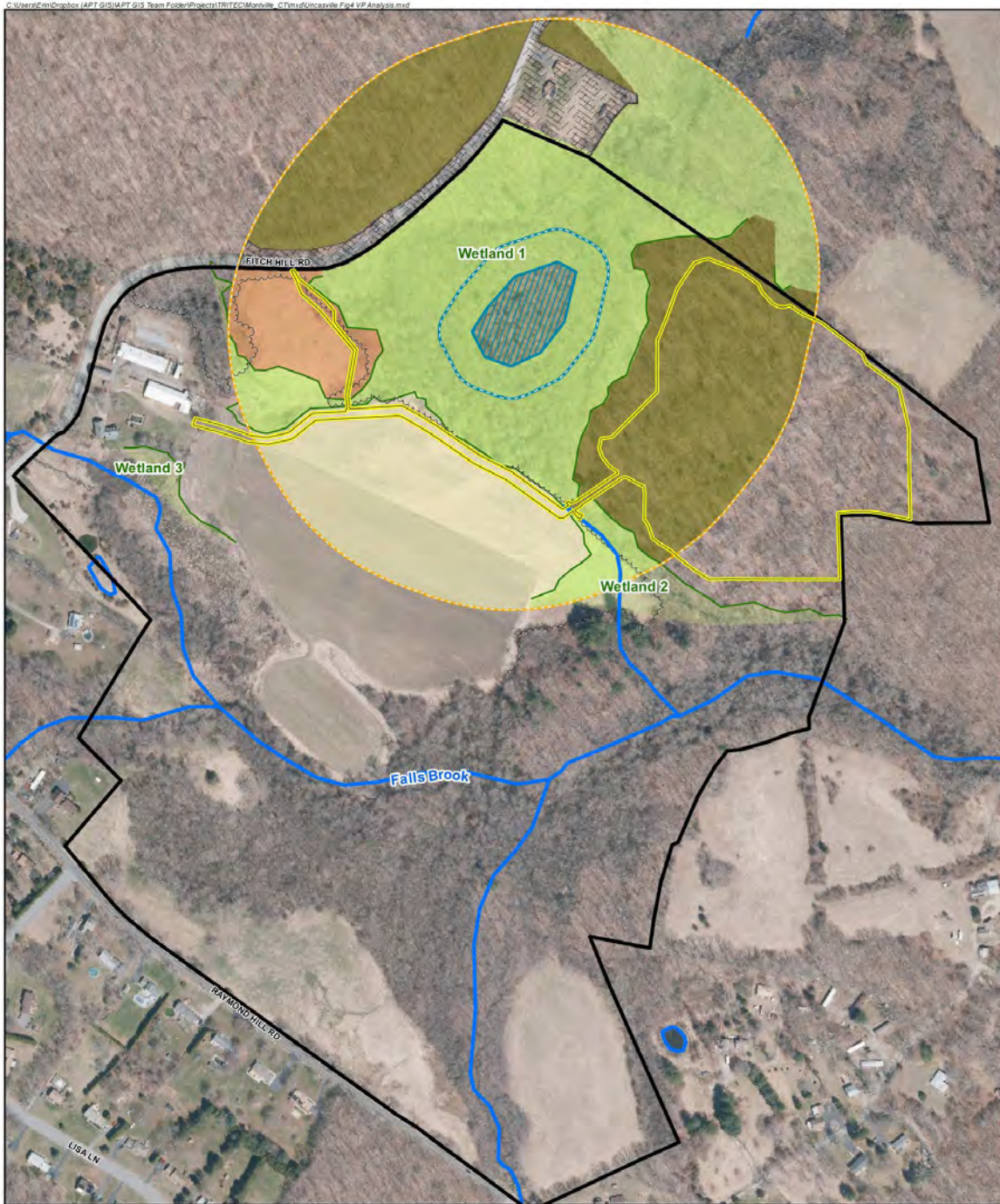
The Project will not have any impacts in areas within 100 feet of the vernal pool. The nearest points of the Project to the vernal pool are  $\pm 255$  feet (south to the access road) and 285 feet (east to a stormwater basin). The Facility fence line would be  $\pm 339$  feet away from the vernal pool. The entirety of the Facility would be located in upland habitat consisting of mature hardwood forest. While this type of terrestrial habitat would be considered near optimal for vernal pool indicator species, similar contiguous habitat exists within the CTH, particularly north of the Site. The Facility footprint would not exceed the 25% development threshold. Development within the CTH would increase from 6% under existing conditions to 22% once the Facility is constructed. Therefore, the Project would maintain the current tier status of the vernal pool. For these reasons, the Project will not have a significant adverse impact on this vernal pool resource.

Nonetheless, the Petitioner proposes to implement a Resource Protection Plan<sup>7</sup> to mitigate potential short-term impacts associated with construction activities occurring within the CTH. The Resource Protection Plan is intended to prevent incidental injury to any migrating vernal pool species by excluding them from entering the Project Area during construction.

Figures 4 and 5, *Vernal Pool Analysis Map*, provide a depiction of the Project's development relative to the vernal pool.

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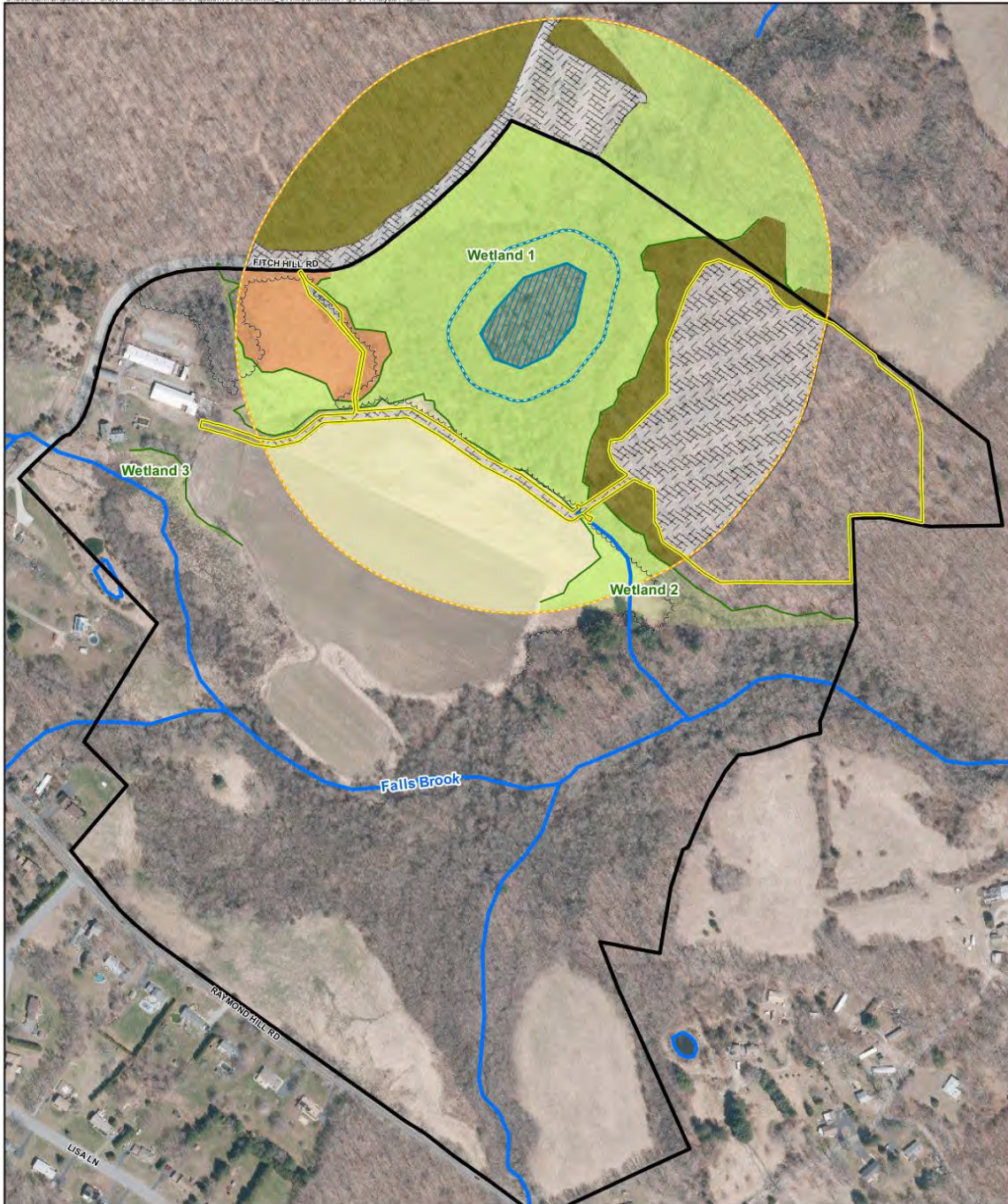
<sup>7</sup> See Appendix A, *Project Plans*, Environmental Notes – Resource Protection Measures, Sheet GN-2.



**Figure 4**  
**Vernal Pool Analysis Map - Existing**  
 N Silver Brook Solar Facility  
 486 Fitch Hill Road  
 Uncasville, CT 06382







**Legend**

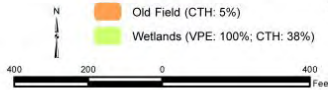
- Site
- Project Area
- Watercourse (CTDEEP)
- Surveyed Treeline
- Surveyed Wetland Boundary

- Vernal Pool
- 100' Vernal Pool Envelope (VPE)
- 100'-750' Critical Terrestrial Habitat (CTH)

**Habitat Cover Type**

- Agricultural Field (CTH: 16%)
- Developed (CTH: 22%)
- Forested (CTH: 19%)
- Old Field (CTH: 5%)
- Wetlands (VPE: 100%; CTH: 38%)

**Map Notes:**  
 Base Map Source: CTECO 2019 Aerial Imagery  
 Map Scale: 1 inch = 400 feet  
 Map Date: January 2022



**Figure 5**  
**Vernal Pool Analysis Map - Proposed**  
 N Silver Brook Solar Facility  
 486 Fitch Hill Road  
 Uncasville, CT 06382



### 3.2.3 Wetland Impacts

The Facility's proposed overhead utility route will result in secondary impacts to Wetland 1 associated with tree clearing for electrical line clearance requirements;  $\pm 1,850$  sq. ft. of wetland tree clearing will be required. Such clearing would be restricted to cutting tree stumps at ground level with no grubbing or stump removal occurring to avoid soil disturbance to these wetland areas and preserve the underlying wetland shrub and herbaceous vegetation. The installation of the poles within the wetland would be considered a de minimis activity.

Direct, temporary wetland impacts to Wetlands 1 and 2 (totaling approximately 750 sq. ft) are associated with the upgrades to the existing culverted wetland crossing. The proposed Resource Protection Plan details proper monitoring of and restoration following this activity.

All of the solar modules and most of the fenced Facility maintain a minimum 100-foot buffer to wetlands. The nearest construction activity, consisting of the discharge point of the western stormwater features, is approximately 51 feet from Wetland 1. The nearest fenced limit of the Facility would occur approximately 90 feet south of Wetland 1. Construction activities would not be expected to result in an adverse impact to the Site's wetland resources based on sufficient buffers being afforded and the fact that the Project will not require clearing of any mature vegetation within those buffers. Table 1, *Summary of Project Wetlands*, provides a summary of distances to wetland resources.

**Table 1: Summary of Project Wetlands**

Wetland Impacts		
Direct Impacts to Wetland 1 (+/- sq.ft.)	375	
Direct Impacts to Wetland 2 (+/- sq.ft.)	375	
Direct Impacts to Wetlands 3 (+/- sq.ft.)	0.0	
Total Direct Impacts to Wetlands (+/- sq.ft.)	750	
Total Secondary Impacts to Wetlands (+/- sq.ft.)	1,850	
Nearest Project Feature to Wetlands (from limit of disturbance)	Distance (+/- ft.)	Location (of wetland from LOD)
Access - Wetlands 1 and 2	0	crossing
Interconnect Poles - Wetland 1	10	northeast
Stormwater Discharge - Wetland 1	51	west
Facility Fence - Wetland 1	90	north
Facility Solar Modules – Wetland 1	100	north
Facility Fence – Wetland 2	145	southwest
Facility Solar Modules – Wetland 2	160	southwest

### **3.2.4 Floodplain Areas**

The Facility will not be located within a 100- or 500-year flood zone. APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map ("FIRM") covering 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 area inclusive of the Site is mapped on FIRM PANEL #09011C0332G, dated July 18, 2011. Based upon the reviewed FIRM Map, portions of the Site are located within the 100-year and 500-year flood zones associated with Wetland 1 and Falls Brook. However, the Project Area is not within or proximate to either of these flood zone areas.

No special design considerations or precautions relative to flooding are required for the Facility. As no portion of the Facility is proposed to be located in or impact either the 100- or 500-year flood zones on the Site, no impacts are anticipated to floodplain or downstream areas.

## **3.3 Water Quality**

As discussed in this section, the Project will comply with DEEP's water quality standards. Once operative, the Facility will be unstaffed, and no potable water uses or sanitary discharges are planned. No liquid fuels are associated with the operation of the Facility. Stormwater generated by the proposed development will be properly handled and treated in accordance with the 2004 *Connecticut Stormwater Quality Manual* and Appendix I.

### **3.3.1 Groundwater**

Groundwater underlying the Site is classified by publicly available DEEP mapping as "GA".<sup>8</sup> This classification indicates groundwater within the area is presumed to be suitable for human consumption without treatment. Based upon a review of available DEEP mapping, the Site is not located within a mapped (preliminary or final) DEEP Aquifer Protection Area.

The Project will have no adverse environmental effect on ground water quality.

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<sup>8</sup> Designated uses in GA classified areas include existing private and potential public or private supplies of drinking water and base flow or hydraulically connected surface water bodies.



### **3.3.2 Surface Water**

The Project will have no adverse environmental effect on surface water quality. Based upon DEEP mapping, the Site is located in Major Drainage Basin 3 (Thames River), Regional Drainage Basin 30 (Thames Main Stem), Sub Regional Drainage Basin 3005 (Stony Brook), and Local Drainage Basins 3005-02 and 3005-04. Falls Brook traverses the southern portion of the Site. Falls Brook is classified by DEEP as a Class A surface waterbody.<sup>9</sup> The Project will have no effect on this surface waterbody.

Based upon the reviewed DEEP mapping, the Site is not located within a mapped Public Drinking Supply Watershed. The nearest Public Drinking Supply Watershed, associated with the Stony Borok Reservoir, is located approximately 0.7 mile to the northwest.

During construction, erosion and sediment (“E&S”) controls will be installed and maintained in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. Once operative, stormwater will be managed in accordance with the 2004 *Connecticut Stormwater Quality Manual*.

### **3.3.3 Stormwater Management**

In addition to the 2004 Connecticut Stormwater Quality Manual and 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, the Project has been designed to meet Appendix I. Combined, these address three (3) main concerns: stormwater runoff peak attenuation, water quality volume treatment, and E&S control during construction. Technical details, mapping, and HydroCAD modeling results are provided in a Stormwater Management Report. A summary of these results is provided below.

#### **Stormwater Runoff Peak Attenuation**

The potential for changes in runoff from the Site as a result of Project construction has been evaluated and addressed. The Project will require tree clearing and grubbing for development of the Facility, utilities/interconnection, access drive and stormwater management features. An increase in runoff will result due to the change in cover type associated with converting woods to meadow within the limits of disturbance.

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<sup>9</sup> Designated uses for A classified waterbodies include potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply and other legitimate uses including navigation.

To manage the increase in post-development runoff, five (5) grass-lined stormwater management basins, rip-rap lined overflow weirs, and three (3) associated swales are proposed. Together, these features will collect surface runoff from within the Facility, thus managing the timing and release of flow from the Project Area.

The stormwater calculations for the Project predict that the post-development peak discharges to the waters of the State of Connecticut for the 2-, 25-, 50- and 100- year storm events are less than the pre-development peak discharges. Therefore, the Project is not anticipated to result in any adverse conditions to the surrounding areas and properties.

### **Water Quality Volume Treatment**

The Project design also provides for adequate treatment of water quality volume associated with effective impervious cover, which includes the proposed gravel access drive and concrete equipment pads. The proposed basins are designed to provide the requisite treatment volumes associated with these features.

### **Erosion and Sediment Control During Construction**

To safeguard water resources from potential impacts during construction, the Petitioner is committed to implementing protective measures in the form of a Stormwater Pollution Control Plan ("SWPCP"), to be finalized and submitted to the Council, subject to approval by DEEP Stormwater Management. The SWPCP will include monitoring of established E&S controls that are to be installed and maintained in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. The Petitioner will also apply for a *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* from DEEP.

Development of the Project requires extensive clearing, ground disturbance and grading. A phased erosion control plan will be implemented. The stormwater management basins described above will be installed early in the construction phase, prior to clearing the trees upslope to serve as sediment traps. Perimeter erosion controls (silt fence, straw bales, wattles, etc.) will encircle the Project Area to capture sediment potentially mobilized during site work. The basins will be cleaned of deposited sediment as needed during construction to maintain sufficient sediment storage capacity. Upon final site stabilization, they will be converted to retention basins.

Open areas will be temporarily stabilized with quick growing annual seed during construction. The Project Area will subsequently be seeded with a permanent Ernst Pollinator-friendly Solar Farm Seed Mix upon completion of construction. The phased erosion control plan and details are provided in Appendix A, *Project Plans*.

With the incorporation of these protective measures, stormwater runoff from Project development is not anticipated to result in an adverse impact to water quality associated with nearby surface water bodies.

### **3.4 Habitat and Wildlife**

Five (5) distinct habitat types (vegetative communities) separated by transitional ecotones are located on the Site and identified within the Project Area. These habitats were assessed using remote sensing and publicly available datasets and were physically inspected during a March 30, 2021 field evaluation.

The habitats occupying the Site are as follows.

- Agricultural Field
- Forested;
- Old Field;
- Wetlands; and
- Developed.

#### **3.4.1 Habitat Types**

##### **Agricultural Field**

Agricultural Field encompasses a majority of the center of the Site and, to a lesser extent, the southern portion. This habitat consists of agricultural hayfields, maintained pastures and livestock corrals. These surfaces are routinely maintained via mowing/grazing in association with their active agricultural use. Routine maintenance of these fields suppresses other herbaceous and shrub species resulting in limited wildlife habitat utilization. This habitat is dominated by cool season grasses and typical forbs like red clover (*Trifolium pratense*). Transitional scrub/shrub and edge forested areas, dominated by autumn olive (*Elaeagnus umbellata*), staghorn sumac (*Rhus*

*typhina*), and multiflora rose (*Rosa multiflora*), separate this habitat from surrounding Wetland and Forested habitats.

Project impacts on the Agricultural Field habitat are restricted to transitional boundaries along the field's northern extent to accommodate the proposed access road and underground utility route. The total area of disturbance is limited to less than one (1) acre. Therefore, the Project will not result in a significant adverse impact to the existing Agricultural Field habitat.

## **Forested**

Forested habitat occupies a majority of the far northeastern and southern extents of the Site. This habitat is characterized by mature even-aged hardwood, closed canopy (~70% canopy closure) forest forming a forested block with adjacent Wetland forested habitats. The Forested habitat differs from the adjacent Wetlands habitat by occurring entirely within well-drained upland areas and consisting of a significantly different vegetative species composition. Dominant species within the Forested habitat include red, white, and black oak complex (*Quercus rubra*, *Q. alba*, and *Q. velutina*), with codominant American beech (*Fagus grandifolia*) and red maple (*Acer rubrum*). Suppressed overstory species include black cherry (*Prunus serotina*), eastern white pine (*Pinus strobus*), and eastern hemlock (*Tsuga canadensis*). A moderately dense shrub layer consisting of American beech clonal saplings, greenbrier (*Smilax*), highbush blueberry (*Vaccinium corymbosum*), and black birch (*Betula lenta*) occupies much of the understory. The duff layer consists of high amounts of both standing and downed woody debris, between one (1) and two (2) inches deep.

Project impacts to Forested habitat occur entirely within upland forested areas in the northeast corner of the Site.<sup>10</sup> Project development will result in the conversion of approximately 14.26 acres of mature hardwood forest to open field areas. Potential short-term impacts to this habitat will be minimized through the proper stabilization of soils during construction through strict adherence to the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. While the Project necessitates removal of mature hardwood forest, similar Forested habitat occurs in abundance to the north and east of the Facility.

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<sup>10</sup> Discussion of the potential impacts to core forest, or lack thereof, is contained in Section 3.1.2, Core Forest Determination.

## **Old Field**

Existing Old Field habitat is isolated to an open area in the northwestern portion of the Site along Fitch Hill Road. This habitat consists of an old agricultural field left fallow and currently revegetating through natural succession. It is generally dominated by cool season grasses in complex with sparse, green briar, multiflora rose, autumn olive, and red cedar (*Juniperus virginiana*). This habitat block is very small in size and isolated from other early successional habitat types. It occurs between surrounding Wetland habitat with transitional scrub/shrub ecotones separating these areas.

Project development requires the installation of wooden utility poles at regular intervals for the proposed overhead interconnection route within the Old Field habitat. While some vegetation management will be necessary to install the poles and adhere to electrical line clearance requirements, these activities will have a minimal effect on the Old Field habitat. Much of the invasive shrub vegetation that dominates this habitat thrives on periodic disturbances such as those proposed by the Project. Furthermore, routine intrusions within Old Field habitats typically have a beneficial effect and assist in maintaining the habitat structure of early successional areas. The proposed Project activities will not result in a significant adverse impact to the Old Field habitat.

## **Wetland**

As introduced previously in Section 3.2.1, Wetland habitat occurs throughout the Site, occupying much of the northern and southcentral portions, and serves as a transitional ecotone between upland forested habitats and early successional/developed habitats associated with the farming operation. Site wetlands consist of broad forested seep systems with seasonally flooded interior areas dominated by dense scrub/shrub habitats, intermittent watercourses, and pockets of open canopy emergent/wet meadow vegetation. A larger emergent marsh forms bordering wetlands to Falls Brook, a perennial watercourse which drains west to east in the south-central portion of the Site.

As discussed in Section 3.2.3, no direct impacts are proposed from the development of the fenced Facility, which will generally maintain a minimum 100-foot setback from surrounding Wetland habitat. Portions of the overhead utility route and access road are proposed to cross wetlands, resulting in  $\pm 1,850$  sq. ft. of secondary impacts and 750 sq. ft. of temporary direct impacts to

wetland resources. Robust erosion and sediment control measures will be installed and maintained and a Resource Protection Plan will be implemented.

## Developed

The Developed habitat is located along Fitch Hill Road in the far western portion of the Site. A house and several outbuildings and farm-related infrastructure compose a majority of this habitat. A small portion of the access route will utilize the existing residential/farm access from Fitch Hill Road, and will be upgraded to accommodate the Project.

Table 1, *Habitat Areas* provides the total acreages of each habitat type located on the Site and within the Project Area.

**Table 2: Habitat Areas**

Habitat Areas		
Habitat Type	Total Area On-Site (+/- ac.)	Area Occupied by Project (+/- ac.)
Agricultural Field	33.0	0.78
Developed	3.5	0.02
Mixed Hardwood Forest	38.7	14.26
Old Field	2.9	0.17
Wetland	50.5	0.02

### 3.4.2 Core Forest Determination

APT evaluated the size and extent of the contiguous interior forest block present within and adjacent to the Site using two (2) publicly available GIS-based datasets designed to assess impacts to core forest habitat. In addition, an independent evaluation was performed (based on GIS analysis of 2016 leaf-off aerial photography, field observations and professional experience). The results of these analyses demonstrate a small core forest exists on the Site.

The first dataset, the DEEP's *Forestland Habitat Impact Mapping*<sup>11</sup>, depicts the wooded areas on the Site as core forest.

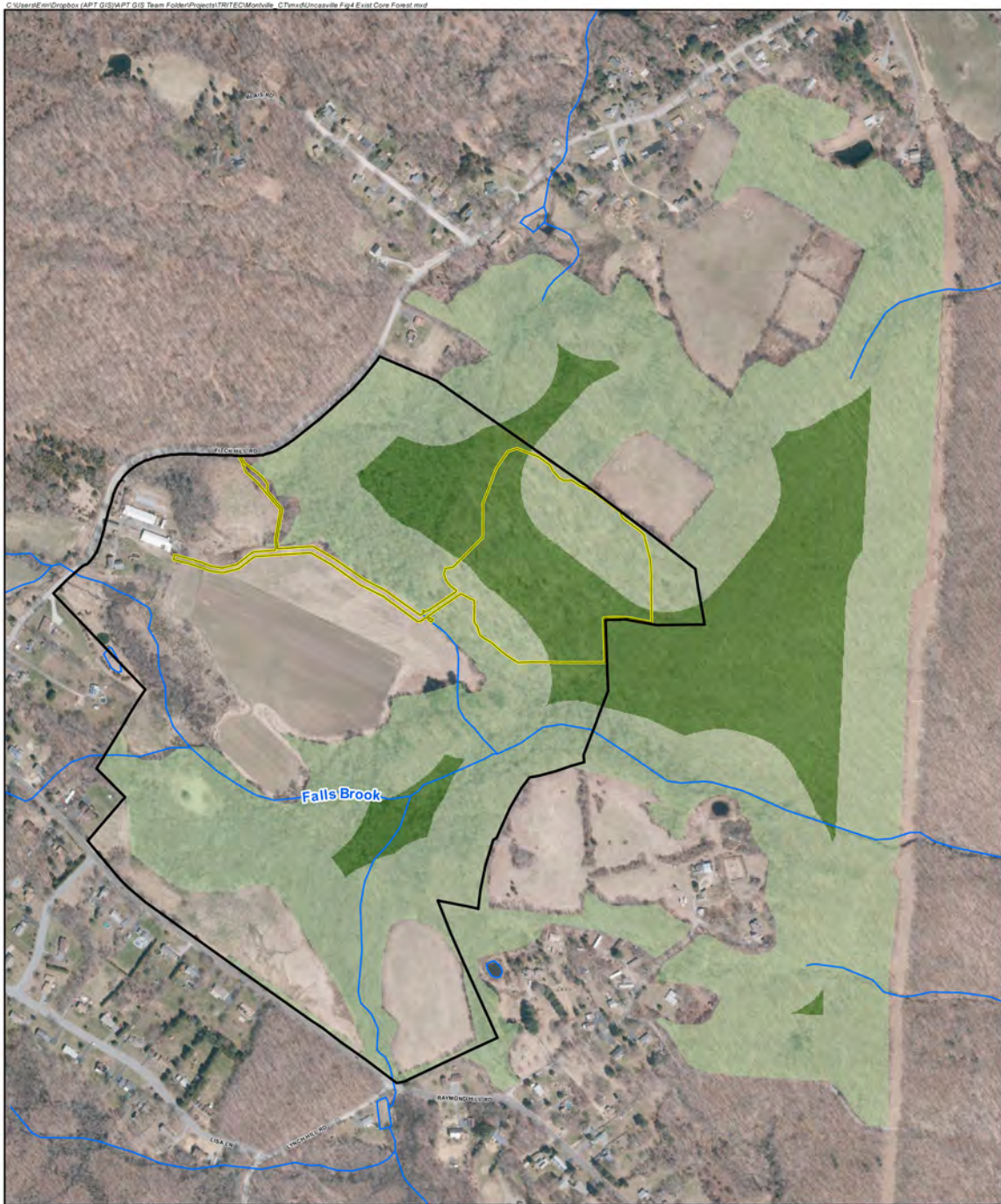
<sup>11</sup> Source: <http://ctdeep.maps.arcgis.com/apps/webappviewer/index.html?id=7b81844bab634281b544c20bf2d7bfb8>: This spatial screening layer identifies prime contiguous and connected core forestland blocks. If the project intersects with the Forestland Habitat Impact Map there is a potential for material effects to core forest.

The second dataset, UConn's Center for Land Use Education and Research's ("CLEAR") Forest Fragmentation Analysis ("FFA")<sup>12</sup> 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. 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 and using APT's independent analysis, the Site appears to contain two small, isolated core forest blocks, including a portion of a ±44-acre patch within the Project Area that extends westward and off-Site to the north and east.

Based on this evaluation, Project development would result in the reduction of approximately 18 acres of core forest by the removal of 14.26 acres of trees within the Project Area, as the proposed clearing to accommodate the Facility will result in a conversion to additional edge forest. The 26-acre small core forest patch in the central portion of the Site will remain intact. Therefore, the Project will not materially affect core forest resources. (See Figure 6, *Existing Core Forest* and Figure 7, *Proposed Core Forest*.)

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<sup>12</sup> CLEAR's FFA: [http://clear.uconn.edu/projects/landscape/forestfrag/forestfrag\\_public%20summary.pdf](http://clear.uconn.edu/projects/landscape/forestfrag/forestfrag_public%20summary.pdf)



**Legend**

Site	Existing Forest Block
Project Area	Core Forest
Watercourse (CTDEEP)	Edge Forest

**Map Notes:**  
 Base Map Source: CTECO 2019 Aerial Imagery  
 Map Scale: 1 inch = 600 feet  
 Map Date: December 2021



**Figure 6**  
**Existing Core Forest**  
 N Silver Brook Solar Facility  
 486 Fitch Hill Road  
 Uncasville, CT 06382





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#### Legend

- Site
- Project Area
- Watercourse (CTDEEP)
- Proposed Forest Block
- Core Forest
- Edge Forest

**Map Notes:**  
 Base Map Source: 2019 aerial imagery CTECO  
 Map Scale: 1 inch = 600 feet  
 Map Date: December 2021



**Figure 7**  
**Proposed Core Forest**  
 N Silver Brook Solar Facility  
 486 Fitch Hill Road  
 Uncasville, CT 06382



### 3.4.3 Wildlife

Development of the Project will occur within portions of all five (5) of the Site habitats, with a majority of the proposed Facility occupying what is currently Forest habitat. Developed, Old Field, and Agricultural Field habitat areas currently provide limited value from a wildlife utilization standpoint as a result of frequent farm management activities, human habitation, and related disturbances. Project-related impacts within these habitats are limited and are not anticipated to adversely affect wildlife.

Based on the surrounding land uses, the upland forest present in the Project Area is likely utilized by species that prefer edge forest habitat and are more tolerant of human disturbance and habitat fragmentation. Generalist wildlife species, including several song birds and mammals such as raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), grey squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphus virginiana*), white-tailed deer (*Odocoileus virginianus*), and eastern chipmunk (*Tamias striatus*) could be expected to use this area. Due to the relatively small size of this habitat block, and given the abundance of similar habitat surrounding the Site, the Project is not anticipated to result in a significant impact to wildlife.

The Project Area will not encroach into the central Wetland habitats. Project development will occur primarily in areas with existing disturbance and adjacent to agricultural fields. As a result, wildlife utilization within these aquatic habitats is expected to continue relatively uninterrupted. Noise and associated human activities during construction may result in limited, temporary disruption to wildlife using nearby interior Wetland habitat. Any possible temporarily displaced wildlife are expected to relocate into existing adjacent wetland habitats of similar character. Post construction, operation of the Facility will not result in a likely adverse effect to wildlife using these habitats because the it will be unoccupied and does not generate any significant noise or traffic.

## 3.5 Rare Species

APT reviewed publicly available information to determine the potential presence of state/federally listed species and critical habitat on or proximate to the Site. A discussion is provided in the following sections.

### 3.5.1 Natural Diversity Data Base

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 Petitioners determine if there is the potential for 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 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) polygons 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 2021), which revealed that no NDDB polygons exist within the Site, with the nearest NDDB polygon located approximately 1.1 miles to the northeast. Because no state-listed species or communities are documented on the Site, consultation with NDDB is not required.

### 3.5.2 USFWS Consultation

Federal consultation was completed in accordance with Section 7 of the Endangered Species Act 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<sup>13</sup> threatened species is known to occur in the vicinity of the Site, northern long-eared bat ("NLEB"; *Myotis septentrionalis*).

The northern long-eared bat ("NLEB"; *Myotis septentrionalis*) is a federally-listed threatened species also known to occur in the vicinity of the Site. The NLEB's range encompasses the entire

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<sup>13</sup> Listing under the federal Endangered Species Act

State of Connecticut and 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 the DEEP's publicly available *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance* map (February 1, 2016) to determine the locations of any known maternity roost trees or hibernaculum in the state. 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 North Branford, approximately 32.2 miles to the southwest.

APT completed a determination of compliance with Section 7 of the Endangered Species Act of 1973 for the Project. In compliance with the USFWS criteria for assessing NLEB, the Project will not likely result in an adverse effect or incidental take<sup>14</sup> of NLEB and does not require a permit from USFWS. A USFWS letter dated July 1, 2021 confirmed compliance; thus, no further consultation with USFWS is required for the proposed activity.

A full review of the *Endangered Species Act (ESA) Compliance Determination* and USFWS's Response Letter is provided in Appendix B, *USFWS and NDDDB Compliance Statement*.

### **3.6 Soils and Geology**

The construction of the water quality basins and swales and grading within the Project Area will generate some excess material that will be redistributed on Site. Topsoil will be segregated from underlying soil, stockpiled, and spread over disturbed areas being seeded. See Appendix A, *Project Plans*.

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*.

Surficial materials within the Project Area are glacial ice laid deposits characterized by late Wisconsinan and Illinoian. In addition, undifferentiated meltwater deposits, Holocene postglacial deposits and deposits of a related series of ice-dammed ponds are found on the Site. Bedrock

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<sup>14</sup> "Incidental take" is defined by the Endangered Species Act as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill bats.

geology beneath the Site is mapped as Hope Valley Alaskite Gneiss. Alaskite Gneiss is described as light-pink to gray, medium to coarse grained granitic gneiss.<sup>15</sup>

The Petitioner does not anticipate encountering bedrock during Project development.

### **3.6.1 Prime Farmland Soils**

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

According to the Connecticut Environmental Conditions Online Resource Guide<sup>16</sup>, approximately 58 acres of the Site contain Prime Farmland Soils (See Figure 2, *Existing Conditions Map*).

The Project Area will occupy approximately 13.5 acres of mapped Prime Farmland Soils ( $\pm 23.3\%$  of such soils on the Site), all of which is currently wooded land and not used for agricultural purposes.

Clearing, excavation and regrading activities are necessary within areas mapped as Prime Farmland Soils to facilitate Project development. The water quality basins allow the Project to comply with Appendix I. Topsoil removed from these areas will be segregated from underlying horizons, temporarily stockpiled and used as top dressing for reestablishing vegetation (pollinator-friendly seed mix). No topsoil will leave the Site.

After its useful life, the Facility will be decommissioned and all of the disturbed areas will be reseeded with the same (or approved equivalent) blend as established within the rest of the Project Area, ultimately creating additional available cleared areas for agricultural use. Therefore, the Project will not materially affect Prime Farmland Soils.

## **3.7 Historic and Archaeological Resources**

At the request of APT, and on behalf of the Petitioner, Heritage Consultants LLC (“Heritage”) reviewed relevant historic and archaeological information to determine whether the Site holds

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<sup>15</sup> Connecticut Natural Resources Atlas Series: Bedrock Geological map, [cteco.uconn.edu/maps/state/Bedrock\\_Geologic\\_Map\\_of\\_Connecticut.pdf](http://cteco.uconn.edu/maps/state/Bedrock_Geologic_Map_of_Connecticut.pdf)

<sup>16</sup> Connecticut Environmental Conditions Online (CTECO) Resource Guide, [www.cteco.uconn.edu](http://www.cteco.uconn.edu).

potential historic or cultural resource significance. Their 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 no National Register of Historic Places (“NRHP”) or State Register of Historic Places properties are located within one (1) mile of the Site.

In terms of archaeological potential, Heritage determined that the Project Area retains a moderate to high potential to contain intact archaeological deposits in the subsoil. At the request of the Petitioner, Heritage performed a Phase 1B Professional Cultural Resources Assessment and Reconnaissance Survey. Based on 218 shovel tests within the Project Area, Heritage concluded that no additional archaeological examination and no additional recordation of artifacts identified as “unassociated field scatter” is warranted.

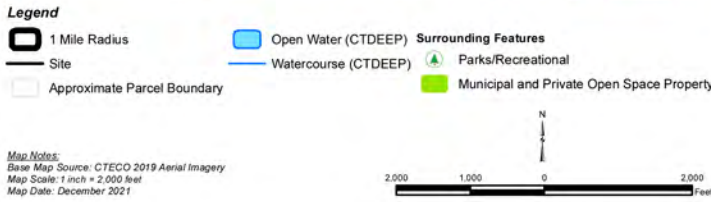
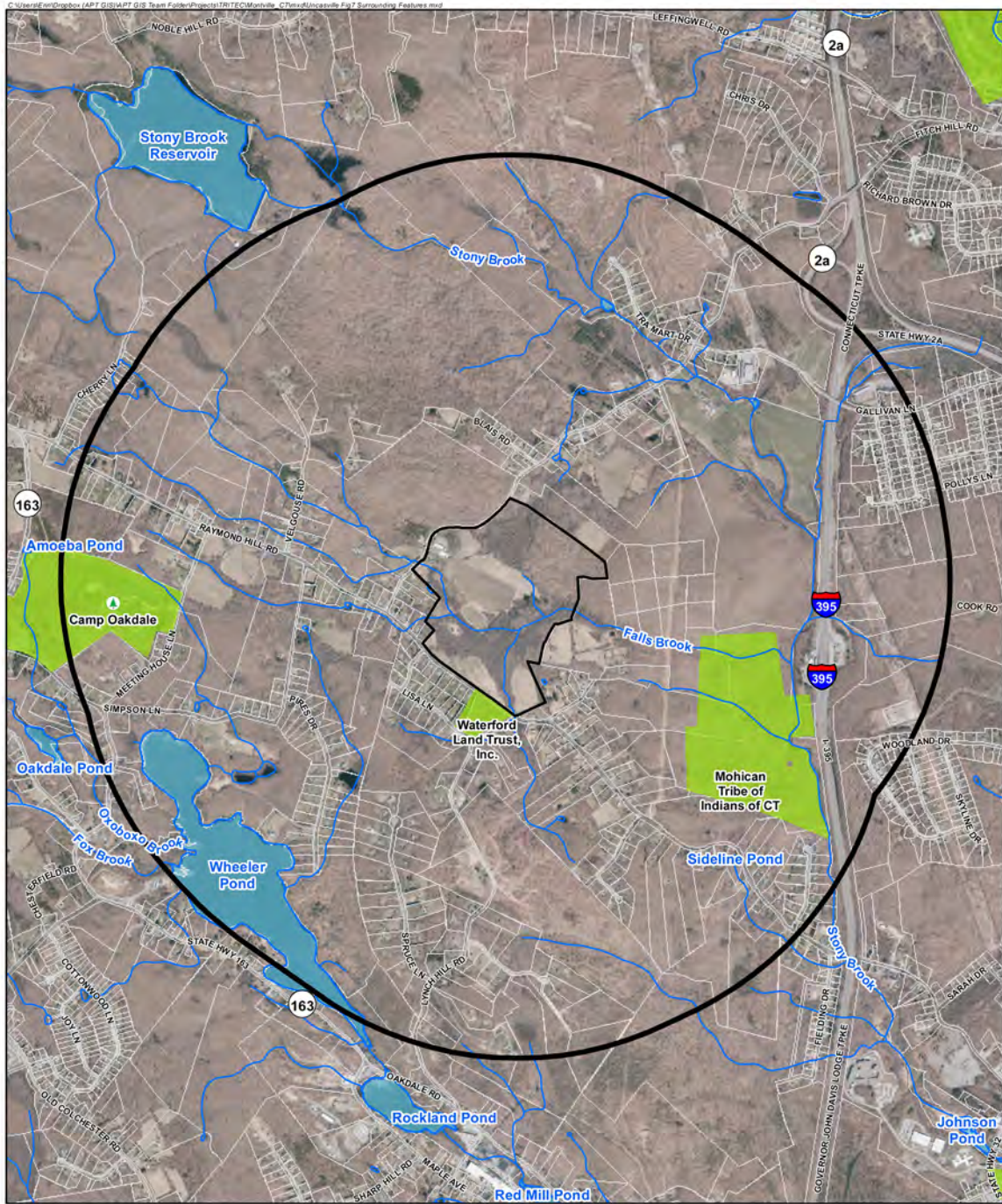
The Phase 1A and Phase 1B reports, included in Appendix C, were submitted to the SHPO. By letter dated November 17, 2021, the SHPO responded, concurring that “additional archaeological investigations of the project areas are not warranted” and concluding that “no historic properties will be affected” by the proposed activities.”

### **3.8 Scenic and Recreational Areas**

No state or local designated scenic roads or scenic areas are located near the Site and therefore none will be physically or visually impacted by development of the Project. The nearest scenic road is a portion of State Route 164 in Preston, located approximately 8.7 miles northeast of the Project Area. There are no CT Blue Blaze Hiking Trails located proximate to the Site.

The nearest public open space is the Waterford Land Trust’s White Oak Preserve, directly across from the Site south of Raymond Hill Road. See Figure 7, *Surrounding Features Map*, for these and other resources located within one mile of the Site.





**Figure 8**  
**Surrounding Features**  
 N Silver Brook Solar Facility  
 486 Fitch Hill Road  
 Uncasville, CT 06382



### 3.9 Noise

The Site contains cleared fields and wooded land, with residences and farm buildings along Fitch Hill Road. Noise associated with human and equestrian activities is currently generated on the Site.

Construction noise is exempted under State of Connecticut regulations for the control of noise, RCSA 22a-69-1.8(h)<sup>17</sup>. During construction of the Facility, the temporary increase in noise would likely raise localized ambient sound levels immediately surrounding the Project Area. Standard types of construction equipment would be used for the Project. In general, the highest noise level from this type of equipment (e.g., backhoe, bulldozer, crane, trucks, etc.) is approximately 88 dBA at the source.

Once operational, noise from the Facility will be minimal. The Site and all surrounding properties are located within the residential zones, and would be considered to be within a Class A Noise Receptor Zone.<sup>18</sup> Conservatively, the Facility would be considered a Class C (Industrial) noise emitter to Class A (Residential) receptors. As such, it is subject to noise standards of 61 dBA during the daytime and 51 dBA at night. The Facility's only noise generating equipment are the inverters and transformers. Based on the most conservative information provided by specified equipment manufacturers, the eight (8) transformers are the loudest proposed equipment; they will generate a maximum sound level of approximately 61 dBA (measured at 1-foot away), individually, and approximately 70 dBA cumulatively.

Sound reduces with distance, and the inverters and transformers are inactive at night. The closest property line to a transformer is approximately 234 feet to the northeast (416 Fitch Hill Road); the residence at this property is approximately 1,110 feet from the nearest transformer. APT applied the Inverse Square Law<sup>19</sup> to evaluate the relative sound level of the transformers at the nearest property line. Based on these calculations, nearby receptors are of sufficient distances from the proposed Project-related equipment and once operational, noise levels during Facility operation will meet applicable State noise standards for a Class A Noise Zone.

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<sup>17</sup> The Town of Montville does not have a noise ordinance.

<sup>18</sup> RCSA 22a-69-3.5. Noise Zone Standards

<sup>19</sup> Inverse Square Law states that *the intensity of a force is inversely proportional to the square of the distance from that force*. With respect to sound, this means that any a noise will have a drastic drop-off in volume as it moves away from the source and then shallows out.



Please refer to the transformer and inverter specification sheets provided in Appendix D, *Product Information Sheets*.

### **3.10 Lighting**

Lighting is currently limited to the residence and farm buildings in the western portion of the Site.

No exterior lighting is planned or required for the Project.

### **3.11 FAA Determination**

The Petitioner submitted relevant Project information to the Federal Aviation Administration (“FAA”) for an aeronautical study to evaluate potential hazards to air navigation. The nearest airport is the Gager Private Airport located approximately 6.6 miles to the northwest in the neighboring town of Bozrah. The FAA provided Determinations of No Hazard to Air Navigation on November 30, 2021. See Appendix E, *FAA Determinations*. Based on this determination, there is no need to conduct a glare analysis.

### **3.12 Visibility**

The Facility will consist of 4,905 non-reflective solar panels measuring approximately 10 feet above grade. The proposed electrical interconnection will require the installation of approximately 15 new utility poles in the northwestern portion of the Site.

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 30 degrees, thereby further reducing reflectivity.

The Project Area will be surrounded by wooded land such that direct views to the fenced Facility will be obscured from off-Site locations. APT assessed the predicted visibility of the Facility with a Project-specific computer analysis of a one-mile radius around the Site. As depicted on the resulting viewshed maps, year-round visibility of the proposed Facility will be limited primarily to areas on the Site, with sporadic and limited views along a portion of Fitch Hill Road north of the

interconnect line. Seasonal visibility, when the leaves are off the trees, is predicted to extend off-Site to the north and east.

Please see Appendix F, *Visibility Documentation* for viewshed maps.

## **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. Predicted visibility of the proposed Facility beyond the Site is limited to visibility within small areas to the north and east.

Once operative, the Facility will be unstaffed and generate minimal traffic.

Most of the Project Area is forested, and development will include clearing of a small core forest area. In general, impacts on existing habitats and wildlife are not significant. The Northern long-eared bat was identified as potentially occurring within the vicinity of the Site but the Project is not expected to result in an adverse effect or an incidental take.

Portions of the Project Area are located within mapped Prime Farmland Soils. The Petitioner has designed the Project to minimize disturbance to these soils by proposing minimally intrusive methods for construction and installation of Facility components and limiting excessive grading and compaction. No soil will be exported from the Site. The Petitioner will seed all disturbed areas. Once the Facility has reached the end of its useful life, the panels and equipment will be removed and the Project Area restored.

The only direct impacts to wetlands are associated with the installation of the underground interconnect line, involving approximately 750 sq. ft. of disturbance. The nearest wetland boundary to the fenced Facility is approximately 90 feet away; all solar modules maintain a 100-foot distance from wetland boundaries. Clearing for portions of the utility interconnect lines will result in secondary impacts to approximately 1,850 sq. ft. within Wetland 1. To aid in the protection of wetland resources, E&S controls will be installed and maintained throughout construction in accordance with the Project's Resource Protection Plan. The distance from the main areas of disturbance within the fenced Facility to wetlands and implementation of protective management techniques will mitigate potential impacts to these resources during construction.

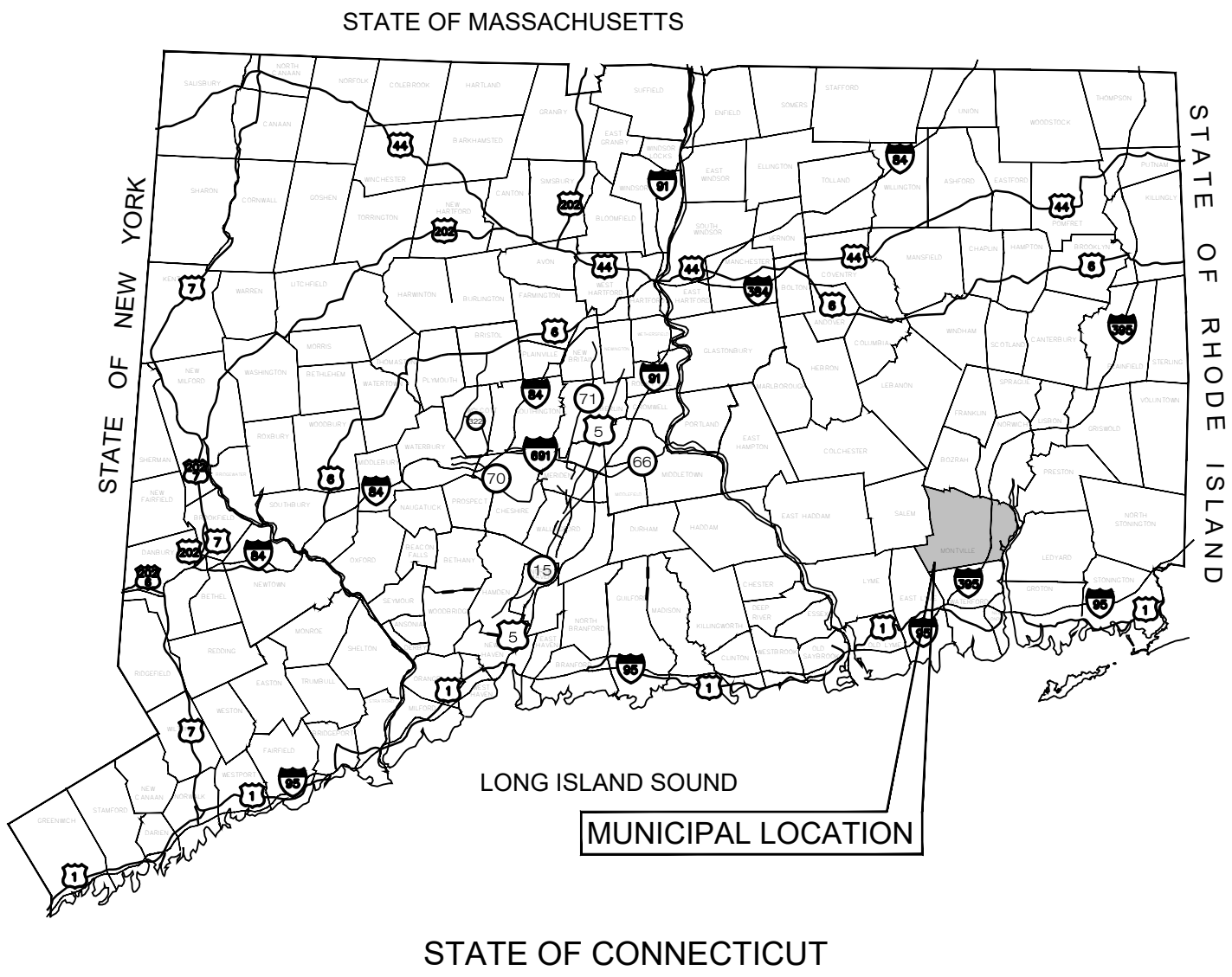
Overall, the Project's design minimizes the creation of impervious surfaces and maintains existing grades to the extent possible. Clearing, regrading and excavation will be required for the development of the Facility and the construction of the water quality management features. The

Project has been designed to adequately handle water volume, in accordance with the DEEP's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* as well as Appendix I. The Petitioner will implement a SWPCP, in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*, that will include provisions for monitoring of development activities and the establishment of E&S controls to be installed and maintained throughout construction.

# **APPENDIX A**

## PROJECT PLANS





# TRITEC AMERICAS

## "N SILVER BROOK SOLAR"

### 486 FITCH HILL ROAD UNCASVILLE, CT 06382

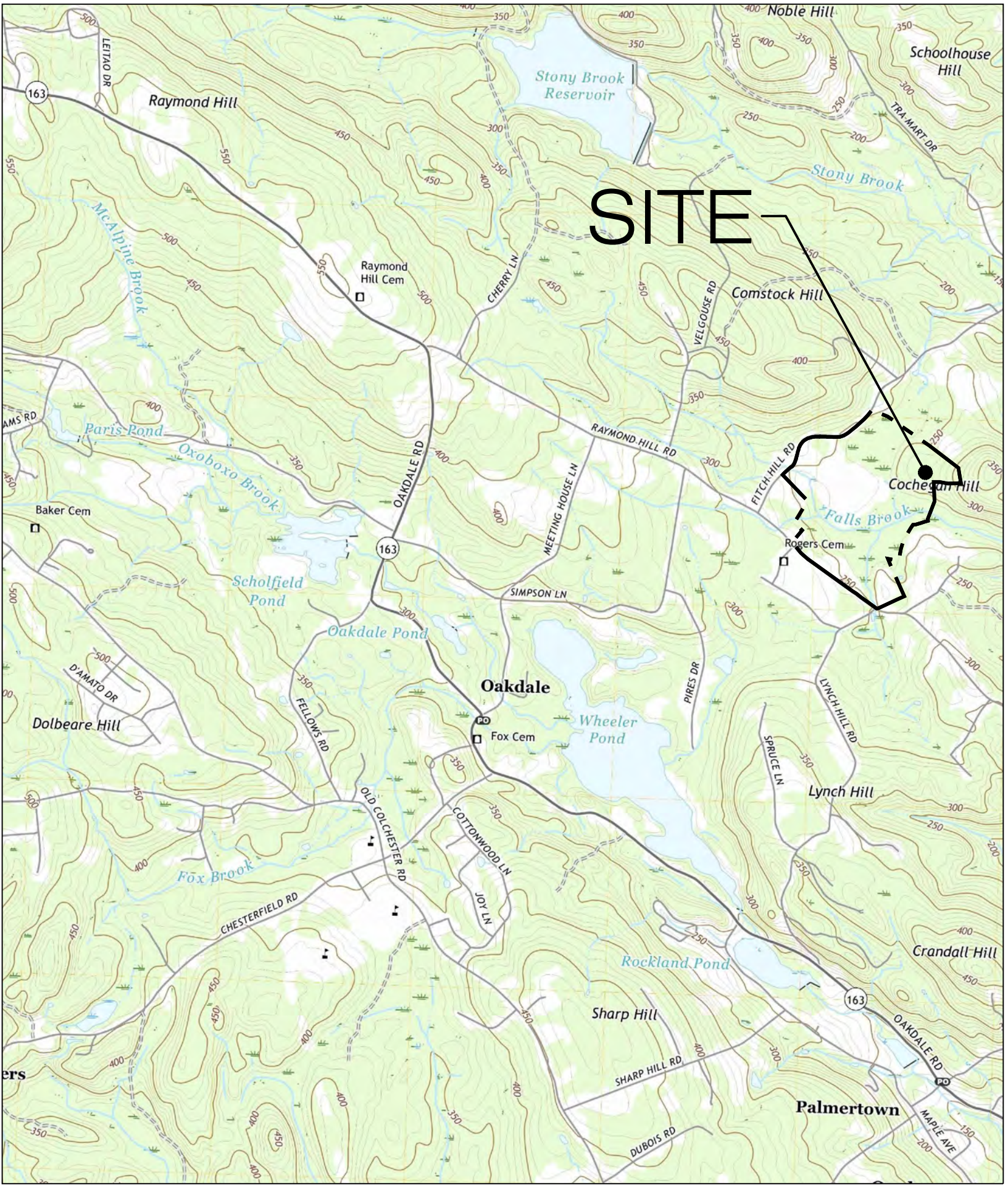
#### LIST OF DRAWINGS

T-1	TITLE SHEET & INDEX
VT101 TO VT104	EXISTING CONDITIONS PLANS PROVIDED BY LANGAN
GN-1	GENERAL NOTES
GN-2	ENVIRONMENTAL NOTES & RESOURCE PROTECTION MEASURES
OP-1	OVERALL LOCUS MAP
OP-2	PARTIAL SITE PLAN
EC-1	SEDIMENTATION & EROSION CONTROL NOTES
EC-2	SEDIMENTATION & EROSION CONTROL DETAILS
EC-3 TO EC-6	PHASE 1 SEDIMENTATION & EROSION CONTROL PLAN
EC-7 TO EC-10	PHASE 2 SEDIMENTATION & EROSION CONTROL PLAN
GD-1 TO GD-4	FINAL GRADING & DRAINAGE PLAN
SP-1 TO SP-4	SITE & UTILITY PLAN
DN-1	SITE DETAILS
DN-2	SITE DETAILS

#### SITE INFORMATION

SITE NAME:	"N SILVER BROOK SOLAR"
LOCATION:	486 FITCH HILL ROAD UNCASVILLE, CT 06382
SITE TYPE/DESCRIPTION:	ADD (1) GROUND MOUNTED SOLAR PANEL ARRAY W/ ASSOCIATED EQUIPMENT, GRAVEL ACCESS ROAD, AND STORMWATER MANAGEMENT.
PROPERTY OWNER:	N SILVER BROOK HOLDINGS, LLC 511 FITCH HILL ROAD UNCASVILLE, CT 06382
APPLICANT:	TRITEC AMERICAS 888 PROPECT STREET LA JOLLA, CA 92037
ENGINEER CONTACT:	KEVIN A. MCCAFFERY, P.E. (860) 581-4477
LATITUDE:	41°28'38.57" N
LONGITUDE:	72°07'50.54" W
ELEVATION:	270'± AMSL
MBLU:	047-051-000
ZONE:	"R-80"
EXISTING LAND USE:	SINGLE FAMILY RESIDENTIAL & AGRICULTURAL
PROPOSED LAND USE:	COMMUNICATIONS, TRANSPORTATION AND PUBLIC UTILITY USES - LARGE SCALE GROUND MOUNTED SOLAR PHOTOVOLTAIC INSTALLATIONS
TOTAL SITE ACREAGE:	128.67± AC.
TOTAL DISTURBED AREA:	15.25± AC.
APPROX. VOLUME OF CUT:	8,100± CY
APPROX. VOLUME OF FILL:	900± CY
APPROX. NET VOLUME:	7,200± CY OF CUT

#### USGS TOPOGRAPHIC MAP



SCALE : 1" = 2000'± SOURCE: USGS 7.5 PALMERTOWN QUADRANGLE, CT 2021



888 PROSPECT STREET  
LA JOLLA, CA 92037  
OFFICE: (619) 363-3080



567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

#### CSC PERMIT SET

NO	DATE	REVISION
0	01/10/22	ISSUED FOR PERMITTING
1		
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#### DESIGN PROFESSIONAL OF RECORD

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY  
CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: N SILVER BROOK  
HOLDINGS LLC  
ADDRESS: 511 FITCH HILL ROAD  
UNCASVILLE, CT 06382

#### N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

DATE:	12/14/21	DRAWN BY: CH	CHECKED BY: KAM
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#### SHEET TITLE:

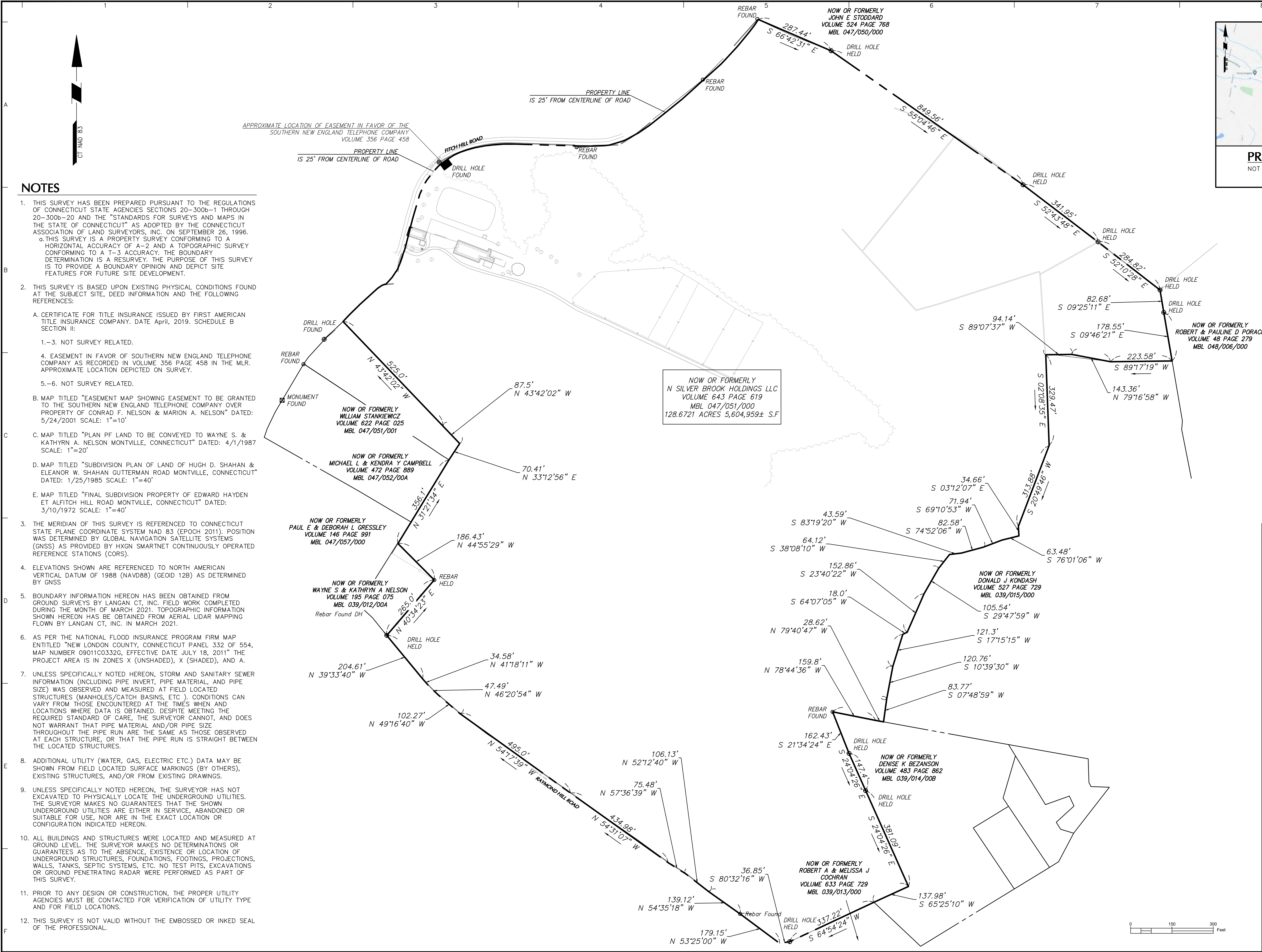
TITLE SHEET & INDEX

#### SHEET NUMBER:

T-1

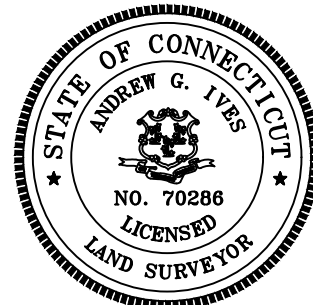






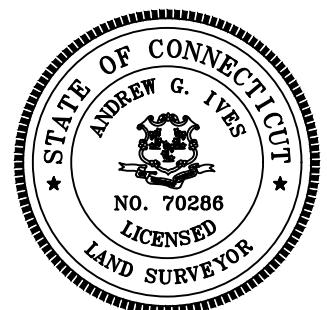
NOTES

- 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 PROPERTY SURVEY CONFORMING TO A HORIZONTAL ACCURACY OF A-2 AND A TOPOGRAPHIC SURVEY CONFORMING TO A T-3 ACCURACY. THE BOUNDARY DETERMINATION IS A RESURVEY. THE PURPOSE OF THIS SURVEY IS TO PROVIDE A BOUNDARY OPINION AND DEPICT SITE FEATURES FOR FUTURE SITE DEVELOPMENT.
- THIS SURVEY IS BASED UPON EXISTING PHYSICAL CONDITIONS FOUND AT THE SUBJECT SITE, DEED INFORMATION AND THE FOLLOWING REFERENCES:  
A. CERTIFICATE FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY. DATE April, 2019. SCHEDULE B SECTION II:  
1.-3. NOT SURVEY RELATED.  
4. EASEMENT IN FAVOR OF SOUTHERN NEW ENGLAND TELEPHONE COMPANY AS RECORDED IN VOLUME 356 PAGE 458 IN THE MLR. APPROXIMATE LOCATION DEPICTED ON SURVEY.  
5.-6. NOT SURVEY RELATED.  
B. MAP TITLED "EASEMENT MAP SHOWING EASEMENT TO BE GRANTED TO THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY OVER PROPERTY OF CONRAD F. NELSON & MARION A. NELSON" DATED: 5/24/2001 SCALE: 1"=10'  
C. MAP TITLED "PLAN PF LAND TO BE CONVEYED TO WAYNE S. & KATHYRN A. NELSON MONTVILLE, CONNECTICUT" DATED: 4/1/1987 SCALE: 1"=20'  
D. MAP TITLED "SUBDIVISION PLAN OF LAND OF HUGH D. SHAHAN & ELEANOR W. SHAHAN GUTTERMAN ROAD MONTVILLE, CONNECTICUT" DATED: 1/25/1985 SCALE: 1"=40'  
E. MAP TITLED "FINAL SUBDIVISION PROPERTY OF EDWARD HAYDEN ET AL FITCH HILL ROAD MONTVILLE, CONNECTICUT" DATED: 3/10/1972 SCALE: 1"=40'
- THE MERIDIAN OF THIS SURVEY IS REFERENCED TO CONNECTICUT STATE PLANE COORDINATE SYSTEM NAD 83 (EPOCH 2011). POSITION WAS DETERMINED BY GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) AS PROVIDED BY HXGN SMARTNET CONTINUOUSLY OPERATED REFERENCE STATIONS (CORS).
- ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) (GEOID 12B) AS DETERMINED BY GNSS
- BOUNDARY INFORMATION HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN CT, INC. FIELD WORK COMPLETED DURING THE MONTH OF MARCH 2021. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BE OBTAINED FROM AERIAL LIDAR MAPPING FLOWN BY LANGAN CT, INC. IN MARCH 2021.
- AS PER THE NATIONAL FLOOD INSURANCE PROGRAM FIRM MAP ENTITLED "NEW LONDON COUNTY, CONNECTICUT PANEL 332 OF 554, MAP NUMBER 09011C0332G, EFFECTIVE DATE JULY 18, 2011" THE PROJECT AREA IS IN ZONES X (UNSHADED), X (SHADED), AND A.
- UNLESS SPECIFICALLY NOTED HEREON, STORM AND SANITARY SEWER INFORMATION (INCLUDING PIPE INVERT, PIPE MATERIAL, AND PIPE SIZE) WAS OBSERVED AND MEASURED AT FIELD LOCATED STRUCTURES (MANHOLES/CATCH BASINS, ETC ). CONDITIONS CAN VARY FROM THOSE ENCOUNTERED AT THE TIMES WHEN AND LOCATIONS WHERE DATA IS OBTAINED. DESPITE MEETING THE REQUIRED STANDARD OF CARE, THE SURVEYOR CANNOT, AND DOES NOT WARRANT THAT PIPE MATERIAL AND/OR PIPE SIZE THROUGHOUT THE PIPE RUN ARE THE SAME AS THOSE OBSERVED AT EACH STRUCTURE, OR THAT THE PIPE RUN IS STRAIGHT BETWEEN THE LOCATED STRUCTURES.
- ADDITIONAL UTILITY (WATER, GAS, ELECTRIC ETC.) DATA MAY BE SHOWN FROM FIELD LOCATED SURFACE MARKINGS (BY OTHERS), EXISTING STRUCTURES, AND/OR FROM EXISTING DRAWINGS.
- UNLESS SPECIFICALLY NOTED HEREON, THE SURVEYOR HAS NOT EXCAVATED TO PHYSICALLY LOCATE THE UNDERGROUND UTILITIES. THE SURVEYOR MAKES NO GUARANTEES THAT THE SHOWN UNDERGROUND UTILITIES ARE EITHER IN SERVICE, ABANDONED OR SUITABLE FOR USE, NOR ARE IN THE EXACT LOCATION OR CONFIGURATION INDICATED HEREON.
- ALL BUILDINGS AND STRUCTURES WERE LOCATED AND MEASURED AT GROUND LEVEL. THE SURVEYOR MAKES NO DETERMINATIONS OR GUARANTEES AS TO THE ABSENCE, EXISTENCE OR LOCATION OF UNDERGROUND STRUCTURES, FOUNDATIONS, FOOTINGS, PROJECTIONS, WALLS, TANKS, SEPTIC SYSTEMS, ETC. NO TEST PITS, EXCAVATIONS OR GROUND PENETRATING RADAR WERE PERFORMED AS PART OF THIS SURVEY.
- PRIOR TO ANY DESIGN OR CONSTRUCTION, THE PROPER UTILITY AGENCIES MUST BE CONTACTED FOR VERIFICATION OF UTILITY TYPE AND FOR FIELD LOCATIONS.
- THIS SURVEY IS NOT VALID WITHOUT THE EMBOSSED OR INKED SEAL OF THE PROFESSIONAL.



Date	Description	No.
REVISIONS		
ANDREW G. IVES APRIL 27, 2021 PROFESSIONAL LAND SURVEYOR CT. LIC. No. 70286		
<b>LANGAN</b> Langan CT, Inc. 555 Long Wharf Drive New Haven, CT 06511 T: 203.562.5771 F: 203.789.6142 www.langan.com		
Project		
<b>486 FITCH HILL RD</b> UNCAVILLE		
NEW LONDON COUNTY CONNECTICUT Drawing Title		
<b>BOUNDARY SURVEY</b>		
Project No.	Drawing No.	
<b>14023201</b>	<b>VT-0101</b>	
Date		
<b>APRIL 27, 2021</b>		
Drawn By		
<b>RLH</b>	Sheet 1 of 4	
Checked By		
<b>ACI</b>		





Date	Description	No.
REVISIONS		
ANDREW G. IVES PROFESSIONAL LAND SURVEYOR CT LIC. No. 70286		
APRIL 27, 2021		
<b>LANGAN</b>  Langan CT, Inc. 555 Long Wharf Drive New Haven, CT 06511  T: 203.562.5771 F: 203.789.6142 www.langan.com		
Project		
486 FITCH HILL RD UNCAVILLE  NEW LONDON COUNTY CONNECTICUT		
Drawing Title		
LIMITED TOPOGRAPHIC SURVEY		
Project No.	Drawing No.	
14023201	VT-0102	
Date		
APRIL 27, 2021		
Drawn By		
RLH		
Checked By		
AGI	Sheet 2 of 4	











GENERAL NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT DEVELOPER STANDARDS, TOWN OF MONTVILLE STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. IF NO PROJECT CONSTRUCTION SPECIFICATION PACKAGE IS PROVIDED BY THE PROJECT DEVELOPER OR THEIR REPRESENTATIVE, THE CONTRACTOR SHALL COMPLY WITH THE MANUFACTURER, TOWN OF MONTVILLE, OR CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AND BE IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
3. THE PROJECT DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING AND STORMWATER PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL MONTVILLE CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
4. REFER TO PLANS, DETAILS AND REPORTS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE PROJECT DEVELOPER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS AND SPECIFICATIONS TO THE PROJECT DEVELOPER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
6. SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE PROJECT DEVELOPER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
7. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE PROJECT DEVELOPER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE PROJECT DEVELOPER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
8. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
9. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
11. THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
12. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE PROJECT DEVELOPER OR THE TOWN OF MONTVILLE.
13. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE PROJECT DEVELOPER AT THE END OF CONSTRUCTION.
14. ALTERNATIVE METHODS AND PRODUCTS, OTHER THAN THOSE SPECIFIED, MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING/CONSTRUCTION PROCESS.
15. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "811" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
16. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.

SITE PLAN NOTES

1. THE SURVEY WAS PROVIDED BY LANGAN, DATED APRIL 27, 2021.
2. THERE ARE BVWS LOCATED ON THE SITE AS INDICATED ON THE PLANS. BVW BOUNDARIES WERE FLAGGED AND LOCATED BY ALL-POINTS TECHNOLOGY CORPORATION, IN MARCH 2021.
3. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDED SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN FOR APPROVAL BY THE ENGINEER AND/OR PERMITTING AGENCIES PRIOR TO THE START OF CONSTRUCTION. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
4. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR BVWS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. IN ADDITION, THE CONTRACTOR SHALL ADHERE TO "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY GOVERNMENT AGENCIES WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
5. ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK, SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 95% PERCENT OF OPTIMUM MOISTURE CONTENT.
6. ALL DISTURBANCE INCURRED TO PUBLIC, MUNICIPAL, COUNTY, STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF MONTVILLE AND STATE OF CONNECTICUT.
7. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT.

UTILITY NOTES

1. CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF MONTVILLE TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
2. REFER TO DRAWINGS BY PROJECT DEVELOPER FOR THE ONSITE ELECTRICAL DRAWINGS AND INTERCONNECTION TO EXISTING ELECTRICAL GRID. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT. THESE DETAILS ARE NOT INCLUDED IN THESE PLANS.
3. UTILITY LOCATIONS AND PENETRATIONS ARE SHOWN FOR THE CONTRACTORS INFORMATION AND SHALL BE VERIFIED WITH THE ELECTRICAL ENGINEER AND THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROP. SANITARY SEWERS AND WHERE PROP. STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE PROJECT DEVELOPER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
5. UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
6. THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
7. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
8. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE TOWN OF MONTVILLE.
9. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
10. RELOCATION OF UTILITY PROVIDER FACILITIES, SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
11. THE CONTRACTOR SHALL COMPACT PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
12. CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
13. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
14. A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER. A 6-INCH TO 18-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROP. SANITARY PIPING.
15. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE PROJECT DEVELOPER AND THE TOWN OF MONTVILLE.
16. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY, AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT "CALL BEFORE YOU DIG" AT 811 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROP. UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
17. THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
18. ELECTRIC DRAWINGS AND REQUIREMENTS ARE NOT INCLUDED AS PART OF THIS DRAWING SET AND SHOULD BE OBTAINED FROM THE PROJECT DEVELOPER.
19. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
20. THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE PROJECT DEVELOPER, TOWN OF MONTVILLE, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.

GENERAL LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
BUILDING SETBACK		
SOLAR SETBACK		
EASEMENT		
TREE LINE		
WETLAND		
WETLAND BUFFER		
VERNAL POOL		
VERNAL POOL BUFFER		
WATERCOURSE		
WATERCOURSE BUFFER		
MAJOR CONTOUR		
MINOR CONTOUR		
UNDERGROUND ELECTRIC		
OVERHEAD ELECTRIC		
GAS LINE		
WATER LINE		
BASIN		
SWALE		
FENCE		
LIMIT OF DISTURBANCE		
LIMIT OF CLEARING AND GRUBBING		
FILTER SOCK		
SILT FENCE		
BAFFLE		

888 PROSPECT STREET  
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OFFICE: (619) 363-3080

567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385    PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM    FAX: (860)-663-0935

CSC PERMIT SET		
NO	DATE	REVISION
0	01/10/22	ISSUED FOR PERMITTING
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DESIGN PROFESSIONAL OF RECORD	
PROF: KEVIN A. MCCAFFERY, PE COMP: ALL-POINTS TECHNOLOGY CORPORATION ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385	
OWNER:	N SILVER BROOK HOLDINGS LLC
ADDRESS: 511 FITCH HILL ROAD UNCASVILLE, CT 06382	

N SILVER BROOK SOLAR	
SITE 486 FITCH HILL ROAD ADDRESS: UNCASVILLE, CT 06382	
APT FILING NUMBER: CT657140	
	DRAWN BY: CH
DATE: 12/14/21	CHECKED BY: KAM

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:	
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GN-1



ENVIRONNMENTAL NOTES
RESOURCE PROTECTION MEASURES

WETLAND, VERNAL POOL & WETLAND CROSSING PROTECTION PROGRAM

AS A RESULT OF THE FACILITY'S UTILITY INTERCONNECTION AND ACCESS ROAD WETLAND CROSSINGS, AND ITS LOCATION IN THE VICINITY OF SENSITIVE WETLAND RESOURCES AND VERNAL POOL HABITAT, THE FOLLOWING PROTECTION PROGRAM SHALL BE IMPLEMENTED BY THE CONTRACTOR TO AVOID UNINTENTIONAL IMPACTS TO PROXIMATE WETLAND RESOURCES OR MORTALITY TO VERNAL POOL HERPETOFAUNA (I.E., WOOD FROG, SALAMANDERS, TURTLES, ETC.) DURING CONSTRUCTION ACTIVITIES. THE VERNAL POOL SPECIFIC PROTECTION MEASURES SHALL BE IMPLEMENTED 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)). PROTECTION MEASURES ASSOCIATED WITH WETLANDS SHALL BE IMPLEMENTED REGARDLESS OF THE TIME OF YEAR.

IT IS OF THE UTMOST IMPORTANCE THAT THE CONTRACTOR COMPLIES WITH THE REQUIREMENT FOR THE INSTALLATION OF PROTECTIVE MEASURES AND THE EDUCATION OF ITS EMPLOYEES AND SUBCONTRACTORS PERFORMING WORK ON THE PROJECT SITE. ALL-POINTS TECHNOLOGY CORPORATION, P.C. ("APT") WILL SERVE AS THE ENVIRONMENTAL MONITOR FOR THIS PROJECT TO ENSURE THAT THESE PROTECTION MEASURES ARE IMPLEMENTED PROPERLY AND WILL PROVIDE AN EDUCATION SESSION ON THE PROJECTS PROXIMITY TO SENSITIVE WETLAND RESOURCES AND ASSOCIATED VERNAL POOL HERPETOFAUNA PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT DEAN GUSTAFSON, SENIOR WETLAND SCIENTIST AT APT, AT LEAST BUSINESS DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. MR. GUSTAFSON CAN BE REACHED BY PHONE AT (860) 552-2033 OR VIA EMAIL AT DGUSTAFSON@ALLPOINTSTECH.COM.

THE PROPOSED WETLAND AND VERNAL POOL PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS INCLUDING: EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; INSTALLATION OF EROSION CONTROLS; PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION; PROTECTIVE MEASURES; WETLAND CROSSING AND CULVERT INSTALLATION; HERBICIDE AND PESTICIDE RESTRICTIONS; AND, REPORTING.

1. 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 APT. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF INFORMATION SUCH AS, BUT NOT LIMITED TO: IDENTIFICATION OF WETLAND RESOURCES PROXIMATE TO WORK AREAS, REPRESENTATIVE PHOTOGRAPHS OF TYPICAL HERPETOFAUNA THAT MAY BE ENCOUNTERED, CONNECTICUT AND FEDERAL LISTING STATUS OF SPECIES THAT COULD BE ENCOUNTERED, TYPICAL SPECIES BEHAVIOR, AND PROPER PROCEDURES IF SPECIES ARE ENCOUNTERED. THE MEETING WILL FURTHER EMPHASIZE THE NON-AGGRESSIVE NATURE OF THESE SPECIES, THE ABSSENCE OF NEED TO DESTROY SUCH ANIMALS AND THE NEED TO FOLLOW PROTECTIVE MEASURES AS DESCRIBED IN FOLLOWING SECTIONS. THE CONTRACTOR WILL DESIGNATE ONE OF ITS WORKERS AS THE "PROJECT MONITOR", WHO WILL RECEIVE MORE INTENSE TRAINING ON THE IDENTIFICATION AND PROTECTION OF HERPETOFAUNA.
- b. THE CONTRACTOR WILL DESIGNATE A MEMBER OF ITS CREW AS THE PROJECT MONITOR TO BE RESPONSIBLE FOR THE PERIODIC "SWEEPS" FOR HERPETOFAUNA WITHIN THE CONSTRUCTION ZONE EACH MORNING AND FOR ANY GROUND DISTURBANCE WORK. THIS INDIVIDUAL WILL RECEIVE MORE INTENSE TRAINING FROM APT ON THE IDENTIFICATION AND PROTECTION OF HERPETOFAUNA IN ORDER TO PERFORM SWEEPS. ANY HERPETOFAUNA DISCOVERED WOULD BE TRANSLOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.
- c. THE CONTRACTOR'S PROJECT MONITOR WILL BE PROVIDED WITH CELL PHONE AND EMAIL CONTACTS FOR APT PERSONNEL TO IMMEDIATELY REPORT ANY ENCOUNTERS WITH HERPETOFAUNA. EDUCATIONAL POSTER MATERIALS WILL BE PROVIDED BY APT AND DISPLAYED ON THE JOB SITE TO MAINTAIN WORKER AWARENESS AS THE PROJECT PROGRESSES.
- d. APT WILL ALSO POST CAUTION SIGNS THROUGHOUT THE PROJECT SITE FOR THE DURATION OF THE CONSTRUCTION PROJECT PROVIDING 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.
2. EROSION AND SEDIMENTATION CONTROLS
- a. PLASTIC NETTING 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 AND 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 (NETLESS) OR NETTING COMPOSED OF PLANAR WOVEN NATURAL BIODEGRADABLE FIBER TO AVOID/MINIMIZE WILDLIFE ENTANGLEMENT.
- b. THE EXTENT OF EROSION CONTROLS WILL BE AS SHOWN ON THE SITE PLANS. THE CONTRACTOR SHALL HAVE ADDITIONAL SEDIMENTATION AND EROSION CONTROLS STOCKPILED ON SITE SHOULD FIELD OR CONSTRUCTION CONDITIONS WARRANT EXTENDING DEVICES. IN ADDITION TO THE CONTRACTOR MAKING THESE DETERMINATIONS, REQUESTS FOR ADDITIONAL CONTROLS WILL ALSO BE AT THE DISCRETION OF THE ENVIRONMENTAL MONITOR.
- c. INSTALLATION OF EROSION AND SEDIMENTATION CONTROLS, REQUIRED FOR EROSION CONTROL COMPLIANCE AND CREATION OF A BARRIER TOO POSSIBLE MIGRATING/DISPERSING HERPETOFAUNA (ONLY APPLICABLE DURING THE SEASONAL RESTRICTION PERIOD AND WILL BE INSTALLED AT THE DISCRETION OF THE ENVIRONMENTAL MONITOR), SHALL BE PERFORMED BY THE CONTRACTOR IF ANY SOIL DISTURBANCE OCCURS OR HEAVY MACHINERY IS ANTICIPATED TO BE USED ON SLOPES. THE ENVIRONMENTAL MONITOR WILL INSPECT THE WORK ZONE AREA PRIOR TO AND FOLLOWING EROSION CONTROL BARRIER INSTALLATION. IN ADDITION, WORK ZONES IN PROXIMITY TO VERNAL POOL RESOURCES WILL BE INSPECTED 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 AT THE DISCRETION OF THE ENVIRONMENTAL MONITOR.
- d. NO EQUIPMENT, VEHICLES, CONSTRUCTION MATERIALS, OR STAGING AREAS SHALL BE STORED/LOCATED WITHIN 100 FEET OF WETLAND RESOURCES.
- e. THE CONTRACTOR IS RESPONSIBLE FOR DAILY INSPECTIONS OF THE SEDIMENTATION AND EROSION CONTROLS, INCLUDING BUT NOT LIMITED TO FOR TEARS OR BREECHEES AND ACCUMULATION LEVELS OF SEDIMENT, PARTICULARLY FOLLOWING STORM EVENTS THAT GENERATE A DISCHARGE AS DEFINED BY AND IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL NOTIFY THE ENVIRONMENTAL MONITOR WITHIN 24 HOURS OF ANY BREECHEES OF THE SEDIMENTATION AND EROSION CONTROLS AND ANY SEDIMENT RELEASES BEYOND THE PERIMETER CONTROLS THAT IMPACT WETLANDS, WATERCOURSES OR WITHIN 100 FEET OF WETLANDS AND WATERCOURSES. THE ENVIRONMENTAL MONITOR WILL PROVIDE PERIODIC INSPECTIONS OF THE SEDIMENTATION AND EROSION CONTROLS THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES ONLY AS IT PERTAINS TO PROTECTION OF NEARBY WETLANDS, WHICH WILL GENERALLY OCCUR ON A MONTHLY BASIS. IF APT IS NOTIFIED BY THE CONTRACTOR OF A SEDIMENT RELEASE, AN INSPECTION WILL BE SCHEDULED SPECIFICALLY TO INVESTIGATE AND EVALUATE POSSIBLE IMPACTS TO WETLAND RESOURCES.
- f. ALL SILT FENCING OR OTHER POTENTIAL BARRIERS TO SAFE HERPETOFAUNA MIGRATION SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS SO THAT REPTILE AND AMPHIBIAN MOVEMENT BETWEEN UPLANDS AND WETLANDS IS NOT RESTRICTED. IF FIBER ROLLS/WATTLES, STRAW BALES, OR OTHER NATURAL MATERIAL EROSION CONTROL PRODUCTS ARE USED, SUCH DEVICES WILL NOT BE LEFT IN PLACE TO BIODEGRADE AND SHALL BE PROMPTLY REMOVED AFTER SOILS ARE STABLE SO AS NOT TO CREATE A BARRIER TO MIGRATING WILDLIFE. SEED FROM SEEDING OF SOILS SHOULD NOT SPREAD OVER FIBER ROLLS/WATTLES AS IT MAKES THEM HARDER TO REMOVE ONCE SOILS ARE STABILIZED BY VEGETATION.

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 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 OCCUR A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES AND SHALL TAKE PLACE ON AN IMPERVIOUS PAD WITH SECONDARY CONTAINMENT DESIGNED TO CONTAIN FUELS.
2. ANY FUEL 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 NECESSARY, INCLUDING THE CONNECTICUT SITING COUNCIL.

4. WETLAND AND VERNAL POOL PROTECTIVE MEASURES

- a. A THOROUGH COVER SEARCH OF THE CONSTRUCTION AREA WILL BE PERFORMED BY APT'S ENVIRONMENTAL MONITOR FOR HERPETOFAUNA PRIOR TO AND FOLLOWING INSTALLATION OF THE SILT FENCING BARRIER TO REMOVE ANY SPECIES FROM THE WORK ZONE PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES. ANY HERPETOFAUNA DISCOVERED WOULD BE TRANSLOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED. PERIODIC INSPECTIONS WILL BE PERFORMED BY APT'S ENVIRONMENTAL MONITOR THROUGHOUT THE DURATION OF THE CONSTRUCTION.
- b. 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.
- c. EROSION CONTROL MEASURES WILL BE REMOVED NO LATER THAN 30 DAYS FOLLOWING FINAL SITE STABILIZATION SO AS NOT TO IMPEDE MIGRATION OF HERPETOFAUNA OR OTHER WILDLIFE.
5. WETLAND CROSSING, CULVERT INSTALLATION & RESTORATION
- a. THE CONTRACTOR SHALL CONTACT APT A MINIMUM OF 72 HOURS PRIOR TO ANY WORK ASSOCIATED WITH THE ELECTRICAL INTERCONNECT WETLAND CROSSINGS AND CONSTRUCTION OF THE PROPOSED ACCESS ROAD WETLAND CROSSING (LOCATED AT AN EXISTING CROSSING) IN ORDER TO MONITOR THESE WORK ACTIVITIES WITH A PARTICULAR FOCUS ON THE INSTALLATION OF CULVERTS AT THE PROPOSED ACCESS ROAD WETLAND CROSSING.
- b. INSTALLATION OF THE CULVERTS INVERT ELEVATIONS SHALL CONFORM TO THE PROJECT SITE PLANS AND ASSOCIATED DETAILS ALLOWING FOR SLIGHT FIELD ADJUSTMENTS BASED ON EXISTING ELEVATIONS WITHIN THE WETLAND SYSTEM TO ENSURE THAT THE CROSSING AND CULVERTS WILL NOT IMPEDED OR ADVERSELY IMPACT CONVEYANCE OF EXISTING SURFACE FLOWS THROUGH THE WETLAND SYSTEM.
- c. ANY EXPOSED/DISTURBED WETLAND SOILS RESULTING FROM THE PROPOSED ACCESS ROAD WETLAND CROSSING SHALL BE SEEDED WITH A NEW ENGLAND WET SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR APPROVED EQUIVALENT) AT THE MANUFACTURERS RECOMMENDED SEED RATE. SIDE SLOPES AT THE WETLAND CROSSING SHALL BE SEEDED WITH A NEW ENGLAND CONSERVATION/WILDLIFE SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR APPROVED EQUIVALENT) AT THE MANUFACTURERS RECOMMENDED SEED RATE. MULCH SEEDED AREAS WITH NON-WOVEN NATURAL FIBER EROSION CONTROL BLANKET OR 2 TO 3 INCHES OF CLEAN STRAW MULCH, AS APPROPRIATE.

6. HERBICIDE AND PESTICIDE RESTRICTIONS

- a. THE USE OF HERBICIDES AND PESTICIDES AT THE FACILITY SHALL BE AVOIDED WHEN POSSIBLE. IN THE EVENT HERBICIDES AND/OR PESTICIDES ARE REQUIRED AT THE FACILITY, THEIR USE WILL BE USED IN ACCORDANCE WITH CURRENT INTEGRATED PEST MANAGEMENT ("IPM") PRINCIPLES WITH PARTICULAR ATTENTION TO MINIMIZE APPLICATIONS WITHIN 100 FEET OF WETLAND OR WATERCOURSE RESOURCES. NO APPLICATIONS OF HERBICIDES OR PESTICIDES ARE ALLOWED WITHIN ACTUAL WETLAND OR WATERCOURSE RESOURCES.

7. REPORTING

- a. DAILY COMPLIANCE MONITORING REPORTS (BRIEF NARRATIVE AND APPLICABLE PHOTOS) DOCUMENTING EACH APT INSPECTION WILL BE SUBMITTED BY APT TO THE PERMITTEE AND ITS CONTRACTOR FOR COMPLIANCE VERIFICATION OF THESE PROTECTION MEASURES. THESE REPORTS ARE NOT TO BE USED TO DOCUMENT COMPLIANCE WITH ANY OTHER PERMIT AGENCY APPROVAL CONDITIONS (I.E., DEEP STORMWATER PERMIT MONITORING, ETC.). ANY NON-COMPLIANCE OBSERVATIONS OF EROSION CONTROL MEASURES OR EVIDENCE OF EROSION OR SEDIMENT RELEASE WILL BE IMMEDIATELY REPORTED TO THE PERMITTEE AND ITS CONTRACTOR AND INCLUDED IN THE REPORTS ALONG WITH ANY OBSERVATIONS OF VERNAL POOL HERPETOFAUNA.
- b. FOLLOWING COMPLETION OF THE CONSTRUCTION PROJECT, APT WILL PROVIDE A COMPLIANCE MONITORING SUMMARY REPORT TO THE PERMITTEE DOCUMENTING IMPLEMENTATION OF THE WETLAND AND VERNAL POOL PROTECTION PROGRAM AND MONITORING OBSERVATIONS. THE PERMITTEE IS RESPONSIBLE FOR PROVIDING A COPY OF THE COMPLIANCE MONITORING SUMMARY REPORT TO THE CONNECTICUT SITING COUNCIL FOR COMPLIANCE VERIFICATION.
- c. ANY OBSERVATIONS OF RARE SPECIES WILL BE REPORTED TO CTDEEP BY APT, WITH PHOTOGRAPHY (IF POSSIBLE) AND WITH SPECIFIC INFORMATION ON THE LOCATION AND DISPOSITION OF THE ANIMAL.



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DESIGN PROFESSIONAL OF RECORD

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: N SILVER BROOK HOLDINGS LLC

ADDRESS: 511 FITCH HILL ROAD  
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N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

DATE: 12/14/21


DRAWN BY: CH

CHECKED BY: KAM

SHEET TITLE:

ENVIRONMENTAL NOTES  
RESOURCE PROTECTION  
MEASURES

SHEET NUMBER:



GN-2



N/F  
NOELLA POND ET AL.  
67 VELGOUSE RD  
047-002-00A

N/F  
DAVID W MAURICE  
65 VELGOUSE RD  
047-002-00B

N/F  
BRIAN D HALL  
61 VELGOUSE RD  
047-002-000

N/F  
MICHAEL T STAEHLE  
54 VELGOUSE RD  
046-047-000

N/F  
WENDY DANIELS  
44 VELGOUSE RD  
046-046-00A

N/F  
NORMAN I & SALLY A GAUTHIER  
40 VELGOUSE RD  
046-046-000

N/F  
KIM M & TODD B PIKE  
39 VELGOUSE RD  
047-003-000

N/F  
JAMES A SR & JOANN A BABCOCK  
33 VELGOUSE RD  
047-004-000

DANIEL AND REBECCA L COY  
31 VELGOUSE RD  
047-004-T00

N/F  
WILLIAM STANKIEWICZ  
510 FITCH HILL RD  
047-051-001

N/F  
GARY R STRINGER SR  
514 FITCH HILL RD  
047-052-000

N/F  
MICHAEL L & KENDRA Y CAMPBELL  
518 FITCH HILL RD  
047-052-00A

N/F  
PAUL E & DEBORAH L GRESSLEY  
677 RAYMOND HILL RD  
047-057-000

N/F  
WAYNE S & KATHRYN A NELSON  
679 RAYMOND HILL RD  
039-012-00A

N/F  
JOAL & BRUCE A PATTERSON  
670 RAYMOND HILL RD  
039-041-000

N/F  
MELANIE A JENSEN  
662 RAYMOND HILL RD  
039-040-000

N/F  
ROBERT A & AMY B STOODT  
656 RAYMOND HILL RD  
039-039-000

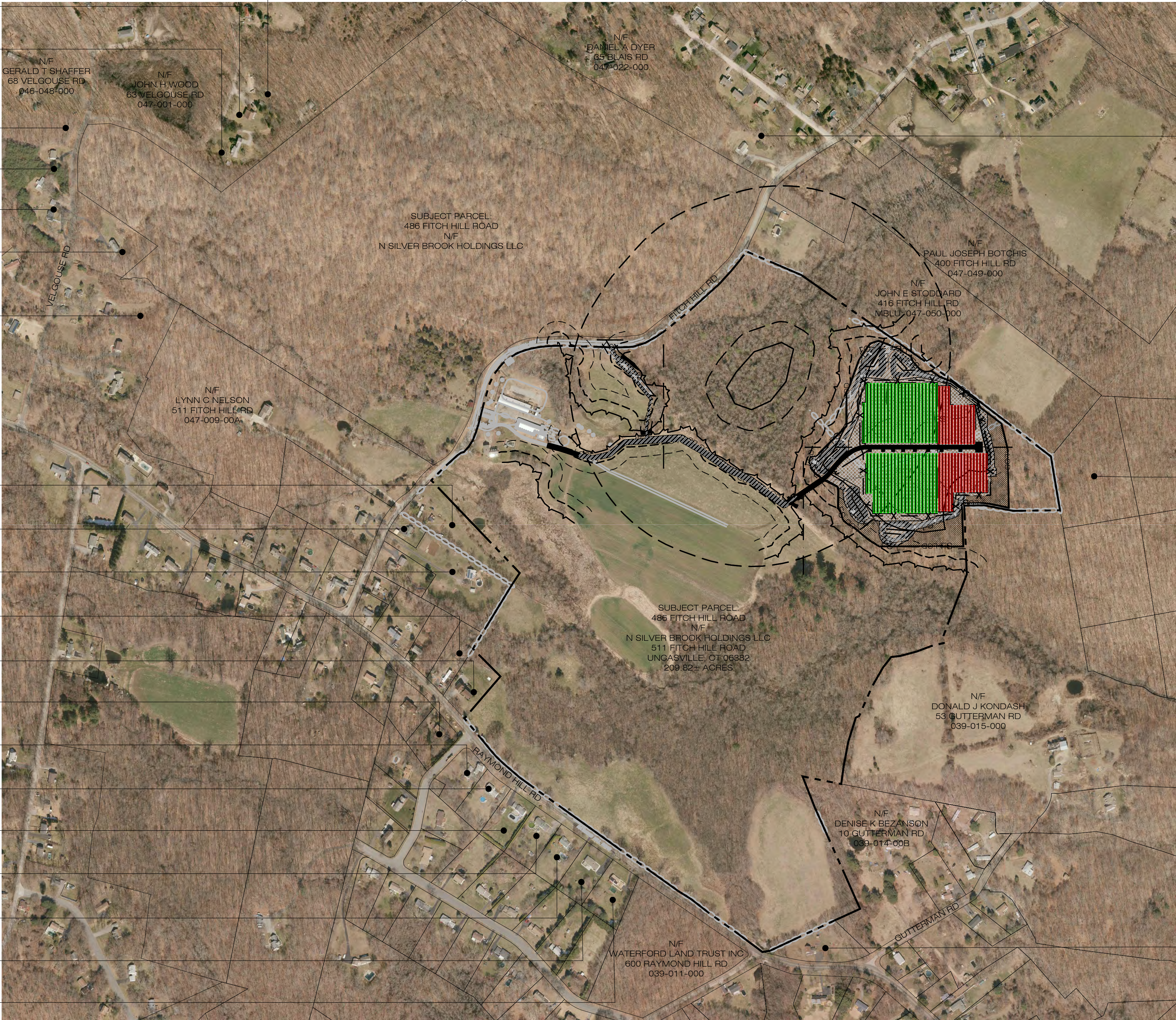
N/F  
JOHN CAMERON  
650 RAYMOND HILL RD  
039-038-000

N/F  
VIVIAN MARY KEITH  
644 RAYMOND HILL RD  
039-037-000

N/F  
JEREMY C & CHRYSTAL R LURETTE  
638 RAYMOND HILL RD  
039-036-000

N/F  
BARBARA ANN J BROWN  
632 RAYMOND HILL RD  
039-035-000

N/F  
CHRISTINA & JOHNATHAN CORMIER  
626 RAYMOND HILL RD  
039-034-000

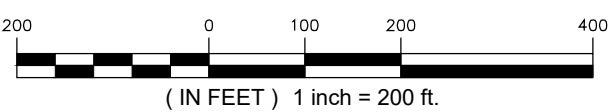


N/F  
GARY BRODASKI  
406 FITCH HILL RD  
047-010-000

N/F  
ROBERT & PAULINE D PORACH  
GUTTERMAN RD  
048-006-000

N/F  
ROBERT A & MELISSA J COCHRAN  
587 RAYMOND HILL RD  
039-013-000

1  
OP-1  
**OVERALL LOCUS MAP**  
SCALE : 1" = 200'-0"



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COMP: ALL-POINTS TECHNOLOGY CORPORATION  
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**SHEET TITLE:**

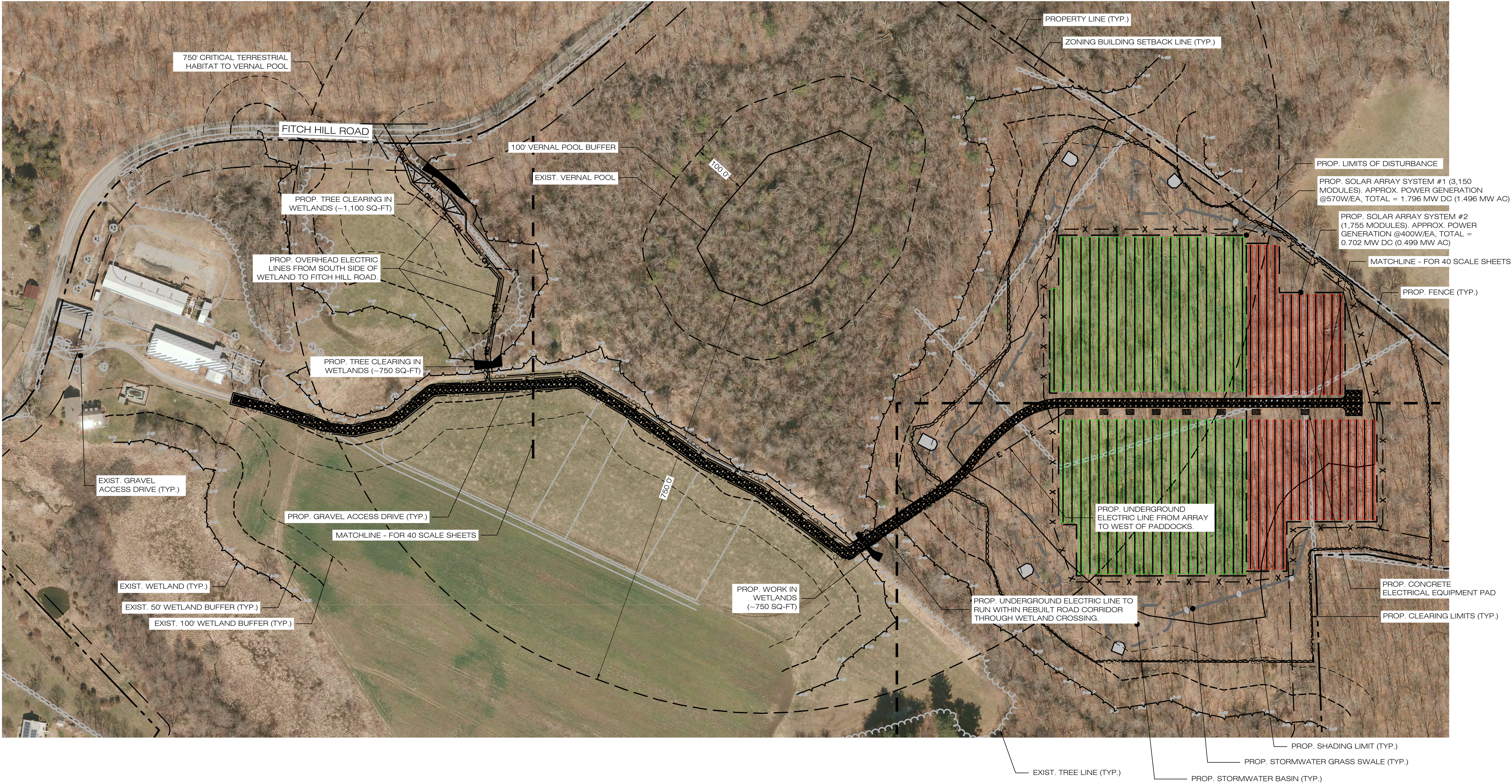
**OVERALL LOCUS MAP**

**SHEET NUMBER:**

**OP-1**

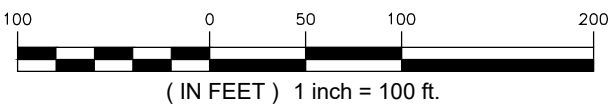






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OP-1

**PARTIAL SITE PLAN**  
SCALE : 1" = 100'-0"



**TRITEC**  
AMERICAS

888 PROSPECT STREET  
LA JOLLA, CA 92037  
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**ALL-POINTS**  
TECHNOLOGY CORPORATION

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**PARTIAL SITE PLAN**

SHEET NUMBER:

**OP-2**

STATE OF CONNECTICUT  
2017  
LICENSED  
PROFESSIONAL ENGINEER



EROSION CONTROL NOTES

EROSION AND SEDIMENT CONTROL PLAN NOTES

- THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF MONTVILLE, PERMITTEE, AND/OR SWPCP MONITOR. ALL PERIMETER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
- THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. SEE CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN AS REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS, AS REQUIRED, AND AS DIRECTED BY THE PERMITTEE AND/OR SWPCP MONITOR. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
- A BOND OR LETTER OF CREDIT MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
- THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR INSTALLED SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS AS NECESSARY IN A TIMELY MANNER.
- THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (SILT FENCE, COMPOST FILTER SOCK, EROSION CONTROL BLANKET, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.
- ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.
- PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING, ORANGE SAFETY FENCE, CONSTRUCTION TAPE, OR EQUIVALENT FENCING/TAPE. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
- CONSTRUCTION ENTRANCES (ANTI-TRACKING PADS) SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION IF REQUIRED. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. CONTRACTOR SHALL ENSURE THAT ALL VEHICLES EXITING THE SITE ARE PASSING OVER THE ANTI-TRACKING PADS PRIOR TO EXISTING.
- ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER.
- NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS. ALL SLOPES SHALL BE SEEDED AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
- DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE CONFORMING TO THE GUIDELINES WITHIN THE APPROVED LIMIT OF DISTURBANCE IF REQUIRED. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE PERMITTEE OR MUNICIPALITY.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SECURED APPROPRIATELY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
- MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDDED WITH TACKIFIER.
- SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL. PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
- VEGETATIVE ESTABLISHMENT SHALL OCCUR ON ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
- MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP CONCRETE PADS, CLEAN THE STORMWATER MANAGEMENT SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM PERMITTEE OR THE MUNICIPALITY.
- SEEDING MIXTURES SHALL BE NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX (SEE SITE DETAILS SHEET DN-1), OR APPROVED EQUAL BY OWNER.

CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR		
E&S MEASURE	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
COMPOST FILTER SOCK	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
TEMPORARY SEDIMENT BASIN (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SEDIMENT TRAP (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.

SEDIMENT & EROSION CONTROL NARRATIVE

- THE PROJECT INVOLVES THE CONSTRUCTION OF A GROUND MOUNTED SOLAR PANEL FACILITY WITH ASSOCIATED EQUIPMENT, INCLUDING THE CLEARING, GRUBBING AND GRADING OF APPROXIMATELY 15.25± ACRES OF EXISTING LOT.  
  
THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:  
A. CLEARING, GRUBBING, AND GRADING OF EXISTING LOT.  
B. CONSTRUCTION OF 4,905 GROUND MOUNTED SOLAR PANELS AND ASSOCIATED EQUIPMENT.  
C. THE STABILIZATION OF DISTURBED AREAS WITH PERMANENT VEGETATIVE TREATMENTS.
- FOR THIS PROJECT, THERE ARE APPROXIMATELY 15.25± ACRE OF THE SITE BEING DISTURBED WITH NEGLIGIBLE INCREASE IN THE IMPERVIOUS AREA OF THE SITE, AS ALL ACCESS THOUGH THE SITE WILL BE GRAVEL. IMPERVIOUS AREAS ARE LIMITED TO THE CONCRETE PADS FOR ELECTRICAL EQUIPMENT.
- THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF STATE OF CONNECTICUT (NRCS, VERSION 18, DEC 6, 2018), CONTAINS TYPE 68C, 68D, 73C AND 703B (HYDROLOGIC SOIL GROUP B) AND 702B (HYDROLOGIC SOIL GROUP C). A GEOTECHNICAL ENGINEERING REPORT HAS NOT BEEN COMPLETED.
- IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 3-4 MONTHS.
- REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
- STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL AND THE TOWN OF MONTVILLE STANDARDS, TO THE EXTENT POSSIBLE AND PRACTICABLE FOR THIS PROJECT ON THIS SITE. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE CONNECTICUT EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, LATEST EDITION.
- DETAILS FOR THE TYPICAL STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON THE PLAN SHEETS OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.
- CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION:  
A. STAGED CONSTRUCTION;  
B. MINIMIZE THE DISTURBED AREAS TO THE EXTENT PRACTICABLE DURING CONSTRUCTION;  
C. STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT MEASURES AS SOON AS POSSIBLE, BUT NO LATER THAN 7-DAYS FOLLOWING DISTURBANCE;  
D. MINIMIZE IMPERVIOUS AREAS;  
E. UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.
- THE FOLLOWING SEPARATE DOCUMENTS ARE TO BE CONSIDERED A PART OF THE EROSION AND SEDIMENTATION PLAN:  
A. STORMWATER MANAGEMENT REPORT DATED DECEMBER 2021.  
B. SWPCP, TO BE ISSUED AT A LATER DATE.

SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS. SHOULD THE CONTRACTOR ALTER THE CONSTRUCTION SEQUENCE OR ANY EROSION AND SEDIMENTATION CONTROL MEASURES THEY SHALL MODIFY THE STORMWATER POLLUTION CONTROL PLAN ("SWPCP") AS REQUIRED BY THE GENERAL PERMIT. MAJOR CHANGES IN SEQUENCING AND/OR METHODS MAY REQUIRE REGULATORY APPROVAL PRIOR TO IMPLEMENTATION.

- THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE LIMITS OF DISTURBANCE IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
  - CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNERS REPRESENTATIVE(S), THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.
  - NOTIFY CALL BEFORE YOU DIG AT 811, AS REQUIRED, PRIOR TO THE START OF CONSTRUCTION.
- PHASE 1
- REMOVE EXISTING IMPEDIMENTS AS NECESSARY AND PROVIDE MINIMAL CLEARING AND GRUBBING TO INSTALL THE REQUIRED CONSTRUCTION ENTRANCE/S.
  - CLEAR ONLY AS NEEDED TO INSTALL THE PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION. ALL WETLAND AREAS SHALL BE PROTECTED BEFORE MAJOR CONSTRUCTION BEGINS.
  - INSTALL PERIMETER EROSION CONTROL.
  - INSTALL EROSION CONTROL BELOW EQUIPMENT AREA AND INSTALL CONCRETE EQUIPMENT PADS AND CONDUITS PROTECTED BY THESE CONTROLS.
- 8A. INSTALL TEMPORARY SEDIMENT TRAPS 3B & 3C AND ASSOCIATED SWALES. UPON COMPLETION OF THE INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES, PHASE 2 WORK UP GRADIENT CAN PROCEED.
- 8B. INSTALL TEMPORARY SEDIMENT TRAPS 2A & 2B AND ASSOCIATED SWALES. UPON COMPLETION OF THE INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES, PHASE 2 WORK UP GRADIENT CAN PROCEED.
- 8C. INSTALL TEMPORARY SEDIMENT TRAP 1 AND ASSOCIATED SWALES. UPON COMPLETION OF THE INSTALLATION AND STABILIZATION OF THE BASIN AND SWALES, PHASE 2 WORK UP GRADIENT CAN PROCEED.

PHASE 2

- UPON COMPLETION OF THE INSTALLATION OF EACH OF THE TEMPORARY SEDIMENT TRAPS; THE AREA ABOVE THE BASIN CAN HAVE THE REMAINING ARRAY AREA CLEARING AND GRUBBING COMPLETED AS REQUIRED. REMOVE CUT WOOD AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF DEMOLITION DEBRIS OFF-SITE IN ACCORDANCE WITH APPLICABLE LAWS.
- TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.
- INSTALL REMAINING ELECTRICAL CONDUIT.
- INSTALL RACKING POSTS FOR GROUND MOUNTED SOLAR PANELS.
- INSTALL GROUND MOUNTED SOLAR PANELS AND COMPLETE ELECTRICAL INSTALLATION.
- AFTER SUBSTANTIAL COMPLETION OF THE INSTALLATION OF THE SOLAR PANELS, COMPLETE REMAINING SITE WORK, INCLUDING ANY REQUIRED LANDSCAPE SCREENING, AND STABILIZE ALL DISTURBED AREAS.
- FINE GRADE, RAKE, SEED AND MULCH ALL REMAINING DISTURBED AREAS.
- AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE PERMITTEE AND IF NECESSARY THE TOWN OF MONTVILLE AGENT, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.



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COMP: ALL-POINTS TECHNOLOGY CORPORATION  
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ADDRESS: UNCASVILLE, CT 06382

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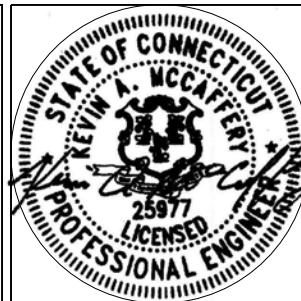
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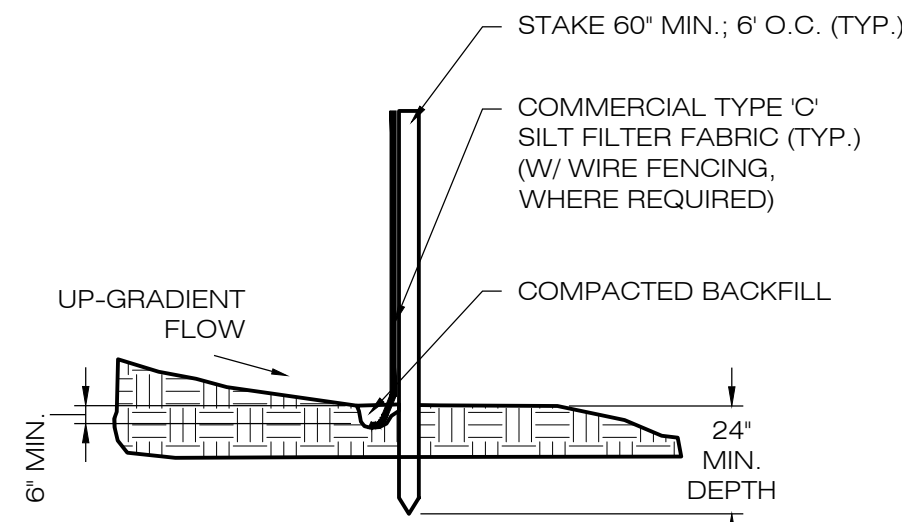
SEDIMENTATION &  
EROSION CONTROL  
NOTES

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EC-1

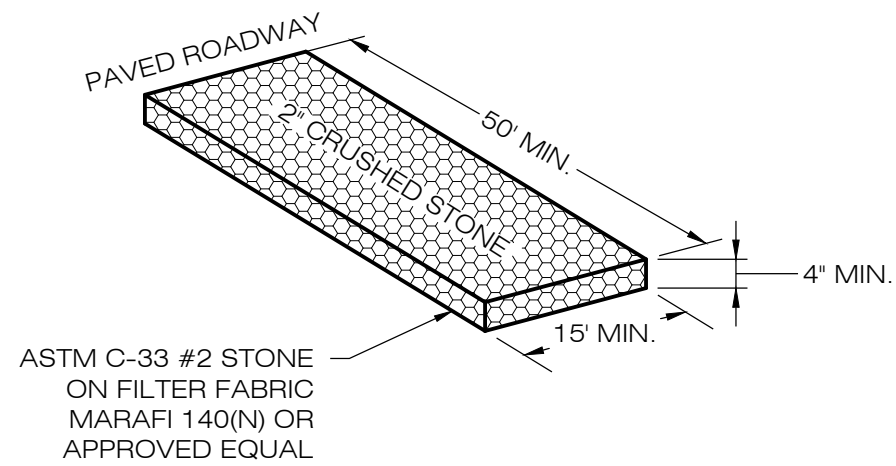




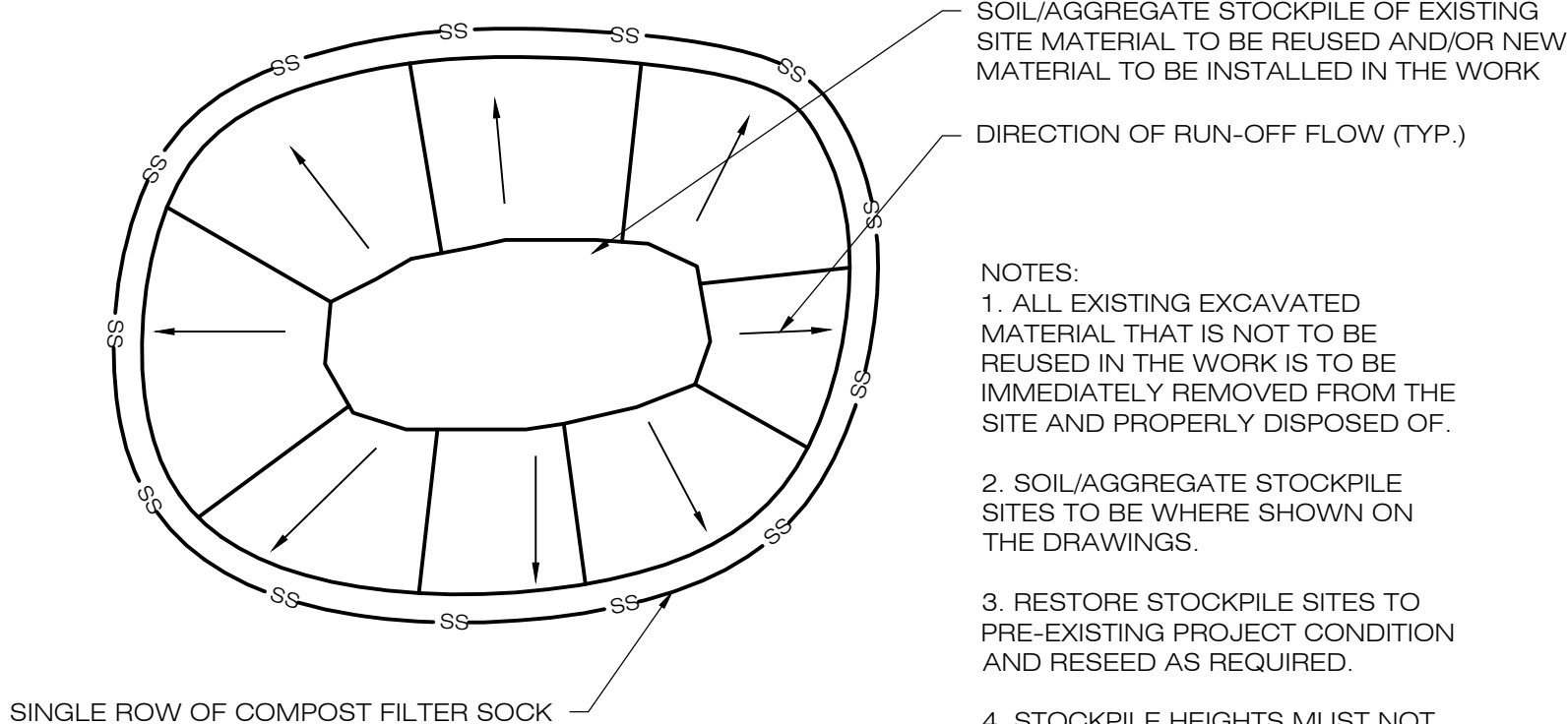


NOTE:  
SILT FENCE SHALL BE LAPPED ONLY  
WHEN NECESSARY PER THE  
MANUFACTURER RECOMMENDATIONS.

1  
EC-4  
**SILT FENCE DETAIL**  
SCALE : N.T.S.



2  
EC-4  
**CONSTRUCTION  
ENTRANCE DETAIL**  
SCALE : N.T.S.



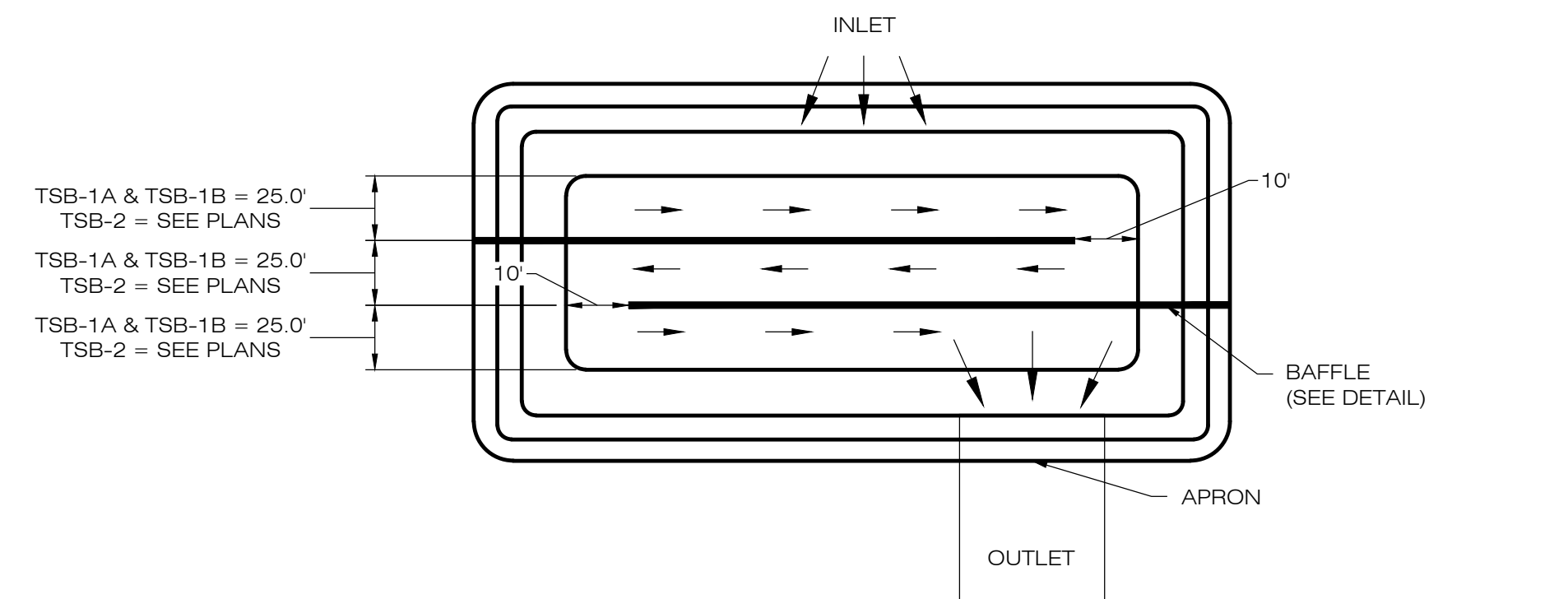
NOTES:  
1. ALL EXISTING EXCAVATED  
MATERIAL THAT IS NOT TO BE  
REUSED IN THE WORK IS TO BE  
IMMEDIATELY REMOVED FROM THE  
SITE AND PROPERLY DISPOSED OF.

2. SOIL/AGGREGATE STOCKPILE  
SITES TO BE WHERE SHOWN ON  
THE DRAWINGS.

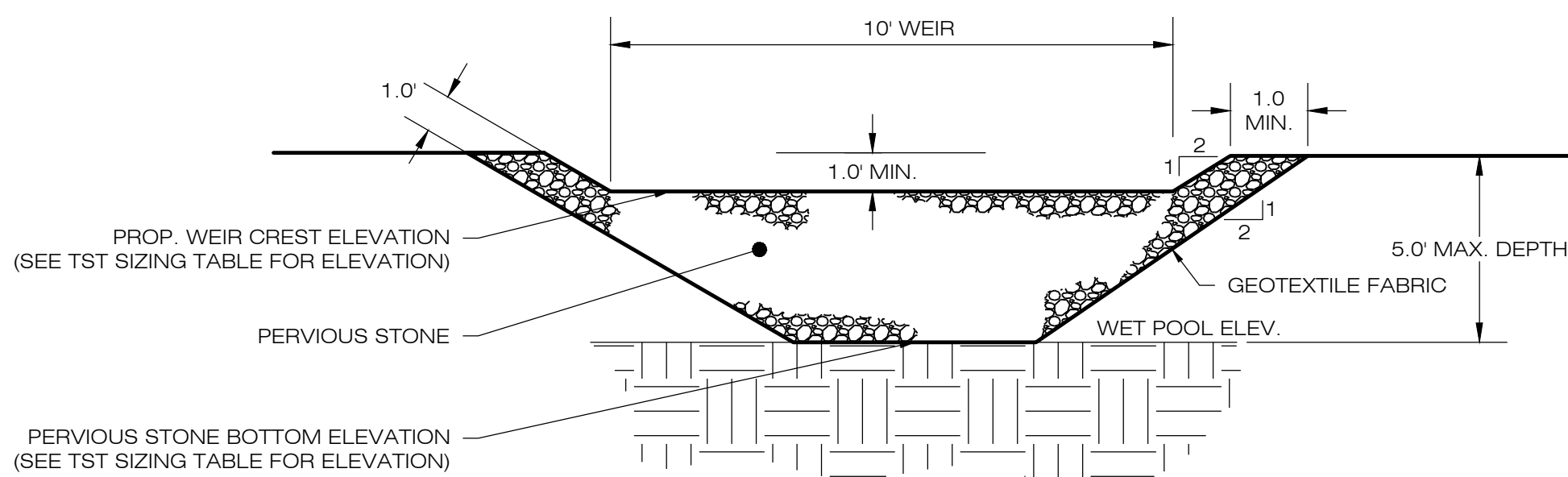
3. RESTORE STOCKPILE SITES TO  
PRE-EXISTING PROJECT CONDITION  
AND RESEED AS REQUIRED.

4. STOCKPILE HEIGHTS MUST NOT  
EXCEED 35'. STOCKPILE SLOPES  
MUST BE 2:1 OR FLATTER.

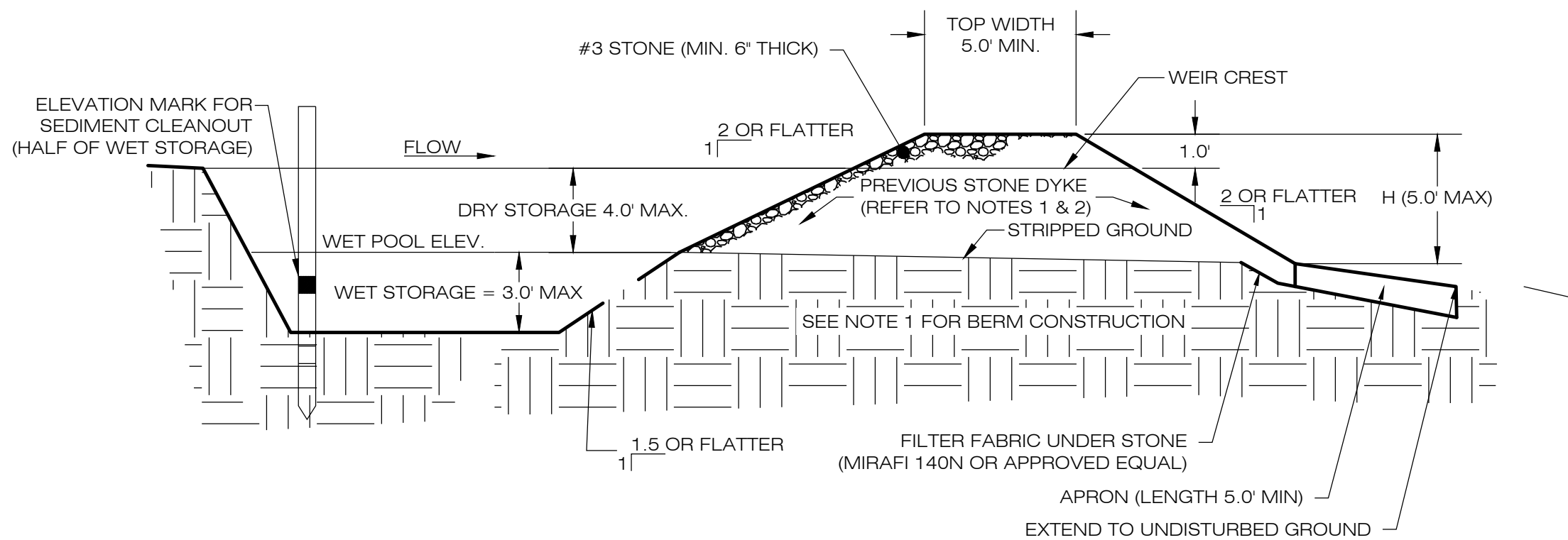
3  
EC-4  
**MATERIALS STOCKPILE DETAIL**  
SCALE : N.T.S.



TOP VIEW

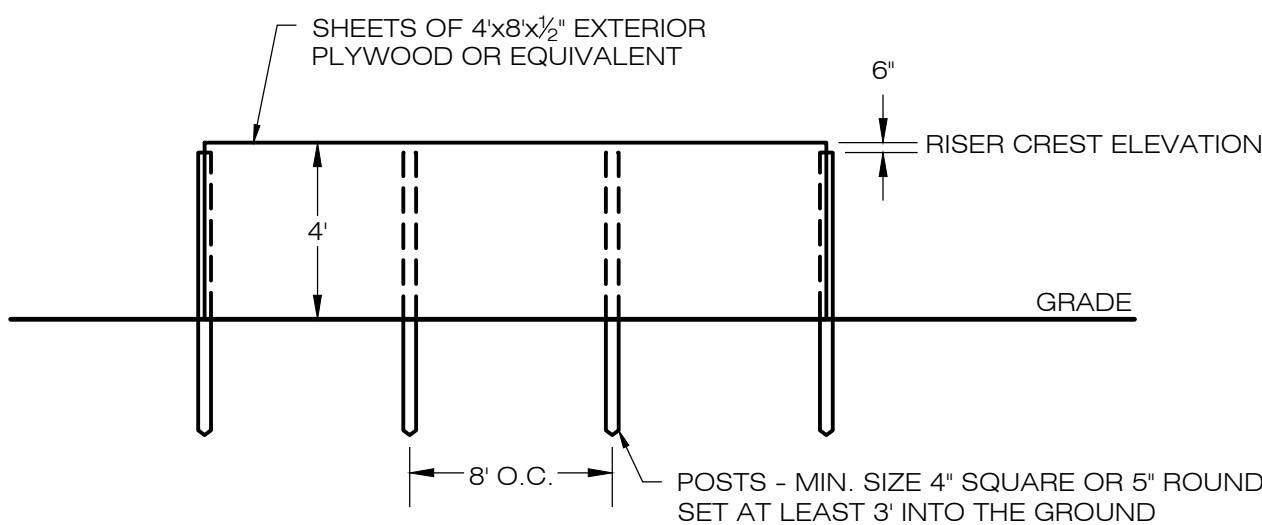


OUTLET ELEVATION



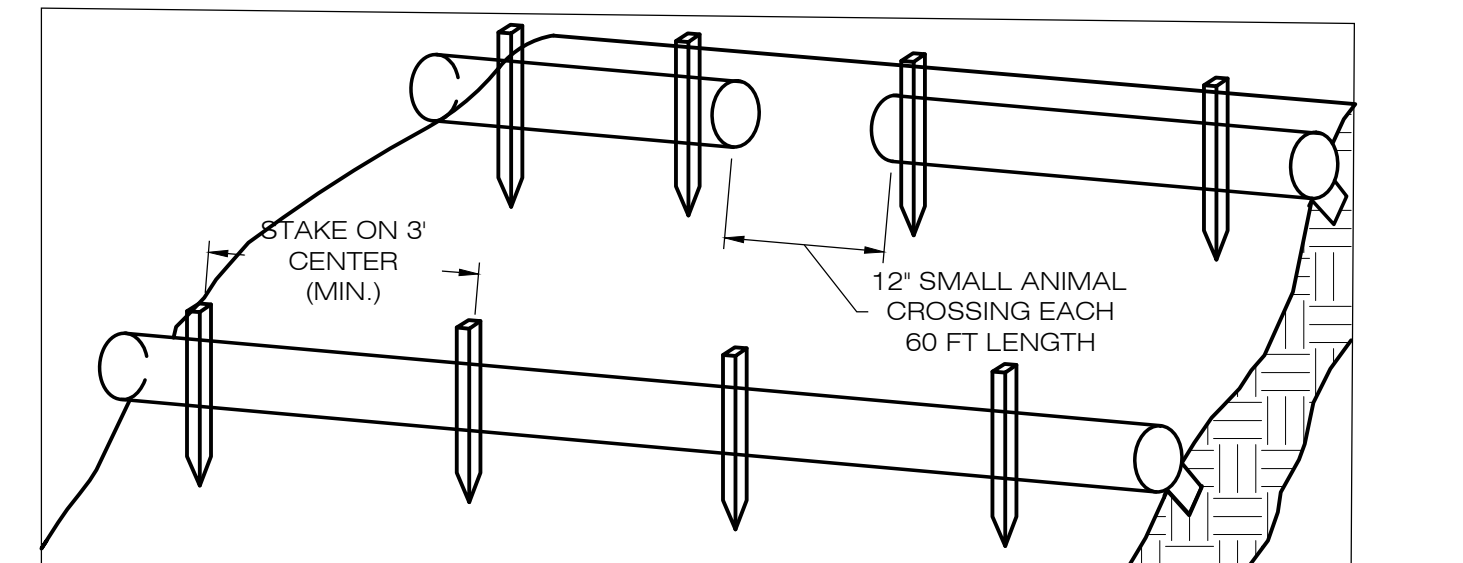
NOTES:  
1. CONSTRUCT TEMPORARY SEDIMENT TRAP BERMS AND SIDEWALLS PER THE INFILTRATION BASIN DETAIL.  
2. PERVIOUS STONE DIKE SHALL BE CONSTRUCTED OF CT DOT MODIFIED RIP-RAP WITH #3 STONE ON FACE.  
3. SEDIMENT TRAP BAFFLES SHALL BE INSTALLED AS SHOWN ON EC-1 AND EC-2.  
4. SEE TST SIZING TABLE FOR WET AND DRY STORAGE VOLUMES.

5  
EC-4  
**TEMPORARY SEDIMENT TRAP**  
SCALE : N.T.S.



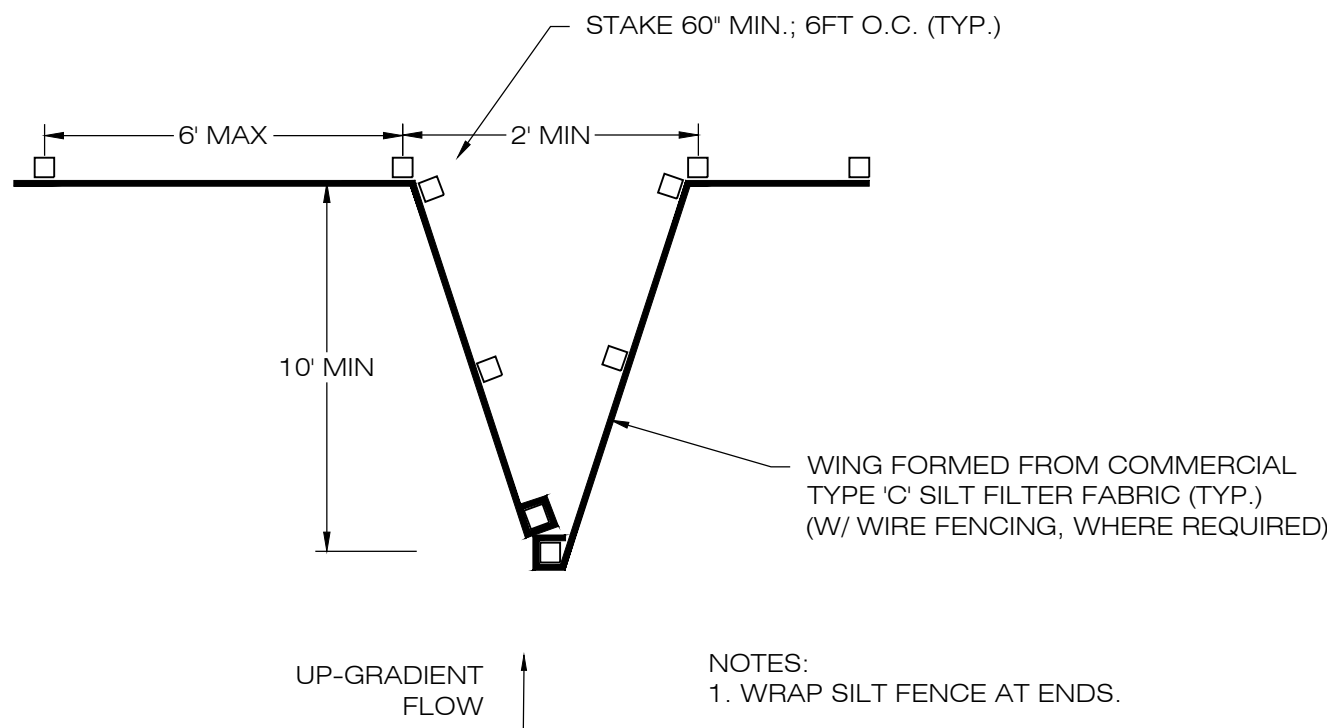
NOTES:  
1. FILL ANY VOIDS BETWEEN THE BOTTOM OF THE BASIN AND BAFFLE.

6  
EC-4  
**SEDIMENT TRAP BAFFLE**  
SCALE : N.T.S.



1. BEGIN AT THE LOCATION WHERE THE SOCK IS TO BE INSTALLED BY EXCAVATING A 2-3' (5-7.5 CM) DEEP X 9' (22.9 CM) WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP SLOPE FROM THE ANCHOR TRENCH.  
2. PLACE THE SOCK IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE SOCK ON THE UPHILL SIDE. SOCKS SHALL BE INSTALLED IN 60 FT CONTINUOUS LENGTHS WITH ADJACENT SOCKS TIGHTLY ABUT. EVERY 60 FT THE SOCK ROW SHALL BE SPACED 12 INCHES CLEAR, END TO END, FOR AMPHIBIAN AND REPTILE TRAVEL. THE OPEN SPACES SHALL BE STAGGERED MID LENGTH OF THE NEXT DOWN GRADIENT SOCK.  
3. SECURE THE SOCK WITH 18-24' (45.7-61 CM) STAKES EVERY 3-4' (0.9 - 1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE SOCK LEAVING AT LEAST 2-3' (5-7.5 CM) OF STAKE EXTENDING ABOVE THE SOCK. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

4  
EC-4  
**COMPOST FILTER SOCK  
SEDIMENTATION CONTROL BARRIER**  
SCALE : N.T.S.



NOTES:  
1. WRAP SILT FENCE AT ENDS.  
2. NO JOINING FENCE SECTIONS SHALL BE  
INSTALLED WITHIN 30 FEET OF WING.

8  
EC-4  
**SILT FENCE WING DETAIL**  
SCALE : N.T.S.

TEMPORARY SEDIMENT TRAP SIZING TABLE										
NAME	DRAINAGE AREA (AC)	SEDIMENT VOLUME/ACRE AREA (CY)	REQ. VOLUME (CY)	REQ. WET VOLUME (CY)	PROP. BTM. ELEV. (FT)	PROP. STONE DIKE BTM. ELEV. (FT)	PROP. WEIR CREST ELEV. (FT)	PROP. TOP ELEV. (FT)	WET VOL. PROVIDED (CY)	TOTAL VOL. PROVIDED. (CY)
TST-1	2.21 AC	134 CY	296 CY	148 CY	250.0'	252.0'	253.0'	255.0'	234.52 CY	673.89 CY
TST-2A	3.04 AC	134 CY	407 CY	203.5 CY	247.0'	249.0'	250.0'	252.0'	341.93 CY	689.34 CY
TST-2B	1.58 AC	134 CY	212 CY	106 CY	244.0'	246.0'	247.0'	249.0'	270.39 CY	572.01 CY
TST-3B	2.90 AC	134 CY	389 CY	194.5 CY	250.0'	252.0'	253.0'	255.0'	392.74 CY	775.36 CY
TST-3C	1.34 AC	134 CY	180 CY	90 CY	249.0'	251.0'	252.0'	254.0'	202.09 CY	447.21 CY



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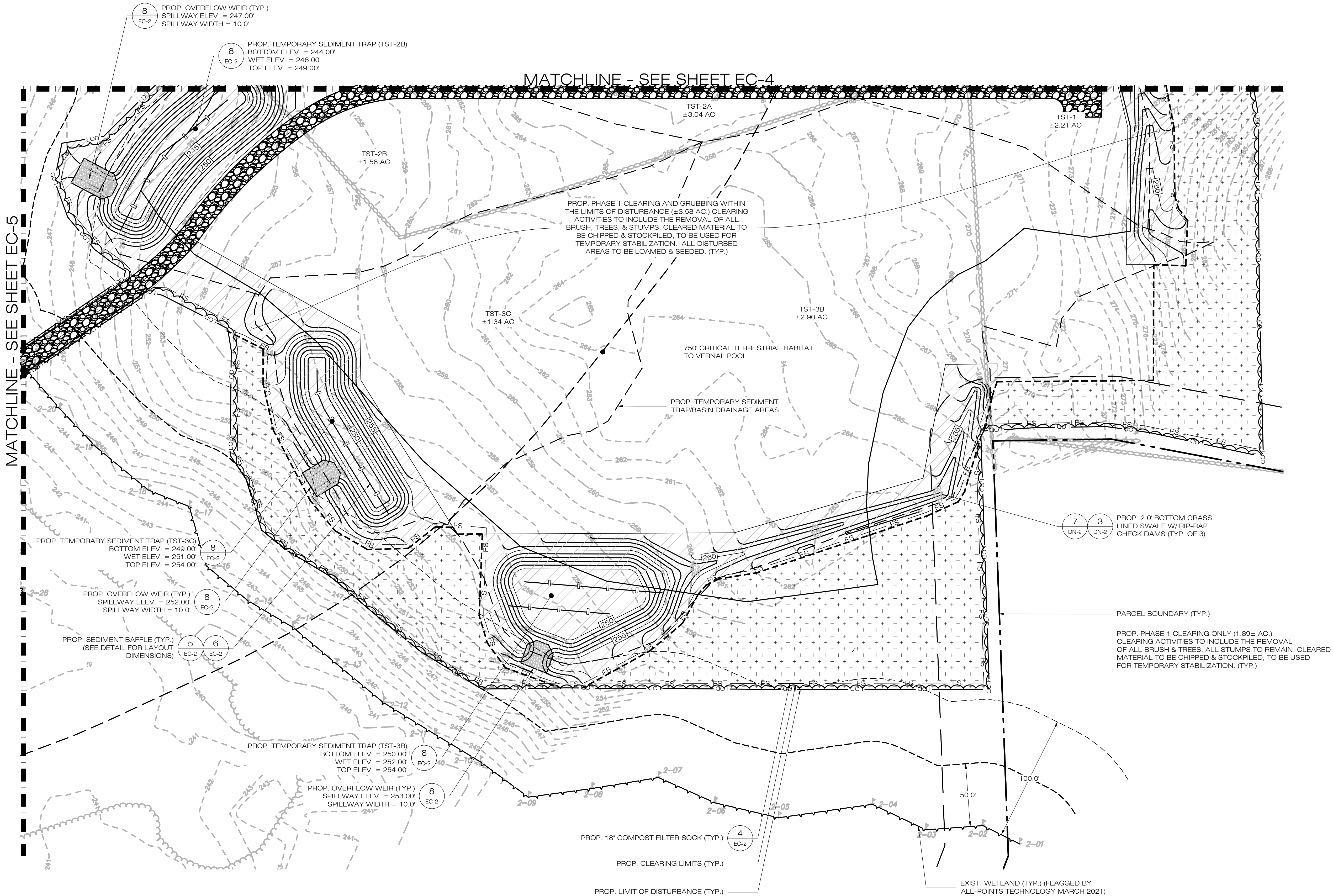
**SEDIMENTATION &  
EROSION CONTROL  
DETAILS**

#### SHEET NUMBER:

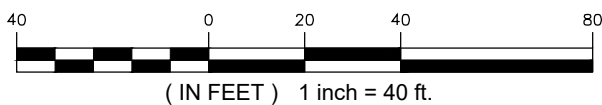
**EC-2**







1  
EC-3 **PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN**  
SCALE : 1" = 40'-0"



888 PROSPECT STREET  
LA JOLLA, CA 92037  
OFFICE: (619) 363-3080



567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0835

CSC PERMIT SET

NO	DATE	REVISION
0	01/10/22	ISSUED FOR PERMITTING
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DESIGN PROFESSIONAL OF RECORD

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: N SILVER BROOK HOLDINGS LLC  
ADDRESS: 511 FITCH HILL ROAD  
UNCASVILLE, CT 06382

N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

DATE: 12/14/21 DRAWN BY: CH  
CHECKED BY: KAM

SHEET TITLE:

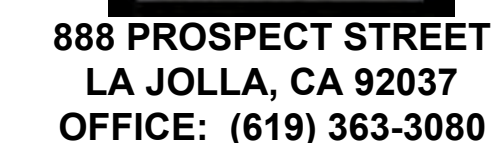
**PHASE 1  
SEDIMENTATION &  
EROSION CONTROL PLAN**

SHEET NUMBER:

**EC-3**







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NO	DATE	REVISION
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#### DESIGN PROFESSIONAL OF RECORD

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY  
CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

**OWNER:** N SILVER BROOK  
HOLDINGS LLC  
**ADDRESS:** 511 FITCH HILL ROAD  
UNCASVILLE, CT 0638

N SILVER BROOK SOLAR

**SITE** 486 FITCH HILL ROAD  
**ADDRESS:** UNCASVILLE, CT 06382

APT FILING NUMBER: CT65714

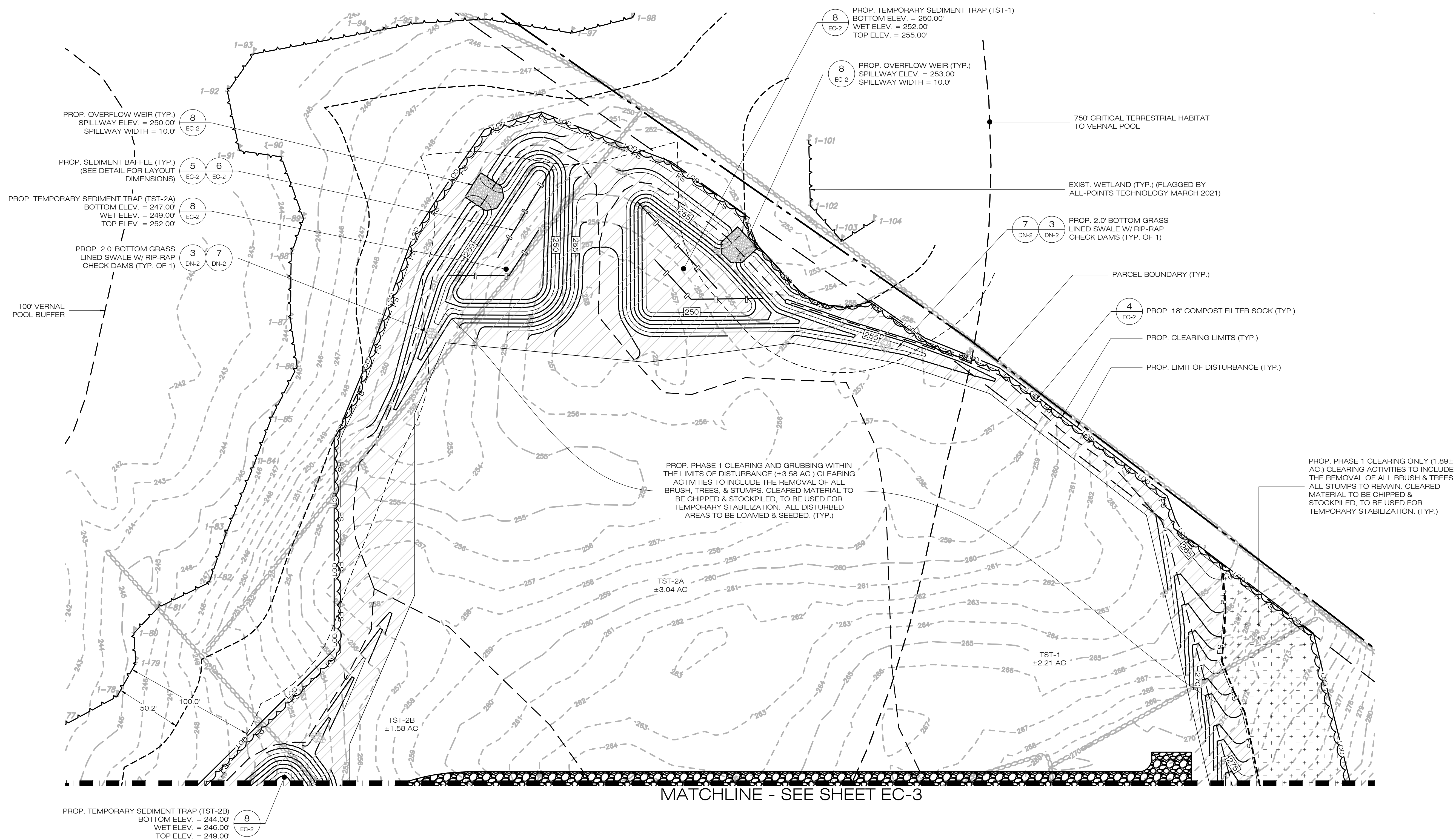
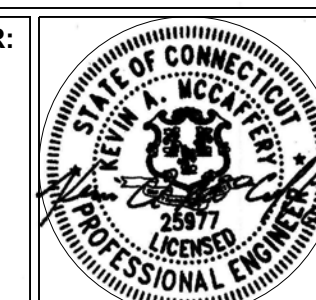
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DATE: 12/14/21	CHECKED BY: KAM

**SHEET TITLE:**

## PHASE 1 SEDIMENTATION & EROSION CONTROL PLAN

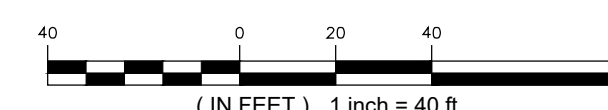
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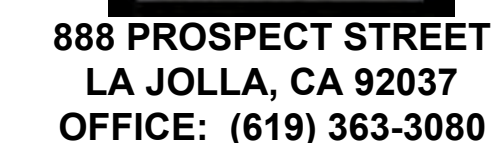


MATCHLINE - SEE SHEET EC-3

1 **PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN**  
EC-4 SCALE : 1" = 40'-0"







CSC PERMIT SET		
NO	DATE	REVISION
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**PROF: KEVIN A. MCCAFFERY, PE**  
**COMP: ALL-POINTS TECHNOLOGY**  
**CORPORATION**  
**ADD: 567 VAUXHAUL STREET**  
**EXTENSION - SUITE 311**  
**WATERFORD, CT 06385**

**OWNER:** N SILVER BROOK  
HOLDINGS LLC  
**ADDRESS:** 511 FITCH HILL ROAD  
UNCASVILLE, CT 06382

**SITE** 486 FITCH HILL ROAD  
**ADDRESS:** UNCASVILLE, CT 06382

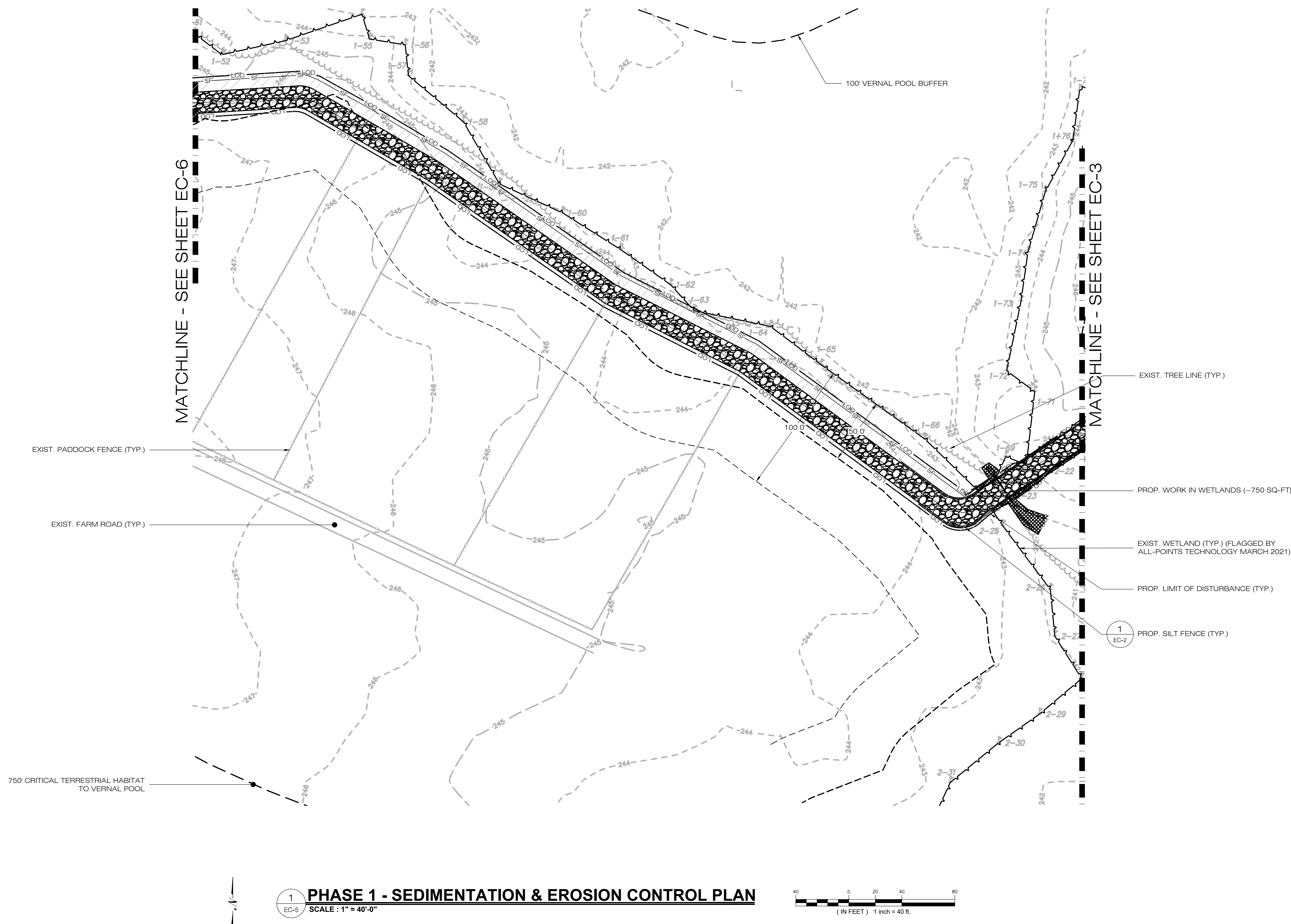
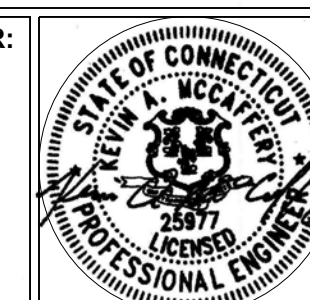
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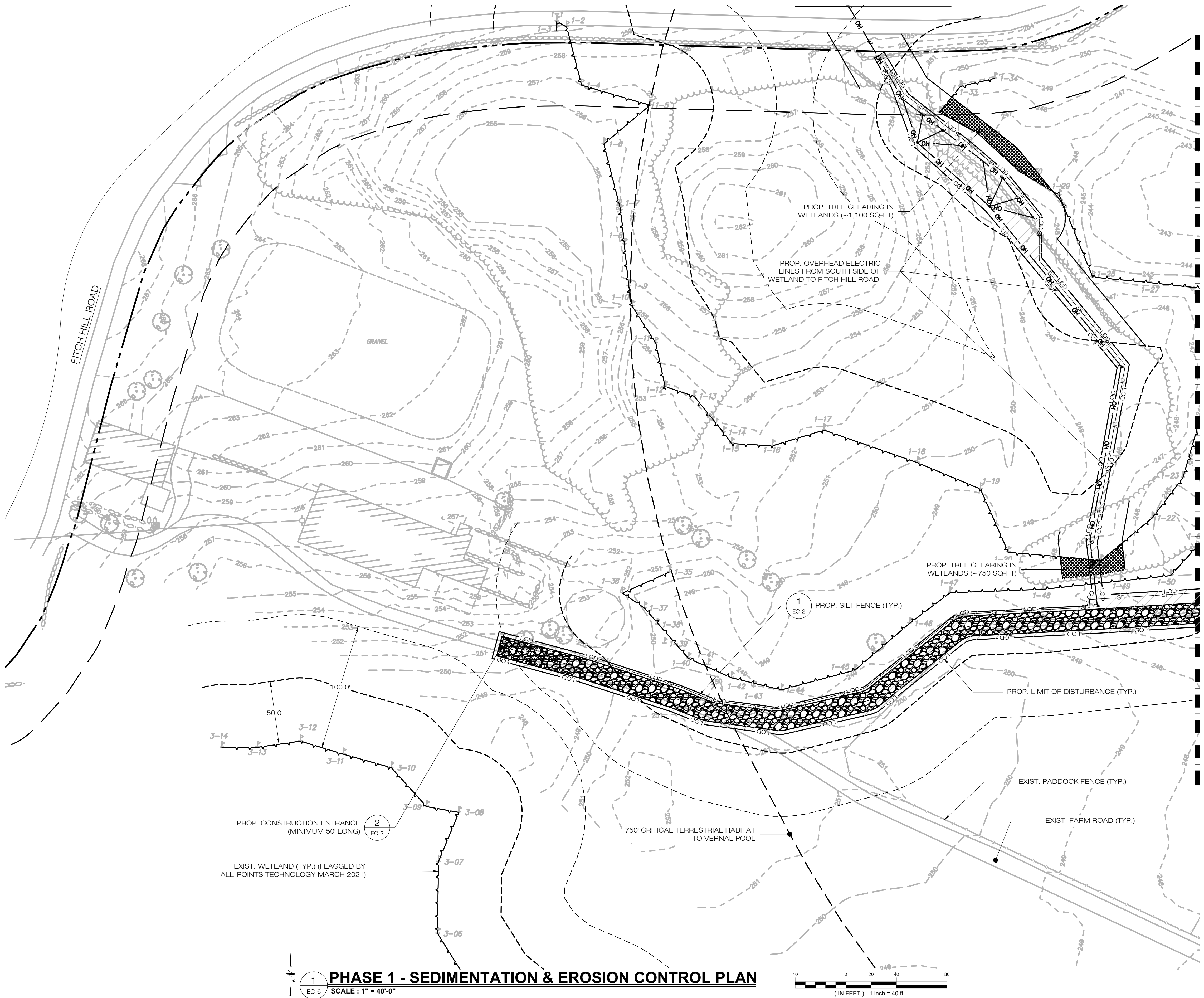
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## PHASE 1 SEDIMENTATION & EROSION CONTROL PLAN

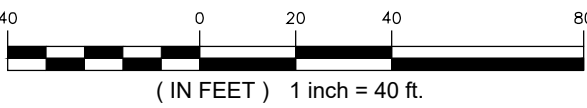
EC-5







**PHASE 1 - SEDIMENTATION & EROSION CONTROL PLAN**  
SCALE : 1" = 40'-0"



MATCHLINE - SEE SHEET EC-5

888 PROSPECT STREET  
LA JOLLA, CA 92037  
OFFICE: (619) 363-3080

567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385    PHONE: (860)-663-1697  
WWW.ALLPOINTSTECH.COM    FAX: (860)-663-0935

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DESIGN PROFESSIONAL OF RECORD

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: N SILVER BROOK HOLDINGS LLC  
ADDRESS: 511 FITCH HILL ROAD  
UNCASVILLE, CT 06382

N SILVER BROOK SOLAR

SITE: 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

DATE: 12/14/21	DRAWN BY: CH
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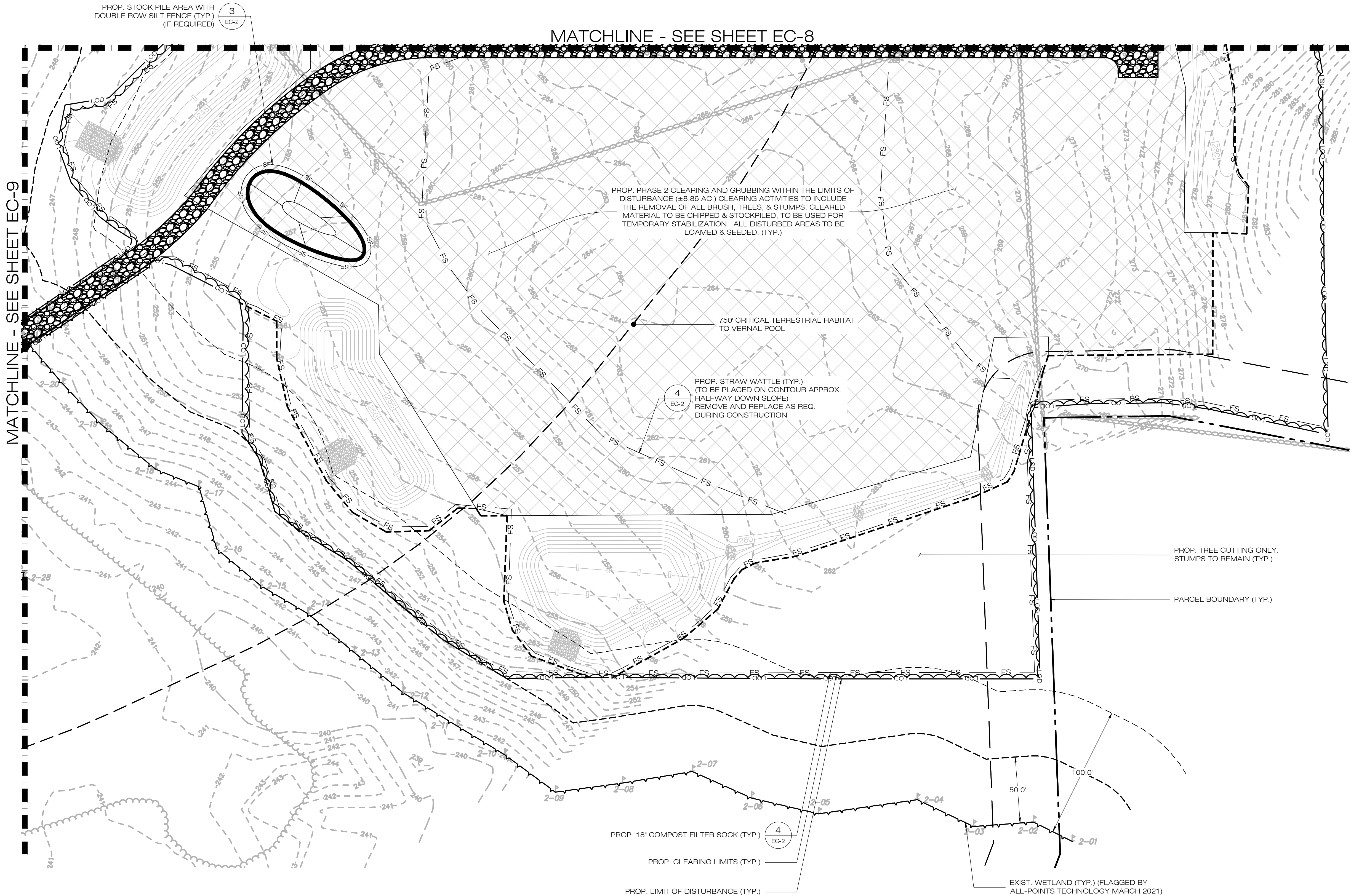
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**PHASE 1  
SEDIMENTATION &  
EROSION CONTROL PLAN**

SHEET NUMBER:

**EC-6**

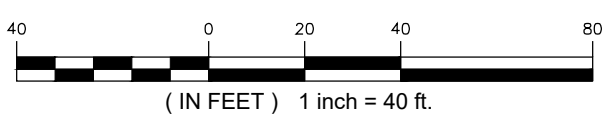




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EC-7

**PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN**

SCALE : 1" = 40'-0"



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WWW.ALLPOINTSTECH.COM FAX: (860) 663-0935

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**DESIGN PROFESSIONAL OF RECORD**

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: N SILVER BROOK HOLDINGS LLC  
ADDRESS: 511 FITCH HILL ROAD  
UNCASVILLE, CT 06382

**N SILVER BROOK SOLAR**

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

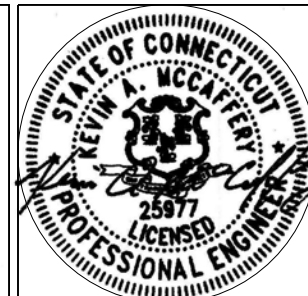
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DATE: 12/14/21 CHECKED BY: KAM

**SHEET TITLE:**

**PHASE 2  
SEDIMENTATION &  
EROSION CONTROL PLAN**

**SHEET NUMBER:**

**EC-7**







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COMP: ALL-POINTS TECHNOLOGY CORPORATION  
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WATERFORD, CT 06385

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UNCASVILLE, CT 06382

#### N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

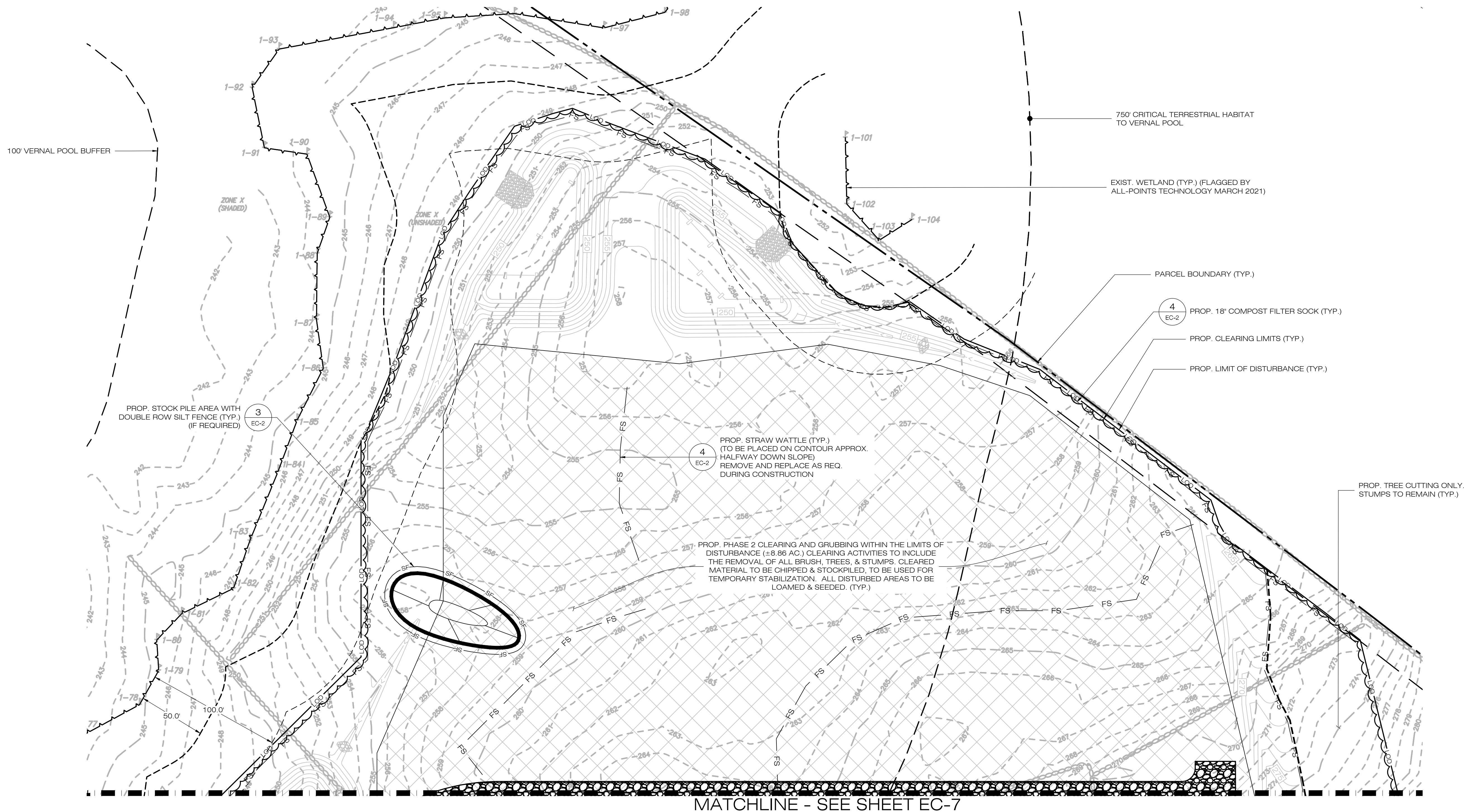
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#### SHEET TITLE:

**PHASE 2  
SEDIMENTATION &  
EROSION CONTROL PLAN**

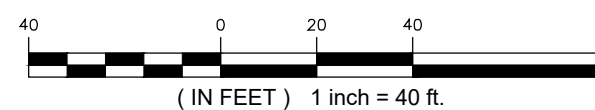
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**EC-8**



### 1 PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN

EC-8 SCALE : 1" = 40'-0"







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NO	DATE	REVISION
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DESIGN PROFESSIONAL OF RECORD

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EXTENSION - SUITE 311  
WATERFORD, CT 06385

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UNCASVILLE, CT 06382

N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

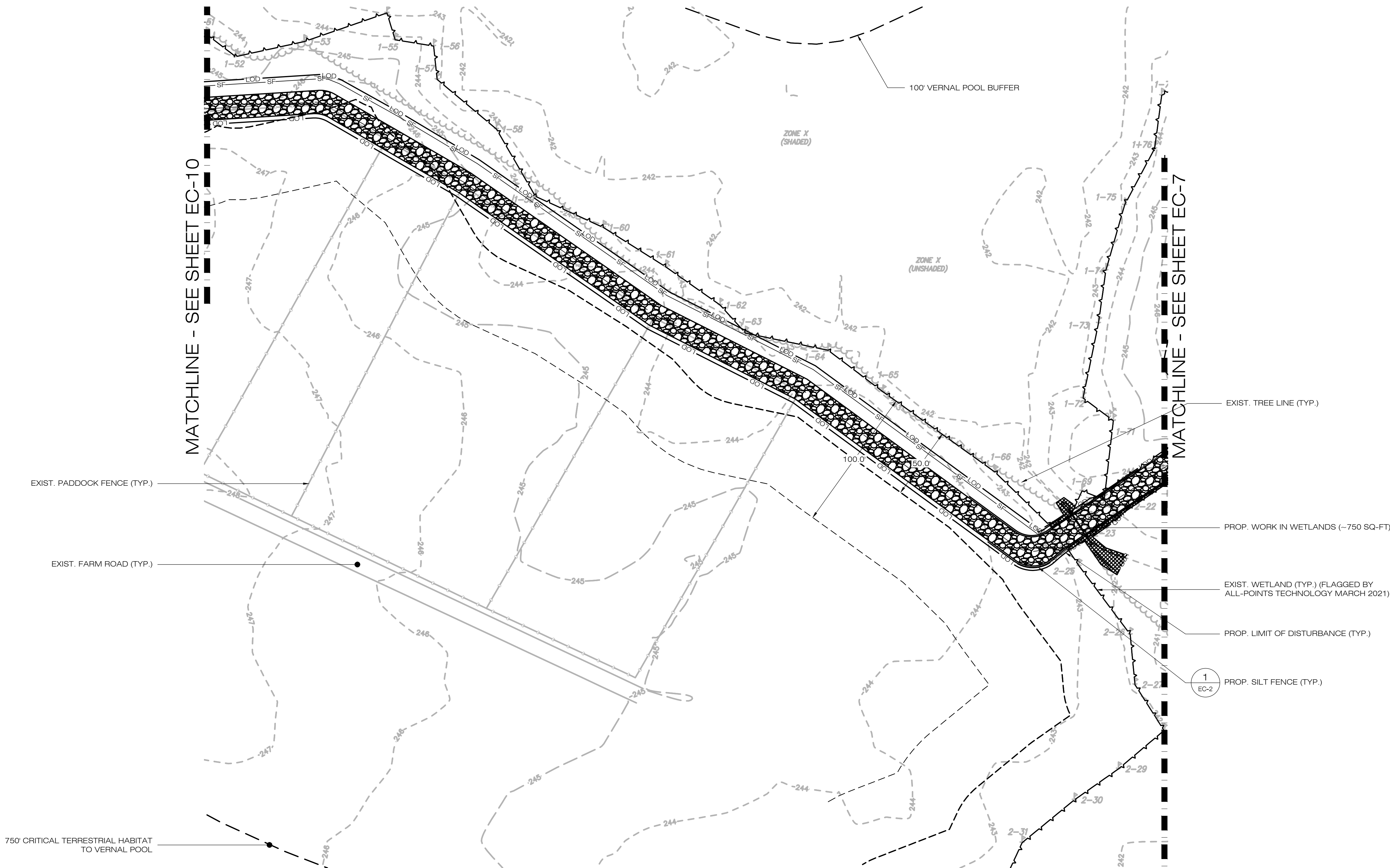
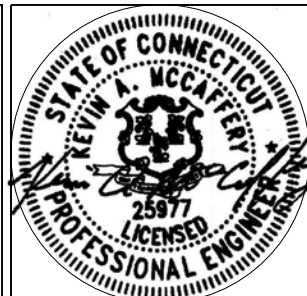
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SHEET TITLE:

PHASE 2  
SEDIMENTATION &  
EROSION CONTROL PLAN

SHEET NUMBER:

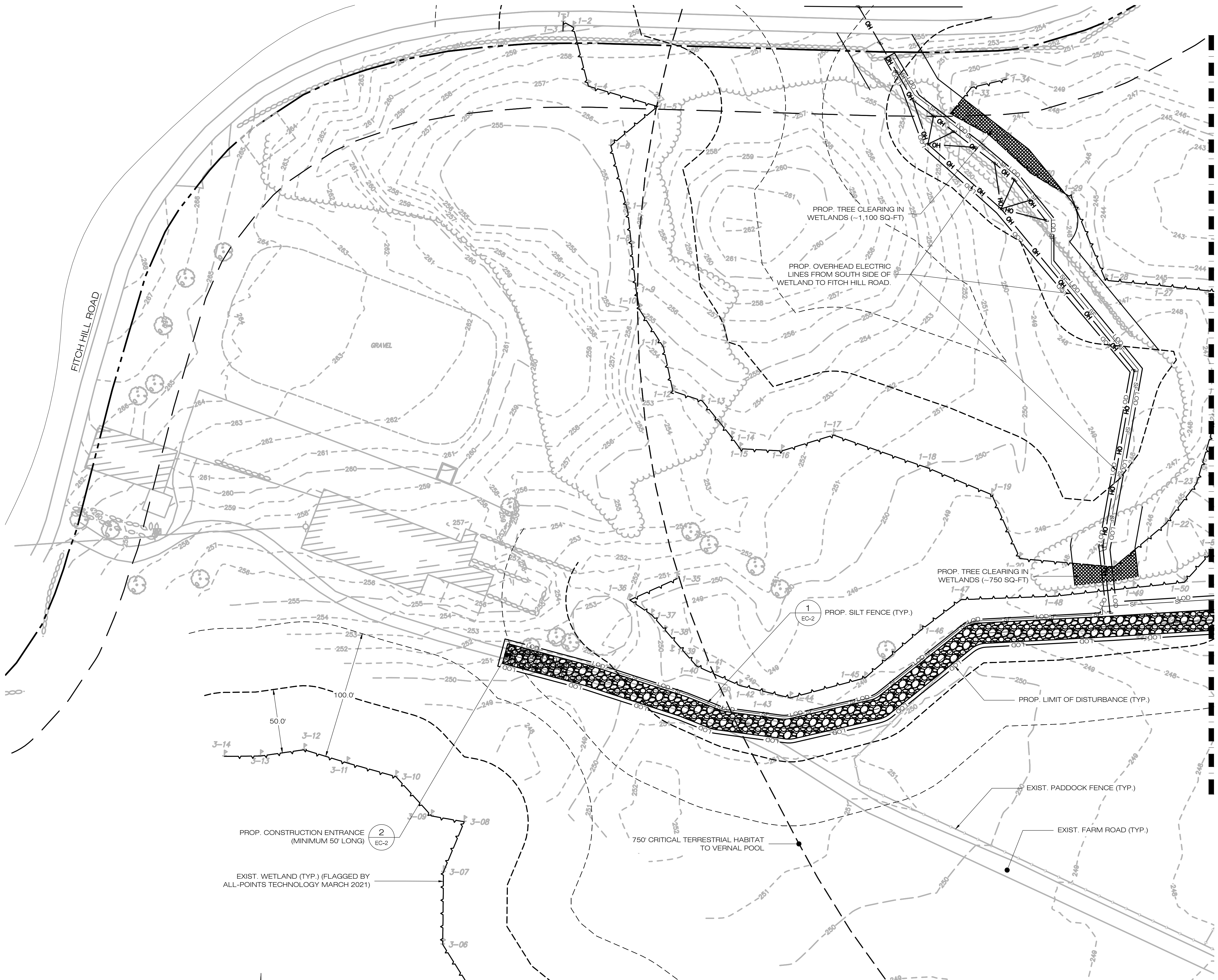
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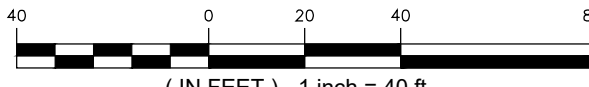
1  
EC-9  
**PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN**  
SCALE : 1" = 40'-0"

40 0 20 40 80  
(IN FEET) 1 inch = 40 ft.





**PHASE 2 - SEDIMENTATION & EROSION CONTROL PLAN**



MATCHLINE - SEE SHEET EC-9

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LA JOLLA, CA 92037  
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WWW.ALLPOINTSTECH.COM    FAX: (860)-663-0935

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NO	DATE	REVISION
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**DESIGN PROFESSIONAL OF RECORD**

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: N SILVER BROOK HOLDINGS LLC  
ADDRESS: 511 FITCH HILL ROAD  
UNCASVILLE, CT 06382

**N SILVER BROOK SOLAR**

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

DATE: 12/14/21

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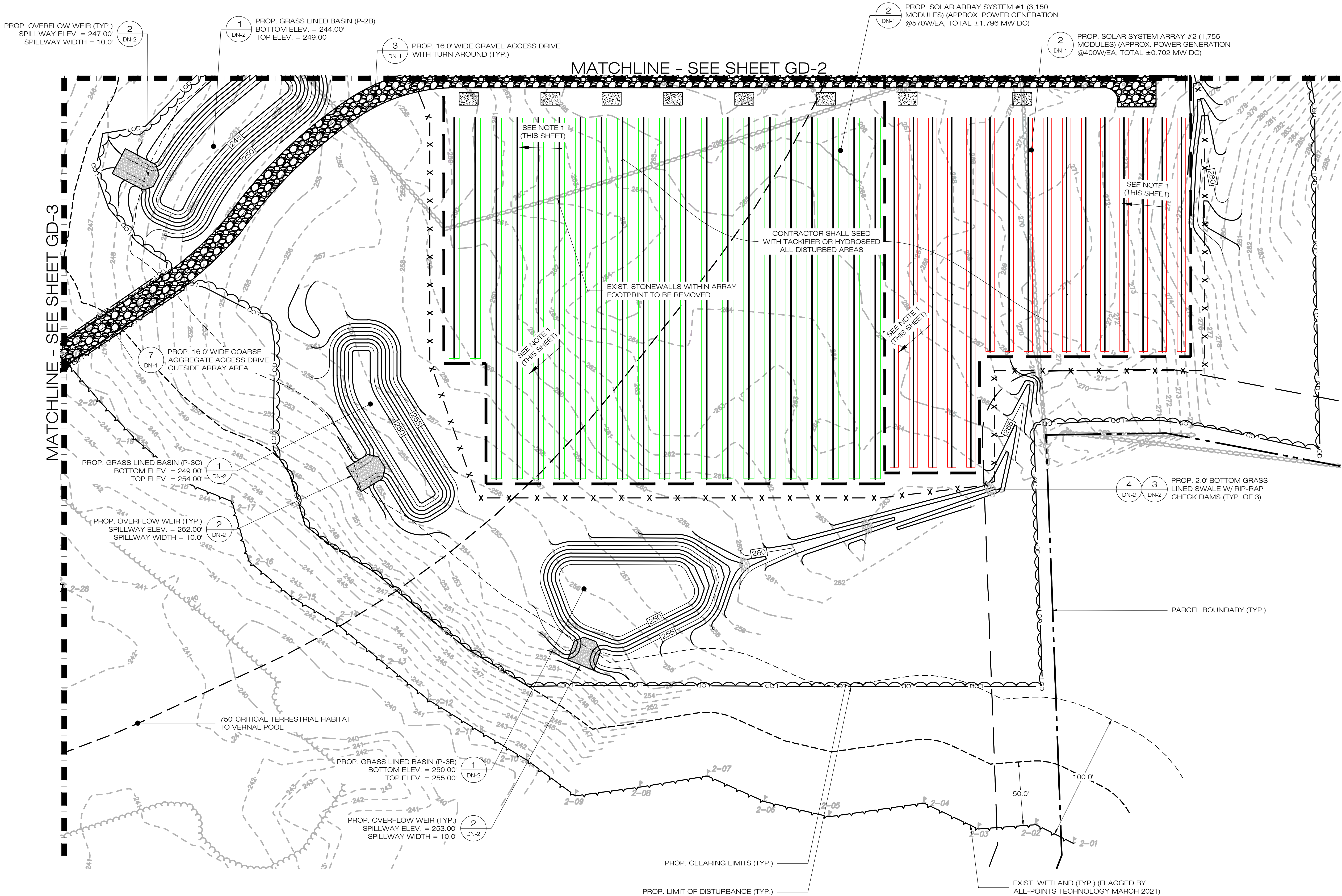
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**PHASE 2  
SEDIMENTATION &  
EROSION CONTROL PLAN**

SHEET NUMBER:

**EC-10**





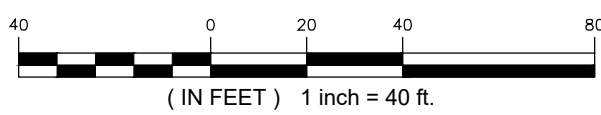
NOTES:

1. GRADE/SHAPE AREA TO MAINTAIN EXIST. DRAINAGE PATTERNS.
2. CONTRACTOR SHALL REMOVE ALL BAFFLES FROM SEDIMENT BASINS AND SWALES.
3. CONTRACTOR SHALL REPLACE TEMPORARY SEDIMENT BASIN OUTLET WITH GRAVEL OVERFLOW WEIR UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.
4. CONTRACTOR SHALL MODIFY/REPLACE THE TEMPORARY SEDIMENT BASIN RISER AS NEEDED UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP MONITOR.

1  
GD-1

## FINAL GRADING & DRAINAGE PLAN

SCALE : 1" = 40'-0"



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LA JOLLA, CA 92037  
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UNCASVILLE, CT 06382

### N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

DATE: 12/14/21 DRAWN BY: CH  
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### SHEET TITLE:

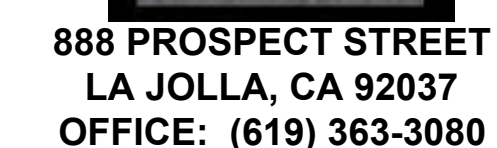
FINAL GRADING &  
DRAINAGE PLAN

### SHEET NUMBER:

GD-1







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NO	DATE	REVISION
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DESIGN PROFESSIONAL OF RECORD

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ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

**OWNER:** N SILVER BROOK  
HOLDINGS LLC  
**ADDRESS:** 511 FITCH HILL ROAD  
UNCASVILLE, CT 06382

N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

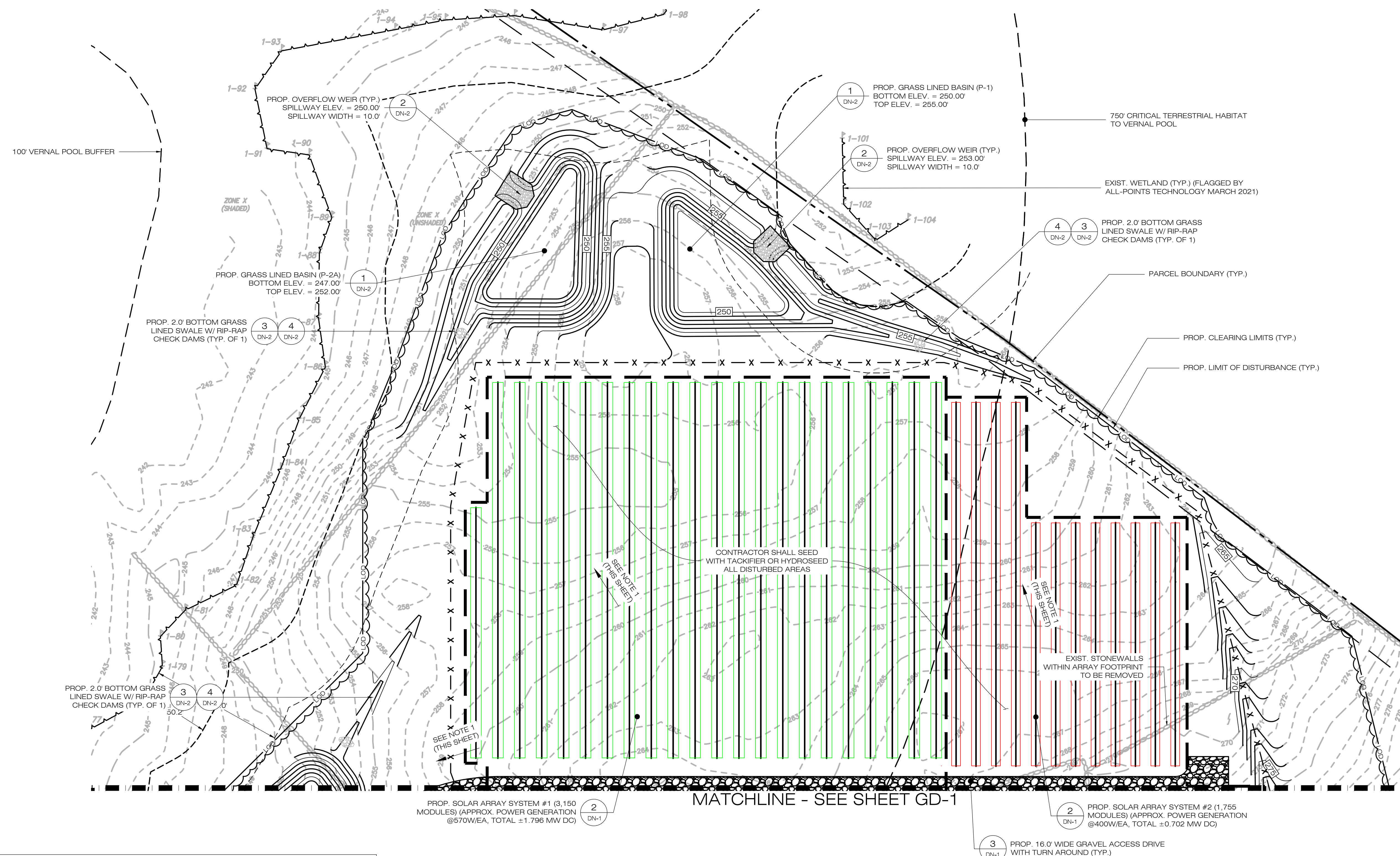
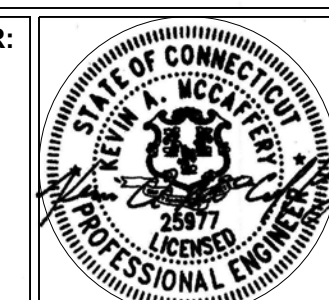
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**SHEET TITLE:**

## FINAL GRADING & DRAINAGE PLAN

**SHEET NUMBER:**

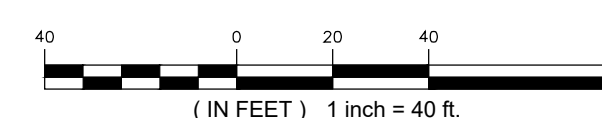
GD-2



NOTES:

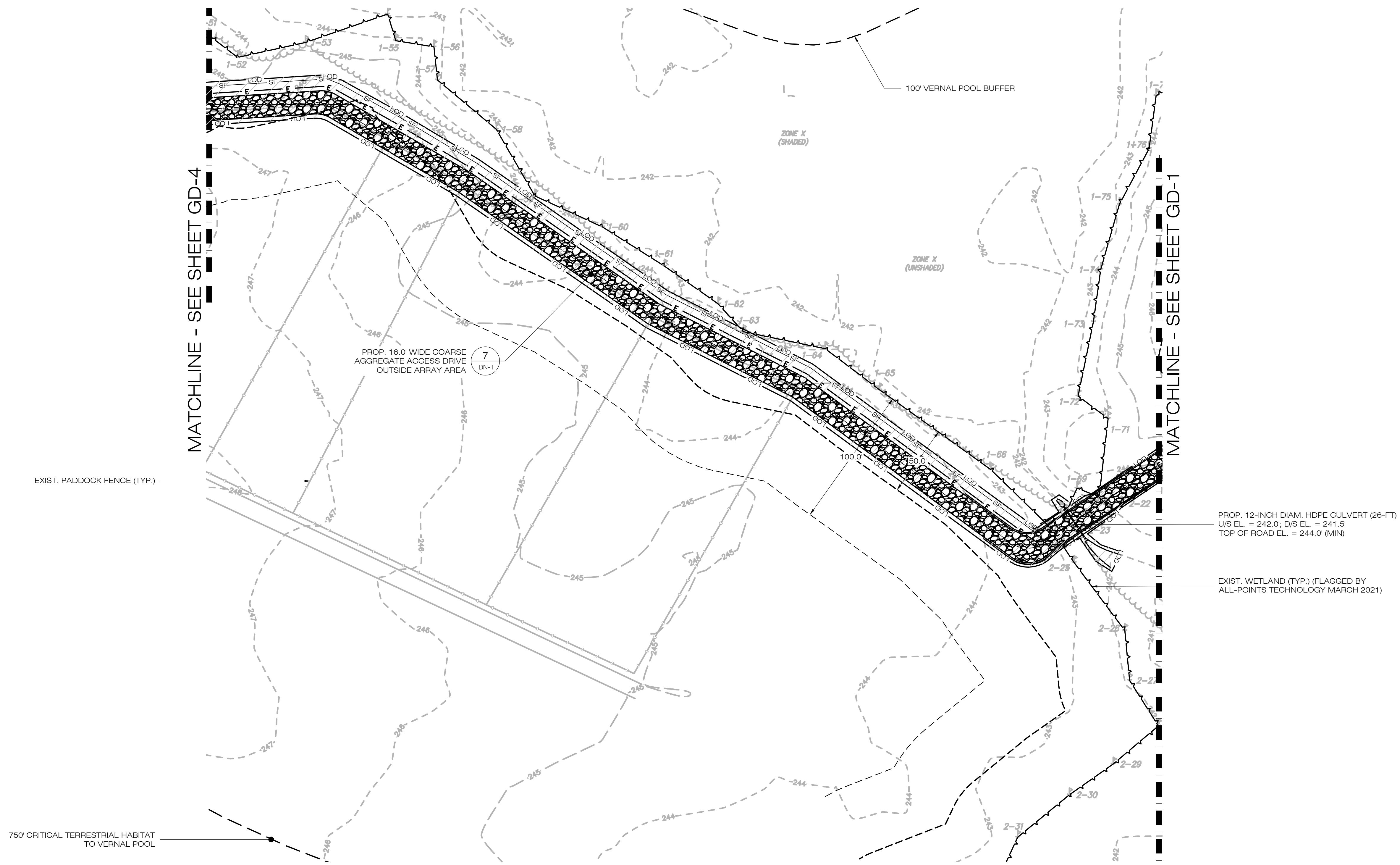
1. GRADE/SHAPE AREA TO MAINTAIN EXIST. DRAINAGE PATTERNS.
2. CONTRACTOR SHALL REMOVE ALL BAFFLES FROM SEDIMENT BASINS AND SWALES.
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4. CONTRACTOR SHALL MODIFY/REPLACE THE TEMPORARY SEDIMENT BASIN RISER AS NEEDED UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP MONITOR

1 **FINAL GRADING & DRAINAGE PLAN**  
 GD-2 **SCALE : 1" = 40'-0"**



**SHEET NUMBER:**







888 PROSPECT STREET  
LA JOLLA, CA 92037  
OFFICE: (619) 363-3080



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WATERFORD, CT 06385    PHONE: (860) 663-1697  
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DESIGN PROFESSIONAL OF RECORD

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

OWNER: N SILVER BROOK HOLDINGS LLC  
ADDRESS: 511 FITCH HILL ROAD UNCASVILLE, CT 06382

N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

DATE: 12/14/21

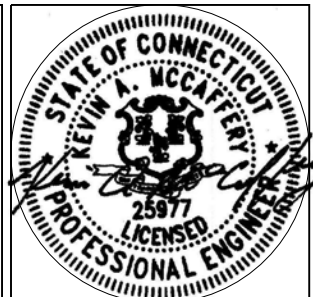
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FINAL GRADING & DRAINAGE PLAN

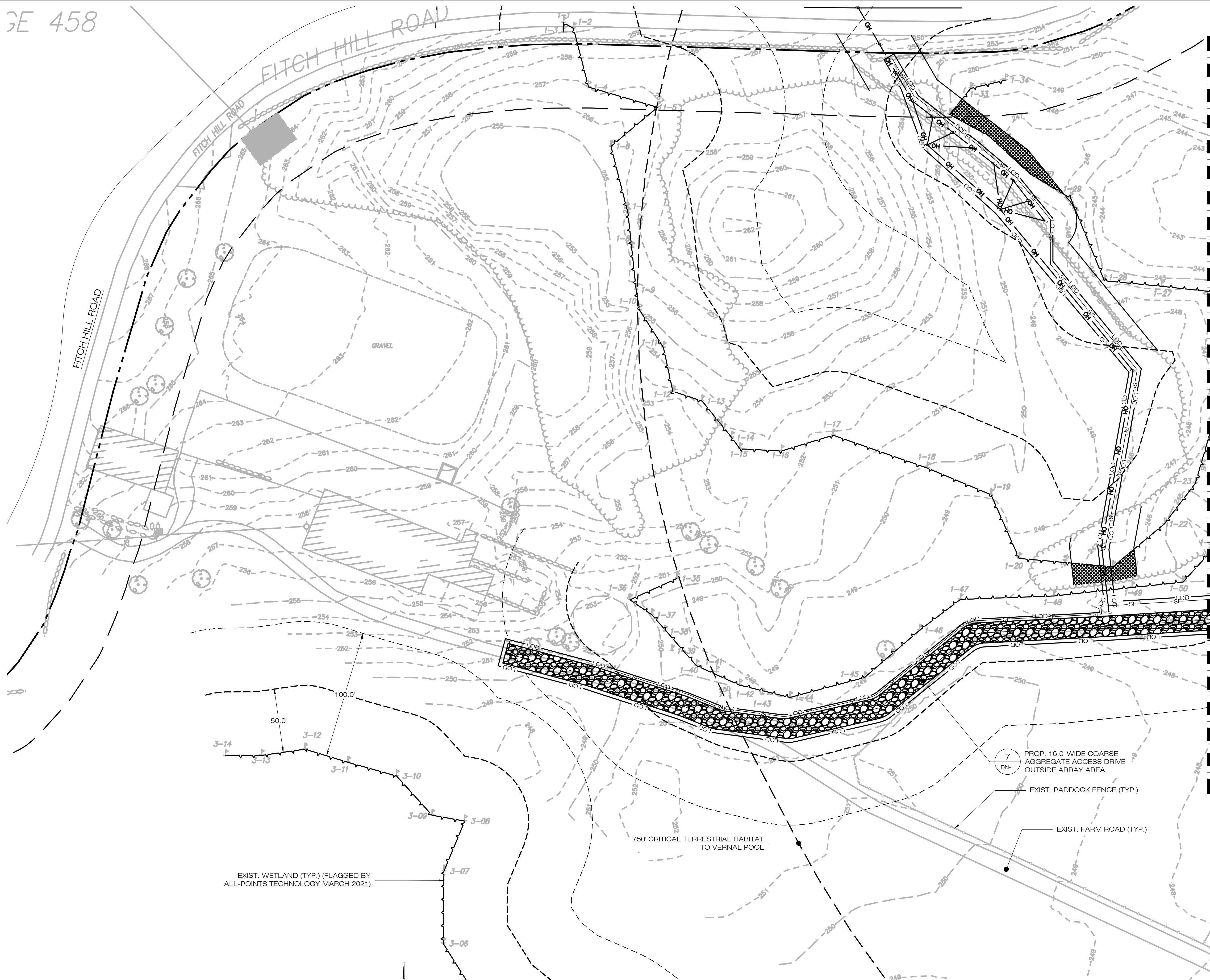
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GD-3



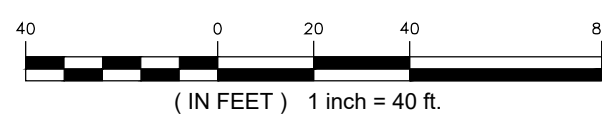


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MATCHLINE - SEE SHEET EC-5

1  
GD-4  
**FINAL GRADING & DRAINAGE PLAN**  
SCALE: 1" = 40'-0"



888 PROSPECT STREET  
LA JOLLA, CA 92037  
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UNCASVILLE, CT 06382

**N SILVER BROOK SOLAR**

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

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**SHEET TITLE:**

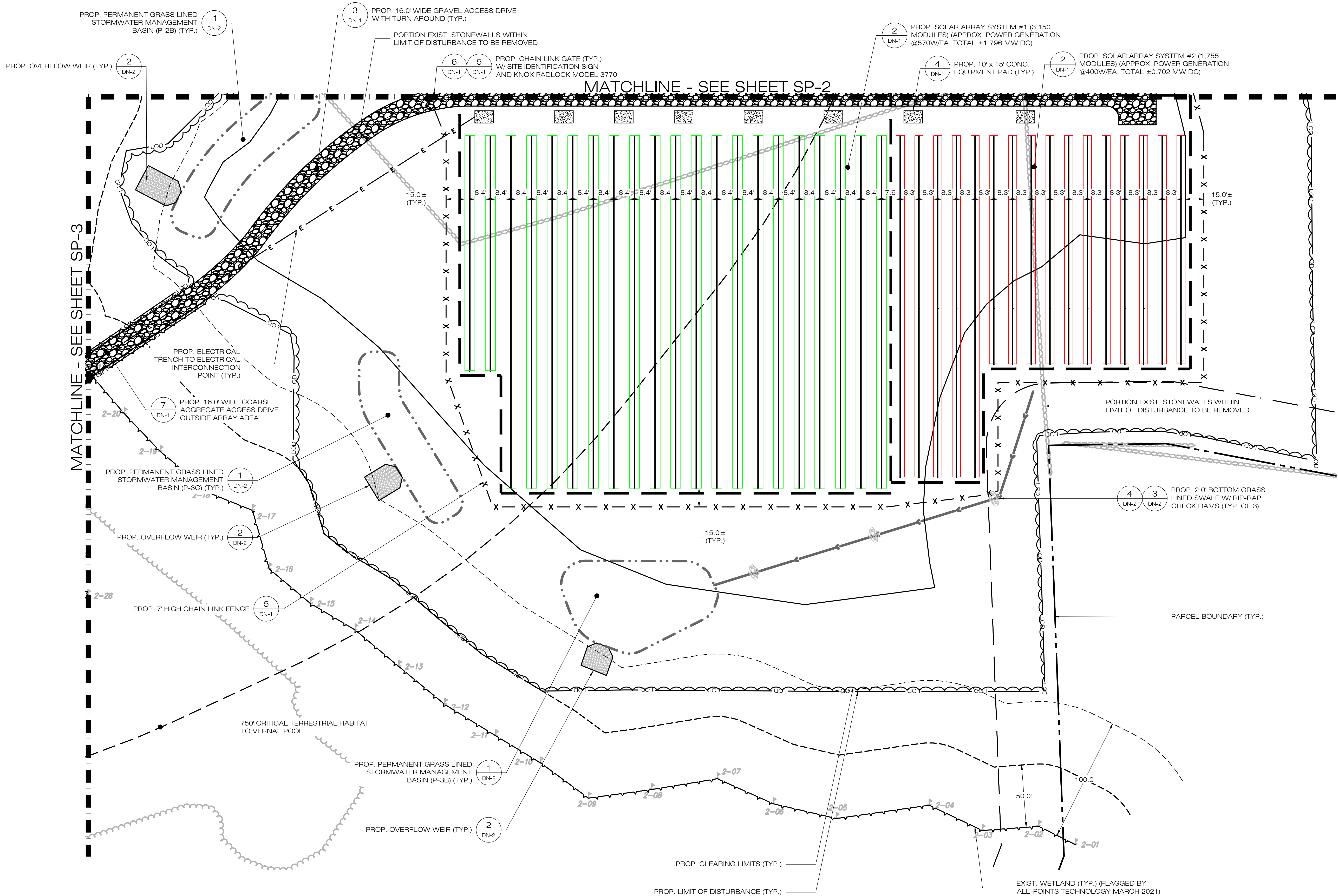
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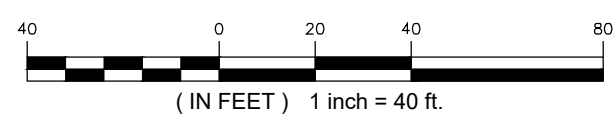
**GD-4**







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SP-1  
**SITE & UTILITY PLAN**  
SCALE : 1" = 40'-0"



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N SILVER BROOK SOLAR

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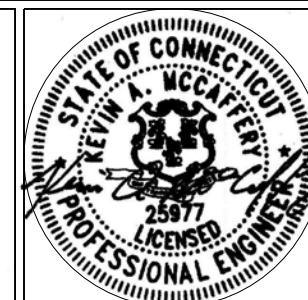
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SHEET TITLE:

**SITE & UTILITY PLAN**

SHEET NUMBER:

**SP-1**





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DESIGN PROFESSIONAL OF RECORD

PROF: KEVIN A. MCCAFFERY, PE  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADD: 567 VAUXHAUL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: N SILVER BROOK HOLDINGS LLC  
ADDRESS: 511 FITCH HILL ROAD  
UNCASVILLE, CT 06382

N SILVER BROOK SOLAR

SITE 486 FITCH HILL ROAD  
ADDRESS: UNCASVILLE, CT 06382

APT FILING NUMBER: CT657140

DATE: 12/14/21

DRAWN BY: CH  
CHECKED BY: KAM

SHEET TITLE:

SITE & UTILITY PLAN

SHEET NUMBER:

SP-2

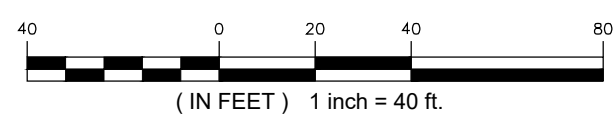
STATE OF CONNECTICUT

2025

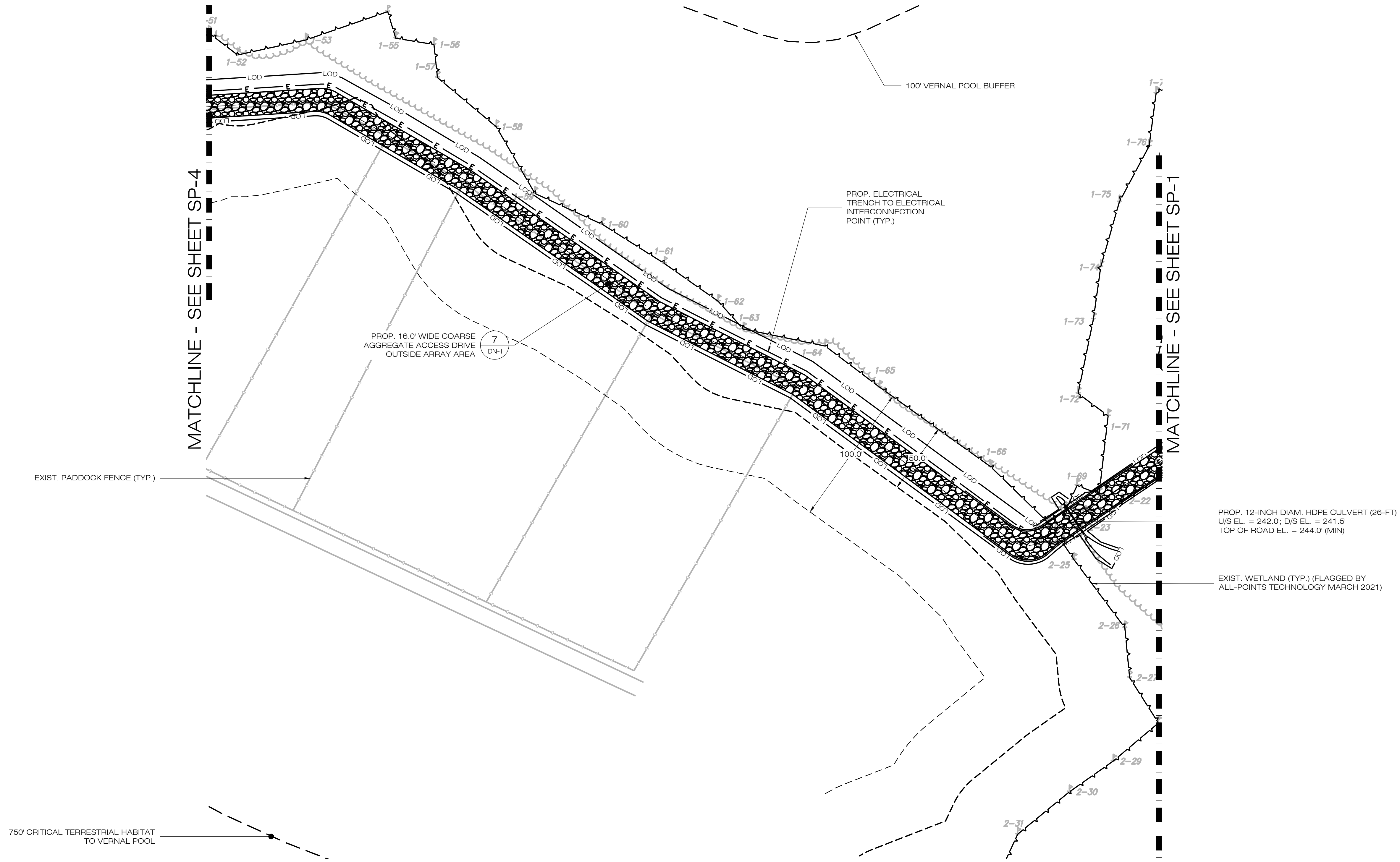
PROFESSIONAL ENGINEER



1 SITE & UTILITY PLAN  
SP-2 SCALE : 1" = 40'-0"







TRITEC

AMERICAS

888 PROSPECT STREET  
LA JOLLA, CA 92037  
OFFICE: (619) 363-3080

ALL-POINTS

TECHNOLOGY CORPORATION

567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385    PHONE: (860) 663-1697  
WWW.ALLPOINTSTECH.COM    FAX: (860) 663-0935

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SHEET NUMBER:

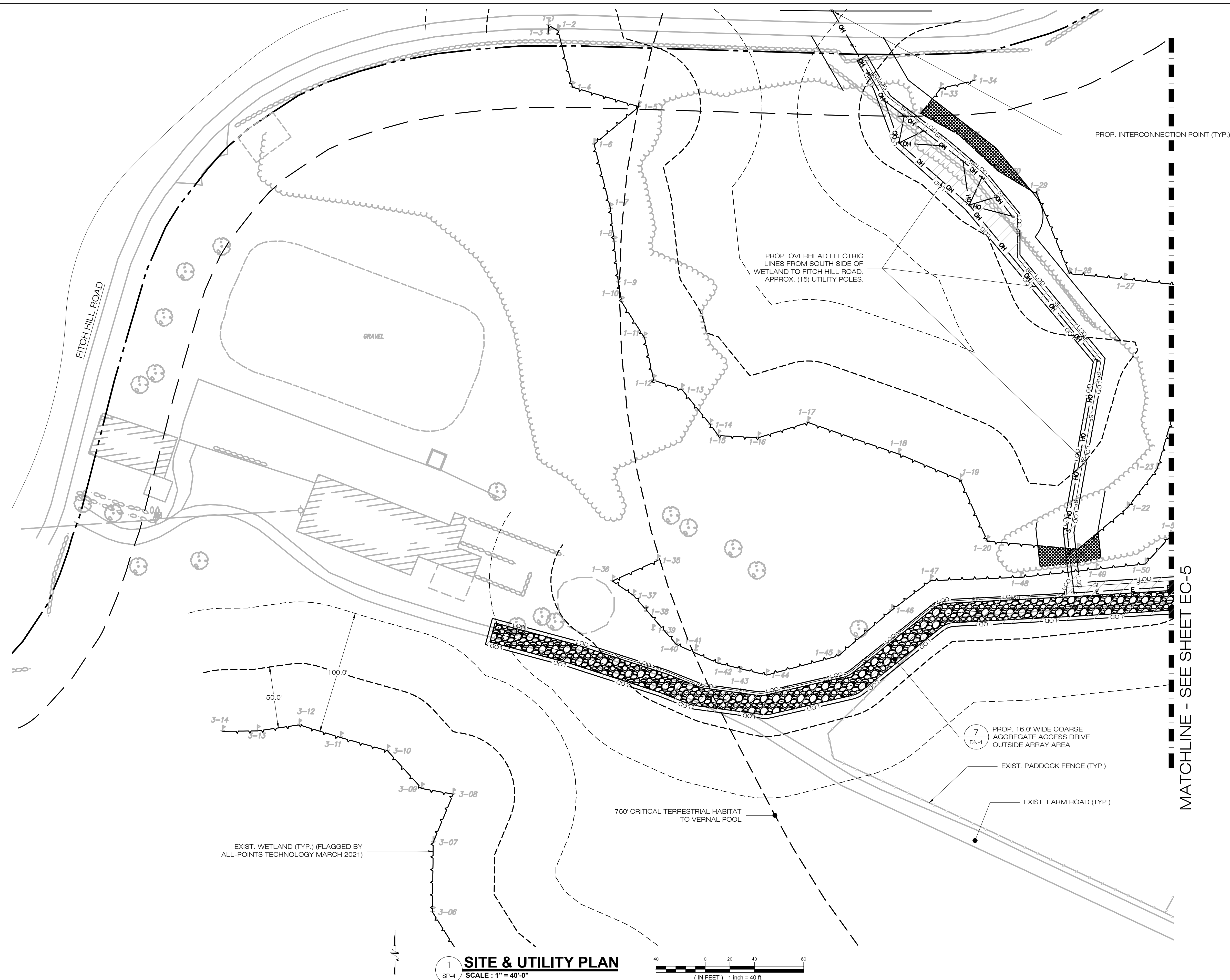
SP-3

STATE OF CONNECTICUT

REGISTERED PROFESSIONAL ENGINEER

2017







888 PROSPECT STREET  
LA JOLLA, CA 92037  
OFFICE: (619) 363-3080



567 VAUXHAUL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385    PHONE: (860)-663-1697  
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DATE: 12/14/21	DRAWN BY: CH
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SHEET TITLE:

SITE & UTILITY PLAN

SHEET NUMBER:

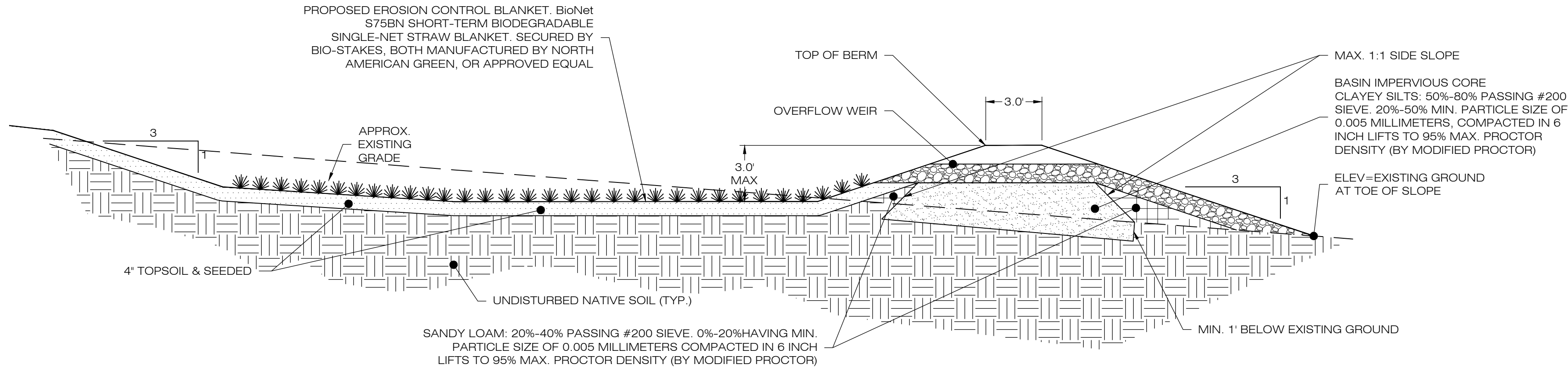
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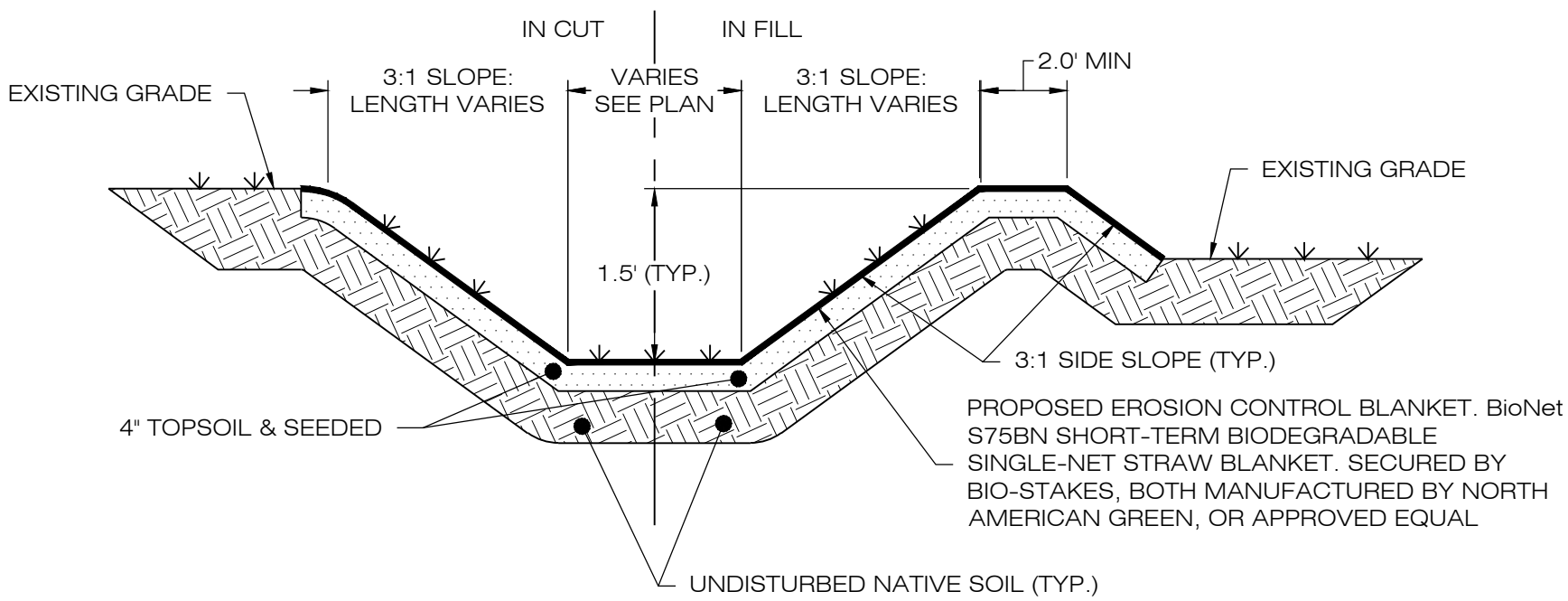




NOTES:

- SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.
- FOR CONVERTING TSB TO INFILTRATION BASIN, REMOVE BAFFLES, CLEAN OUT SEDIMENT, RESHAPE AS REQUIRED, RECONSTRUCT OUTLET WEIR INCLUDING ADDITIONAL IMPERVIOUS CORE, AND RESEEDING.
- INSPECT AND CLEAN PIPES PRIOR TO INSTALLING PERMANENT OUTLET.

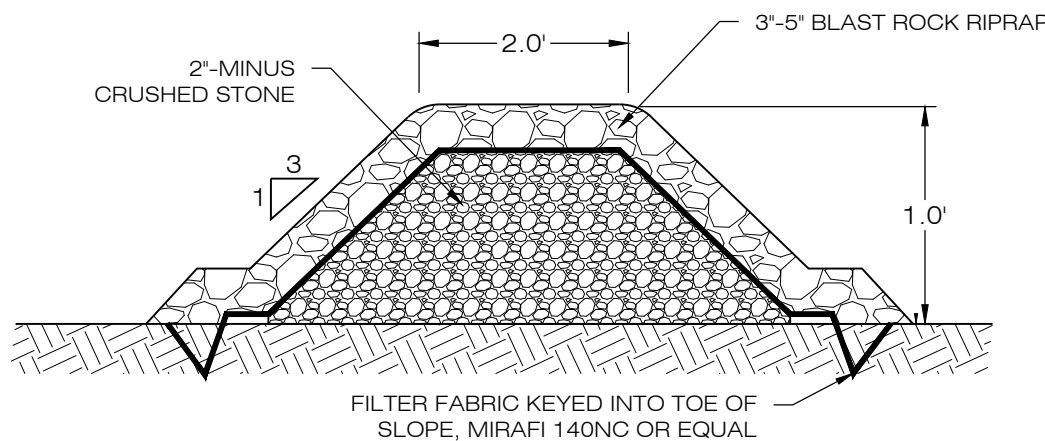
**1 GRASS LINED INFILTRATION BASIN**  
SCALE : N.T.S.



NOTES:

- SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.
- IF DEPTH VARIES FROM 1.5', SEE PLAN CALLOUTS.

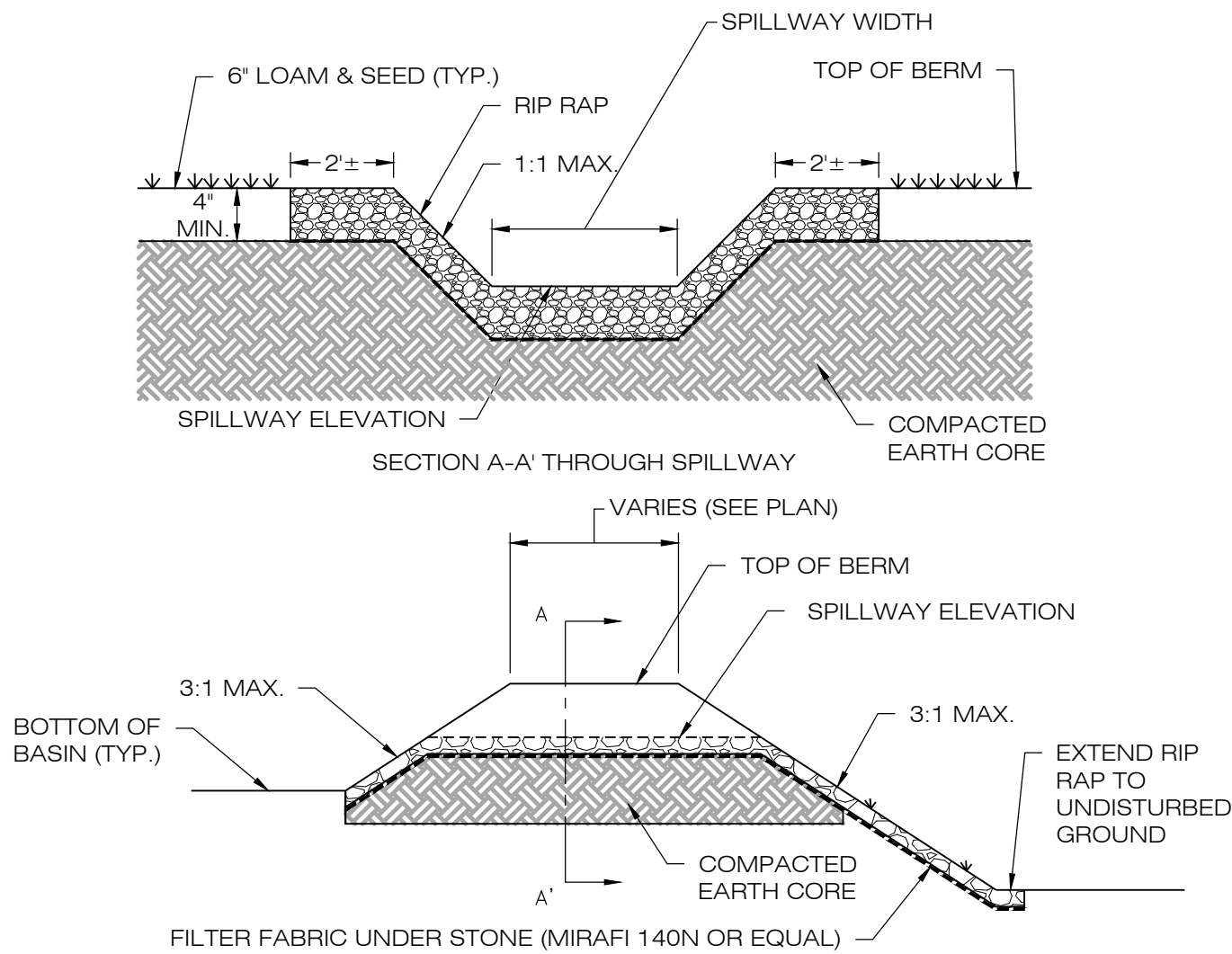
**3 GRASS LINED SWALE**  
SCALE : N.T.S.



NOTES:

- STONE SHALL BE PLACED MECHANICALLY OR BY HAND. STONE SHALL NOT BE DUMPED DIRECTLY INTO SWALE.
- SEE GRADING AND DRAINAGE PLAN.

**4 STONE CHECK DAM**  
SCALE : N.T.S.



**2 OVERFLOW WEIR DETAIL**  
SCALE : N.T.S.

TRITEC

AMERICAS

888 PROSPECT STREET  
LA JOLLA, CA 92037  
OFFICE: (619) 363-3080

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TECHNOLOGY CORPORATION

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DATE: 12/14/21

DRAWN BY: CH

CHECKED BY: KAM

SHEET TITLE:

SITE DETAILS

SHEET NUMBER:

DN-2

STATE OF CONNECTICUT

REGISTERED PROFESSIONAL ENGINEER

2017



# **APPENDIX B**

## **USFWS AND NDDB COMPLIANCE STATEMENT**





## USFWS & NDDB COMPLIANCE

November 10, 2021

Mr. David Trepeck  
TRITEC Americas, LLC  
888 Prospect Street, Suite 200  
La Jolla, CA 92037

Re: 486 Fitch Hill Road, Montville, CT  
APT Job No: CT657140

On behalf of TRITEC Americas, 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 solar energy generation facility ("Facility") would result in a potential adverse effect to listed species.

APT understands that TRITEC Americas proposes the construction of a solar energy generation facility a privately owned 209.82-acre parcel located at 486 Fitch Hill Road in the Uncasville section of Montville, Connecticut. The Project will be located on a portion of the property located on the east side Fitch Hill Road, which totals approximately 128.67 acres ("Subject Property").

### **USFWS**

The federal consultation was completed in accordance with Section 7 of the Endangered Species Act 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<sup>1</sup> 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 in the northeastern portion of the Subject Property, occupy  $\pm 15$  acres, the majority of which will lie within a wooded upland area; trees potentially provide NLEB habitat. A review of the Connecticut Department of Energy & Environmental Protection ("CTDEEP") Wildlife Division Natural Diversity Data Base ("NDDB") NLEB habitat map<sup>2</sup> revealed that the proposed Facility is not within 150 feet of a known occupied NLEB maternity roost tree and is not within 0.25 mile of a known NLEB hibernaculum. The nearest NLEB habitat resource to the proposed Facility is located  $\pm 32.2$  miles to the southwest in North Branford.

APT submitted the effects determination using the NLEB key within the IPaC system for the proposed Facility (the "Action"). This IPaC key assists users in determining whether a Federal action is consistent

---

<sup>1</sup> Listing under the federal Endangered Species Act

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



with the activities analyzed in the USFWS's January 5, 2016, intra-Service Programmatic Biological Opinion ("PBO") on the Final 4(d) Rule for the NLEB for Section 7(a)(2) compliance.

Based upon the IPaC submission, the Action is consistent with activities analyzed in the PBO; please refer to the enclosed July 1, 2021, USFWS letter. The Action may affect NLEB; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). If the USFWS does not respond within 30 days from the date of the letter (August 2, 2021), one may presume that the IPaC-assisted determination was correct and that the PBO satisfies and concludes Verogy's responsibilities for this Action under ESA Section 7(a)(2) with respect to NLEB. No response was received from USFWS; therefore, the Action complies with ESA Section 7(a)(2) with respect to NLEB.

In addition, TRITEC Americas would consider the following additional recommended voluntary measures, where appropriate and as the project schedule allows, to reduce the potential for impact to NLEB.

- Conduct tree removal activities outside of the NLEB pup season (June 1-July 31) and active season (April 1-October 31) to minimize impacts to pups at roosts not yet identified.
- 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: site is located > 5 miles from the nearest hibernacula.*
- 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.

### **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 on the Subject Property. Please refer to the enclosed NDDB Map which depicts the nearest NDDB buffer  $\pm 1.1$  miles north of the Subject Property. Since the Subject Property is not located within a NDDB buffer area, consultation with DEEP is not required in accordance with their review policy<sup>3</sup> or required in accordance with the Connecticut Siting Council's NDDB review policy.

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

Sincerely,  
All-Points Technology Corporation, P.C.



Dean Gustafson  
Senior Biologist

Enclosures

---

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



# USFWS NLEB Letter

---





## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104  
<http://www.fws.gov/newengland>



IPaC Record Locator: 668-103503375

July 01, 2021

Subject: Consistency letter for the 'TRITEC Uncasville' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Deborah Gustafson:

The U.S. Fish and Wildlife Service (Service) received on July 01, 2021 your effects determination for the 'TRITEC Uncasville' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause “take”<sup>[1]</sup> of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action’s effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].



**Action Description**

You provided to IPaC the following name and description for the subject Action.

**1. Name**

TRITEC Uncasville

**2. Description**

The following description was provided for the project 'TRITEC Uncasville':

TRITEC Americas intends to lease a portion of the ±209.82-acre Property (within the part of the parcel east of Fitch Hill Road) for development of a ±1.99 (AC) megawatt solar photovoltaic electric generating facility located at 486 Fitch Hill Road in Montville, Connecticut.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.4756565,-72.13476037990509,14z>

**Determination Key Result**

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

**Determination Key Description: Northern Long-eared Bat 4(d) Rule**

This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

---



## Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

## Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

*No*

2. Will your activity purposefully **Take** northern long-eared bats?

*No*

3. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

**Automatically answered**

*No*

4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at [www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html](http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html).

*Yes*

5. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

*No*

6. Will the action involve Tree Removal?

*Yes*

7. Will the action only remove hazardous trees for the protection of human life or property?

*No*

8. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

*No*

---

9. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

*No*

---



## Project Questionnaire

**If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.**

1. Estimated total acres of forest conversion:

15

2. If known, estimated acres of forest conversion from April 1 to October 31

15

3. If known, estimated acres of forest conversion from June 1 to July 31

15

**If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.**

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

**If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.**

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

**If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.**

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

---

# NDDDB Map

---







# **APPENDIX C**

## **CULTURAL RESOURCES REVIEW**





Department of Economic and  
Community Development

State Historic Preservation Office

November 17, 2021

Mr. David R. George  
Heritage Consultants  
PO Box 310249  
Newington, CT 06131

Subject: Phase IA and Phase IB Cultural Resource Reconnaissance Survey  
Uncasville Solar  
486 Fitch Hill Road  
Montville (Uncasville), Connecticut  
ENV-22-0372

Dear Mr. George:

The State Historic Preservation Office (SHPO) has reviewed the cultural resource reconnaissance surveys prepared by Heritage Consultants, LLC (Heritage), dated August 2021. 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 undertaking includes the construction of a solar facility, which is to occupy an approximately 9.87 acre project area. The parcel is located to the east of Fitch Hill Road, and to the north of Falls Brook, with access to be from Fitch Hill Road. The submitted report is well-written, comprehensive, and meet the standards set forth in the *Environmental Review Primer for Connecticut's Archaeological Resources*.

Five previously recorded archaeological sites are located within 1 mile of the project area; however, none will be impacted by the proposed project. No properties listed or formally determined eligible for listing on either the State or National Register are located within one mile of the project area. Three stone wall segments, as well as one stone cluster, were identified within the project parcel; however, neither the stone wall segments nor the stone cluster can be attributed to a specific type, function or time period. The stone cluster will not be directly impacted by construction of the facility.

Following the pedestrian survey, it was determined that the majority of the project area was characterized as having low slopes, well-drained soils, and proximity to a fresh water source,

State Historic Preservation Office

450 Columbus Boulevard, Suite 5 | Hartford, CT 06103 | P: 860.500.2300 | [ct.gov/historic-preservation](http://ct.gov/historic-preservation)

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Department of Economic and  
Community Development

State Historic Preservation Office

Falls Brook, and therefore, retained a moderate to high potential to contain intact archaeological deposits. A Phase IB reconnaissance survey was recommended and completed.

Phase IB of the reconnaissance survey consisted of subsurface testing of areas deemed to have moderate to high archaeological sensitivity during Phase IA, and that would be subject to ground disturbing impacts as part of the proposed undertaking. A total of 208 of 209 planned shovel tests were excavated successfully throughout the proposed work area; an additional 10 delineation shovel tests were excavated throughout the project area. The reconnaissance survey resulted in the identification of two loci: Locus 1 and Locus 2. Based on low density of artifacts and lack of cultural features, neither of the loci possesses sufficient research potential to be eligible for listing on the National Register of Historic Places.

As a result of the information submitted, SHPO concurs with the findings of the report that additional archeological investigations of the project areas are not warranted and that no historic properties will be affected by the proposed activities. However, please be advised that if construction plans change to include previously uninvestigated/undisturbed areas, this office should be contacted for additional consultation.

This office appreciates the opportunity to review and comment upon this project. For additional information, please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or [marena.wisniewski@ct.gov](mailto:marena.wisniewski@ct.gov).

Sincerely,

A handwritten signature in black ink that reads "Jonathan Kinney".

Jonathan Kinney  
Deputy State Historic Preservation Officer

State Historic Preservation Office

450 Columbus Boulevard, Suite 5 | Hartford, CT 06103 | P: 860.500.2300 | [ct.gov/historic-preservation](http://ct.gov/historic-preservation)

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AUGUST 2021

PHASE IA CULTURAL RESOURCES ASSESSMENT SURVEY OF  
THE PROPOSED NORTH SILVERBROOK SOLAR PROJECT AT  
486 FITCH HILL ROAD IN UNCASVILLE, CONNECTICUT

PREPARED FOR:



567 VAUXHALL STREET EXTENSION – SUITE 311  
WATERFORD, CT 06385

PREPARED BY:



55 EAST CEDAR STREET  
NEWINGTON, CONNECTICUT 06111

## **ABSTRACT**

This report presents the results of a Phase IA cultural resources assessment survey for the proposed North Silverbrook Solar Project at 486 Fitch Hill Road in Uncasville, Connecticut. The study area associated with this facility encompasses approximately 9.87 acres of land located to the east of Fitch Hill Road and to the north of Falls Brook. The current investigation consisted of: 1) preparation of an overview of the region's prehistory, history, and natural setting; 2) a literature search to identify and discuss previously recorded cultural resources in the region; 3) a review of readily available historical maps and aerial imagery depicting the project area to identify potential historical resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the project area to determine their archaeological sensitivity. Some portions of the project area are characterized by open fields showing signs of plowing, however, intact B-Horizon deposits may still be in place. The low slopes of the project area and the fact that Falls Brook runs past its southern border suggest it would have been a desirable area for Native American use and/or occupation. Historical resources related to the project area's agricultural use also may exist as well. Based on the available data it is the professional opinion of Heritage that the project area retains moderate/high sensitivity for yielding archaeological deposits.



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- Figure 2. Copy of the project plans for the proposed solar center in Uncasville, Connecticut.
- Figure 3. Map of soils located in the vicinity of the project area in Uncasville, Connecticut.
- Figure 4. Excerpt from an 1854 historical map showing the location of the project area in Uncasville, Connecticut.
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- Figure 9. Digital map showing the location of previously identified archaeological sites in the vicinity of the project area in Uncasville, Connecticut.
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- Figure 11. Aerial image showing the locations and directions of photos taken by Heritage personnel during Phase IA survey of the project area in Uncasville, Connecticut.

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- Photo 1. Overview of the project area facing east from the western end of the proposed access road.
- Photo 2. Overview of the project area facing east along the proposed access road.
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# CHAPTER I

## INTRODUCTION

This report presents the results of a Phase IA cultural resources assessment survey of the proposed North Silverbrook Solar Project at 486 Fitch Hill Road in Uncasville, Connecticut (Figures 1 and 2). All-Points Technology Corporation (All-Points) requested that Heritage Consultants, LLC (Heritage) complete the assessment survey as part of the planning process for the proposed solar facility. The study area associated with this facility encompasses approximately 9.87 acres of land situated to the east of Fitch Hill Road and to the north of Falls Brook within what the Town of Montville refers to as Parcel 47-51, which is accessed from the east side of Fitch Hill Road. The proposed access road associated with the facility extends past a historical farmstead to the east through agricultural land, then northeast into a forested area where the proposed solar facility will be constructed. The proposed solar facility project area is surrounded on all sides by deciduous forest. The region in general is a sparsely developed residential area. Heritage completed this investigation on behalf of All-Points in May of 2021. All work associated with this project was performed in accordance with the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987) promulgated by the Connecticut State Historic Preservation Office (CT-SHPO).

### **Project Description and Methods Overview**

As mentioned above, the proposed solar project will be located to the east of Fitch Hill Road and to the north of Falls Brook within Parcel 47-51 in Uncasville, Montville, Connecticut. The project area is currently characterized by a mixture of deciduous forest and agricultural fields to the southwest through which the proposed access road will extend. Elevations throughout the project area range from approximately 73.2 to 88.4 m (240 to 290 ft) NGVD. The proposed solar facility will contain approximately 5,300 solar panel modules in rows spaced 4.6 m (15 ft) apart throughout the project area, all of which will be surrounded by a chain link fence. Metering equipment will be installed off the western boundary of the solar array and to the south of the proposed access road. This access road will extend eastward toward Fitch Hill Road and it will be a gravel thoroughfare. An overhead electrical line with utility poles will connect the metering equipment to the existing electrical grid along Fitch Hill Road. Finally, trees will be cleared for the proposed access road, overhead interconnect, and solar array.

This Phase IA cultural resources assessment survey consisted of the completion of the following tasks: 1) a contextual overview of the region'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 cultural resources in the region encompassing the project area; 3) a review of readily available historical maps and aerial imagery depicting the project area in order to identify potential historical resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the project area in order to determine their archaeological sensitivity.

### **Project Results and Management Recommendations Overview**

The review of historical maps and aerial images of the project area and files maintained by the CT-SHPO resulted in the identification of five previously identified archaeological sites located within 1.6 km (1 mi) mile of the project area. No National or State Register of Historic Places properties were identified. The previously identified archaeological sites are discussed in detail in Chapter V. In addition to the cultural resources discussed above, Heritage combined data from the historical map and aerial image

analysis, as well as pedestrian survey, to stratify the project area into zones of no/low and moderate/high archaeological sensitivity.

Based on the data recovered during the background review and subsequent pedestrian survey effort, it is the professional opinion of Heritage that all 9.87 acres of the project area retain moderate/high sensitivity for yielding archaeological deposits. The low slopes of the project area and the fact that Falls Brook runs past its southern border suggest it would have been a desirable area for Native American use. Historical resources related to the project area's agricultural use may exist at this location as well..

#### **Project Personnel**

Key personnel for this project included Mr. David R. George, M.A., R.P.A, (Principal Investigator), Ms. Kelsey Tuller, M.A., (Field Director), Ms. Barbara Sternal, M.A., (Historian), and Mr. Jeffrey Brown, M.A., (GIS Specialist). Ms. Elizabeth Correia, M.A., compiled this report under the supervision of Mr. George.



## CHAPTER II

### NATURAL SETTING

#### Introduction

This chapter provides a brief overview of the natural setting of the region containing the project area in Uncasville, Connecticut. Previous archaeological research has documented that specific environmental factors can be associated with both prehistoric and historical period site selection. These include general ecological conditions, as well as types of fresh water sources present, degree of slopes, and soils situated within a given project area. The remainder of this chapter 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 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: Southeast 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.

#### Southeast Hills Ecoregion

The Southeast Hills ecoregion consists of “coastal uplands, lying within 25 miles of Long Island Sound, characterized by low, rolling to locally rugged hills of moderate elevation, broad areas of upland, and local areas of steep and rugged topography” (Dowhan and Craig 1976). Elevations in the Southeast Hills ecoregion generally range from 75.7 to 227.2 m (250 to 750 ft) above sea level (Dowhan and Craig 1976). The bedrock of the region is composed of schists and gneisses deposited during the Paleozoic. Soils in the region have developed on top of glacial till in upland locales, and on top of stratified deposits of sand, gravel, and silt in the local valleys and upland areas (Dowhan and Craig 1976). Freshwater sources located in the region containing the project area include Williams Pond, Trent Pond, Salmon River, Nipsic Brook, and Wildcat Brook, as well as other unnamed streams, ponds and wetland areas.

#### Hydrology in the Vicinity of the Project Area

The project area is situated within a region that contains several sources of freshwater, including Falls Brook just to the south of the project area boundary, Stony Brook, Wheeler Pond, Oxoboxo Lake, Rockland

Pond, Oxoboxo Brook, Picker Pond, and the Thames River, as well as unnamed streams, ponds, and wetlands. These freshwater sources may have served as resource extraction areas for Native American and historical populations. 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.

### **Soils Comprising the Project Area**

Soil formation is the direct result of the interaction of many variables, including climate, vegetation, parent material, time, and organisms present (Gerrard 1981). Once archaeological deposits are buried within the soil, they are subject to various diagenic and taphonomic 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. In contrast, acidic soils enhance the preservation of charred plant remains.

A review of the soils within the project area is presented below. The study area is characterized by the presence of two major soil types: the Haven and Enfield series (32) and the Narragansett series (68) (Figure 3). Generally speaking, the soils identified within the project area are very deep, well drained loams and are the types of soils that are typically correlated with prehistoric and historical use and occupation. Descriptive profiles for each soil type are presented below; they were gathered from the National Resources Conservation Service.

#### Haven and Enfield Series (Soil Code 32)

The Haven series consists of very deep, well drained soils formed in loamy over sandy and gravelly outwash. They are nearly level through moderately sloping soils on outwash plains, valley trains, terraces, and water-sorted moraine deposits. Saturated hydraulic conductivity is moderately high or high in the mineral solum and very high in the substratum. Slope ranges from 0 through 15 percent. A typical profile associated with Haven soils is as follows: **Oi**--0 to 2 inches (0 to 5 centimeters); slightly decomposed plant material derived from loose pine needles, leaves and twigs; **Oa**--2 to 3 inches (5 to 8 centimeters); black (5YR 2/1) highly decomposed plant material; **A**--3 to 6 inches (8 to 15 centimeters); dark grayish brown (10YR 4/2) loam; weak fine and medium granular structure; friable; many fine and coarse roots; very strongly acid; abrupt smooth boundary; **Bw1**--6 to 13 inches (15 to 33 centimeters); brown (7.5YR 4/4) loam; weak fine and medium subangular blocky structure; friable; common fine roots; many fine pores; very strongly acid; clear wavy boundary; **Bw2**--13 to 22 inches (33 to 56 centimeters); strong brown (7.5YR 5/6) loam; weak fine and medium subangular blocky structure; friable; common fine roots; many fine pores; 5 percent fine gravel; very strongly acid; gradual wavy boundary; **BC**--22 to 31 inches (56 to 79 centimeters); yellowish brown (10YR 5/6) gravelly loam; weak medium and fine subangular blocky structure; friable; few fine roots; common fine pores; 20 percent fine gravel; very strongly acid; clear wavy boundary; and **2C**--31 to 65 inches (79 to 165 centimeters); yellowish brown (10YR 5/4) to brownish yellow (10YR 6/6) stratified gravelly sand; single grained; loose; 30 percent fine gravel; very strongly acid.

The Enfield series consists of very deep, well drained loamy soils formed in a silty mantle overlying glacial outwash. They are nearly level to sloping soils on outwash plains and terraces. Slope ranges from 0 to 15 percent. A typical profile associated with Enfield soils is as follows: **Ap**--0 to 7 inches; dark grayish



brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many very fine and fine roots; 5 percent fine gravel; strongly acid; abrupt smooth boundary; **Bw1**--7 to 16 inches; strong brown (7.5YR 5/6) silt loam; weak medium subangular blocky structure; friable; common very fine and many fine roots; 5 percent fine gravel; strongly acid; clear wavy boundary; **Bw2**--16 to 25 inches; light olive brown (2.5Y 5/4) silt loam; weak medium subangular blocky structure; friable, few very fine and common fine roots; 5 percent fine gravel; strongly acid; abrupt wavy boundary; and **2C**--25 to 60 inches; brown (10YR 5/3) very gravelly sand; single grain; loose; stratified; 45 percent gravel and 5 percent cobbles; strongly acid.

#### Narragansett Series (Soil Code 68)

The Narragansett series consists of very deep, well drained loamy soils formed in a mantle of medium-textured deposits overlying till. They are nearly level to moderately steep soils on till plains, low ridges and hills. Slope ranges from 0 to 25 percent. A typical profile associated with Narragansett soils is as follows: **Ap**--0 to 6 inches; dark brown (10YR 3/3) silt loam; weak medium granular structure; very friable; common medium roots; very strongly acid; clear wavy boundary; **Bw1**--6 to 15 inches; dark yellowish brown (10YR 4/6) silt loam; weak medium subangular blocky structure; very friable; common medium roots; very strongly acid; gradual wavy boundary; **Bw2**--15 to 24 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; very friable; common medium roots; strongly acid; clear wavy boundary; **Bw3**--24 to 28 inches; yellowish brown (10YR 5/6) gravelly silt loam; weak medium subangular blocky structure; very friable; few fine roots; 15 percent gravel; strongly acid; clear wavy boundary; and **2C**--28 to 60 inches; light olive brown (2.5Y 5/4) very gravelly loamy coarse sand; single grain; loose; 45 percent gravel and cobbles; strongly acid.

#### **Summary**

The natural setting of the area containing the proposed solar facility is common throughout the Southeast Hills ecoregion. The major river within this ecoregion is the Thames River, which has numerous smaller tributaries. Moderate slopes dominate the region, and the soils are loams. In general, the project region was well suited to Native American occupation throughout the prehistoric era. This portion of Uncasville was also used after Colonial settlement for agricultural land, as evidenced by the presence of agricultural fields throughout the region; thus, archaeological deposits dating from the prehistoric and historical era may be expected near or within the proposed project area.

## 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. Sites chosen for excavation were highly visible and they were in such areas as the coastal zone, e.g., shell middens, and Connecticut River Valley. 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 project area.

#### Paleo-Indian Period (12,000 to 10,000 Before Present [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 graters, 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, graters, 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 of 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 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, 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 $\pm$ 280 and 7,015 $\pm$ 160 B.P. (Dincauze 1976).

In addition to Neville points, Dincauze (1976) described two other projectile points 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<sup>2</sup> (5,383 ft<sup>2</sup>). 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).

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

The Terminal Archaic Period, 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 of Orient Fishtail projectile points (McBride 1984:119; Ritchie 1971).

In addition, it was during the late Terminal Archaic Period 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 of 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 been 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, include 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).

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, punctuation, 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 much 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

### HISTORICAL OVERVIEW

#### Introduction

The proposed project area is located in the village of Uncasville in the town of Montville in New London County, Connecticut. Originally part of New London, the area now called Montville was settled in 1646 as “Pequot” and was named for the Native American tribe. Following increased European settlement, the region became known in 1658 as the North Parish of New London and included a portion of today’s town of Salem. Montville was officially incorporated as a town in 1786. The project area is located in eastern Montville, and to the west of modern-day Interstate 395 and the Thames River. The remainder of this chapter provides an overview history of Montville and historical data specific to the project area.

#### Native American History

Prior to European contact, the Pequot and Mohegan tribes resided in eastern Connecticut (Oberg 2006:16). While similar in their shared variation of the Algonquian language, the Pequots and Mohegans possessed distinct cultural practices and territories prior to European contact. The Pequots occupied much of the area east of the Thames River, including the coast of Long Island Sound, extending into a portion of present-day Griswold. Sassacus was sachem of the Pequots during the mid-seventeenth century and their territory included the region of Montville, located on the western side of the Thames River between present day New London and Norwich. Though Uncas, then a prominent member of the Pequot tribe, had married into Sassacus’ familial line, the two differed greatly on ruling matters. Uncas left with his followers and formed the Mohegan Tribe. When Uncas attempted to overthrow Sassacus, he was exiled only to be pardoned soon after (De Forest 1853). In 1637, when the Pequot tribe and the English colonists eventually went to war, Uncas sided with the colonists in the removal of the Pequot tribe. This strategy was not new as he had worked alongside John Mason and the Narragansett Tribe during the attempted extermination of the Pequot in 1637 (Baker 1896). Following the Pequot War, Uncas settled in the former Pequot territory of Montville. Uncas’ authority extended north along the Quinebaug and Yantic Rivers, and groups in those areas paid tribute to the Mohegans. The eastern area of Montville was dedicated as a Reservation until 1790 when the Connecticut legislature divided the land among colonial families (Baker 1896).

#### History of the Town of Montville

The colonization of New London, the parent town of Montville, began in the 1640s. Several large tracts of land in the conquered Pequot territory were granted to prominent colonial individuals, with an initial focus on the Thames River harbor. In 1658, the Connecticut legislature changed the growing town’s name from Pequot to New London. Uncas similarly made grants of land from the territory he held in the future Montville in the 1640s, but the first known colonists to be granted land there were Richard Haughton and James Rogers in 1658 (Caulkins 1895). Disputes over ownership of the land hindered colonization of Montville, so that it only had enough colonial residents to form the North Parish of the Congregational Church of New London as of 1720. The territorial dispute was settled in 1721, and the separate town of Montville was created in 1786, part of a wave of post-Revolutionary War era town incorporations across the state (Crofut 1937). New London’s large area and thriving port had a substantial population of over 5,000 resident as of 1782, while Montville remained much smaller. In 1800, Montville had a population of 2,233 residents, which declined slightly to 2,187 residents in 1810, and then dramatically to 1,951 as of the 1820 census, largely due to the separation of the town of Salem in 1819 (Montville 2010).



Montville witnessed various nineteenth century economic trends: stagnation and decline between 1830 and 1850, modest growth from 1850 to 1880, and another net decline from 1880 to 1900. The population fluctuated accordingly, starting at 2,233 residents, dropping to 1,848, and rising again to 2,664 (Keegan 2012). The 1850 federal census of industry reported 14 firms in town that made at least \$500.00 worth of products per year in Montville, half of which were textile mills of various types. In total, these firms employed only 139 men and 94 women in an average month, demonstrating the modest employment opportunities in the manufacturing sector of Montville (United States Census 1860). This lack of work kept the population low and in 1870 the town had 2,495 residents (Howard and Crocker 1879).

By the end of the nineteenth century, manufacturing and industrial sectors in Montville saw an increase in activity. A tributary of the Thames River known as Saw-mill Brook (now called Oxoboxo Brook) hosted a dye works, numerous paper mills, and several textile mills. The smaller streams in the area continued to support grist mills and sawmills (Baker 1896). In 1932, the town's industries were listed as "agriculture, and the manufacture of paper, paper boxes, cotton goods, etc." (Connecticut 1932:288). Montville's population rose significantly after 1900, almost doubling by 1950 to 4,766 residents (Keegan 2012). Various factors contributed to this population growth. Continued industrial activity attracted new residents and many European immigrants arrived to work in the factories or establish farms. Improved transportation, such as the establishment of streetcars in the villages of Uncasville and Chesterfield, and the prevalence of automobiles also facilitated an influx of people. In addition, a number of residents of large cities built summer homes in town (Montville 2010).

Montville's population continued to increase during the 1960s, approaching 16,000 residents by 1970 and perpetuating a more gradual upward trend through the rest of the century (Keegan 2012). Late-twentieth century growth was the result of suburbanization, as people moved out of Norwich and New London, aided by the 1958 opening of Interstate 395 (Oglesby 2013). After 1970, the population growth leveled off, except for an increase of approximately 2,000 people between 1990 and 2010, reaching 18,680 residents by the end of that period (Keegan 2012). In 1994, a new settlement of the Mohegan tribe's land claims allowed the tribe to open a casino and related enterprises. The same year, a state prison opened in Montville, which added 1,800 imprisoned men to the town's population (Montville 2010). As of 2014, the town's largest employers were the town itself, the State of Connecticut Corrections Department (correlated to the prison), a manufacturer of gauges and meters (one of eight manufacturing firms in town), and two retail firms (out of nearly 65). Overall, the town's employment was dominated by the government sector, followed by the accommodation and foods services sector (CERC 2016). Despite its population growth Montville retains areas of rural landscape along with its suburban sections.

### **History of the Project Area**

According to an 1854 map of central Montville, the project area was located in a rural area along a branch of the Stony Brook and to the east of a roadway (Figure 4). There were several properties nearby, including a homestead north of the parcel that was owned by G. Dolbeare and another to the southeast owned by W. Baker. The closest homestead was west of the project area and belonged to A. F. Rogers, a descendent of one of the earliest settlers in Montville, James Rogers (Rogers 1902). In 1850, Asahel F. Rogers was listed as a 57-year-old farmer with a sizable estate worth of \$10,000.00 (United States Census 1850). By 1860, Rogers was going by Azel and was still a farmer, but his land holdings had decreased slightly and were valued at \$9,000.00. Rogers' 27-year-old son, John R., was a member of his household at that time and was working as a farmhand, presumably on the family farm (United States Census 1860).

A subsequent 1868 map of the area indicated that the A.F. Rogers estate was now owned by R. Rogers (Figure 5). This was likely Azel's son John R. who went by J. Randolph Rogers. Azel F. Rogers did not pass away until 1869, suggesting that perhaps he relinquished control and possibly ownership of the farm due to an illness (Find A Grave 2021a). John R. Rogers was listed in the 1870 census as a 37-year-old farmer whose real estate was valued at \$5,500.00, indicating an almost 50 percent decrease from his father's original land holdings in 1850 (United States Census 1870). By 1880, Rogers was 47 and working as a mate on a merchant brig. There were no real estate holdings listed on the census (United States Census 1880). John R. Rogers passed away in 1887 and it is unclear when the property moved out of his ownership and why he had to take on work as a sailor (Find A Grave 2021b). Other nearby properties changed hands as well. In 1868, the homestead that had belonged to G. Dolbeare was simply labeled R.E. and the property under W. Baker's name was owned by J. Chappell.

In the early twentieth century, the region was still primarily rural agricultural land. A 1934 aerial photograph showed the project area situated in agricultural fields to the southeast of Fitch Hill Road (Figure 6). The project parcel consisted of cleared and forested land with several standing structures to the west of the proposed access road. Extending to the south of the project area, was the waterway now called Falls Brook. By 1951, very little had changed (Figure 6). The region still consisted of rural agricultural land as of the middle of the twentieth century. The parcel was almost completely forested by that time and the proposed access road crossed a cleared field and extended into a forested area. An access road running northeast to southwest connecting fields intersected the proposed access road. Some residences and outbuildings to the west of the proposed access road had been removed and others were added. A 2019 aerial photograph showed some development to the southwest of the project area as well as the addition of several structures west of the proposed access road (Figure 8). There was a narrow clearing running north to south located east of the project parcel and the access road that intersected the project area and was no longer in use. The parcel was completely forested and the proposed access road was partly on cleared land and partly on forested land.

## **Conclusions**

Based on the location of the project area and its consistent use as agricultural fields, there is the possibility of encountering remains of outbuildings, stonewalls, or other evidence of historical farming practices. While the project area is located in close proximity to the location of the homestead of Azel F. Rogers and John Randolph Rogers, despite their relation to one of Montville's earliest settlers these persons, and other nearby landowners, were not of local, state, or national importance. Any archaeological deposits associated with the individuals who owned the land, and their occupations, are not likely to be considered historically significant.



## CHAPTER V

### PREVIOUS INVESTIGATIONS

#### **Introduction**

This chapter presents an overview of previous archaeological research completed within the vicinity of the project area in Uncasville, Connecticut. This discussion provides the comparative data necessary for assessing the results of the current Phase IA cultural resources assessment survey, and it ensures that the potential impacts to all previously recorded cultural resources located within and adjacent to the project area are taken into consideration. Specifically, this chapter reviews previously identified archaeological sites and National/State Register of Historic Places properties situated in the project region (Figures 9 and 10). The discussions presented below are based on information currently on file at the CT-SHPO in Hartford, Connecticut. In addition, the electronic site files maintained by Heritage were examined during this investigation. Both the quantity and quality of the information contained in the original cultural resources survey reports and State of Connecticut archaeological site forms are reflected below.

#### **Previously Recorded Archaeological Sites and National/State Register of Historic Places Properties/Districts in the Vicinity of the Project Area**

A review of data currently on file at the CT-SHPO, as well as the electronic site files maintained by Heritage, resulted in the identification of five previously identified archaeological sites within 1.6 km (1 mi) of the project area and they are described below (Figure 9). No National or State Register of Historic Places properties were identified within the search area (Figure 10).

##### Site 86-13

Site 86-13, also known as the Find Spot 1 E-1 Loop Site, is located approximately 965 m (0.60 mi) to the south of Fitch Hill Road within a Spectra Energy Corporation gas pipeline right of way in Montville, Connecticut (Figure 9). The Public Archaeology Laboratory, Inc., (PAL) identified the site in 2013 and recovered an isolated argillite Small Stemmed projectile point from the subsoil at this location. This projectile point type was manufactured during the Late Archaic Period. Site 86-13 has not been assessed applying the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). It will not be impacted by the proposed North Silverbrook Solar project because of distance from the project area.

##### Site 86-14

Site 86-14, also referred to as the Find Spot 2 E-1 Loop Site, is situated approximately 1,075 m (0.67 mi) to the north of Raymond Hill Road in Montville, Connecticut. It too is located within a Spectra Energy Corporation gas pipeline right of way (Figure 9). PAL recorded this site in 2013 and recovered a single quartz Small Stemmed projectile point from the topsoil in this area. This projectile point type was manufactured during the Late Archaic Period. Jennifer Ort and Jenifer Elam of PAL recorded the site on October 24, 2013 and determined that it was not potentially eligible for listing on the National Register of Historic Places. It will not be impacted by the proposed North Silverbrook Solar project because of distance from the project area.

##### Site 86-15

Site 86-15 is the Raymond Hill Wetland Site; it is located approximately 220 m (721.8 ft) to the north of Raymond Hill Road in Montville, Connecticut (Figure 9). PAL recorded the site in 2013 and recovered 10

chert flakes from one test pit and four array test pits. Jennifer Ort and Jenifer Elam recorded the site on October 24, 2013 as a camp site. While the site could not be dated to a specific prehistoric time period, it was determined to be potentially eligible for listing on the National Register of Historic Places. Site 86-15 will not be impacted by the proposed North Silverbrook Solar project because of distance from the project area.

#### Site 86-53

Site 86-53 is the Cochegan Rock Site, recorded by Gregory F. Walwer of Archaeological Consulting Services in 1996. Walwer recorded that this was the site of reported early habitation, sheep herding, council meetings, and ceremonies for the Mohegans. The rock within the site area is believed to be the largest free standing glacial erratic in the region, and it now holds a commemorative inscription created by the Boy Scouts of America. Site 86-53 is located north of Raymond Hill Road and south of Falls Brook in Montville, Connecticut (Figure 9). It has not been assessed applying the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). In addition, it will not be impacted by the proposed North Silverbrook Solar project because of distance from the project area.

#### Find Spot 3 E-1 Loop

The site form for the Find Spot 3 E-1 Loop Site was recorded by Jennifer Ort and Jenifer Elam of the PAL on October 24, 2013. The site is located approximately 955 m (0.60 mi) to the north of Raymond Hill Road within a Spectra Energy Corporation gas pipeline right of way (Figure 9). PAL archaeologists recovered a single piece of quartz chipping debris from the subsoil within the site area. The site could not be dated to a specific prehistoric time period and it was determined to be ineligible for listing on the National Register of Historic Places. The find spot site will not be impacted by the proposed North Silverbrook Solar project because of distance from the project area.

#### **Conclusion**

A total of five prehistoric archaeological resources has been previously identified within 1.6 km (1 mi) of the project area. This indicates that additional prehistoric resources could exist in the project area, which is further supported by the natural setting of the region discussed in Chapter II as suited to Native American occupation. Though no historical resources have been previously recorded within 1.6 km (1 mi) of the project area, Uncasville is known to have been used for farmsteads from settlement to the present era. The project area itself was agricultural land for its entire history, and cultural deposits relating to this activity may exist here.



## 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 Uncasville, 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 recorded cultural resources in project region; 3) a review of historical maps, topographic quadrangles, and aerial imagery depicting the project area in order to identify potential historical 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 archaeological sensitivity of the project area, as well as to visually examine the development area for any previously unidentified cultural resources during pedestrian survey. The undertaking was comprehensive in nature, and project planning considered the distribution of previously recorded cultural resources located within the project region, as well as a visual assessment of the project area. The methods used to complete this investigation were designed to provide coverage of all portions of the project area. The fieldwork portion of this undertaking entailed pedestrian survey, photo-documentation, and mapping (see below).

#### Archival Research & Literature Review

Background research for this project included a review of a variety of historical maps depicting the proposed project area; an examination of USGS 7.5' series topographic quadrangles; a review of aerial images dating from 1934 through 2019; and a review of all archaeological sites and National/State Register of Historic Places on file with the CT-SHPO, as well as electronic cultural resources data maintained by Heritage. The intent of this review was to identify all previously recorded cultural resources situated within and immediately adjacent to the project area, and to provide a natural and cultural context for the project region. This information then was used to develop the archaeological context of the project area, and to assess its sensitivity with respect to the potential for producing intact cultural resources.

Background research materials, including historical maps, aerial imagery, and information related to previous archaeological investigations, were gathered from the CT-SHPO. Finally, electronic databases and Geographic Information System files maintained by Heritage were employed during the course of this project, and they provided valuable data related to the project region, as well as data concerning previously identified archaeological sites and National and State Register of Historic Places properties within the general vicinity of the project area.

#### 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 Uncasville, Connecticut. This included pedestrian

survey, photo-documentation, and mapping of the area containing the proposed facility. During the completion of the pedestrian survey, representatives from Heritage photo-documented all potential areas of impact using digital media.



## **CHAPTER VII**

### **RESULTS OF THE INVESTIGATION & MANAGEMENT OVERVIEW**

#### **Introduction**

This chapter presents the results of the Phase IA cultural resources assessment survey of the project area in Uncasville, Connecticut. As stated in the introductory section of this report, the goals of the investigation included completion of the following tasks: 1) a contextual overview of the region'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 cultural resources in the project region; 3) a review of readily available historical maps and aerial imagery depicting the project area in order to identify potential historical resources and/or areas of past disturbance; and 4) pedestrian survey and photo-documentation of the project items in order to determine their archaeological sensitivity.

#### **Results of Phase IA Survey**

At the time of survey, the project area was characterized by deciduous forest, with agricultural land to the southwest through which a proposed access road will extend (Figure 11 and Photos 1 through 15). The proposed access road connects to a driveway that runs east from Fitch Hill Road (Photo 1). It then runs past a historical residence and associated outbuildings into farm fields (Photos 2 through 4). The project area becomes forested along the northeastern segment of the proposed access road (Photo 5). The area that will contain the proposed solar array is characterized by deciduous forest (Photos 6 through 15). Stone walls and disused farm equipment related to the historical use of the property for agricultural cultivation were noted within the project area (Photo 9 and 15).

#### **Overall Sensitivity of the Proposed Project Area**

The field data associated with soils, slopes, aspect, distance to water, and previous disturbance collected during the pedestrian survey and presented above was used in conjunction with the analysis of historical maps, aerial images, and data regarding previously identified archaeological sites and National/State Register of Historic Places properties to stratify the project area into zones of no/low and/or moderate/high archaeological sensitivity. In general, historical period archaeological sites are relatively easy to identify on the current landscape because the features associated with them tend to be relatively permanent constructions that extend above the ground surface (i.e., stone foundations, pens, wells, privies, etc.). Archaeological sites dating from the prehistoric era, on the other hand, are less often identified during pedestrian survey because they are buried, and predicting their locations relies more on the analysis and interpretation of environmental factors that would have informed Native American site choices.

With respect to the potential for identifying prehistoric archaeological sites, the project area was divided into areas of no/low and/or moderate/high archaeological potential by analyzing the landform types, slope, aspect, soils contained within them, and their distance to water. In general, areas located less than 300 m (1,000 ft) from a freshwater source and that contain slopes of less than 8 percent and well-drained soils possess a high potential for producing prehistoric archaeological deposits. Those areas located between 300 and 600 m (1,000 and 2,000 ft) from a freshwater source and well drained soils are considered moderate probability areas. 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 and near stream/river confluences, while 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 generally deemed to retain a no/low archaeological sensitivity with respect to their potential to contain prehistoric archaeological sites.

In addition, the potential for a given area to yield evidence of historical period archaeological deposits is based not only on the above-defined landscape features but also on the presence or absence of previously identified historical period archaeological resources as identified during previous archaeological surveys, recorded on historical period maps, or captured in aerial images of the region under study. In this case, portions of the project area that are situated within 100 m (328 ft) of a previously identified historical period archaeological site or a National or State Register of Historic Places district/individually listed property also may be deemed to retain a moderate/high archaeological sensitivity. In contrast, those areas situated over 100 m (328 ft) from any of the above-referenced properties would be considered to retain a no/low historical period archaeological sensitivity.

### **Project Summary**

The combined review of historical maps, aerial images, land deeds, and pedestrian survey indicates that the entirety of the project area contains low slopes and well drained soils within open fields and forest situated in close proximity to a freshwater source. Portions characterized by open field showed signs of past plowing; however, intact B-Horizon deposits may still be in place. The low slopes of the project area and the fact that Falls Brook extends past its southern border, suggests it would have been a desirable area for Native American use. Historical resources related to the project area's agricultural use may exist here as well, supported by the existence of a historical farmstead, stone walls, and farm equipment. Based on the data collected during this investigation, it is the professional opinion of Heritage that the 9.87 acre project area retains a moderate/high sensitivity for yielding archaeological deposits.



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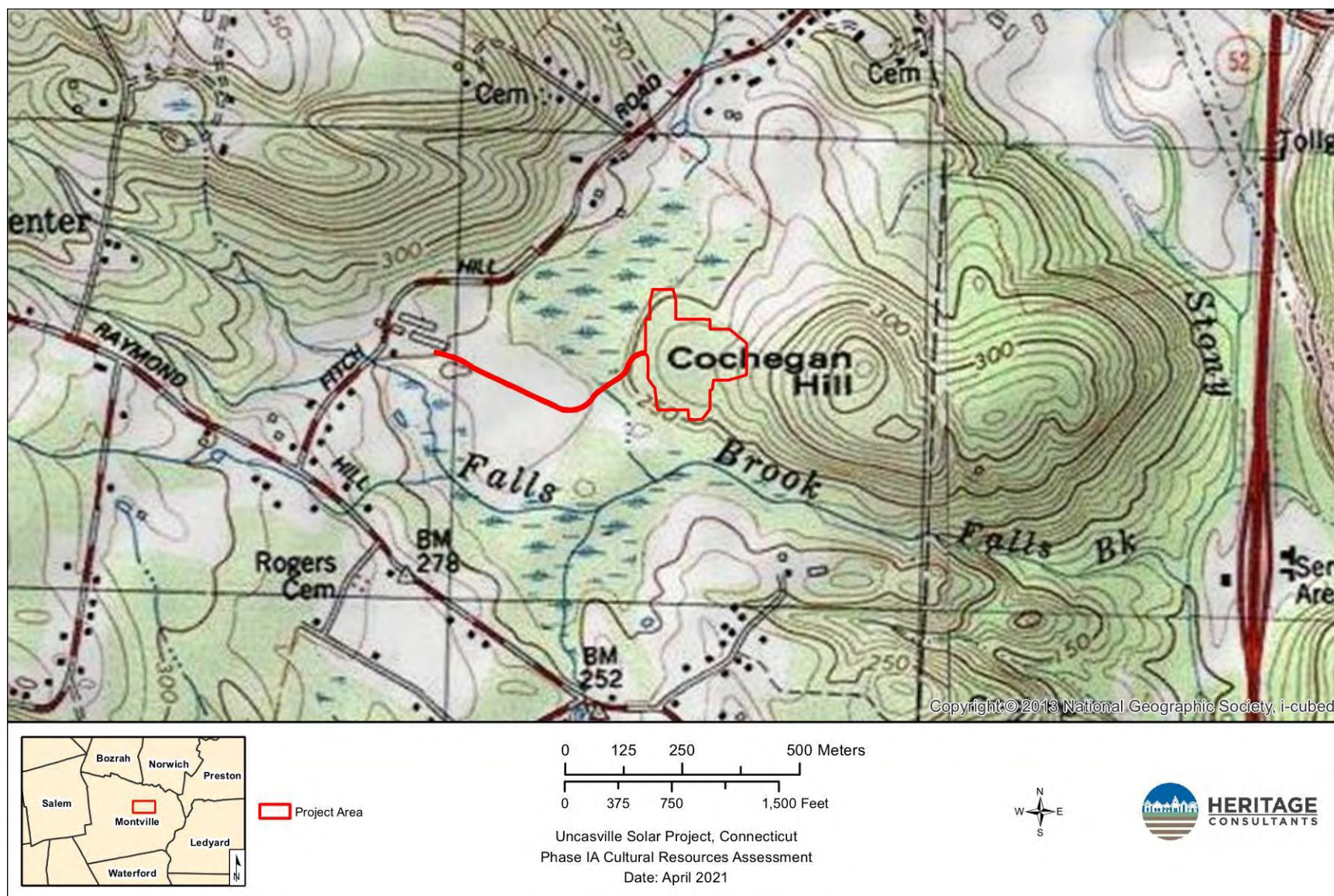


Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the project area in Uncasville, Connecticut.



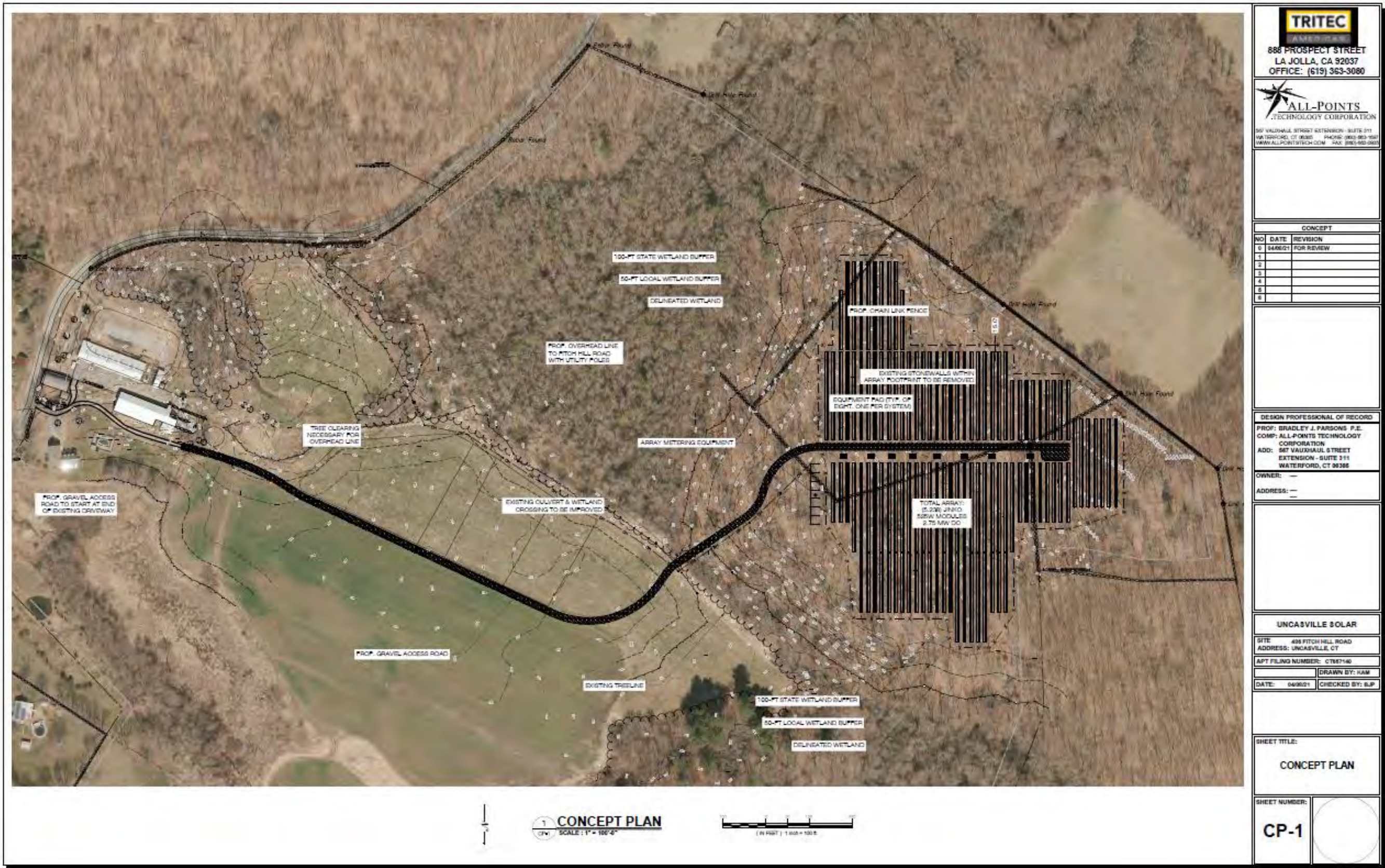
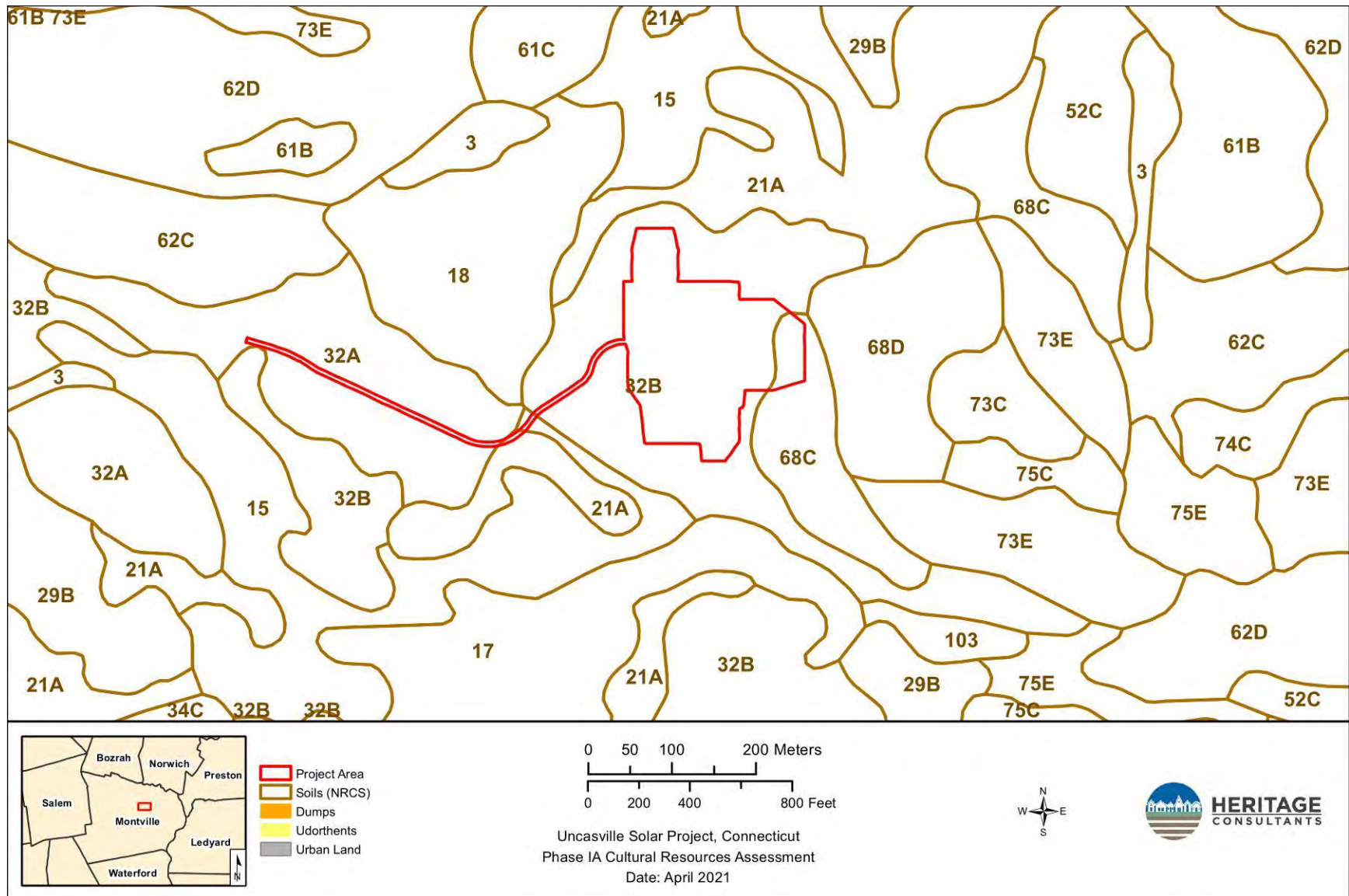


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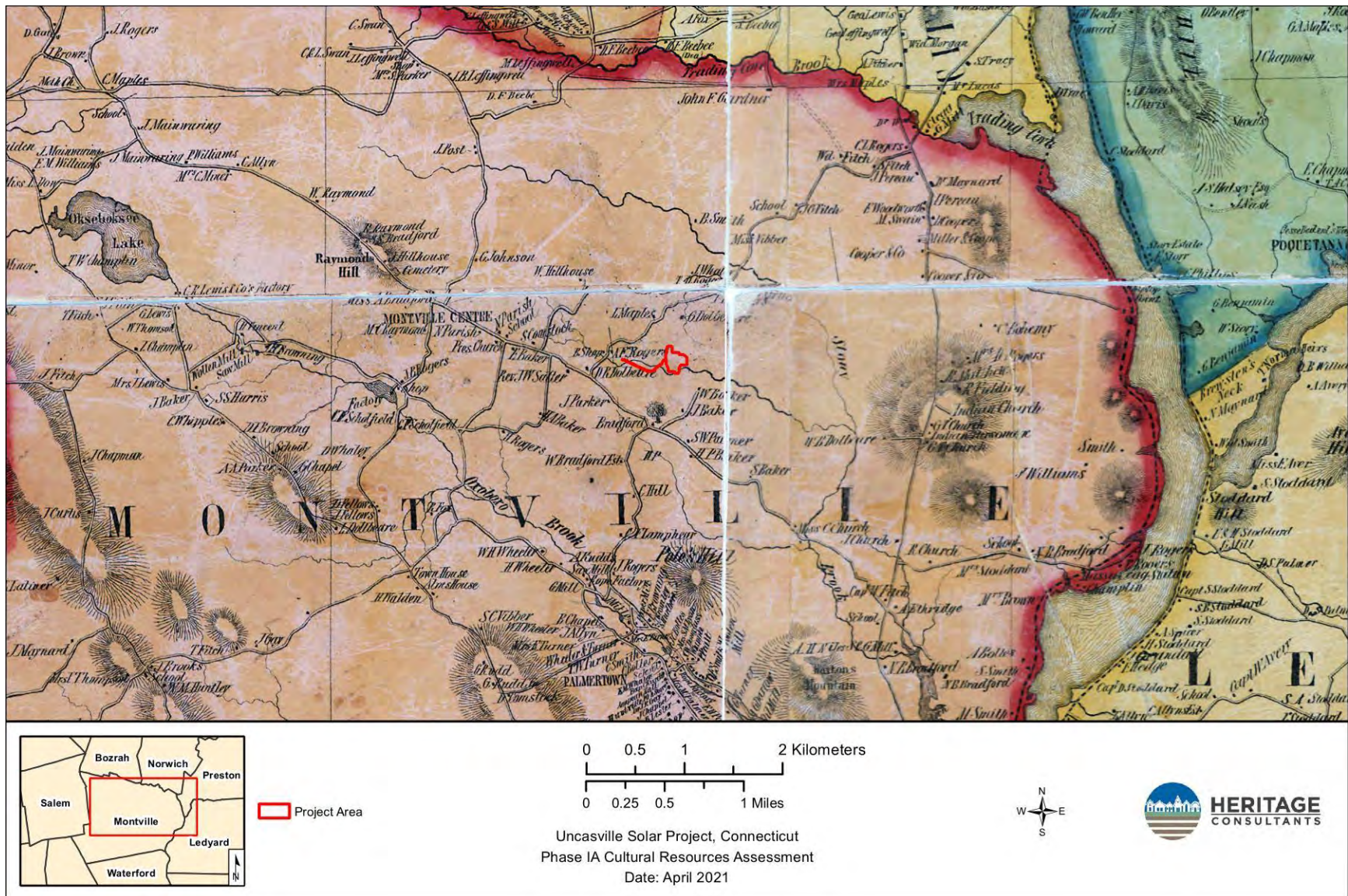


Figure 4. Excerpt from an 1854 historical map showing the location of the project area in Uncasville, Connecticut.



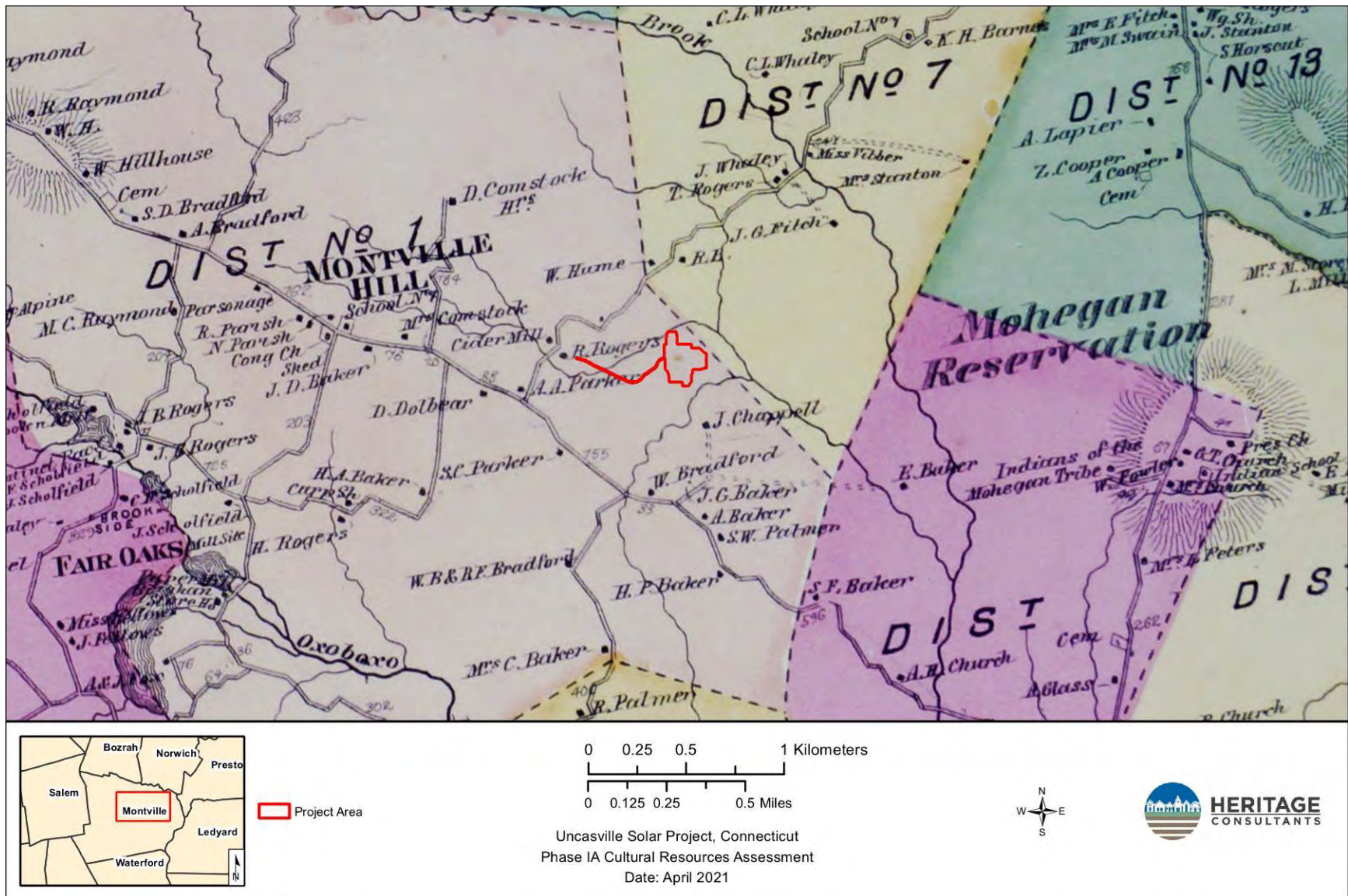


Figure 5. Excerpt from an 1868 historical map showing the location of the project area in Uncasville, Connecticut.



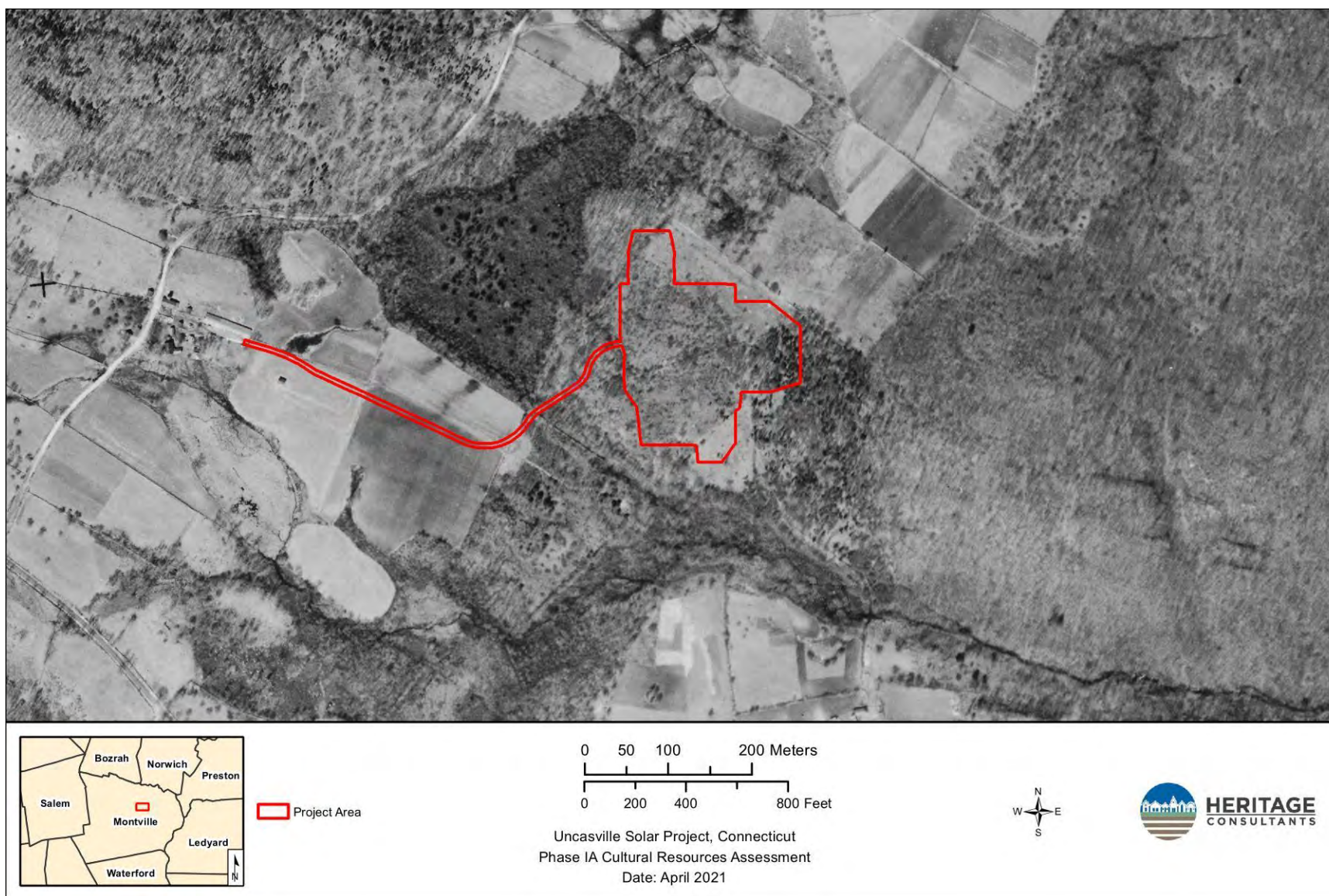


Figure 6. Excerpt from a 1934 aerial photograph showing the location of the project area in Uncasville, Connecticut.

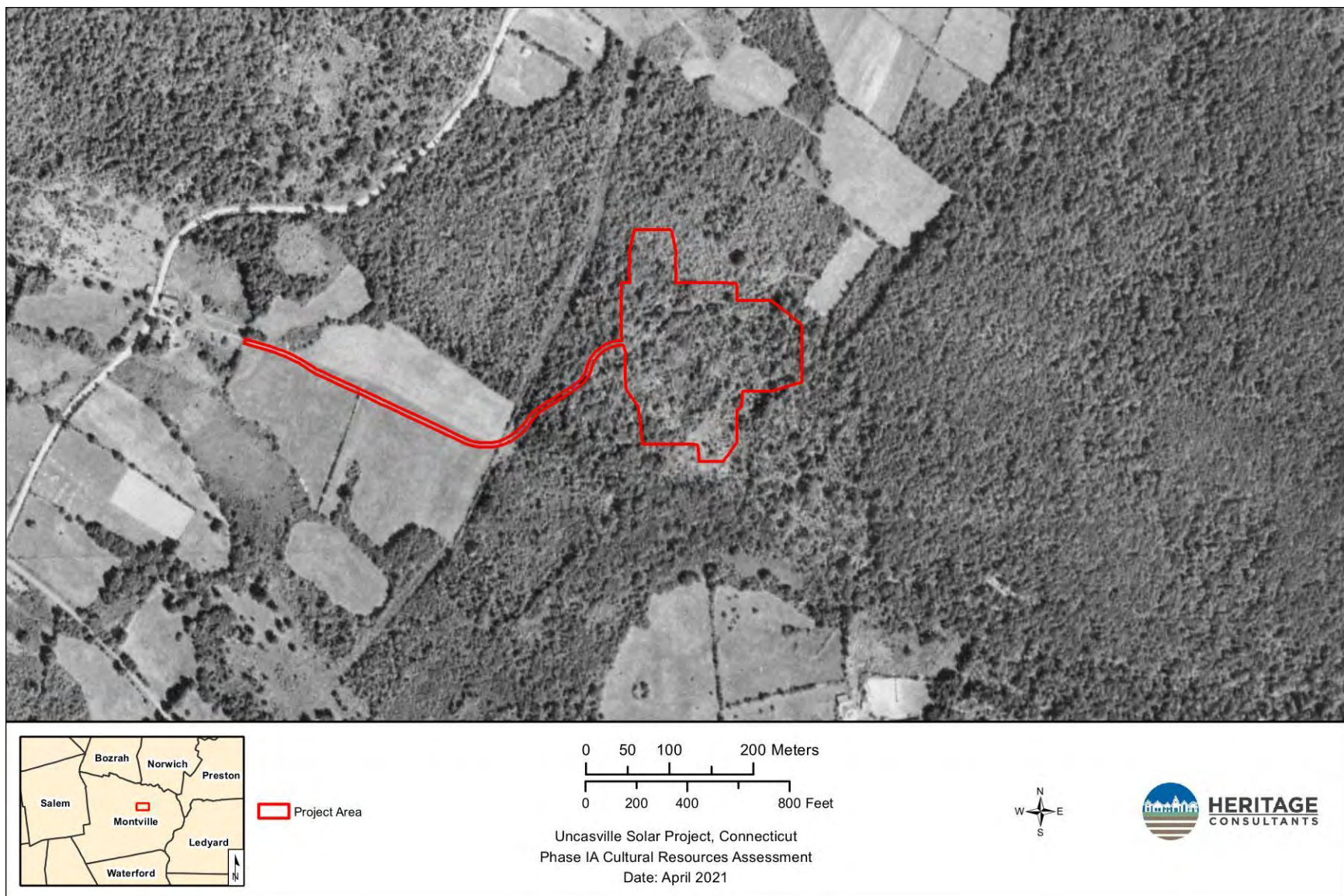


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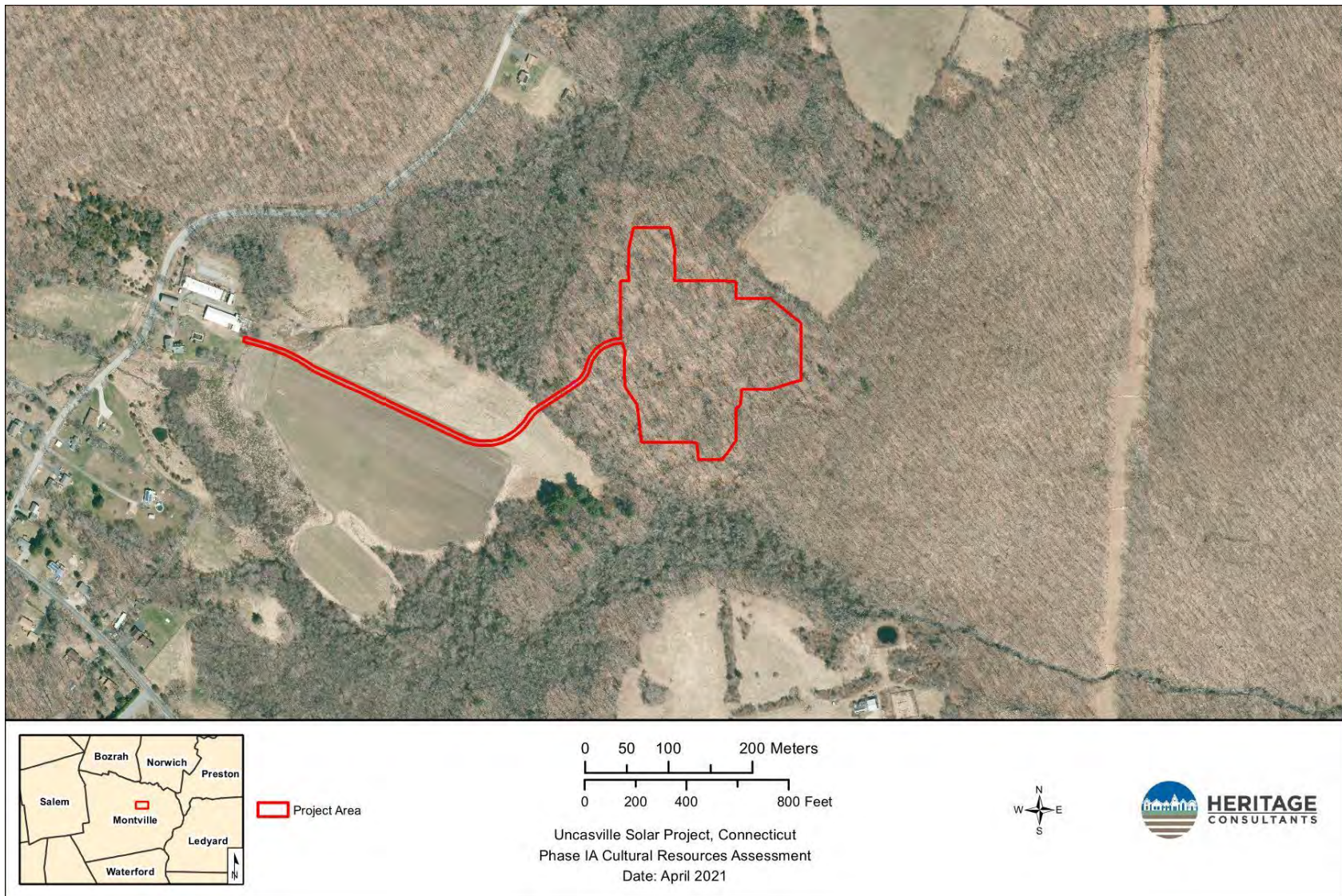


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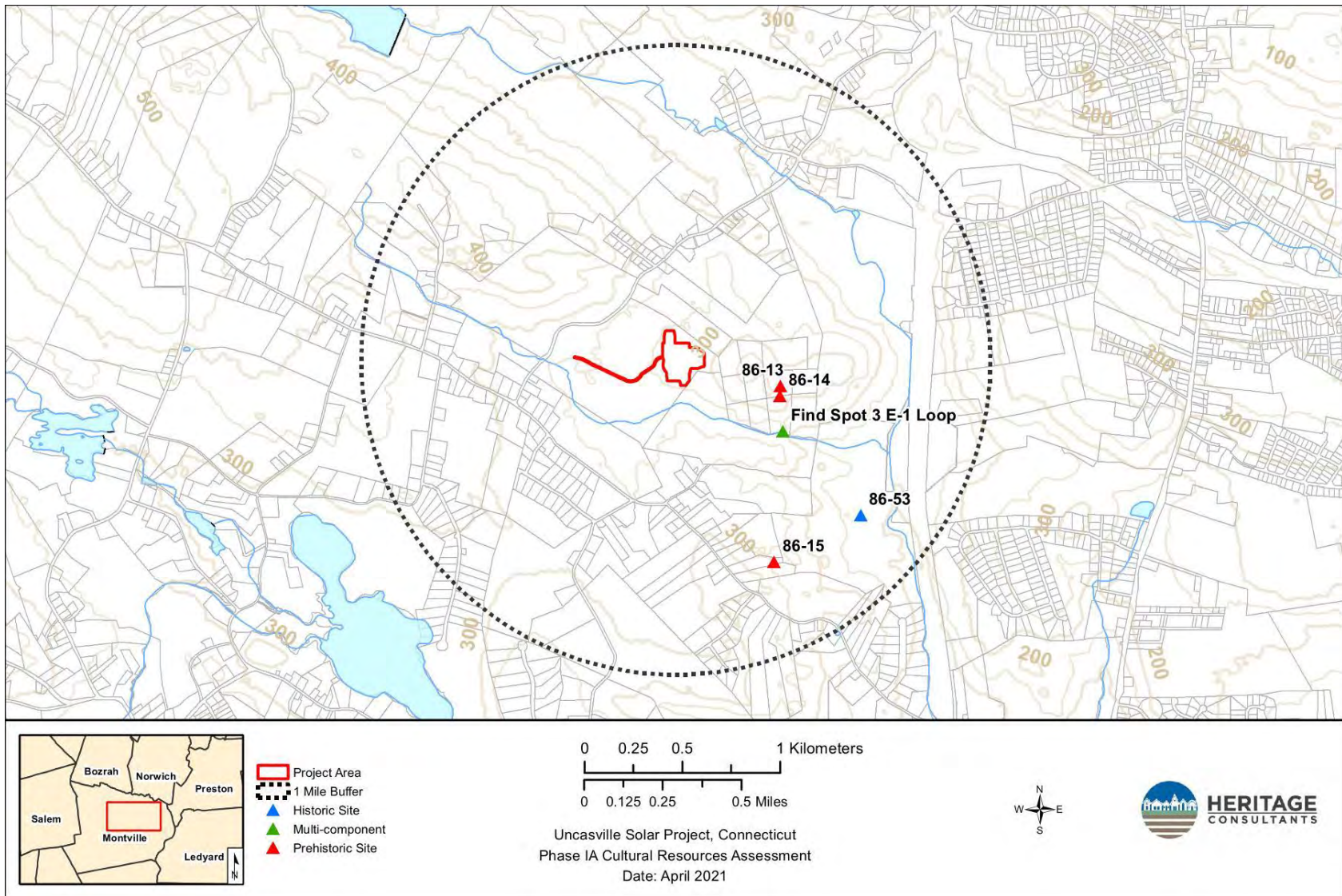


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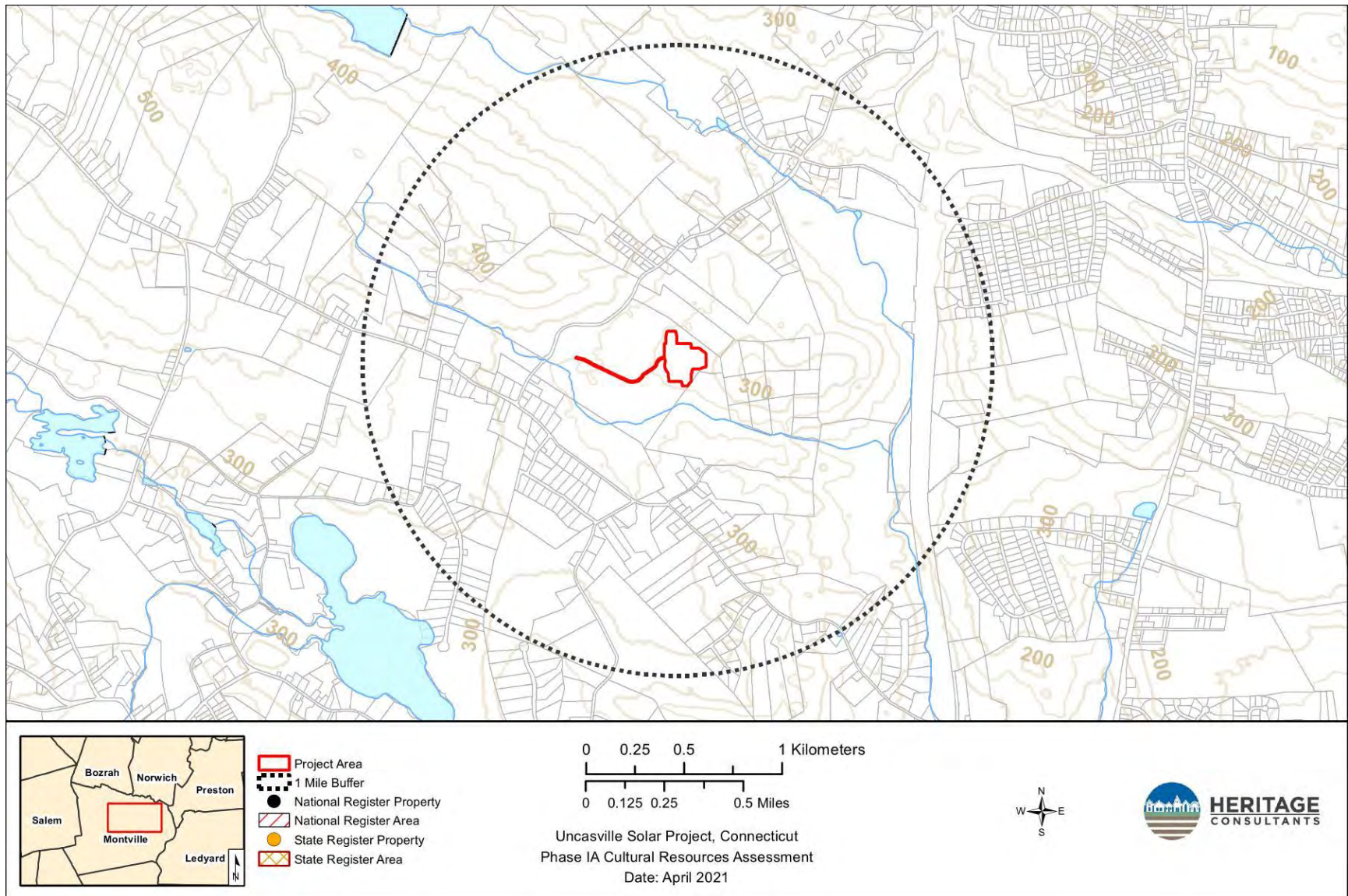


Figure 10. Digital map depicting the locations of previously identified National/State Register of Historic Places properties in the vicinity of the project area in Uncasville, Connecticut.



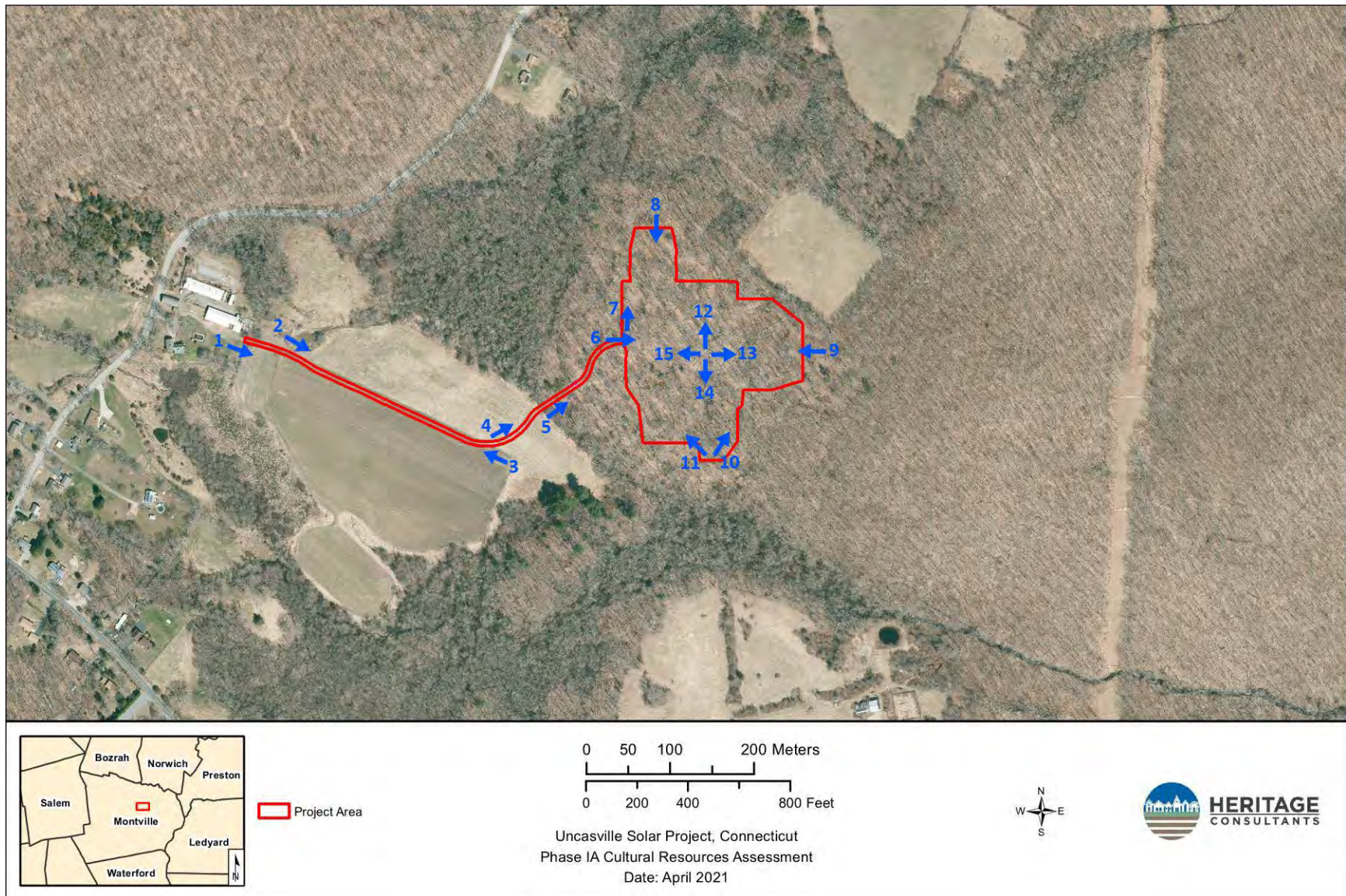


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Photo 3. Overview of the project area facing west from the center of the proposed access road.



Photo 4. Overview of the project area facing northeast from the center of the proposed access road.





Photo 5. Overview of the project area facing northeast from the eastern section of the proposed access road.



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Photo 8. Overview of the project area facing south from the northern boundary.





Photo 9. Overview of the project area facing west from the eastern boundary.



Photo 10. Overview of the project area facing northeast from the southern boundary.





Photo 11. Overview of the project area facing northwest from the southern boundary.



Photo 12. Overview of the project area facing north from the center.





Photo 13. Overview of the project area facing east from the center.



Photo 14. Overview of the project area facing south from the center.





Photo 15. Overview of the project area facing west from the center.



AUGUST 2021

PHASE IB CULTURAL RESOURCES RECONNAISSANCE SURVEY OF  
THE PROPOSED NORTH SILVERBROOK SOLAR PROJECT AT  
486 FITCH HILL ROAD IN UNCASVILLE, CONNECTICUT

PREPARED FOR:



567 VAUXHALL STREET EXTENSION – SUITE 311  
WATERFORD, CT 06385

PREPARED BY:



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## ABSTRACT

This report presents the results of a Phase IB cultural resources reconnaissance survey for the proposed North Silverbrook Solar Project, which will be constructed at 486 Fitch Hill Road in Uncasville, Connecticut. The project area encompasses approximately 9.8 acres located to the east of Fitch Hill Road and to the north of Falls Brook. The undertaking will include installation of a solar array surrounded by a chain link fence. A proposed gravel access road will extend through agricultural land to the east, then northeast into a forested area where the proposed solar facility will be constructed. A Phase IA cultural resources assessment survey for this project was completed in May of 2021. The pedestrian survey indicated that the project area is characterized by gently sloping topography and well drained soils, and Falls Brook runs past its southern border.

A Phase IB survey was completed in July 2021. A total of 208 of 209 (99 percent) planned shovel tests and 10 of 10 (100 percent) delineation shovel tests were excavated throughout the project area, resulting in the identification of two archaeological loci. Locus 1 yielded two quartzite flakes from the plow zone and a quartz Archaic Period Brewerton Eared Triangle point from the subsoil. Locus 2 produced a single argillite tertiary flake in the plow zone. No cultural features or soil anomalies were associated with the two loci. Both loci were assessed as not significant applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). In addition, five shovel tests also yielded a scatter of both modern and historical artifacts within the disturbed Ap-Horizon (plow zone) and a layer of fill. None of these items were found in association with buried cultural features or above ground architectural remains. Thus, this low density assemblage was identified as unassociated field scatter. No impacts to significant archaeological resources are expected by the construction of the solar facility, and no additional archaeological examination of the project area is recommended prior to construction.

Finally, a single stone cluster and three dry laid stone walls were identified within the project area. The stone cluster is located in the southern portion of the project area. One stone wall was identified in the northern portion of the project area running southwest to northeast. A second stone wall was identified to the south of the proposed access road beginning at the western boundary of the project area and running east. A third stone wall extends perpendicular to it in the southeastern portion of the project area and runs from north to south. The stone cluster and stone walls cannot be attributed to a specific type, function, or time period; no additional recordation of them is recommended.



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# CHAPTER I

## INTRODUCTION

This report presents the results of a Phase IB cultural resources reconnaissance survey of a proposed solar facility (the Facility) in Uncasville, Connecticut (Figure 1). All-Points Technology Corporation (All-Points) requested that Heritage Consultants, LLC (Heritage) complete the reconnaissance survey as part of the planning process for the Facility, which will encompass approximately 9.8 acres of land situated to the east of Fitch Hill Road and to the north of Falls Brook. The project area is situated within what the Town of Montville refers to as Parcel 47-51, which is accessed from the east side of Fitch Hill Road. The proposed access road associated with the Facility will pass a farmstead to the east through agricultural land, then northeast into a forested area where the proposed solar facility will be constructed. The proposed facility is surrounded on all sides by deciduous forest. The region in general is a sparsely developed residential area. Heritage completed the fieldwork for this investigation in July of 2021. All work associated with this project was performed in accordance with the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987) promulgated by the Connecticut State Historic Preservation Office (CT-SHPO).

### **Project Description and Methods**

As mentioned above, the proposed solar project will be located to the east of Fitch Hill Road and to the north of Falls Brook within Parcel 47-51 in Uncasville, Montville, Connecticut. The project area is currently characterized by a mixture of deciduous forest and agricultural fields to the southwest through which the proposed access road will extend. Elevations throughout the project area range from approximately 73.2 to 88.4 meters (240 to 290 feet) NGVD. The proposed Facility will contain approximately 5,300 solar panel modules in rows spaced 4.6 meters (15 feet) apart throughout the project area, all of which will be surrounded by a chain link fence. Metering equipment will be installed off the western boundary of the solar array and to the south of the proposed access road. This access road will extend eastward toward Fitch Hill Road and it will be a gravel thoroughfare. An overhead electrical line with utility poles will connect the metering equipment to the existing electrical grid along Fitch Hill Road. Finally, trees will be cleared for the proposed access road, overhead interconnect, and solar array.

The Phase IB cultural resources reconnaissance survey was completed utilizing pedestrian survey, systematic shovel testing, GPS recordation, and photo-documentation. During the survey, Heritage conducted the systematic excavation of shovel tests along 15 survey transects across the proposed project area and access road. The shovel tests along the proposed access road and Transect 1 extended from west to east. The shovel tests were situated at 15 m (49.2 ft) intervals along the access road. Shovel tests along the remaining 14 parallel survey transects were spaced 15 m (49.2 ft) apart running north to south. Each shovel test measured 50 x 50 cm (19.7 x 19.7 in) in size, and each was excavated to the glacially derived C-Horizon or until immovable objects (e.g., tree roots, boulders, etc.) were encountered. Each shovel test was excavated in 10 cm (3.9 in) arbitrary levels within natural strata, and the fill from each level was screened separately. All shovel test fill was screened through 0.635 cm (0.25 in) hardware cloth and examined visually for cultural material. Soil characteristics were recorded using Munsell Soil Color Charts and standard soils nomenclature. Each shovel test was backfilled after being recorded.

### **Project Results**

The review of historical maps and aerial images of the project area, files maintained by the Connecticut State Historic Preservation Office (CT-SHPO), and the previously completed Phase IA pedestrian survey,

revealed that five previously identified archaeological sites have been located within 1.6 kilometer (1 mile) of the project area, suggesting that the landform on which the Facility will be located retained a moderate to high archaeological sensitivity. No National or State Register of Historic Places properties were identified in the area

A Phase IB survey of the Facility was completed in July 2021. A total of 208 of 209 (99 percent) planned shovel tests and 10 of 10 (100 percent) delineation shovel tests were excavated throughout the project area, and two cultural resources loci were identified. Locus 1 yielded two quartzite flakes from the plow zone and a quartz Archaic Period Brewerton Eared Triangle point in the subsoil. Locus 2 yielded a single argillite tertiary flake in the plow zone. No cultural features or soil anomalies were associated with the two loci. Loci 1 and 2, which lacked substantial numbers of artifacts and research potential, were assessed as not significant applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). No additional archaeological examination of Loci 1 and 2 is recommended prior to construction of the Facility.

In addition, of the 208 excavated shovel tests, five yielded a scatter of both modern and historical artifacts within the disturbed Ap-Horizon (plow zone) and a localized layer of fill. None of these items were found in association with buried cultural features or above ground architectural remains, and no historical resources were identified in the Facility area. The low density historical/modern period assemblage was identified as unassociated field scatter. No impacts to significant archaeological resources are expected by the construction of the solar facility, and no additional archaeological examination of the project area is recommended prior to construction.

Finally, a single stone cluster and three dry laid stone wall segments were identified in the Facility area. The stone cluster is located in the southern portion of the project area. One stone wall was identified in the northern portion of the Facility area; it extended from southwest to northeast. A second stone wall was identified to the south of the proposed access road and beginning at the western boundary of the project area and extending to the east. The third stone wall was identified in the southeastern portion of the project area; it extended from north to south. The identified stone cluster and walls cannot be attributed to a specific type, function, or time period; no additional recordation of this surficial features is recommended.

### **Project Personnel**

Heritage personnel who contributed to the project include David R. George, M.A., R.P.A., (Principal Investigator); Renée Petruzelli, M.A., R.P.A. (Project Archaeologist); Samuel Spitzchuch, B.A., (Field Director); Stephen Anderson, B.A., (Geographic Information Specialist), and Barbara Sternal, M.A., (Historian).



## CHAPTER II

# NATURAL SETTING

### Introduction

This chapter provides a brief overview of the natural setting of the region containing of the region containing the Facility in Uncasville, Connecticut. Previous archaeological research has documented that specific environmental factors can be associated with both prehistoric and historical period site selection. These include general ecological conditions, as well as types of fresh water sources present, degree of slopes, and soils situated within a given project area. The remainder of this chapter 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 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: Southeast 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.

### Southeast Hills Ecoregion

The Southeast Hills ecoregion consists of “coastal uplands, lying within 25 miles of Long Island Sound, characterized by low, rolling to locally rugged hills of moderate elevation, broad areas of upland, and local areas of steep and rugged topography” (Dowhan and Craig 1976). Elevations in the Southeast Hills ecoregion generally range from 75.7 to 227.2 m (250 to 750 ft) above sea level (Dowhan and Craig 1976). The bedrock of the region is composed of schists and gneisses deposited during the Paleozoic. Soils in the region have developed on top of glacial till in upland locales, and on top of stratified deposits of sand, gravel, and silt in the local valleys and upland areas (Dowhan and Craig 1976). Freshwater sources located in the region containing the project area include Williams Pond, Trent Pond, Salmon River, Nipsic Brook, and Wildcat Brook, as well as other unnamed streams, ponds and wetland areas.

### Hydrology in the Vicinity of the Facility

The Facility is situated within a region that contains several sources of freshwater, including Falls Brook just to the south of the project area boundary, Stony Brook, Wheeler Pond, Oxoboxo Lake, Rockland Pond, Oxoboxo Brook, Picker Pond, and the Thames River, as well as unnamed streams, ponds, and wetlands. These freshwater sources may have served as resource extraction areas for Native American and historical

populations. 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.

### **Soils Comprising the Facility Area**

Soil formation is the direct result of the interaction of many variables, including climate, vegetation, parent material, time, and organisms present (Gerrard 1981). Once archaeological deposits are buried within the soil, they are subject to various diagenic and taphonomic 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. In contrast, acidic soils enhance the preservation of charred plant remains.

A review of the soils within the Facility area is presented below. The study area is characterized by the presence of two major soil types: the Haven and Enfield series (32) and the Narragansett series (68) (Figure 3). Generally speaking, the soils identified within the project area are very deep, well drained loams and are the types of soils that are typically correlated with prehistoric and historical use and occupation. Descriptive profiles for each soil type are presented below; they were gathered from the National Resources Conservation Service.

#### Haven and Enfield Series (Soil Code 32)

The Haven series consists of very deep, well drained soils formed in loamy over sandy and gravelly outwash. They are nearly level through moderately sloping soils on outwash plains, valley trains, terraces, and water-sorted moraine deposits. Saturated hydraulic conductivity is moderately high or high in the mineral solum and very high in the substratum. Slope ranges from 0 through 15 percent. A typical profile associated with Haven soils is as follows: **Oi**--0 to 2 inches (0 to 5 centimeters); slightly decomposed plant material derived from loose pine needles, leaves and twigs; **Oa**--2 to 3 inches (5 to 8 centimeters); black (5YR 2/1) highly decomposed plant material; **A**--3 to 6 inches (8 to 15 centimeters); dark grayish brown (10YR 4/2) loam; weak fine and medium granular structure; friable; many fine and coarse roots; very strongly acid; abrupt smooth boundary; **Bw1**--6 to 13 inches (15 to 33 centimeters); brown (7.5YR 4/4) loam; weak fine and medium subangular blocky structure; friable; common fine roots; many fine pores; very strongly acid; clear wavy boundary; **Bw2**--13 to 22 inches (33 to 56 centimeters); strong brown (7.5YR 5/6) loam; weak fine and medium subangular blocky structure; friable; common fine roots; many fine pores; 5 percent fine gravel; very strongly acid; gradual wavy boundary; **BC**--22 to 31 inches (56 to 79 centimeters); yellowish brown (10YR 5/6) gravelly loam; weak medium and fine subangular blocky structure; friable; few fine roots; common fine pores; 20 percent fine gravel; very strongly acid; clear wavy boundary; and **2C**--31 to 65 inches (79 to 165 centimeters); yellowish brown (10YR 5/4) to brownish yellow (10YR 6/6) stratified gravelly sand; single grained; loose; 30 percent fine gravel; very strongly acid.

The Enfield series consists of very deep, well drained loamy soils formed in a silty mantle overlying glacial outwash. They are nearly level to sloping soils on outwash plains and terraces. Slope ranges from 0 to 15 percent. A typical profile associated with Enfield soils is as follows: **Ap**--0 to 7 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many very fine and fine roots; 5 percent fine gravel; strongly acid; abrupt smooth boundary; **Bw1**--7 to 16 inches; strong brown (7.5YR 5/6) silt loam; weak medium subangular blocky structure; friable; common very fine and many fine roots; 5 percent fine gravel; strongly acid; clear wavy boundary; **Bw2**--16 to 25 inches; light olive brown (2.5Y 5/4)



silt loam; weak medium subangular blocky structure; friable, few very fine and common fine roots; 5 percent fine gravel; strongly acid; abrupt wavy boundary; and **2C**--25 to 60 inches; brown (10YR 5/3) very gravelly sand; single grain; loose; stratified; 45 percent gravel and 5 percent cobbles; strongly acid.

#### Narragansett Series (Soil Code 68)

The Narragansett series consists of very deep, well drained loamy soils formed in a mantle of medium-textured deposits overlying till. They are nearly level to moderately steep soils on till plains, low ridges and hills. Slope ranges from 0 to 25 percent. A typical profile associated with Narragansett soils is as follows: **Ap**--0 to 6 inches; dark brown (10YR 3/3) silt loam; weak medium granular structure; very friable; common medium roots; very strongly acid; clear wavy boundary; **Bw1**--6 to 15 inches; dark yellowish brown (10YR 4/6) silt loam; weak medium subangular blocky structure; very friable; common medium roots; very strongly acid; gradual wavy boundary; **Bw2**--15 to 24 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; very friable; common medium roots; strongly acid; clear wavy boundary; **Bw3**--24 to 28 inches; yellowish brown (10YR 5/6) gravelly silt loam; weak medium subangular blocky structure; very friable; few fine roots; 15 percent gravel; strongly acid; clear wavy boundary; and **2C**--28 to 60 inches; light olive brown (2.5Y 5/4) very gravelly loamy coarse sand; single grain; loose; 45 percent gravel and cobbles; strongly acid.

#### **Summary**

The natural setting of the area containing the proposed Facility is common throughout the Southeast Hills ecoregion. The major river within this ecoregion is the Thames River, which has numerous smaller tributaries. Moderate slopes dominate the region, and the soils are loams. In general, the project region was well suited to Native American occupation throughout the prehistoric era. This portion of Uncasville was also used after Colonial settlement for agricultural land, as evidenced by the presence of agricultural fields throughout the region; thus, archaeological deposits dating from the prehistoric and historical era may be expected near or within the proposed Facility.

## 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. Sites chosen for excavation were highly visible and they were in such areas as the coastal zone, e.g., shell middens, and Connecticut River Valley. 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 project area.

#### **Paleo-Indian Period (12,000 to 10,000 Before Present [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 graters, 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, graters, 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 of 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 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, 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 points 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<sup>2</sup> (5,383 ft<sup>2</sup>). 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).

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

The Terminal Archaic Period, 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 of Orient Fishtail projectile points (McBride 1984:119; Ritchie 1971).

In addition, it was during the late Terminal Archaic Period 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 of 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 been 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, include 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).

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, punctuation, 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 much 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

### HISTORICAL OVERVIEW

#### Introduction

The proposed Facility is located in the village of Uncasville in the town of Montville in New London County, Connecticut. Originally part of New London, the area now called Montville was settled in 1646 as Pequot and was named for the Native American tribe. Following increased European settlement, the region became known in 1658 as the North Parish of New London and included a portion of today's town of Salem. Montville was officially incorporated as a town in 1786. The project area is located in eastern Montville, west of modern-day Interstate 395 and the Thames River. The remainder of this chapter provides an overview history of Montville and historical data specific to the Facility area.

#### Native American History

Prior to European contact, eastern Connecticut was inhabited by the Mohegan and Pequot tribes. The Mohegans were concentrated between Norwich and New London on the western side of the Thames River. Various Mohegan settlements were in that territory, including Pomechaug and Fort Hill. Other settlements called Massapeag and Shantok were both located on the western bank of the Thames River, with Shantok being the largest. The Pequots were primarily located in the Mystic River Valley, with their territory spanning along the coast from the Thames River in the west to the Pawcatuck River in the east and as far north as present-day Griswold. While similar in their shared variation of the Algonquian language, the Pequots and Mohegans possessed distinct cultural practices prior to European contact. When the Europeans arrived, the Pequots began to dominate trade with them and expanded their territory, coming into conflict with the various other native groups that lived in the area at the time. The Mohegan sachem Uncas had married a member of the Pequot tribe in order to form an alliance. However, he, and other Native Americans subject to the Pequots' rule, sought a way to change the power balance. Uncas made numerous attempts to overthrow the Pequot sachem Sassacus, who was also his wife's brother. Sassacus could not afford to lose the support of the Mohegans; therefore, he exiled Uncas instead of executing him (Oberge 2006). In 1638, when the Pequot tribe and the English colonists eventually went to war, Uncas sided with the colonists in the removal of the Pequot tribe. This strategy was not new as he had worked alongside John Mason and the Narragansett tribes during the attempted extermination of the Pequot in 1637 (Baker 1896). Following the Pequot War, Uncas settled in the area that is now Montville, which was no longer under Pequot control. Uncas' authority extended north along the Quinebaug and Yantic Rivers, and groups in those areas paid tribute to the Mohegans. The eastern area of Montville was dedicated as a Reservation until 1790 when the Connecticut legislature divided the land among colonial families (Baker 1896).

#### History of the Town of Montville

The colonization of New London, the parent town of Montville, began in the 1640s. Several large tracts of land in the former Pequot territory were granted to prominent colonial individuals, with an initial focus on the Thames River harbor. Originally named Pequot, in 1658, the Connecticut legislature changed the growing town's name to New London. Uncas similarly made grants of land from the territory he held in the future Montville in the 1640s, but the first known colonists to be granted land there were Richard Houghton and James Rogers in 1658 (Caulkins 1895). Disputes over ownership of the land slowed colonization of Montville, so that it only had enough colonial residents to form the North Parish of the Congregational Church of New London as of 1720. The territorial dispute was then settled in 1721, and the separate town of Montville was created in 1786, as part of a wave of post-Revolutionary War era town



incorporations across the state (Crofut 1937). New London's large area and thriving port had a substantial population of over 5,000 through 1782, while Montville remained much smaller. In 1800, Montville had a population of 2,233 residents, which declined slightly to 2,187 residents in 1810, and then dramatically to 1,951 as of the 1820 census, largely due to the separation of the town of Salem in 1819 (Secretary of the State Denise W. Merrill 2021a).

Montville witnessed various nineteenth century economic trends: stagnation and decline between 1830 and 1850, modest growth from 1850 to 1880, and another net decline from 1880 to 1900. The population fluctuated accordingly, starting at 2,233 residents, dropping to 1,848 in 1850, and rising again to 2,664 in 1880 (Secretary of the State Denise W. Merrill 2021b). The 1850 federal census of industry reported 14 firms that made at least \$500 of product per year in Montville, half of which were textile mills of various types. In total, these firms employed only 139 men and 94 women in an average month, demonstrating the modest employment opportunities in the manufacturing sector of Montville (United States Census Bureau 1850). By the end of the nineteenth century, manufacturing and industrial sectors in Montville saw an increase in activity. A tributary of the Thames River known as Saw-mill Brook (now called Oxoboxo Brook) hosted a dye works, numerous paper mills, and several textile mills. The smaller streams in the area continued to support grist mills and sawmills (Baker 1896).

As of the early twentieth century, Montville's economy was still based on a combination of farming and manufacturing. In 1932, the town's industries were listed as "agriculture, and the manufacture of paper, paper boxes, cotton goods, etc." (Connecticut 1932:288). Montville's population rose significantly after 1900, almost doubling by 1950 to 4,766 residents (Secretary of the State Denise W. Merrill 2021c). Various factors contributed to this population growth. Continued industrial activity attracted new residents and many European immigrants arrived to work in the factories or establish farms. Improved transportation, such as the establishment of streetcars in the villages of Uncasville and Chesterfield, and the prevalence of automobiles also facilitated an influx of people. In addition, a number of residents of large cities built summer homes in town (Montville 2010). Montville's population continued to increase during the 1960s, approaching 16,000 residents by 1970 and perpetuating a more gradual upward trend through the rest of the century (Secretary of the State Denise W. Merrill 2021d). Late-twentieth century growth was the result of suburbanization, as people moved out of Norwich and New London, aided by the 1958 opening of Interstate 395 (Oglesby 2013). In 1994, a state prison opened in Montville, which added 1,800 imprisoned men to the town's population (Montville 2010). In 1995, the Mohegan tribe gained land in Montville, after receiving federal recognition the previous year. The tribe opened a casino on its land in 1996 and it remains one of only two casinos in the state (the other being Foxwoods owned by the Mashantucket Pequot tribe) (Bixby 05 October 1996:A1; Lightman 30 September 1995:A1). As of 2018, the town's largest employers were the town itself, the State of Connecticut Corrections Department (correlated to the prison), a manufacturer of gauges and meters (one of eight manufacturing firms in town), and two retail firms (out of 61). Overall, the town's employment was dominated by the government sector, followed by the accommodation and foods services sector. The population by 2020 was 19,546 residents (AdvanceCT and CTData Collaborative 2020). Despite its population growth, Montville retains areas of rural landscape along with its suburban sections.

### **History of the Facility Area**

The Facility is located in the village of Uncasville (named after the Mohegan sachem Uncas) in the southeastern corner of Montville. Uncasville was the site of various mills in the nineteenth century mostly located on the Oxoboxo River, which extends through the village. In the mid-twentieth century, land in Uncasville was sold to the United Nuclear Corporation, which had a manufacturing facility on the site that produced nuclear fuel components until the 1990s. This same land, which consisted of 244 acres, was

ceded to the Mohegan tribe to settle their land claims and comprises most of their reservation (Montville 2010).

According to an 1854 map of central Montville, the Facility is located in what was a rural area along a branch of the Stony Brook and to the east of a roadway (Figure 3). There were several properties located nearby, including a homestead to the north of the parcel owned by G. Dolbeare and another to the southeast owned by W. Baker. The closest homestead was to the west of the Facility; it belonged to A. F. Rogers, otherwise known as Asahel F. Rogers, a descendent of one of the earliest settlers in Montville, James Rogers (Rogers 1902). In 1850, Asahel F. Rogers was a 57-year-old farmer with a sizable estate worth \$10,000 (U.S. Census Bureau 1850). By 1860, Rogers was going by Azel and was still a farmer, but his land holdings had decreased slightly and were valued at \$9,000. Rogers' 27-year-old son John R. was a member of his household at the time and was working as a farmhand, presumably on the family farm (U.S. Census Bureau 1860).

An 1868 map of the area indicated that the A. F. Rogers estate was now owned by R. Rogers (Figure 4). This was likely Azel's son John R. who went by J. Randolph Rogers. Azel F. Rogers did not pass away until 1869, suggesting that perhaps he relinquished control and possibly ownership of the farm due to an illness (Find A Grave 2021a). As of the 1870 census, John R. Rogers was a 37-year-old farmer whose real estate was valued at \$5,500, indicating an almost 50 percent decrease from his father's original land holdings in 1850 (U.S. Census Bureau 1870). By 1880, Rogers was 47 and working as a mate on a merchant brig. There were no real estate holdings listed on the census (U.S. Census Bureau 1880). Rogers passed away in 1887 and it is unclear when the property moved out of his ownership and why he had to take on work as a sailor (Find A Grave 2021b). Other nearby properties changed hands as well. In 1868, the homestead that had belonged to G. Dolbeare was simply labeled R.E. and the property under W. Baker's name was owned by J. Chappell.

In the early twentieth century, the region was still primarily rural agricultural land. A 1934 aerial photograph showed the Facility location as situated in agricultural fields southeast of Fitch Hill Road (Figure 5). At that time, the project parcel consisted of cleared and forested land with several standing structures west of the where the proposed access road will be built. The area also contained Falls Brook, which extended to the Facility. By 1951, very little had changed in the project region (Figure 6). The area still consisted of rural agricultural land. The project parcel was almost completely forested at that time and the proposed access road crosses what was a cleared field and traveled into a forested area. Another former road that extended from northeast to southwest connected fields that interested where the proposed access road will be built. The 1951 aerial also shows that some structures to the west of the proposed access road had been removed and others were added during the middle of the twentieth century. A 2019 aerial photograph showed some development to the southwest of the Facility, as well as the addition of several structures west of the proposed access road (Figure 7). As of 2019, the parcel was completely forested and the proposed access road was partly on cleared land and partly on forested land.

## **Conclusions**

Based on the location of the Facility and its consistent use as agricultural fields, there is the possibility of encountering remains of outbuildings, stonewalls, or other evidence of historical farming. The project area is in close proximity to the location of the homestead of Azel F. Rogers and John Randolph Rogers; however, despite their relation to one of Montville's earliest settlers these persons, as well as other nearby landowners, these individuals were not of local, state, or national importance. Any archaeological deposits associated with them are not likely to be considered historically significant.



## CHAPTER V

### PREVIOUS INVESTIGATIONS

#### Introduction

This chapter presents an overview of previous archaeological research completed within the vicinity of the Facility in Uncasville, Connecticut. This discussion provides the comparative data necessary for assessing the results of the current Phase IB cultural resources reconnaissance survey, and it ensures that the potential impacts to all previously recorded cultural resources located within and adjacent to the project area are taken into consideration. Specifically, this chapter reviews previously identified archaeological sites and National/State Register of Historic Places properties situated in the project region (Figures 8 and 9). The discussions presented below are based on information currently on file at the Connecticut State Historic Preservation Office (CT-SHPO) in Hartford, Connecticut. In addition, the electronic site files maintained by Heritage were examined during this investigation. Both the quantity and quality of the information contained in the original cultural resources survey reports and State of Connecticut archaeological site forms are reflected below.

#### **Previously Recorded Archaeological Sites and National/State Register of Historic Places Properties/Districts in the Vicinity of the Project Area**

A review of data currently on file at the CT-SHPO, as well as the electronic site files maintained by Heritage, resulted in the identification of five previously identified archaeological sites within 1.6 km (1 mi) of the project area and they are described below (Figure 8). No National or State Register of Historic Places properties were identified within the search area (Figure 9).

##### Site 86-13

Site 86-13, also known as the Find Spot 1 E-1 Loop Site, is located approximately 965 m (0.60 mi) to the south of Fitch Hill Road within a Spectra Energy Corporation gas pipeline right of way in Montville, Connecticut (Figure 8). The Public Archaeology Laboratory, Inc., (PAL) identified the site in 2013 and recovered an isolated argillite Small Stemmed projectile point from the subsoil at this location. This projectile point type was manufactured during the Late Archaic Period. Site 86-13 has not been assessed applying the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). It will not be impacted by the proposed Facility because of distance from the project area.

##### Site 86-14

Site 86-14, also referred to as the Find Spot 2 E-1 Loop Site, is situated approximately 1,075 m (0.67 mi) to the north of Raymond Hill Road in Montville, Connecticut. It too is located within a Spectra Energy Corporation gas pipeline right of way (Figure 8). PAL recorded this site in 2013 and recovered a single quartz Small Stemmed projectile point from the topsoil in this area. This projectile point type was manufactured during the Late Archaic Period. Jennifer Ort and Jenifer Elam of PAL recorded the site on October 24, 2013, and it was determined that it was not potentially eligible for listing on the National Register of Historic Places. It will not be impacted by the proposed Uncasville Solar project because of distance from the project area.

##### Site 86-15

Site 86-15 is the Raymond Hill Wetland Site; it is located approximately 220 m (721.8 ft) to the north of Raymond Hill Road in Montville, Connecticut (Figure 8). PAL recorded the site in 2013 and recovered 10

chert flakes from one test pit and four array test pits. Jennifer Ort and Jenifer Elam recorded the site on October 24, 2013, as a camp site. While the site could not be dated to a specific prehistoric time period, it was determined to be potentially eligible for listing on the National Register of Historic Places. Site 86-15 will not be impacted by the proposed Uncasville Solar project because of distance from the project area.

#### Site 86-53

Site 86-53, which is also known as the Cohegan Rock Site, was recorded in 1996 by Gregory F. Walwer of Archaeological Consulting Services. Walwer recorded that this was the site of reported early habitation, sheep herding, council meetings, and ceremonies for the Mohegan Tribe. The rock within the site area is believed to be the largest free standing glacial erratic in the region, and it now holds a commemorative inscription created by the Boy Scouts of America. Site 86-53 is located north of Raymond Hill Road and south of Falls Brook in Montville, Connecticut (Figure 8). It has not been assessed applying the qualities of significance as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). It will not be impacted by the proposed North Silverbrook Solar project because of distance from the project area.

#### Find Spot 3 E-1 Loop

The site form for the Find Spot 3 E-1 Loop Site was recorded by Jennifer Ort and Jenifer Elam of the PAL on October 24, 2013. The site is located approximately 955 m (0.60 mi) to the north of Raymond Hill Road within a Spectra Energy Corporation gas pipeline right of way (Figure 8). PAL archaeologists recovered a single piece of quartz chipping debris from the subsoil within the site area. The site could not be dated to a specific prehistoric time period and it was determined to be ineligible for listing on the National Register of Historic Places. The find spot site will not be impacted by the proposed North Silverbrook Solar project because of distance from the project area.

#### **Conclusion**

A total of five prehistoric archaeological resources has been previously identified within 1.6 km (1 mi) of the Facility. This indicates that additional prehistoric resources could exist within the project area, which is further supported by the natural setting of the region discussed in Chapter II as suited to Native American occupation. Though no historical resources have been previously recorded within 1.6 km (1 mi) of the project area, Uncasville is known to have been used for farmsteads from settlement to the present era. The project area itself was agricultural land for its entire history, and cultural deposits relating to this activity may exist here.



## CHAPTER VI

### METHODS

#### Introduction

This chapter describes the research design and field methods used to complete the current Phase IB cultural resources reconnaissance survey of the 9.8 acres deemed to retain moderate/high sensitivity for intact archaeological deposits associated with the proposed Solar Facility in Uncasville, Connecticut. In addition, the location and point-of-contact for the facility at which all cultural material, drawings, maps, photographs, and field notes generated during survey will be curated is provided below.

#### Research Design

The current Phase IB cultural resources reconnaissance survey was designed to identify all prehistoric and historical cultural resources located within moderate/high sensitivity areas associated with the proposed facility. Fieldwork for the project was comprehensive in nature and project planning considered the distribution of previously recorded archaeological sites located near the project parcel, as well as an assessment of the natural qualities of the Facility area. The methods used to complete this investigation were designed to provide complete and thorough coverage of all portions of the moderate/high sensitivity areas. This undertaking entailed pedestrian survey, systematic subsurface testing, detailed mapping, and photo-documentation.

#### Field Methods

Following the completion of all background research, the moderate/high sensitivity area previously identified during the Phase IA cultural resources assessment survey was subjected to a Phase IB cultural resources reconnaissance survey utilizing pedestrian survey, photo-documentation, GPS recordation, and systematic shovel testing. The field strategy was designed such that the entirety of the moderate/high sensitivity areas was examined visually and photographed. The archaeological field methodology also included subsurface testing in which shovel tests were situated at 15 m (49.2 ft) intervals along the access road. The shovel tests along the proposed access road extended from west to east. Shovel tests along the remaining 14 parallel survey transects were spaced 15 m (49.2 ft) from north to south throughout the solar array. Finally, when identified, positive shovel tests that yielded prehistoric period artifacts were delineated by excavating additional shovel tests spaced 7.5 m (25.6 ft) intervals around them.

During the survey, each shovel test measured 50 x 50 cm (19.7 x 19.7 in) in size, and each was excavated until the glacially derived C-Horizon was encountered or until large buried objects (e.g., boulders) prevented further excavation. Each shovel test was excavated in 10 cm (3.9 in) arbitrary levels within natural strata, and the fill from each level was screened separately. All shovel test fill was screened through 0.635 cm (0.25 in) hardware cloth and examined visually for cultural material. Soil characteristics were recorded in the field using Munsell Soil Color Charts and standard soils nomenclature. Shovel tests were backfilled after they were recorded.

#### Curation

Following the completion and acceptance of the Final Report of Investigations, all cultural material, drawings, maps, photographs, and field notes will be curated with:

Dr. Sarah Sportman  
Office of Connecticut State Archaeology, Box U-1023  
University of Connecticut  
Storrs, Connecticut 06269



## CHAPTER VII

# RESULTS & MANAGEMENT RECOMMENDATIONS

### Introduction

This chapter presents the results of the Phase IB cultural resources reconnaissance survey of the proposed solar Facility in Uncasville, Connecticut. It was completed by Heritage on behalf of All-Points in July of 2021. All fieldwork was performed in accordance with the *Environmental Review Primer for Connecticut's Archaeological Resources*, which is promulgated by the Connecticut State Historic Preservation Office (Poirier 1987). Field methods employed during the current investigation consisted of pedestrian survey, mapping, photo-documentation, and subsurface testing throughout the array area. Field methods and results are discussed below.

### Results of the Phase IB Cultural Resources Reconnaissance Survey of the Facility

As discussed in Chapter I, the proposed project area encompasses approximately 9.8 acres of land situated to the east of Fitch Hill Road and to the north of Falls Brook within what the Town of Montville refers to as Parcel 47-51; the project area is accessed from the east side of Fitch Hill Road. The proposed access road associated with the Facility extends past a farmstead to the east through agricultural land, then northeast into a forested area, where the solar array will be constructed (Figure 10 and Photos 1 and 2). The Facility is surrounded on all sides by deciduous forest, and the region is a sparsely developed residential area situated at elevations ranging from 73.2 to 88.4 m (240 to 290 ft) NGVD. A total of approximately 5,300 solar panel modules will be installed in rows spaced 4.6 m (15 ft) apart throughout the Facility area. A chain link fence will surround the solar panels. Metering equipment will be installed off the western boundary of the solar array and to the south of the proposed access road. This proposed gravel access road will extend eastward toward Fitch Hill Road. An overhead electrical line with utility poles will connect the metering equipment to the existing electrical grid along Fitch Hill Road. Finally, trees will be cleared for the proposed access road, overhead interconnect, and solar array.

The current Phase IB survey consisted of pedestrian survey, subsurface testing, and mapping of the project parcel. The subsurface testing regime associated with the Phase IB cultural resources reconnaissance survey resulted in the excavation of a total of 208 of 209 (99 percent) planned shovel tests and 10 of 10 (100 percent) delineation shovel tests (Figure 10). The single shovel test that was not excavated was because it fell in a wetland area. Of the 208 excavated shovel tests, five yielded a scatter of both modern and historical period artifacts within the Ap-Horizon (plow zone) between 0 to 20 centimeters (0 to 15.7 inches) below surface and in a disturbed layer of localized fill between 20 to 60 centimeters (8 to 23.6 inches) below surface. Historical/modern artifacts recovered from the plow zone (Ap-Horizon) included 1 blue transfer print pearlware rim sherd, 5 plain whiteware ceramic sherds, and 1 olive green glass shard. A layer of localized fill was identified in Shovel Test 4 along Transect 1, which was located approximately 5 meters south of an existing wetland area. It is likely that Shovel Test 4 fell within a filled wetland area. Artifacts from the layer of fill included 1 plain whiteware sherd, 3 clear glass bottle shards, 2 clear glass window shards, 1 brick fragment, 1 ferrous strap with a screw attached, 1 piece of unidentified ferrous metal, 5 pieces of slag, 1 coal fragment, and 1 piece of coal ash. None of these items were found in association with intact soil horizons, buried cultural features, or above ground architectural remains. Thus, this low density historic/modern assemblage was interpreted as unassociated field scatter. No additional archaeological examination of it is recommended.

The Phase IB survey also resulted in the identification of two archaeological loci in the Facility area. They were designated as Locus 1 and Locus 2 (Figure 9). A total of 10 delineation shovel tests were excavated around the positive shovel tests within the loci. Locus 1 and Locus 2 are described below.

#### Locus 1

Locus 1 was identified in the south-central portion of the Facility area (Figure 10 and Photos 3 through 6). It encompasses a total of two shovel tests that included Shovel Test 9 along Transect 5 and Shovel Test 8 along Transect 6. A typical shovel test excavated within the Locus 1 area exhibited four soil horizons in profile and reached to a depth of 55 centimeters below surface (22 inches below surface). The uppermost soil horizon Ap-Horizon (plow zone) extended from 0 to 22 centimeters below surface (0 to 8.7 inches below surface) and was described as a deposit of dark brown (10YR 3/3) silty loam with fine sand. It was underlain by a layer of subsoil (B1-Horizon) that ranged in depth from 22 to 33 centimeters below surface (8.7 to 13 inches below surface) and was described as a yellowish brown (10YR 5/6) sandy silt. The underlying B2-Horizon was identified as a layer of (10YR 3/4) yellowish brown sandy silt that extended between 33 to 45 centimeters (13 to 17.7 inches) below surface. Finally, the glacially derived C-Horizon reached from 45 to 55 centimeters below surface (17.7 to 22 inches below surface) and was classified as a layer of light olive brown (2.5Y 5/4) coarse sand with silt.

Shovel testing of the Locus 1 area resulted in the recovery of three prehistoric period artifacts from two shovel tests. A total of 2 quartzite tertiary flakes were recovered from Shovel Test 9 along Transect 5 in the disturbed Ap-Horizon (plow zone) between 10 to 20 centimeters (4 to 8 inches) below surface. In addition, a single quartz Brewerton Eared Triangle point was identified in the subsoil of Shovel Test 8 along Transect 6 between 20 to 30 centimeters (8 to 12 inches) below surface (Photo 7). A total of eight delineation shovel tests were excavated around the two positive shovel tests. No additional artifacts or were identified. The Brewerton Eared Triangle was not found in association with any other artifacts and is interpreted as an isolated find; it dates from the Late Archaic period of Connecticut prehistory (ca., 6,000 to 3,900 B.P.). Despite these finds, it was determined that locus 1 lacked substantial numbers of artifacts and research potential. It was assessed as not significant applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). No additional archaeological examination of Locus 1 is recommended prior to construction. A site form for this locus is included in Appendix 1.

#### Locus 2

Locus 2 was identified at the western end of the proposed access road and included Shovel Test 5 along Transect 1 (Figure 10 and Photos 8 and 9). A typical shovel test excavated within the Locus 2 area exhibited three soil horizons in profile and reached to a depth of 48 centimeters below surface (19 inches below surface). The Ap-Horizon (plow zone) extended from 0 to 24 centimeters below surface (0 to 9.4 inches below surface) and was described as a deposit of dark brown (10YR 3/3) silty loam. It was underlain by the subsoil (B-Horizon) that ranged in depth from 24 to 33 centimeters below surface (9.4 to 13 inches below surface) and was described as a dark yellowish brown (10YR 4/6) silt with medium sand. Finally, the glacially derived C-Horizon reached from 33 to 48 centimeters below surface (13 to 19 inches below surface) and was classified as a layer of light olive brown (10YR 5/2) gravel with sand.

Shovel testing of the Locus 2 area resulted in the recovery of a single argillite tertiary flake in Shovel Test 5 along Transect 1; it originated from the disturbed Ap-Horizon (plow zone) at depths between 10 to 20 centimeters (4 to 8 inches) below surface. Despite the survey and delineation effort, no additional prehistoric period artifacts were recovered from this locus. No cultural features or soil anomalies were associated with the argillite flake, and it could not be assigned to particular prehistoric time period or cultural affiliation. Locus 2 also was assessed as not significant applying the National Register of Historic



Places criteria for evaluation (36 CFR 60.4 [a-d]). No additional archaeological examination of Locus 1 is recommended prior to construction.

Finally, a single stone cluster and three dry laid stone walls were identified during the Phase IB survey. The stone cluster is located in the southern portion of the project area (Figure 10). One stone wall was identified in the northern portion of the project area and extended from southwest to northeast (Figure 10 and Photo 11). A second stone wall was identified to the south of the proposed access road beginning at the western boundary of the Facility area; it ran to the east (Figure 10 and Photo 12). The third stone wall was situated to the second wall in the southeastern portion of the project area; it extended from north to south (Figure 10 and Photo 13).

### **Management Recommendations**

A total of 208 of 209 (99 percent) planned shovel tests and 10 of 10 (100 percent) delineation shovel tests were excavated throughout the project area, resulting in the identification of two archaeological loci. Locus 1 yielded two quartzite flakes from the plow zone and a single quartz Brewerton Eared Triangle point from the subsoil. The eight delineation shovel tests that were excavated in the Locus 1 area did not yield additional cultural material. No features or soil anomalies were associated with Locus 1, and the Brewerton Eared Triangle point was determined to be an isolated find. Locus 1 was assessed as not significant applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). No additional archaeological examination of the locus area is recommended prior to construction.

Locus 2 yielded a single argillite tertiary flake in the plow zone between 10 to 20 (4 to 8 inches) below surface. No additional prehistoric period artifacts were recovered from the two delineation shovel tests that were excavated around the positive shovel test. No cultural features or soil anomalies were associated with Locus 2, and the recovered cultural materials could not be assigned to a particular prehistoric time period or cultural affiliation. Locus 2 also was assessed as not significant applying the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). No additional archaeological examination of Locus 2 is recommended prior to construction.

Of the 208 excavated shovel tests, five also yielded a scatter of both modern and historical artifacts within the disturbed Ap-Horizon (plow zone) and a layer of localized fill. None of these items were found in association with buried cultural features or above ground architectural remains, and no historical resources were identified in the project area. Thus, this low density assemblage was identified as unassociated field scatter. No impacts to significant archaeological resources are expected by the construction of the Facility, and no additional archaeological examination of the project area is recommended prior to construction. Finally, a single stone cluster and three dry laid stone walls were identified in the project area. The stone cluster and stone walls cannot be attributed to a specific type, function, or time period; no additional recordation of these items is recommended.

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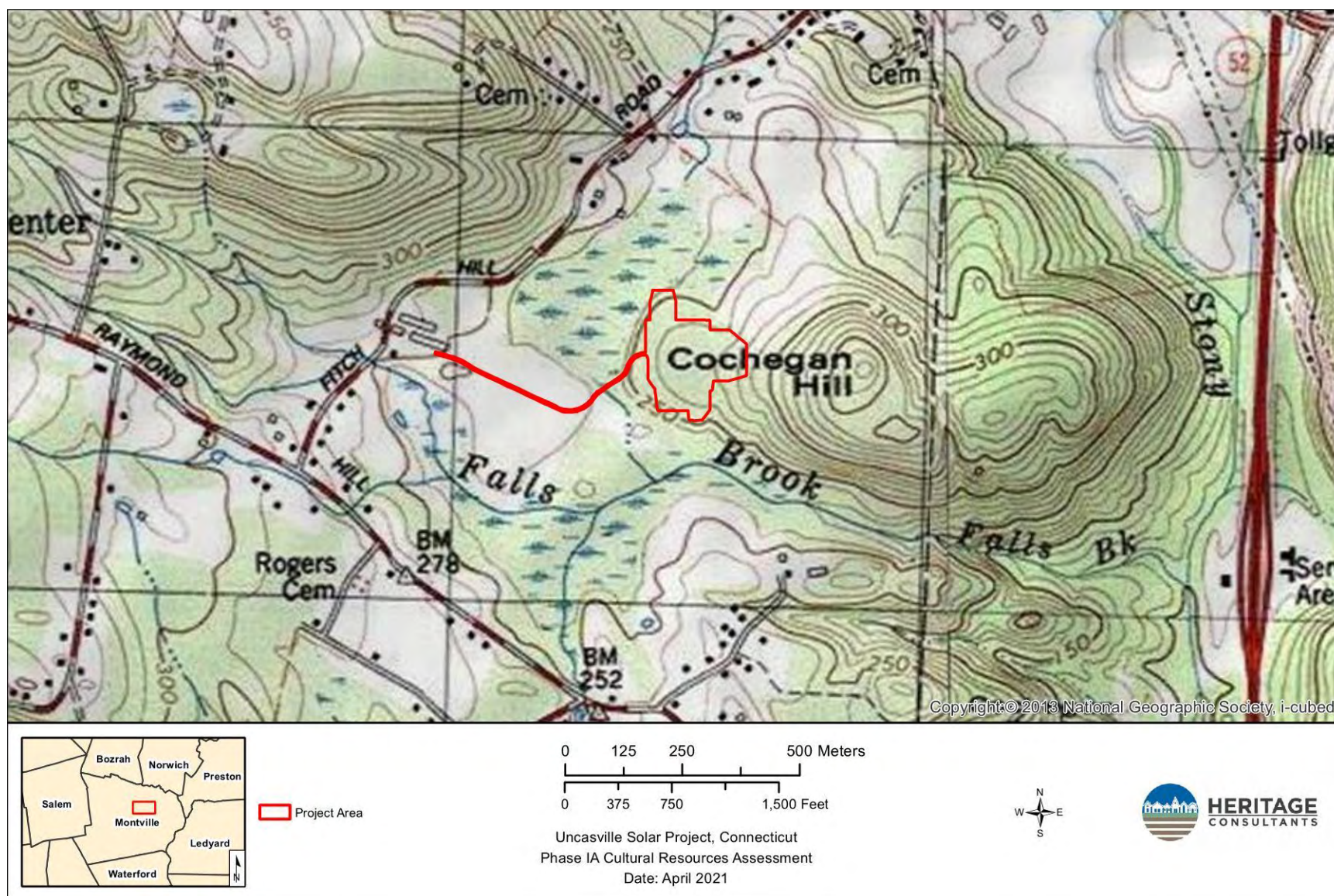


Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the project area in Uncasville, Connecticut.



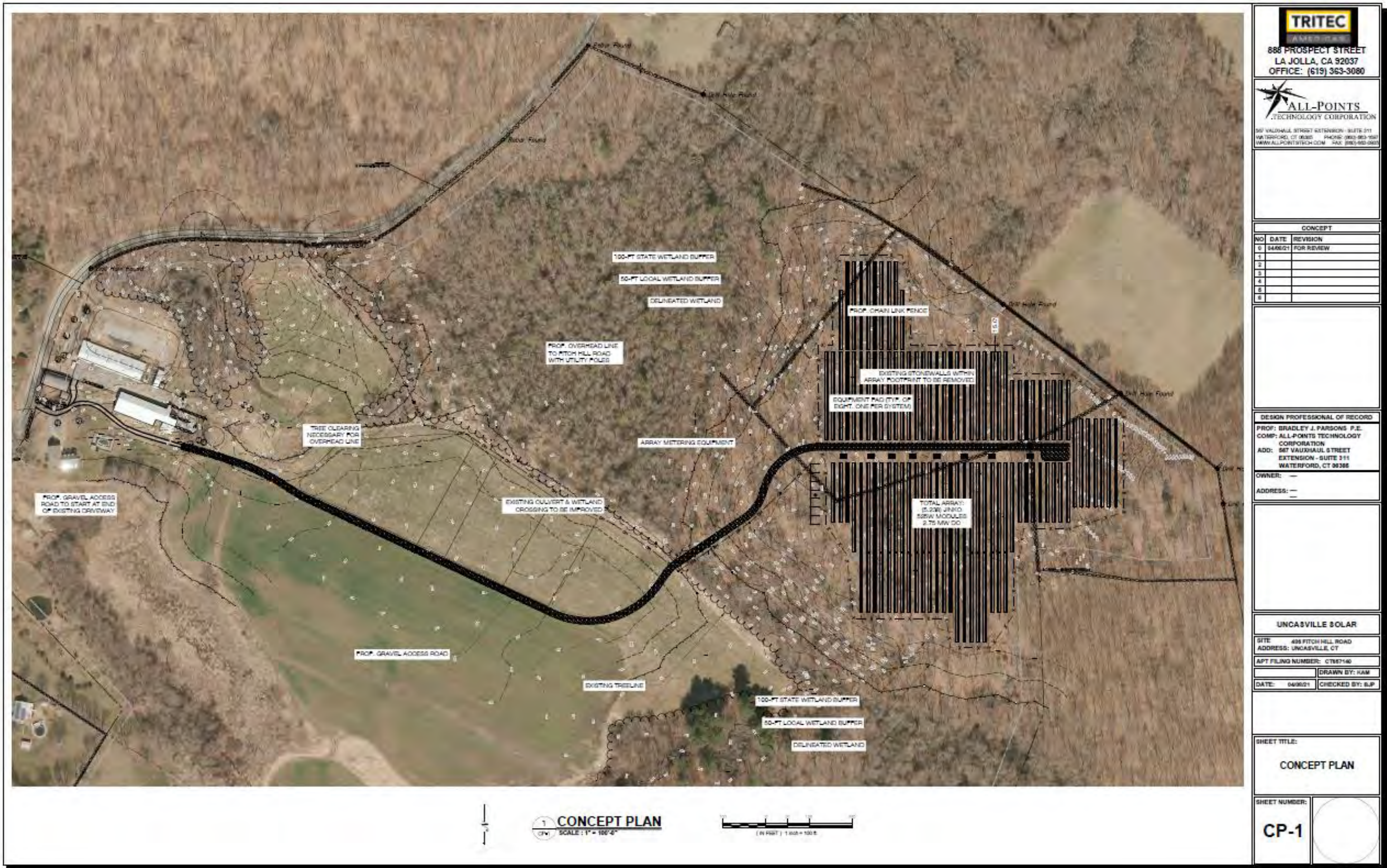


Figure 2. Copy of the project plans for the proposed solar center in Uncasville, Connecticut.



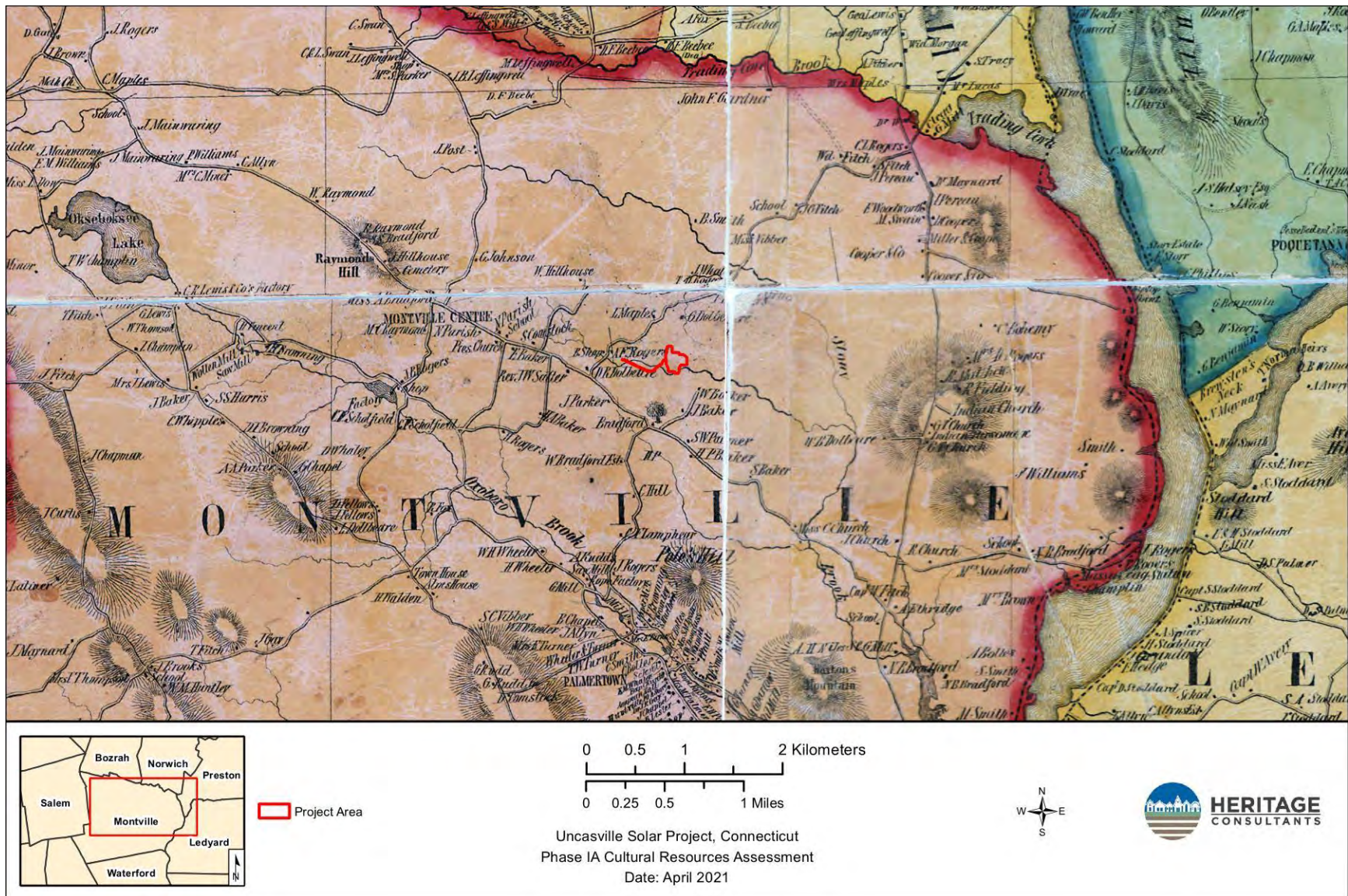


Figure 3. Excerpt from an 1854 historical map showing the location of the project area in Uncasville, Connecticut.



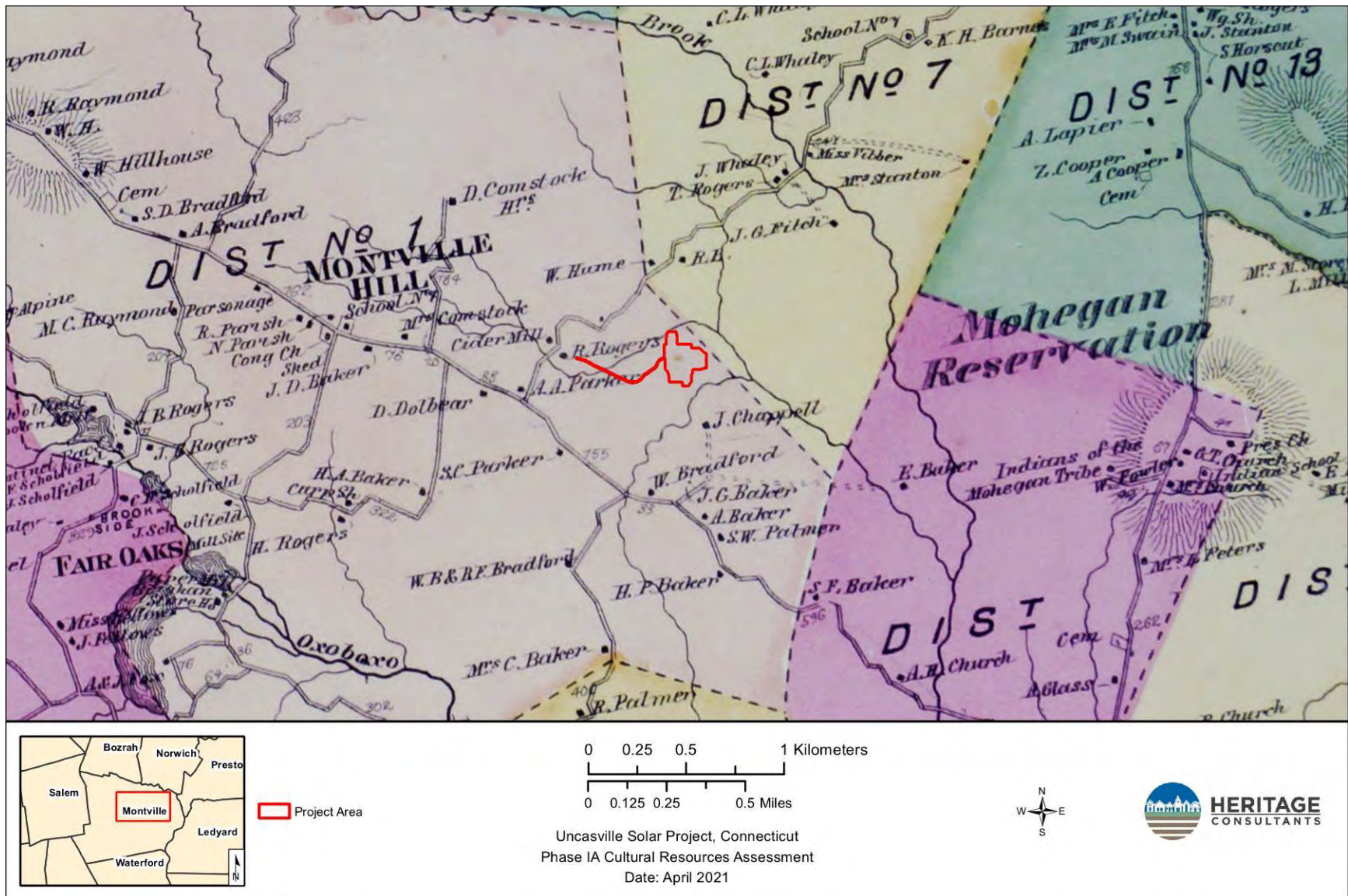


Figure 4. Excerpt from an 1868 historical map showing the location of the project area in Uncasville, Connecticut.



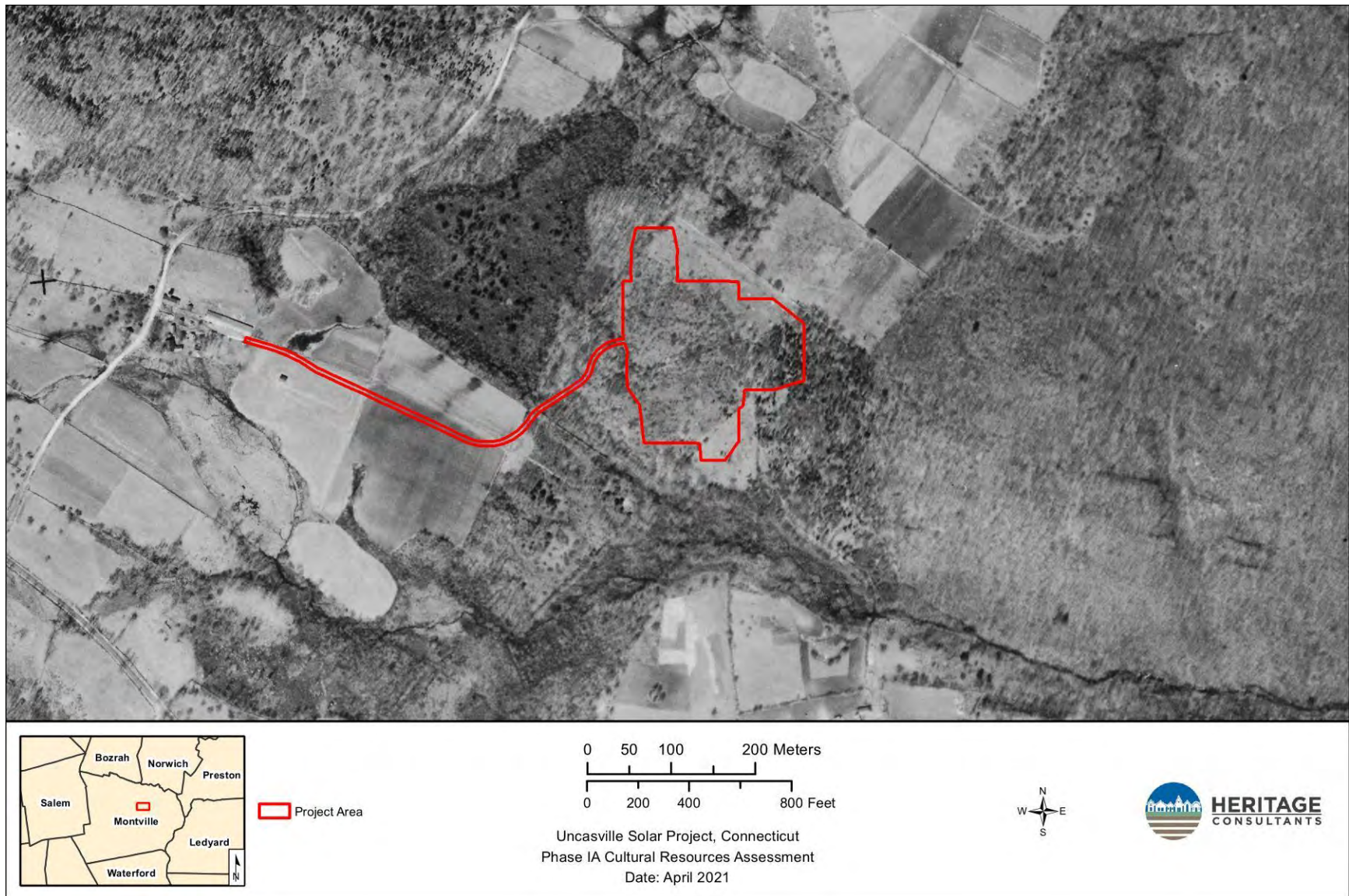


Figure 5. Excerpt from a 1934 aerial photograph showing the location of the project area in Uncasville, Connecticut.

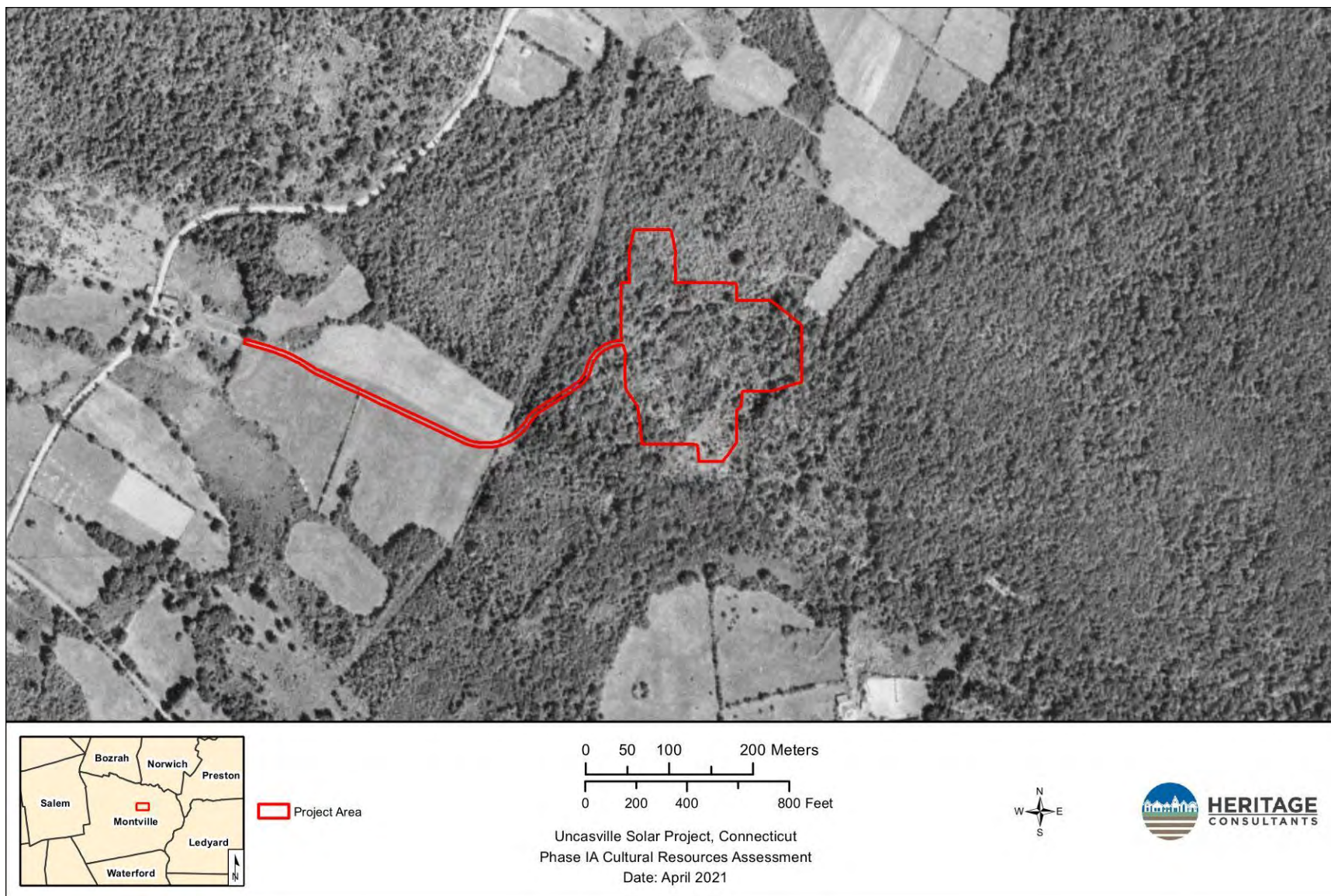


Figure 6. Excerpt from a 1951 aerial photograph showing the location of the project area in Uncasville, Connecticut.



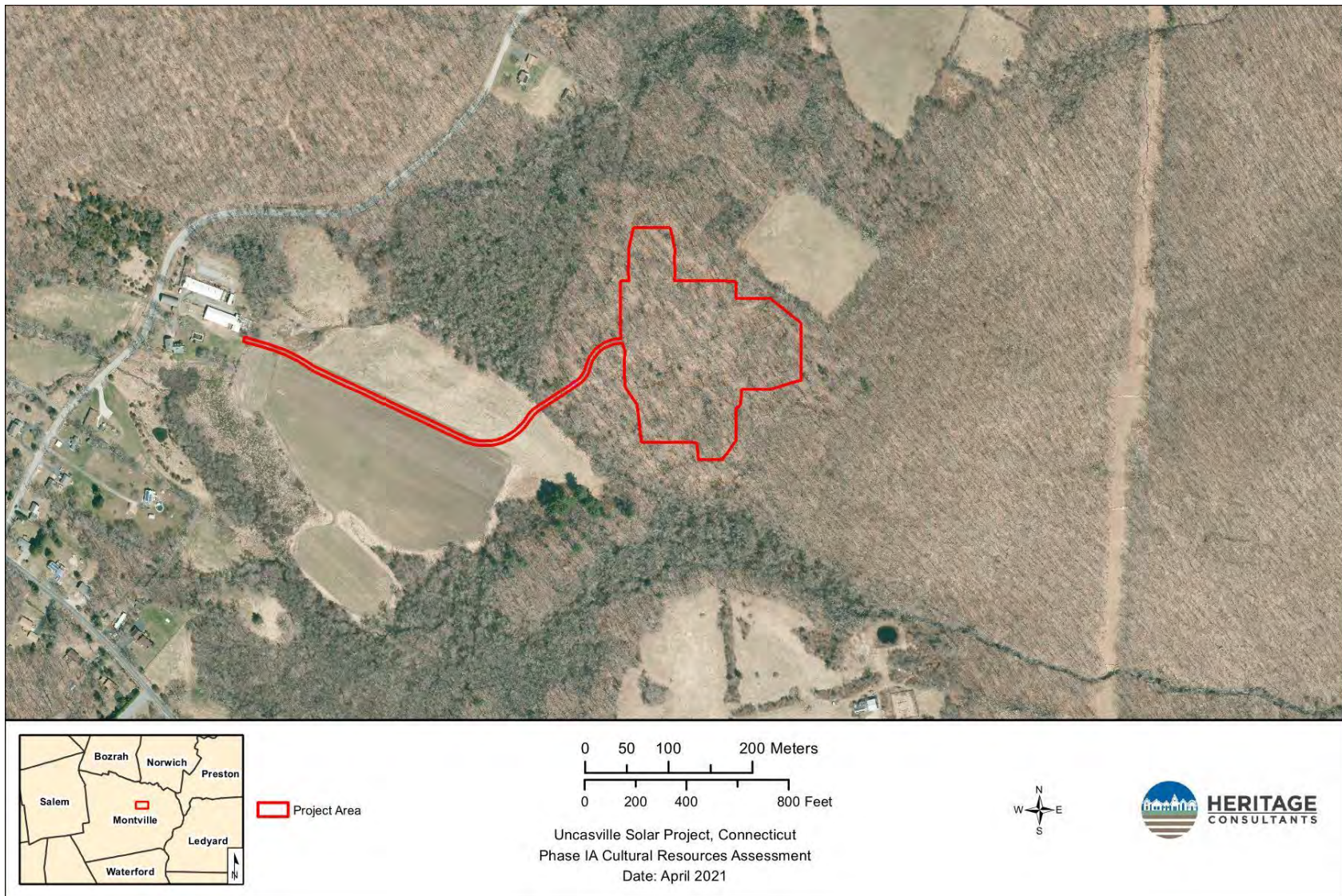


Figure 7. Excerpt from a 2019 aerial photograph showing the location of the project area in Uncasville, Connecticut.



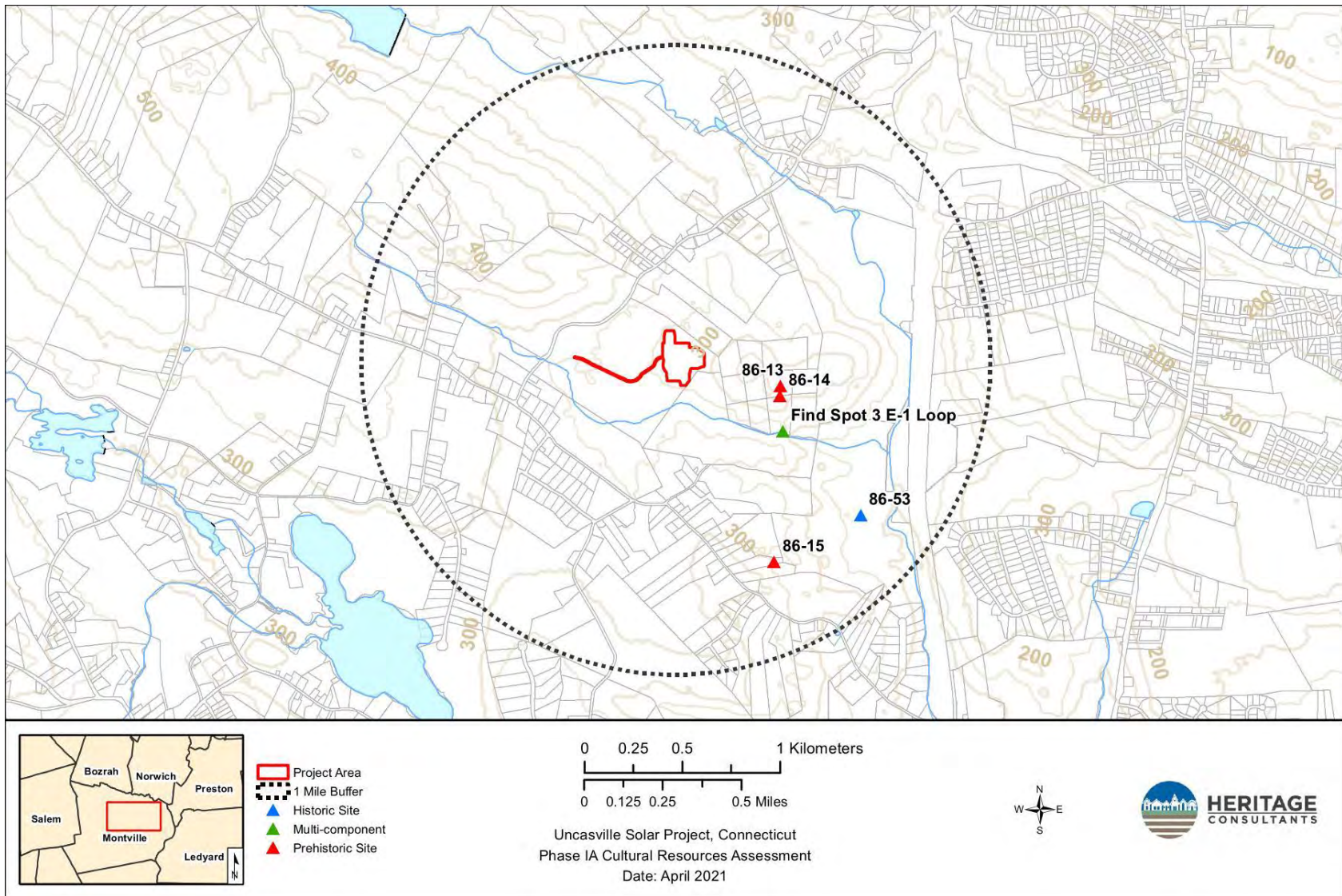


Figure 8. Digital map showing the location of previously identified archaeological sites in the vicinity of the project area in Uncasville, Connecticut.



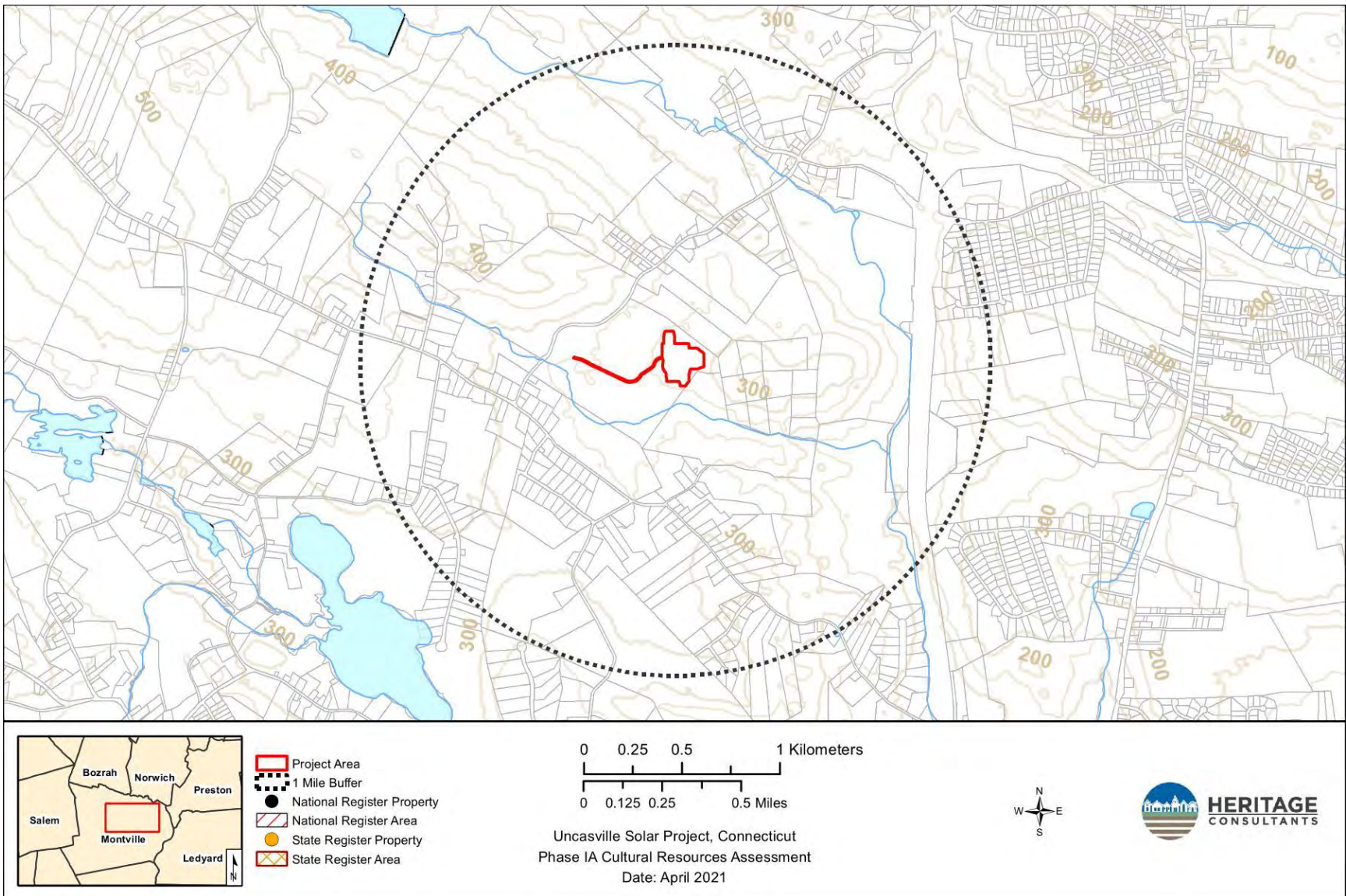


Figure 9. Digital map depicting the locations of previously identified National/State Register of Historic Places properties in the vicinity of the project area in Uncasville, Connecticut.



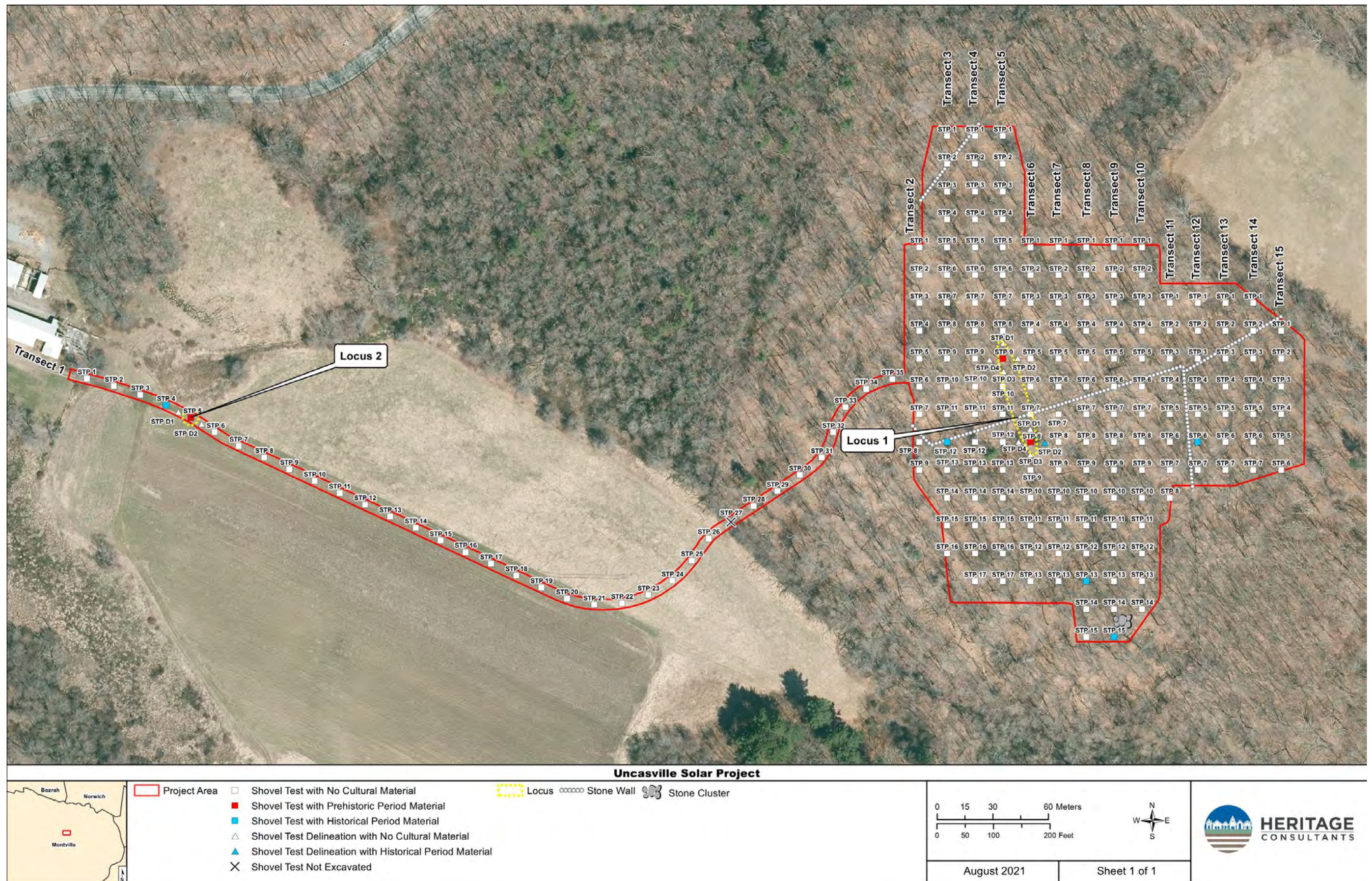


Figure 10. Plan view map depicting the location of Shovel Tests, Delineation Shovel tests and Loci 1 and 2 in Uncasville, Connecticut.





Photo 1. Overview of the southern portion of the proposed access road. Photo taken facing north.



Photo 2. Overview photo from western end of proposed gravel access road. Photo taken facing west.





Photo 3. Overview photo of Locus 1 area. Photo taken facing south.



Photo 4. Overview photo of Locus 1 area. Photo taken facing north.





Photo 5. Overview photo of Locus 1 area. Photo taken facing east.



Photo 6. Overview photo of Locus 1 area. Photo taken facing west.





Photo 7. Obverse photograph of Quartz Brewerton Eared Point from Locus 1.



Photo 8. Overview photo of Locus 2 area from the western end of the proposed access road. Photo taken facing east.



Photo 9. Overview photo of Locus 2 area along the proposed access road. Photo taken facing east.



Photo 10. Overview photo of the stone cluster in southern portion of project area. Photo taken facing east.





Photo 11. Overview photo of stonewall in northern portion of project area. Photo taken facing northeast.



Photo 12. Overview photo of stonewall in central portion of project area. Photo taken facing north.





Photo 13. Overview photo of stone wall in eastern portion of project area.  
Photo taken facing southwest.



# **APPENDIX D**

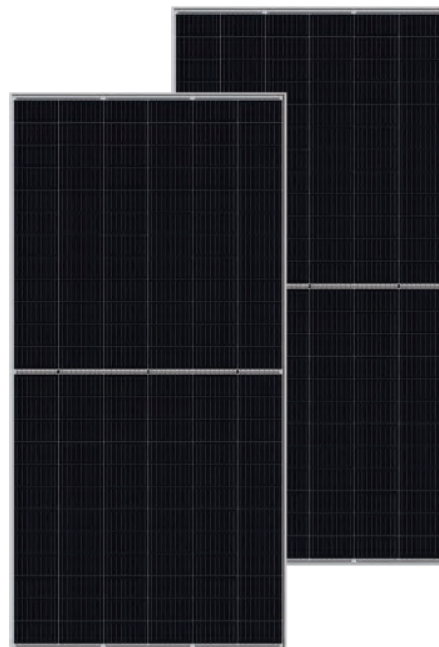
## **PRODUCT INFORMATION SHEETS**

# BIPRO

TP6G72M  
TP6G72M(H) **144 half-cell**

**390 - 415W**

bifacial transparent single glass  
9BB half-cut mono perc



## KEY FEATURES



### 9BB half-cut cell technology

New circuit design, lower internal current, lower Rs loss



### Industry leading high yield

Bifacial PERC cell technology,  
5%-25% more yield depends on different conditions



### Excellent Anti-PID performance

2 times of industry standard Anti-PID test by TUV SUD



### Wider application

No water-permeability and high wear-resistance,  
can be widely used in high-humid, windy and dusty area



### IP68 junction box

High waterproof level

## SYSTEM & PRODUCT CERTIFICATES

- IEC 61215 / IEC 61730 / UL 1703
- ISO 9001: 2015 Quality Management System
- ISO 14001: 2015 Environment Management System
- ISO 45001: 2018 Occupational Health and Safety Management Systems

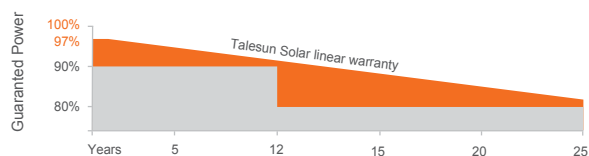


## PERFORMANCE WARRANTY

**12** years  
Quality assurance

**25** years  
Power output guarantee

■ Talesun standard  
■ Industry standard





## ELECTRICAL PARAMETERS

### Performance at STC (Power Tolerance 0 ~ +3%)

Maximum Power (Pmax/W)	390	395	400	405	410	415
Operating Voltage (Vmpp/V)	40.8	41.1	41.4	41.7	42.0	42.3
Operating Current (Impp/A)	9.56	9.61	9.67	9.72	9.77	9.82
Open-Circuit Voltage (Voc/V)	48.7	48.9	49.1	49.3	49.5	49.7
Short-Circuit Current (Isc/A)	10.08	10.14	10.20	10.26	10.32	10.38
Module Efficiency $\eta_m(\%)$	19.06	19.3	19.55	19.79	20.04	20.28

### Performance at NMOT

Maximum Power (Pmax/W)	291.5	295.1	298.8	302.4	306.1	309.8
Operating Voltage (Vmpp/V)	38.1	38.3	38.5	38.8	39.0	39.2
Operating Current (Impp/A)	7.65	7.70	7.75	7.80	7.86	7.91
Open-Circuit Voltage (Voc/V)	45.6	45.7	45.9	46.1	46.3	46.4
Short-Circuit Current (Isc/A)	8.13	8.18	8.23	8.27	8.32	8.37

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5 NMOT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Air Mass AM1.5, Wind Speed 1m/s

### Electrical characteristics with different rear side power gain (refer to 400W front)

Pmax gain	Pmax/W	Vmpp/V	Impp/A	Voc/V	Isc/A
5%	420	41.4	10.14	49.1	10.71
10%	440	41.4	10.63	49.1	11.22
15%	460	41.4	11.11	49.1	11.73
20%	480	41.4	11.59	49.1	12.24
25%	500	41.4	12.08	49.1	12.75

## MECHANICAL SPECIFICATION

Cell Type	Half-cell 9 busbar
Cell Dimensions	158.75*158.75mm (6inches)
Cell Arrangement	144 (6*24)
Weight	23.5kg (51.8lbs)
Module Dimensions	2030*1008*35mm (79.72*39.68*1.38inches)
Cable Length (Portrait)	(+)-300mm (11.81inches) / (-)-300mm (11.81inches)
Cable Length (Landscape)	(+)-1200mm (47.24inches) / (-)-1200mm (47.24inches)
Cable Cross Section Size	4mm <sup>2</sup> (0.006inches <sup>2</sup> )
Front Glass	3.2mm High Transmission, Tempered Glass
No. of Bypass Diodes	3/6
Packing Configuration(1)	31pcs/carton, 682pcs/40hq
Packing Configuration(2)	31+3pcs/carton, 715pcs/40hq
Frame	Anodized Aluminium Alloy
Junction Box	IP68

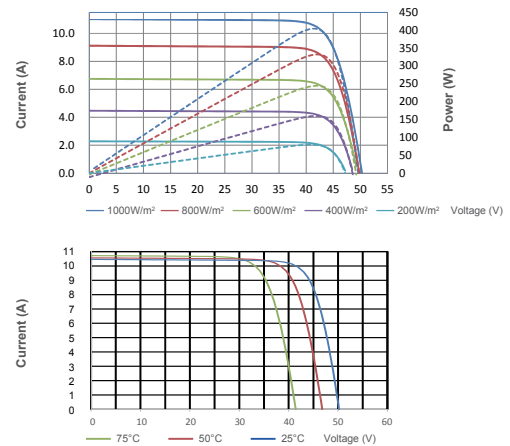
## OPERATING CONDITIONS

Maximum System Voltage	1000V/1500V/DC(IEC)
Operating Temperature	-40°C ~ +85°C
Maximum Series Fuse	20A
Static Loading	5400pa
Conductivity at Ground	≤0.1Ω
Safety Class	II
Resistance	≥100MΩ
Connector	MC4 Compatible
Backside Output Ratio*	60% - 80%
*Under STC: Backside Output Ratio = $P_{\max(\text{rear})} / P_{\max(\text{front})}$	

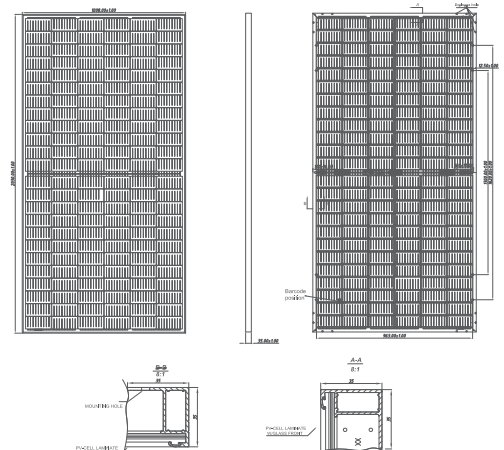
## TEMPERATURE COEFFICIENT

Temperature Coefficient Pmax	-0.36%/°C
Temperature Coefficient Voc	-0.26%/°C
Temperature Coefficient Isc	+0.043%/°C
NMOT	42±2°C

## I-V CURVE



## TECHNICAL DRAWINGS



## Catalog No. 9T10A1008



**Description AL 300KVA 480-208Y 150C K1 STD DOE2016**

**UPC No 783173904725**

**Products > Transformers > Dry Type Vented > General Purpose**

GE Type QL transformers meet DOE 2016 efficiency standards. They are available with aluminum or copper windings and utilize a UL recognized 220°C insulation system.

- Quiet Performance
- Outward-facing mounting feet
- Lug kit included
- Ground bar kit included
- Core and coil assemblies are mounted on rubber isolation pads to reduce noise
- Bolted coil terminations
- Single-piece front/back is easily removable for service
- NEMA 2 drip-proof enclosure is standard; weathershield kits are available for conversion to NEMA 3R outdoor configuration
- Qualified to the seismic requirements of IEEE-693-2005 and IBC-2012 and CBC 2013
- Copper or aluminum windings
- Copper ground strap
- Robust packaging with top and side protection protects against shipping damage
- Accessible mounting flanges with front/back slotted mounting holes make installation easier
- 100% factory tested for shorts and coil integrity, current and loss, voltage, impedance and noise.
- Clear, comprehensive documentation and labeling

### Specifications

#### Descriptors

Category	General Purpose
GO Schedule	TY

#### Specifications

Phase	3
PriVoltage	480
SecVoltage	208Y/120
KVA	300.0 KVA
Coil Material	AL
TempRise	150.0 °C
Frequency	60 Hz
Impedance	5.3 %
AmbTemp	40.0 °C
EnergyEfficiency	DOE 2016
KFactor	K1
Enclosure Type	NEMA 2
Sound	Std
GSA Compliance	No



**Classifications**

CE	0
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**Publications**

Title	Publication No.	Publication Type
<a href="#">UL Nameplate Drawing</a>		
UL Nameplate Drawing 9T10A1008-LBL	9T10A1008-LBL	Connection Diagram

**Additional Documentation:** Visit our [Publication Library](#) to find technical documentation, time current curves, CSI Specifications and promotional literature.



# HT78-18X Transparent

High Efficiency Low LID Bifacial PERC with Half-cut Technology

NEW

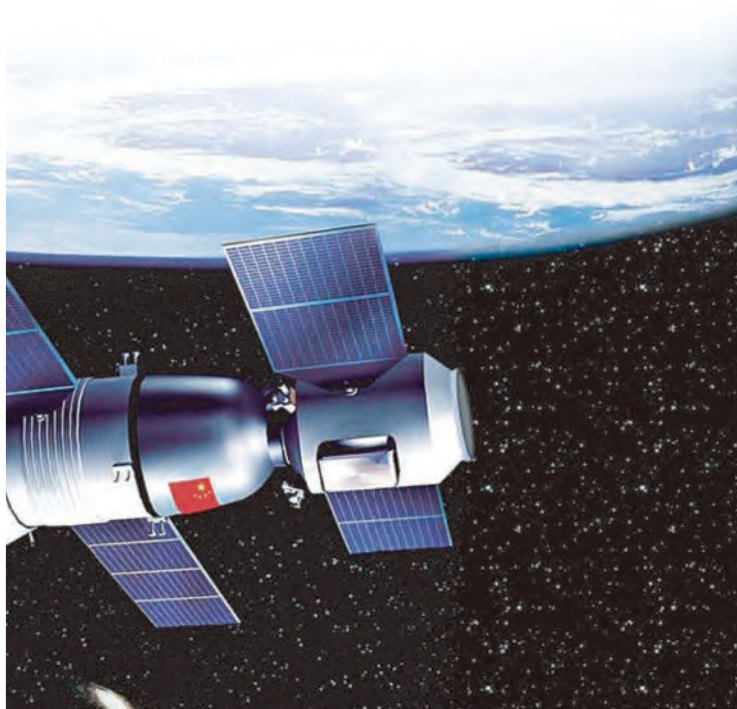
Big Size: Cell 182\*91 Monocrystalline

**570W / 575W**

**580W / 585W / 590W**



- Module Efficiency: 21.1%
- No. of Cells: 156(6 × 26)
- Weight: 29.4kg
- Dimensions: 2470mm×1133mm×35mm



Shanghai Aerospace Automobile  
Electromechanical Co., Ltd. website:  
www.htsolar.com.tr



Factory :  
Turkey HT Solar Energy Joint Stock Company  
Lianyungang ShenZhou New Energy Co., Ltd.



Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.



10BB The optimized number and width of main gate lines, Maximize the light receiving area of components and Reduce component power consumption

**12 Ys**

Products Warranty

**30 Ys**

Warranty on power output



Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BOS costs



**EL**

Microcrack resistant high performance transparent backsheet structure enhance reliability, triple EL tested of high quality control.

All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.

**5W**

Positive tolerance 0/+5W guaranteed



Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)

**PID**

PID Resistant

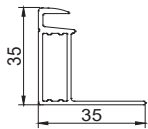
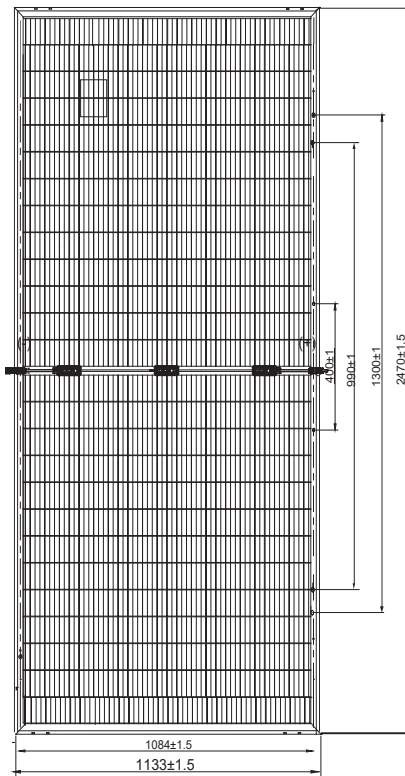
**Comprehensive and first-rate certification system**

IEC61215: 2016. IEC61730: 2016 Latest Standard

and UL 61730 Latest Standard, ISO9001, ISO14001 and ISO45001, meeting the highest international standards Strict quality control

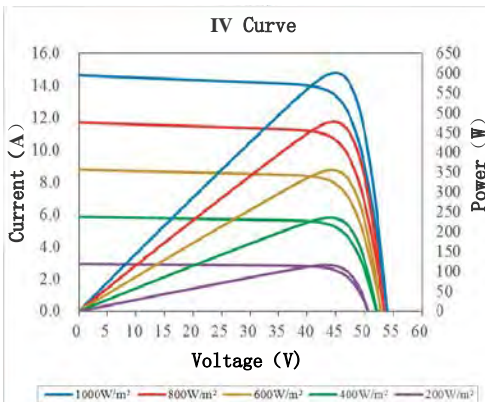


### Engineering Drawing



### I-V Curves

Current-Voltage & Power-Voltage Curve



### Electrical Characteristics

Module	HT78-18X				
Maximum Power at STC(Pmax)	570W	575W	580W	585W	590W
Open-Circuit Voltage(Voc)	53.19V	53.34V	53.49V	53.77V	53.92V
Short-Circuit Current(Isc)	13.68A	13.75A	13.82A	13.89A	13.96A
Optimum Operating Voltage (Vmp)	44.68V	44.83V	44.98V	45.13V	45.28V
Optimum Operating Current(Imp)	12.76A	12.83A	12.90A	12.97A	13.04A
Module Efficiency	20.4%	20.5%	20.7%	20.9%	21.1%
Power Tolerance	0 ~ +5W				
Maximum System Voltage	1500V DC(UL/IEC)				
Maximum Series Fuse Rating	25A				
Operating Temperature	-40 °C to +85°C				

\*STC: Irradiance 1000W/m², module temperature 25, AM=1.5  
Optional black frame or white frame module according to customer requirements

### BIFACIAL REAR SIDE POWER GAIN

Electrical characteristics with different rear side power gain for reference (reference to 590W front)

Module		HT78-18X Bifaciality: 70±5%			
Maximum Power	Pmax Gain	Voc/V	Isc/A	Vmp/V	Imp/A
620W	5%	53.92	14.65	45.28	13.69
649W	10%	53.92	15.36	45.28	14.33
679W	15%	53.92	16.05	45.28	14.99
708W	20%	53.92	16.75	45.28	15.64
738W	25%	53.92	17.45	45.28	16.30

\*bifacial gain: the additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting(structure,height,tilt angle etc.)and abledo of theground.

### NMOT

Module	HT78-18X				
Maximum Power	426W	430W	434W	438W	442W
Open Circuit Voltage (Voc)	49.0V	49.15V	49.30V	49.45V	49.6V
Short Circuit Current (Isc)	11.10A	11.17A	11.24A	11.31A	11.38A
Maximum Power Voltage (Vmp)	40.6V	40.75V	40.90V	41.05V	41.20V
Maximum Circuit Current (Imp)	10.50A	10.56A	10.61A	10.67	10.73A
NMOT	45°C±2°C				

\*NMOT: Irradiance 800W/m², ambient temperature 20°C, wind speed 1 m/s

### Mechanical Characteristics

Solar Cells	Monocrystalline 182 × 91 mm
No. of Cells	156 (6 × 26)
Dimensions	2470mm×1133mm×35mm
Weight	29.4kg
Front Glass	High transmission tempered glass
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm² (UL/IEC) Length: (+) 400mm (-) 200mm/length can be customized
Connectors	MC4 / MC4 Compatible
Packaging Configuration	31pcs / box, 496pcs / 40'HQ Container

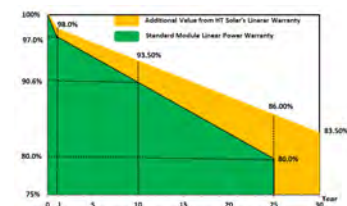
### Temperature Characteristics

Temperature Coefficient of Pmax	γ (Pm)	-0.39%/°C
Temperature Coefficient of Voc	β (Voc)	-0.29%/°C
Temperature Coefficient of Isc	α (Isc)	0.049%/°C

### Warranty

- 12-year product warranty
- 30-year warranty on power output

Specific information is referred to the product quality guarantee





# XGI™ 1500-250 SERIES INVERTERS

## SOLECTRIA PREMIUM 3-PHASE TRANSFORMERLESS UTILITY-SCALE INVERTERS

### FEATURES

- NEW and MORE POWERFUL!
  - XGI 1500-250/250-600
  - XGI 1500-225-600 (Selectable: 225kW/225kVA or 225kW/250kVA)
  - XGI 1500-200/200-480
  - XGI 1500-175-480 (Selectable: 175kW/175kVA or 175kW/200kVA)
- Industry-leading maximum DC/AC Ratio of 2.0
- Accepts two input PV Output Circuits, with no overcurrent protection required
- Made in the USA with global components
- Buy American Act (BAA) compliant
- 99.0% peak efficiency
- Flexible solution for distributed and centralized system architecture
- Advanced grid-support functionality Rule 21/UL1741SA
- Robust, dependable and built to last
- Lowest O&M and installation costs
- Access all inverters on site via WiFi from one location
- Remote diagnostics and firmware upgrades
- SunSpec Modbus Certified
- Tested compatible with the TESLA PowerPack Microgrid System

### OPTIONS

- PV Source Circuit Combiners
- Web-based monitoring
- Extended warranty

MADE IN THE USA



With U.S. and Global Components

Yaskawa Solectria Solar is pleased to introduce its most powerful XGI 1500 inverters, with the XGI 1500-250 models at 600 Vac, and the XGI 1500-200 models for 480 Vac service.



The XGI 1500-250 and XGI 1500-200 feature SiC technology, high power and high efficiency that places them at the top end of the utility-scale string inverters in the market.

Yaskawa Solectria Solar designs all XGI 1500 utility-scale string inverters for high reliability and builds them with the highest quality components -- selected, tested and proven to last beyond their warranty. The XGI 1500 inverters provide advanced grid-support functionality and meet the latest IEEE 1547 and UL 1741 standards for safety.

The XGI 1500 inverters provide ideal solutions for ground-mounted utility-scale PV systems, with models available for service connections at 600 Vac and 480 Vac. Designed and engineered in Lawrence, MA, the SOLECTRIA XGI inverters are assembled and tested at Yaskawa America's facilities in Buffalo Grove, IL. The XGI 1500 inverters are Made in the USA with global components, and are compliant with the Buy American Act.

# XGI™ 1500-250 SERIES INVERTERS

## SPECIFICATIONS

SOLECTRIA MODEL NUMBER		XGI 1500 250/250-600	XGI 1500 225-600	XGI 1500 200/200-480	XGI 1500 175-480
DC Input	Absolute Maximum Input Voltage	1500 VDC			
	Maximum Power Input	860-1250 VDC			
	Voltage Range (MPPT)	860-1450 VDC			
	Operating Voltage Range (MPPT)	1 MPPT			
	Number of MPP Trackers	296.7 A			
	Maximum Operating Input Current	267 A	237.3 A	207.6 A	
	Maximum Operating PV Power	255 kW	230 kW	204 kW	
	Maximum DC/AC Ratio   Max Rated PV Power	2.0   500 kW	2.22   500 kW	2.5   500 kW	
AC Output	Max Rated PV Short-Circuit Current (ΣIsc x 1.25)	500 A			
	Nominal Output Voltage	600 VAC, 3-Phase		480 VAC, 3-Phase	
	AC Voltage Range	-12% to +10%			
	Continuous Real Output Power	250 kW	225 kW	200 kW	175 kW
	Continuous Apparent Output Power	250 kVA	Selectable: 225 or 250 kVA	200 kVA	Selectable: 175 or 200 kVA
	Maximum Output Current	240.6 A	216.5 A	240.6 A	210.5 A
	Nominal Output Frequency	60 Hz			
	Power Factor (Unity default)	+/- 0.80 Adjustable			
	Total Harmonic Distortion (THD) @ Rated Load	<3%			
	Grid Connection Type	3-Ph + N/GND			
Efficiency	Fault Current Contribution (1 cycle RMS)	144 A			
	Peak Efficiency	99.0%			
	CEC Average Efficiency	98.5%			
Temperature	Tare Loss	<1 W			
	Ambient Temperature Range	-40°F to 140°F (-40°C to 60°C)			
	De-Rating Temperature	113°F (45°C)			
	Storage Temperature Range	-40°F to 167°F (-40°C to 75°C)			
	Relative Humidity (non-condensing)	0 - 95%			
Communications	Operating Altitude	9,840 ft (3 km)			
	Advanced Graphical User Interface	WiFi			
	Communication Interface	Ethernet			
	Third-Party Monitoring Protocol	SunSpec Modbus TCP/IP			
	Web-Based Monitoring	Optional			
Testing & Certifications	Firmware Updates	Remote and Local			
	Safety Listings & Certifications	UL 1741, IEEE 1547, UL 1998			
	Advanced Grid Support Functionality	Rule 21, UL 1741SA			
Warranty	Testing Agency	ETL			
	FCC Compliance	FCC Part 15 (Subpart B, Class A)			
Enclosure	Standard and Options	5 Years Standard; Option for 10 Years			
	Acoustic Noise Rating	73 dBA @ 1 m ; 67dBA @ 3 m			
	DC Disconnect	Integrated 2-Pole 400 A DC Disconnect			
	Mounting Angle	Vertical only			
	Dimensions	Height: 29.5 in. (750 mm)   Width: 44.3 in. (1125 mm)   Depth: 15.4 in. (390 mm)			
	Weight	290 lbs (131.5 kg)			
	Enclosure Rating and Finish	Type 4X, Polyester Powder-Coated Aluminum			





# **APPENDIX E**

## **FEDERAL AVIATION ADMINISTRATION DETERMINATIONS**



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7358-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 1
Location:	Uncasville, CT
Latitude:	41-28-42.64N NAD 83
Longitude:	72-07-55.48W
Heights:	252 feet site elevation (SE) 22 feet above ground level (AGL) 274 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).



If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7358-OE

**Signature Control No: 500590422-502942843**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7358-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 274 feet above mean sea level.

**Location:** The structure will be located 9.73 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7359-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 2
Location:	Uncasville, CT
Latitude:	41-28-42.60N NAD 83
Longitude:	72-07-50.95W
Heights:	257 feet site elevation (SE) 22 feet above ground level (AGL) 279 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).



If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7359-OE

**Signature Control No: 500590424-502942839**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7359-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 279 feet above mean sea level.

**Location:** The structure will be located 9.71 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7360-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 3
Location:	Uncasville, CT
Latitude:	41-28-42.38N NAD 83
Longitude:	72-07-50.10W
Heights:	257 feet site elevation (SE) 22 feet above ground level (AGL) 279 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).



If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7360-OE

**Signature Control No: 500590425-502942840**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7360-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 279 feet above mean sea level.

**Location:** The structure will be located 9.7 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

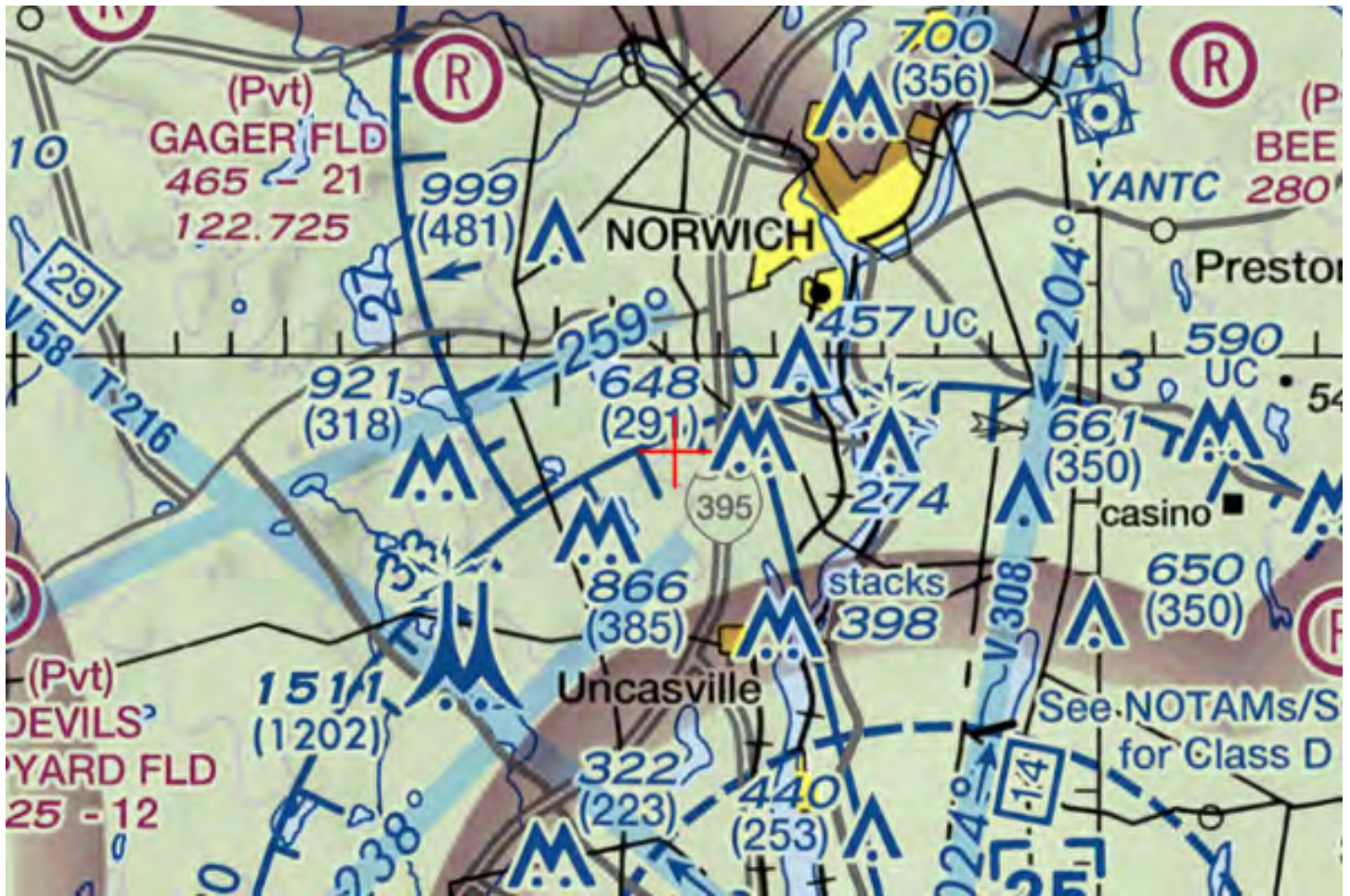
As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7361-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 4
Location:	Uncasville, CT
Latitude:	41-28-41.48N NAD 83
Longitude:	72-07-48.54W
Heights:	264 feet site elevation (SE)
	22 feet above ground level (AGL)
	286 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7361-OE

**Signature Control No: 500590426-502942835**

( TMP )

Stephanie Kimmel

Specialist



## **Additional Condition(s) or Information for ASN 2021-ANE-7361-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 286 feet above mean sea level.

**Location:** The structure will be located 9.68 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

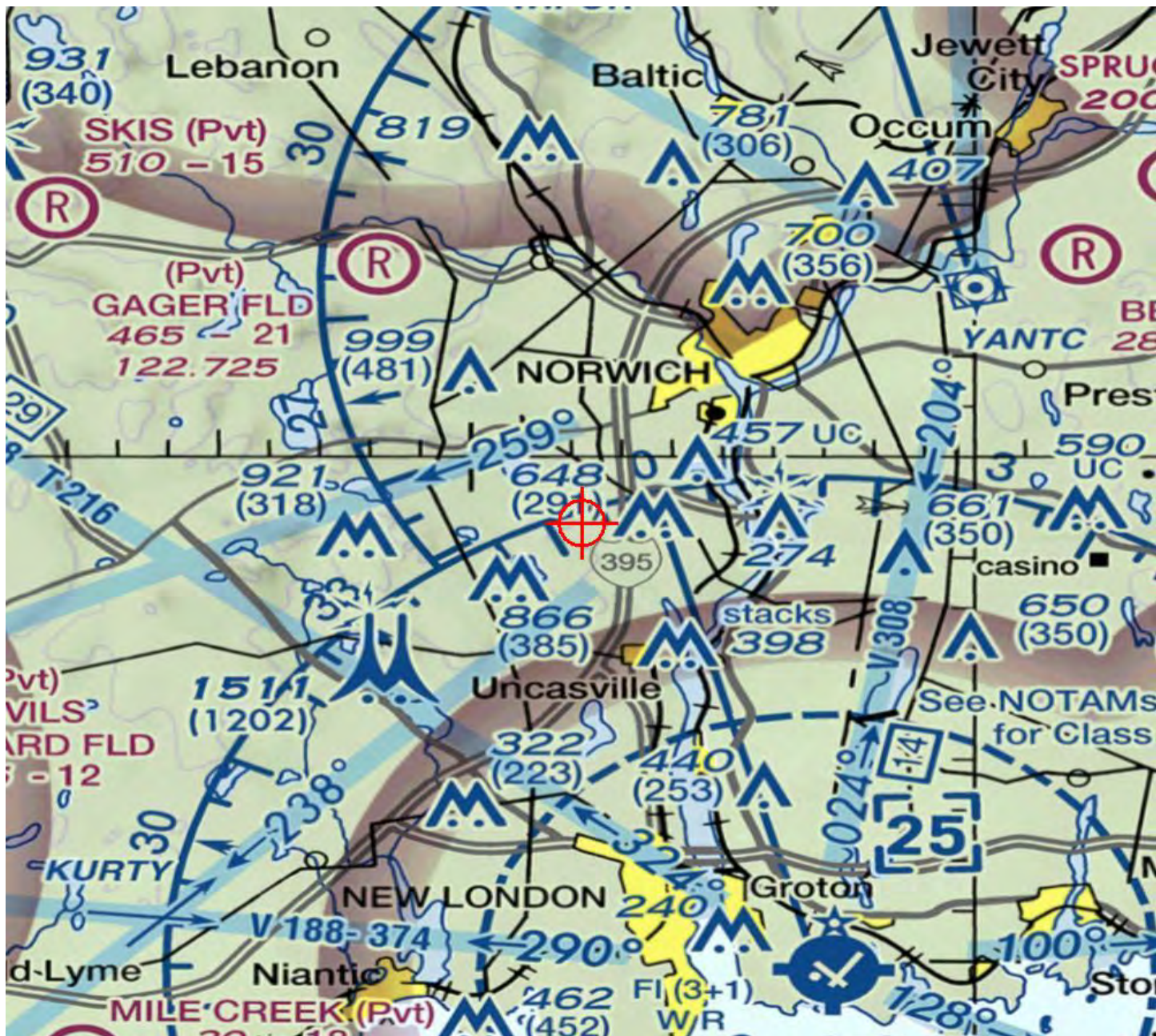
Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7362-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 5 (HP)
Location:	Uncasville, CT
Latitude:	41-28-39.18N NAD 83
Longitude:	72-07-47.82W
Heights:	277 feet site elevation (SE) 22 feet above ground level (AGL) 299 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).



If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7362-OE

**Signature Control No: 500590427-502942842**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7362-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 299 feet above mean sea level.

**Location:** The structure will be located 9.64 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7363-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 6
Location:	Uncasville, CT
Latitude:	41-28-37.38N NAD 83
Longitude:	72-07-47.82W
Heights:	273 feet site elevation (SE) 22 feet above ground level (AGL) 295 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7363-OE

**Signature Control No: 500590428-502942834**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7363-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 295 feet above mean sea level.

**Location:** The structure will be located 9.61 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

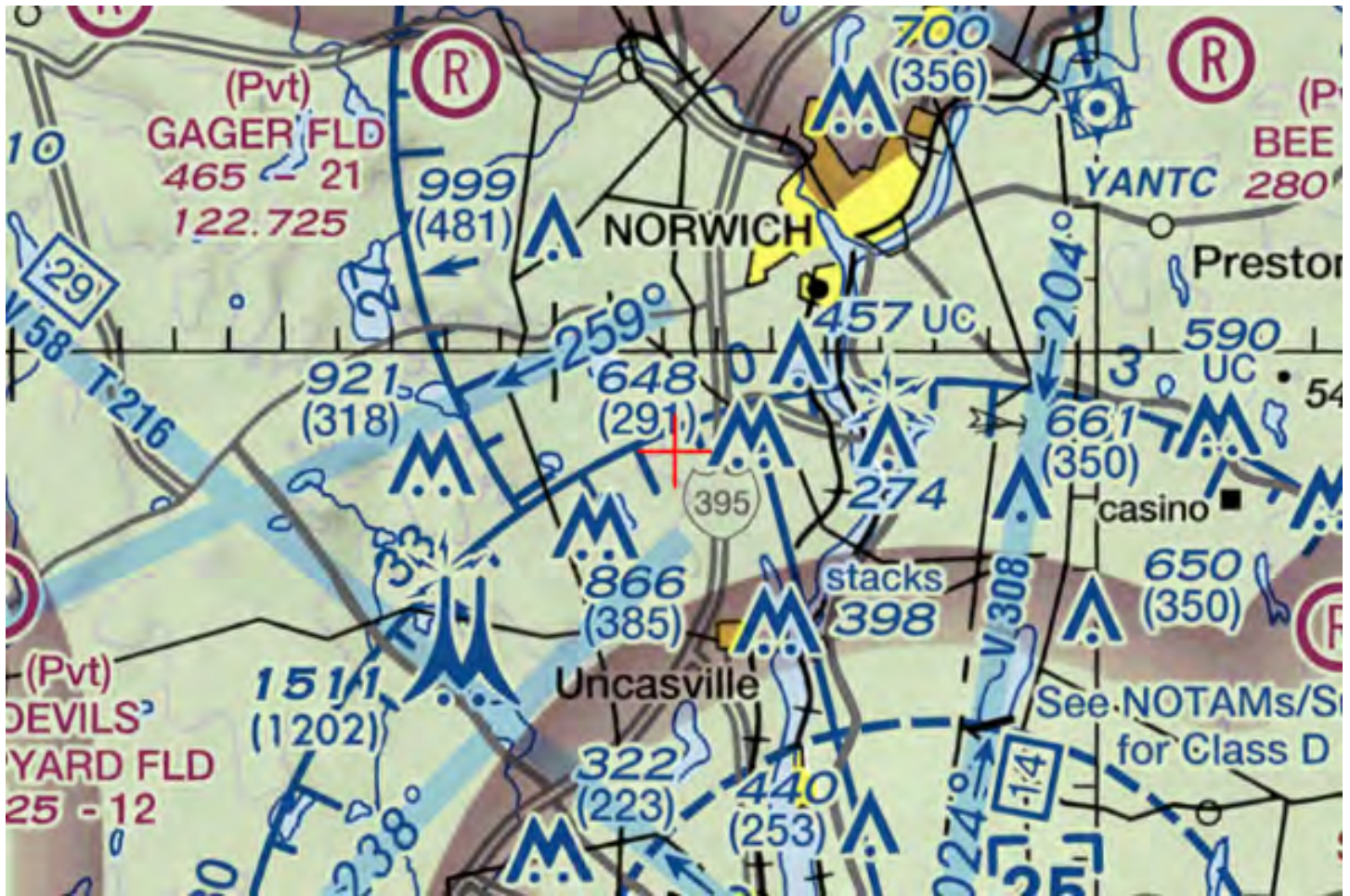
As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7364-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 7
Location:	Uncasville, CT
Latitude:	41-28-36.52N NAD 83
Longitude:	72-07-49.98W
Heights:	264 feet site elevation (SE) 22 feet above ground level (AGL) 286 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7364-OE

**Signature Control No: 500590429-502942838**

( TMP )

Stephanie Kimmel

Specialist



## **Additional Condition(s) or Information for ASN 2021-ANE-7364-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 286 feet above mean sea level.

**Location:** The structure will be located 9.61 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

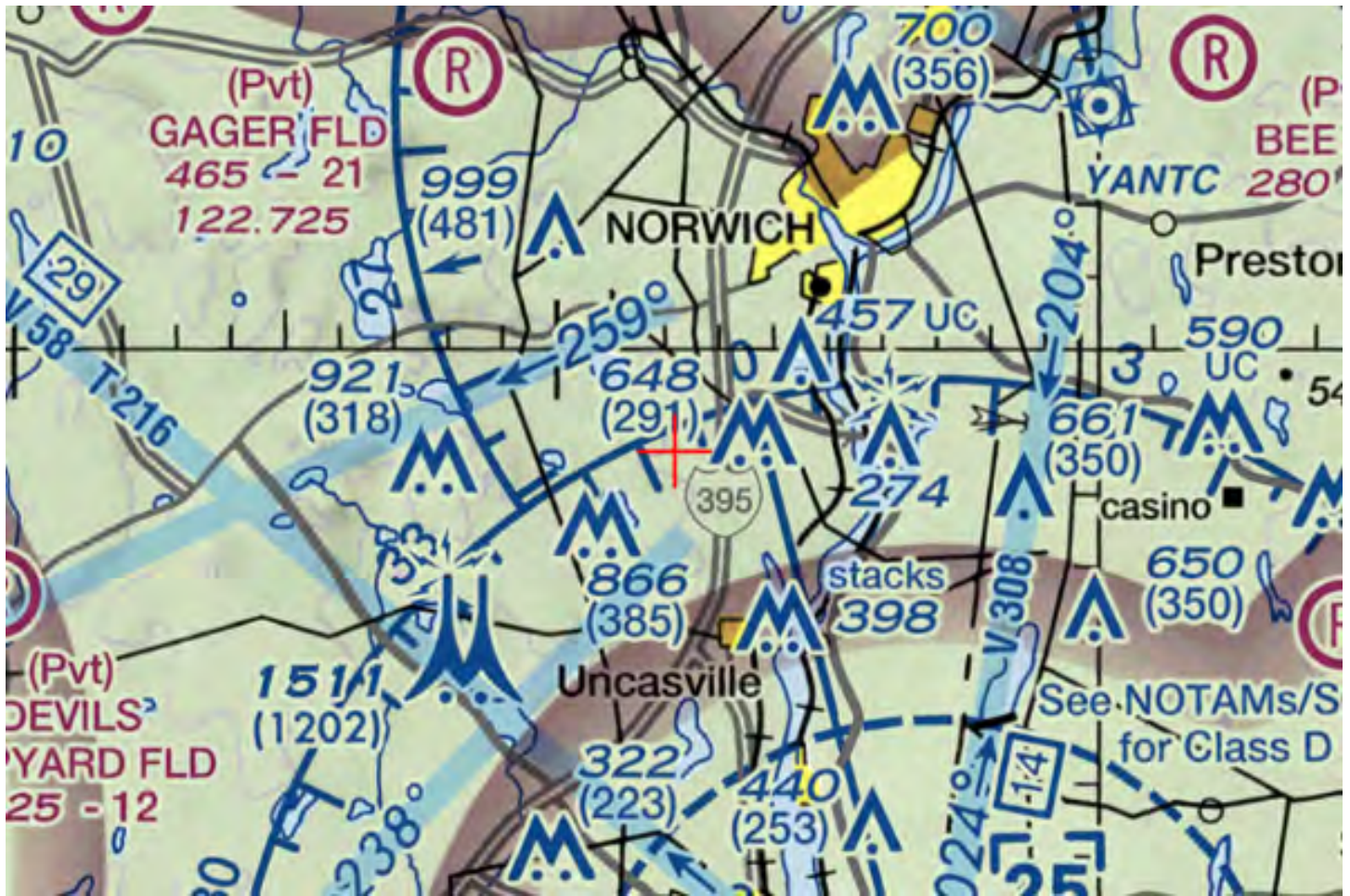
Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7365-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 8
Location:	Uncasville, CT
Latitude:	41-28-36.30N NAD 83
Longitude:	72-07-50.95W
Heights:	263 feet site elevation (SE) 22 feet above ground level (AGL) 285 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).



If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7365-OE

**Signature Control No: 500590430-502942833**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7365-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 285 feet above mean sea level.

**Location:** The structure will be located 9.61 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

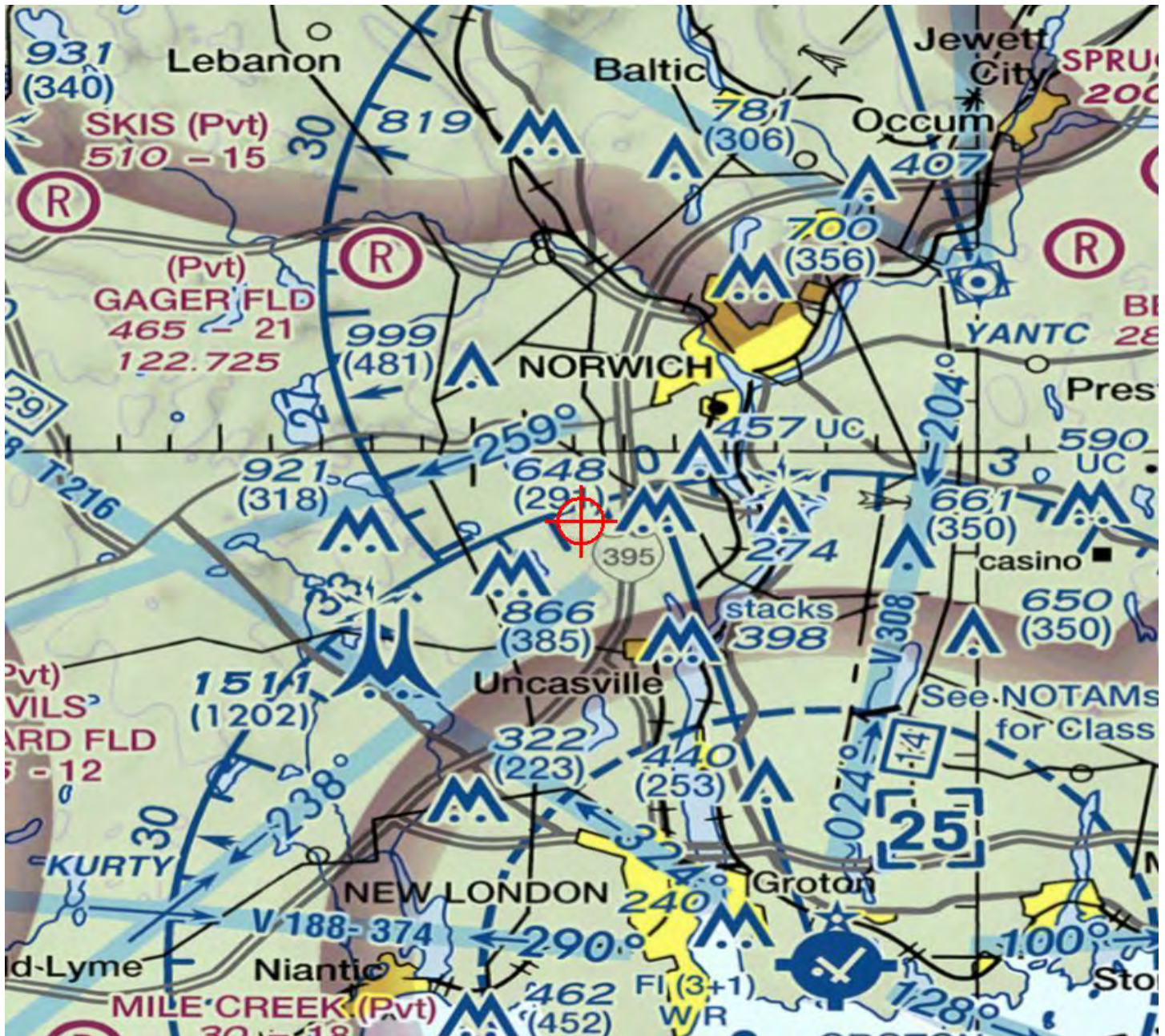
Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7366-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 9
Location:	Uncasville, CT
Latitude:	41-28-36.34N NAD 83
Longitude:	72-07-54.73W
Heights:	256 feet site elevation (SE) 22 feet above ground level (AGL) 278 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7366-OE

**Signature Control No: 500590431-502942836**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7366-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 278 feet above mean sea level.

**Location:** The structure will be located 9.63 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7367-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 10
Location:	Uncasville, CT
Latitude:	41-28-37.27N NAD 83
Longitude:	72-07-55.56W
Heights:	258 feet site elevation (SE) 22 feet above ground level (AGL) 280 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7367-OE

**Signature Control No: 500590432-502942844**

( TMP )

Stephanie Kimmel

Specialist



## **Additional Condition(s) or Information for ASN 2021-ANE-7367-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 280 feet above mean sea level.

**Location:** The structure will be located 9.65 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**





Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7368-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 11
Location:	Uncasville, CT
Latitude:	41-28-39.72N NAD 83
Longitude:	72-07-55.96W
Heights:	258 feet site elevation (SE) 22 feet above ground level (AGL) 280 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).



If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7368-OE

**Signature Control No: 500590433-502942837**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7368-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 280 feet above mean sea level.

**Location:** The structure will be located 9.69 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This determination expires on 05/30/2023 unless extended, revised, or terminated by the issuing office.

**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7369-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\*DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE\*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Mobile Crane Point 12
Location:	Uncasville, CT
Latitude:	41-28-41.66N NAD 83
Longitude:	72-07-55.88W
Heights:	255 feet site elevation (SE) 22 feet above ground level (AGL) 277 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

**\*\*SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION\*\***

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7369-OE

**Signature Control No: 500590434-502942841**

( TMP )

Stephanie Kimmel

Specialist

## **Additional Condition(s) or Information for ASN 2021-ANE-7369-OE**

**Proposal:** To construct and/or operate a(n) Mobile Crane to a height of 22 feet above ground level, 277 feet above mean sea level.

**Location:** The structure will be located 9.72 nautical miles northwest of GON Airport reference point.

### **Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:**

Aeronautical study revealed that the temporary structure will not exceed any Part 77 obstruction standard. Aeronautical study confirmed that the temporary structure will have no effect on any existing or proposed arrival, departure or en route instrument/visual flight rules (IFR/VFR) operations or procedures. Additionally, aeronautical study confirmed that the temporary structure will have no physical or electromagnetic effect on the operation of air navigation and communications facilities and will not impact any airspace and routes used by the military. Based on this aeronautical study, the FAA finds that the temporary structure will have no adverse effect on air navigation and will not impact any aeronautical operations or procedures.

Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

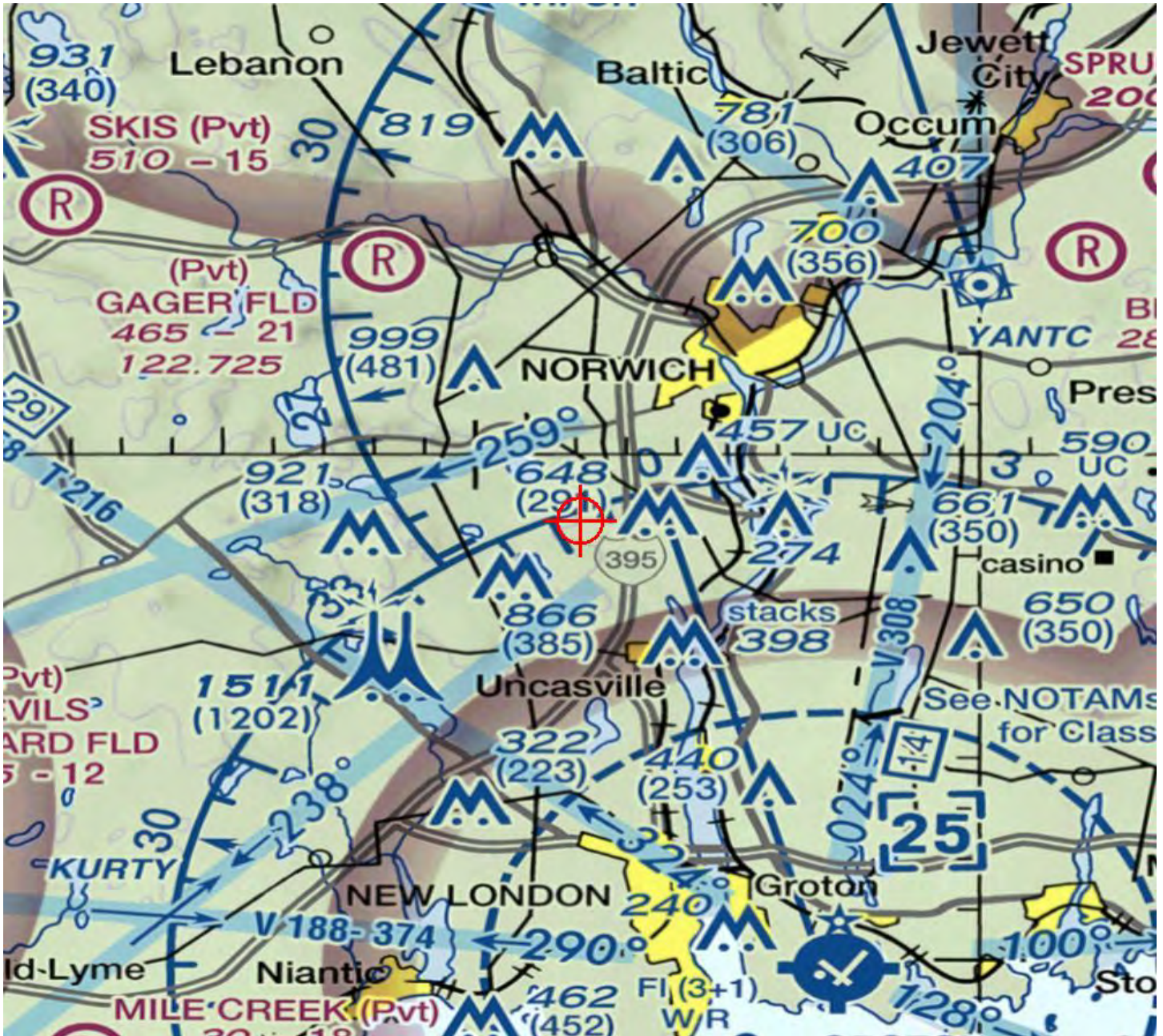
As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, marked-Chapters 3(Marked),14(Temporary),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

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**NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.**







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7371-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 1
Location:	Uncasville, CT
Latitude:	41-28-42.64N NAD 83
Longitude:	72-07-55.48W
Heights:	252 feet site elevation (SE)
	10 feet above ground level (AGL)
	262 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7371-OE.

**Signature Control No: 500599663-502942467**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7372-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 3
Location:	Uncasville, CT
Latitude:	41-28-42.38N NAD 83
Longitude:	72-07-50.10W
Heights:	257 feet site elevation (SE) 10 feet above ground level (AGL) 267 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7372-OE.

**Signature Control No: 500599664-502942468**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7373-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 4
Location:	Uncasville, CT
Latitude:	41-28-41.48N NAD 83
Longitude:	72-07-48.54W
Heights:	264 feet site elevation (SE) 10 feet above ground level (AGL) 274 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7373-OE.

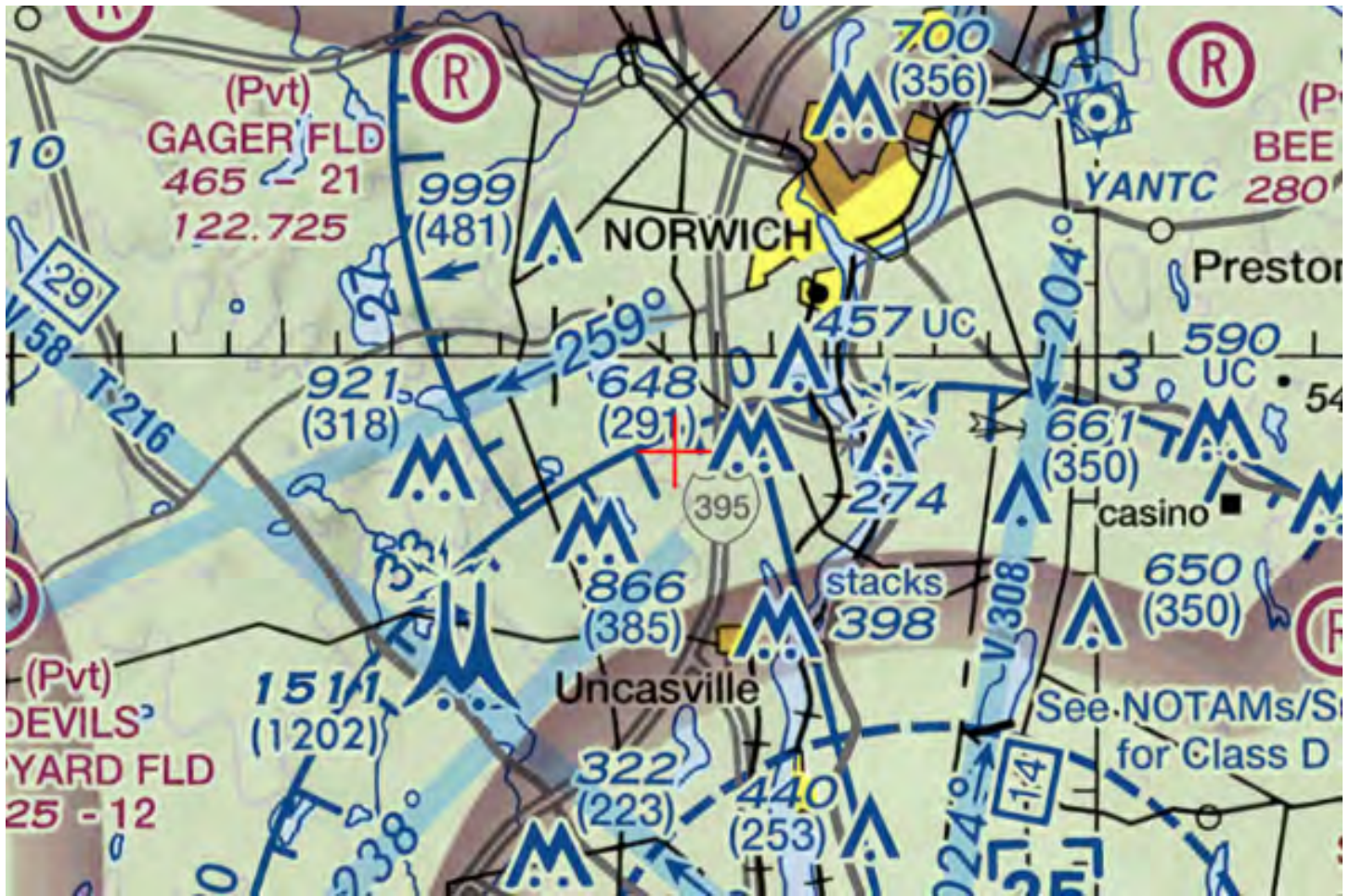
**Signature Control No: 500599666-502942466**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7374-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 5
Location:	Uncasville, CT
Latitude:	41-28-39.18N NAD 83
Longitude:	72-07-47.82W
Heights:	277 feet site elevation (SE)
	10 feet above ground level (AGL)
	287 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7374-OE.

**Signature Control No: 500599667-502942460**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7375-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 6
Location:	Uncasville, CT
Latitude:	41-28-37.38N NAD 83
Longitude:	72-07-47.82W
Heights:	273 feet site elevation (SE)
	10 feet above ground level (AGL)
	283 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7375-OE.

**Signature Control No: 500599668-502942461**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7376-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 7
Location:	Uncasville, CT
Latitude:	41-28-36.52N NAD 83
Longitude:	72-07-49.98W
Heights:	264 feet site elevation (SE) 10 feet above ground level (AGL) 274 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7376-OE.

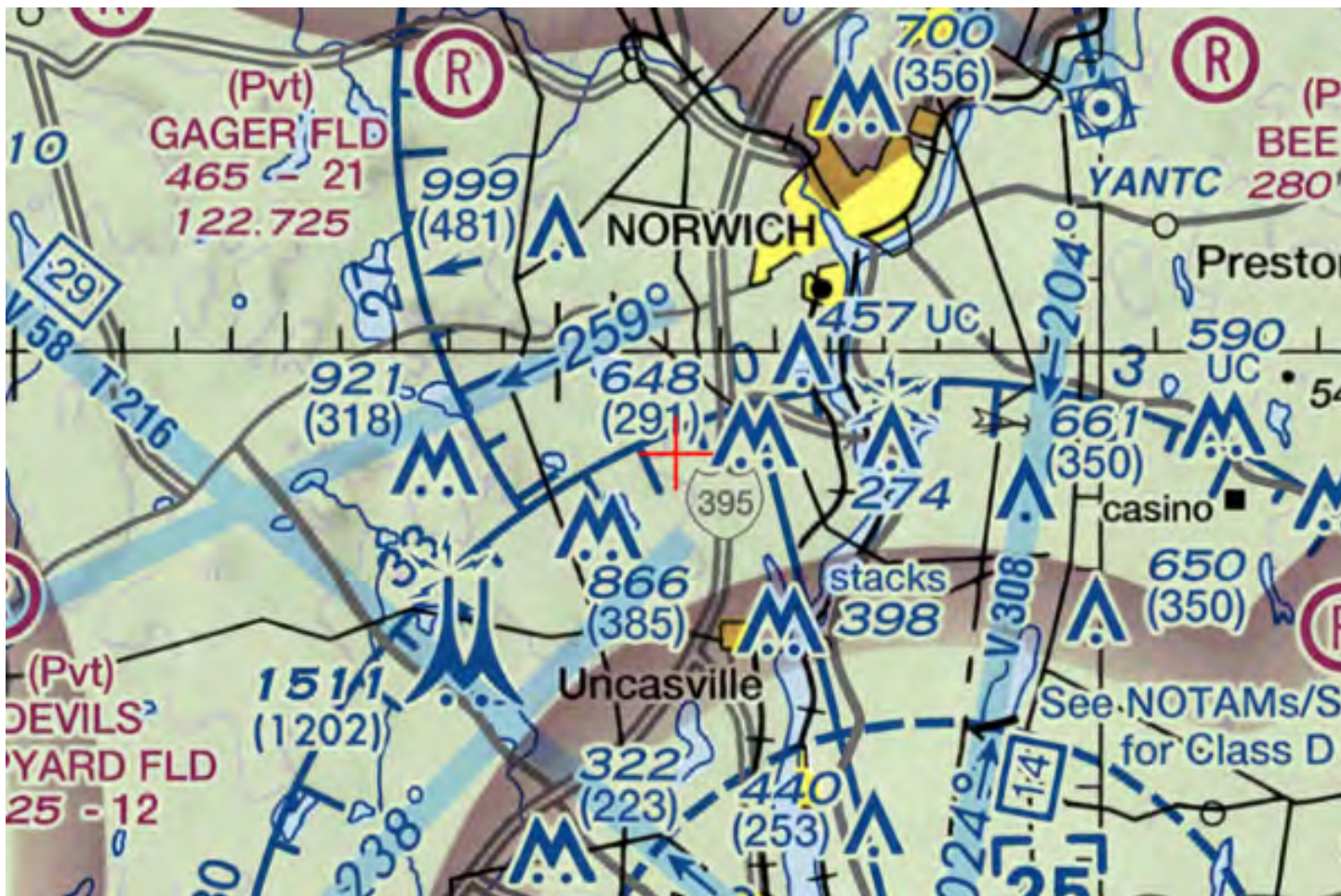
**Signature Control No: 500599671-502942464**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7377-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 8
Location:	Uncasville, CT
Latitude:	41-28-36.30N NAD 83
Longitude:	72-07-50.95W
Heights:	263 feet site elevation (SE) 10 feet above ground level (AGL) 273 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7377-OE.

**Signature Control No: 500599672-502942463**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7378-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 9
Location:	Uncasville, CT
Latitude:	41-28-36.34N NAD 83
Longitude:	72-07-54.73W
Heights:	256 feet site elevation (SE) 10 feet above ground level (AGL) 266 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7378-OE.

**Signature Control No: 500599673-502942459**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7379-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 10
Location:	Uncasville, CT
Latitude:	41-28-37.27N NAD 83
Longitude:	72-07-55.56W
Heights:	258 feet site elevation (SE) 10 feet above ground level (AGL) 268 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7379-OE.

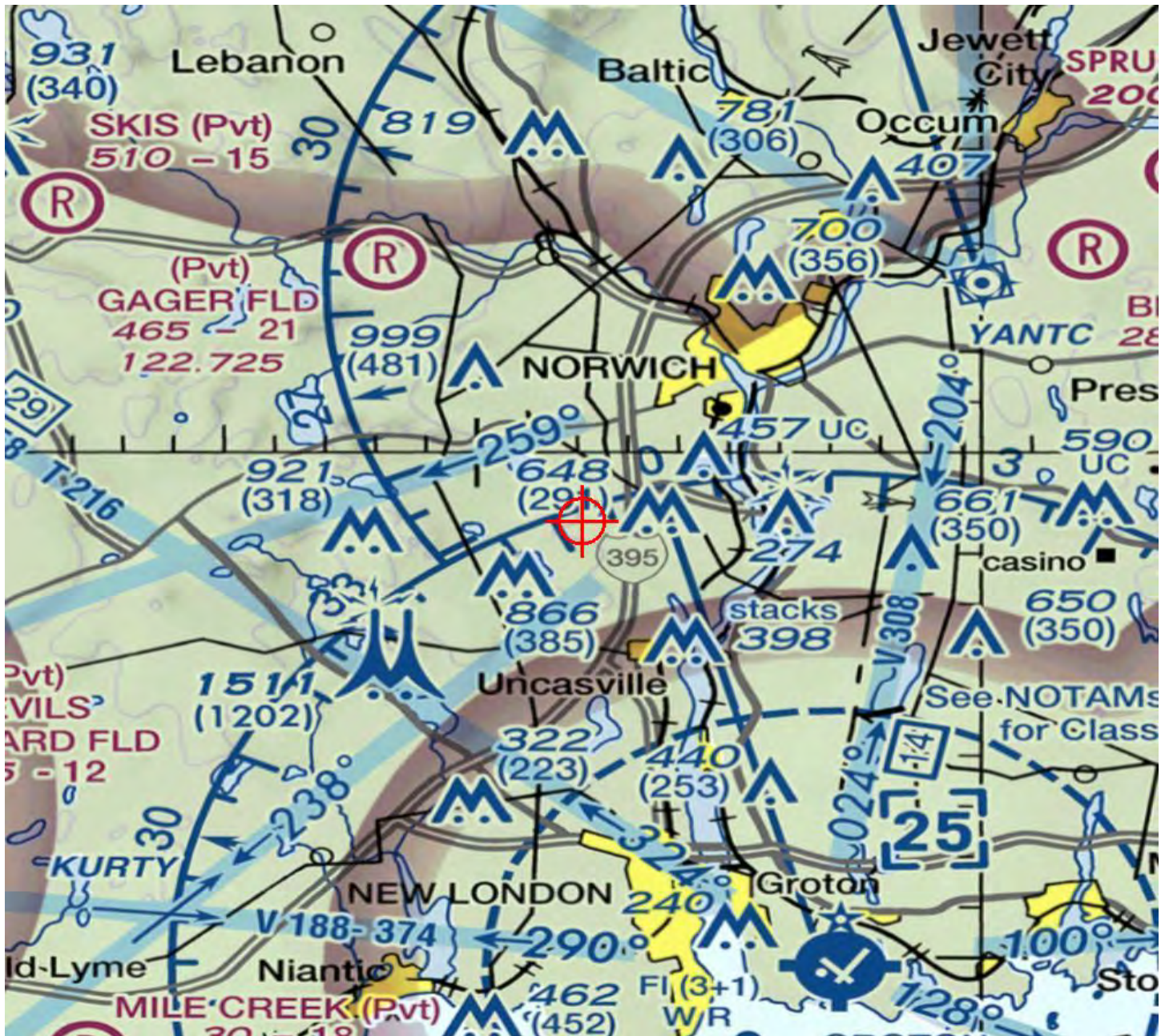
**Signature Control No: 500599674-502942465**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7380-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 11
Location:	Uncasville, CT
Latitude:	41-28-39.72N NAD 83
Longitude:	72-07-55.96W
Heights:	258 feet site elevation (SE) 10 feet above ground level (AGL) 268 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
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This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

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If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7380-OE.

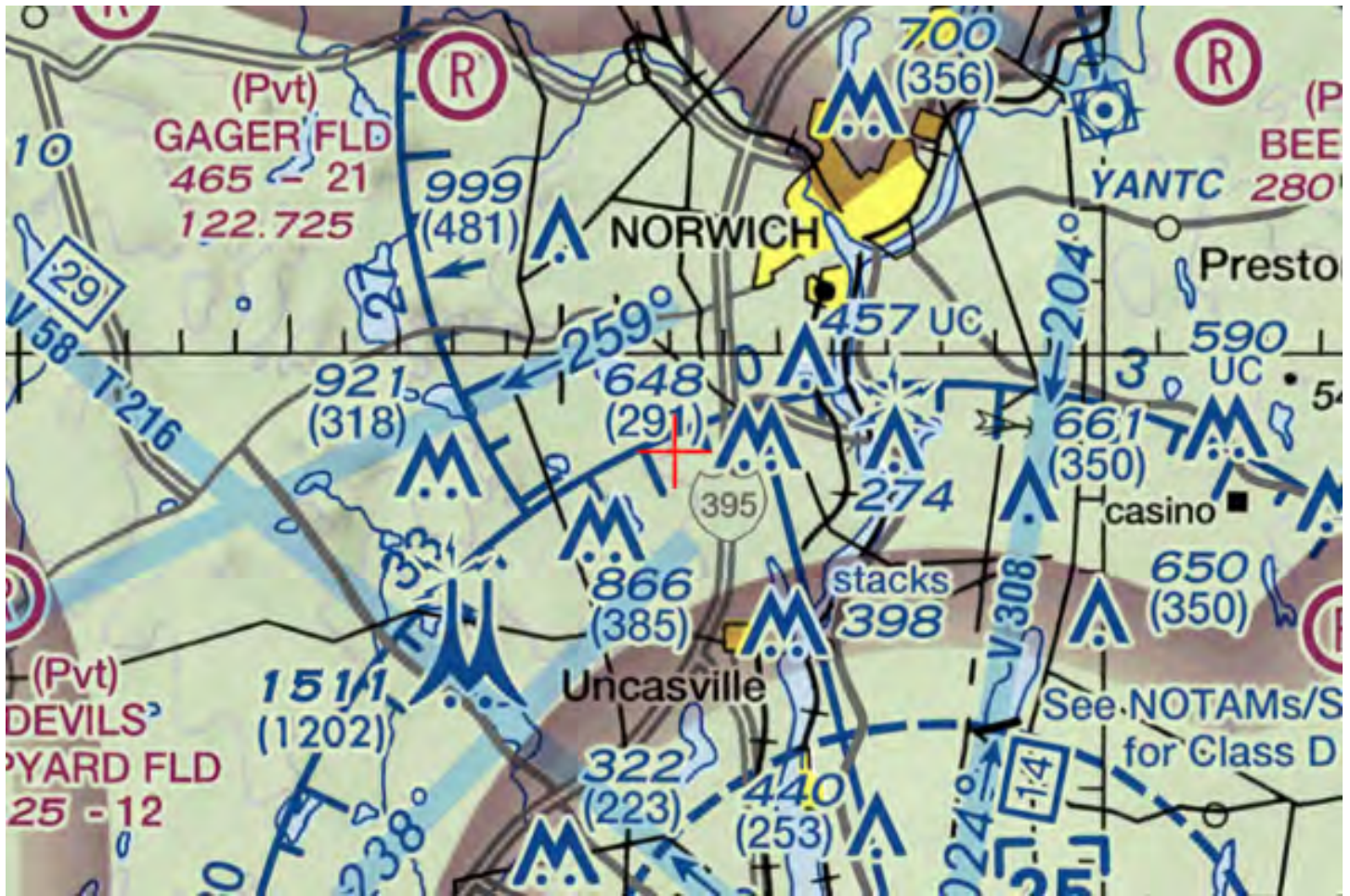
**Signature Control No: 500599675-502942470**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Aeronautical Study No.  
2021-ANE-7381-OE

Issued Date: 11/30/2021

Robert Burns  
All-Points Technology Corporation - Engineering  
3 Saddlebrook Dr  
Killingworth, CT 06419

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 12
Location:	Uncasville, CT
Latitude:	41-28-41.66N NAD 83
Longitude:	72-07-55.88W
Heights:	255 feet site elevation (SE) 10 feet above ground level (AGL) 265 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/30/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
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If we can be of further assistance, please contact our office at (404) 305-6582, or [Stephanie.Kimmel@faa.gov](mailto:Stephanie.Kimmel@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-7381-OE.

**Signature Control No: 500599676-502942469**

( DNE )

Stephanie Kimmel  
Specialist

Attachment(s)  
Map(s)





# **APPENDIX F**

## **VISIBILITY DOCUMENTATION**





**EXISTING**

**AERIAL PHOTOGRAPH  
SOURCE: PICTOMETRY 2020**

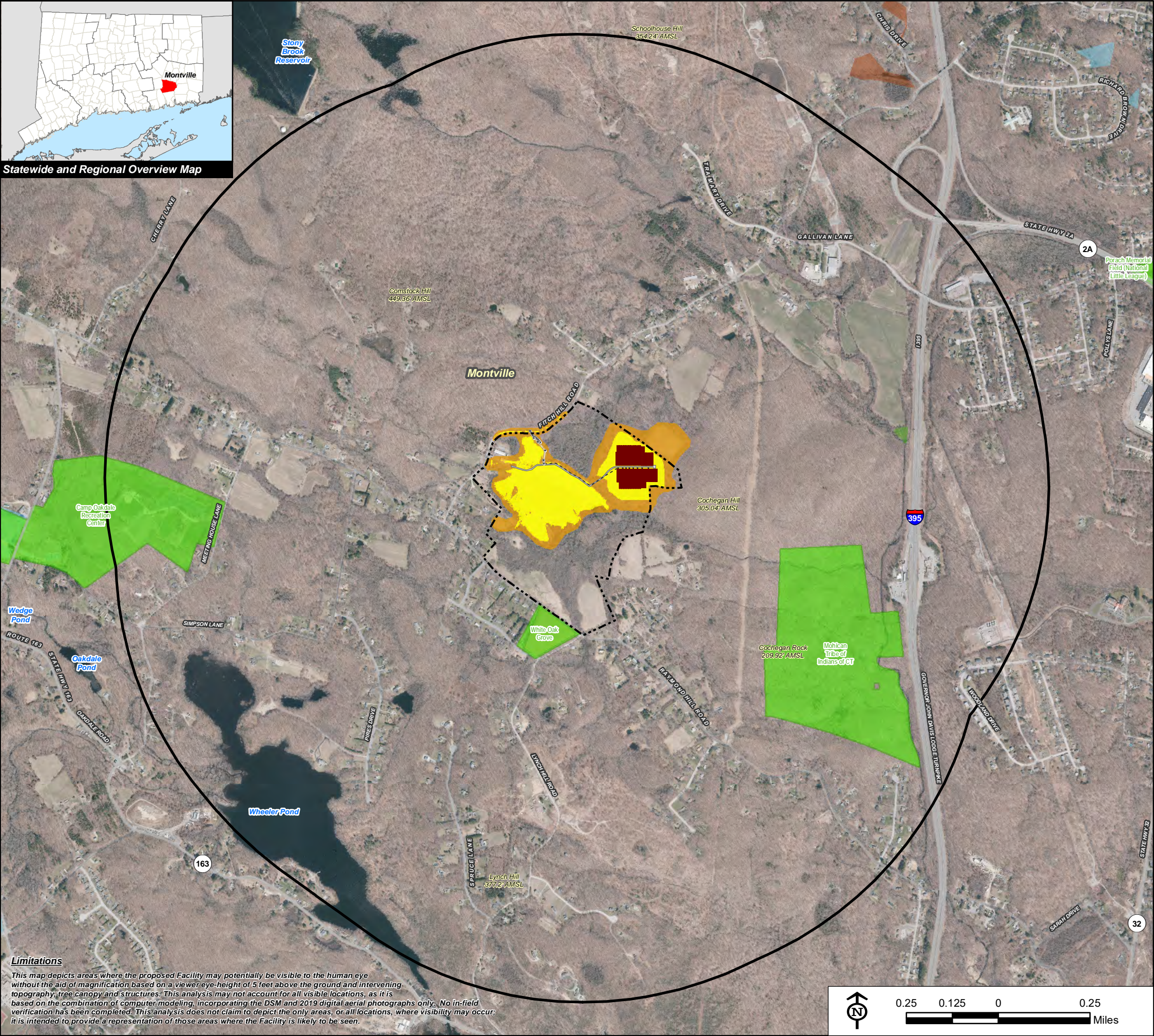




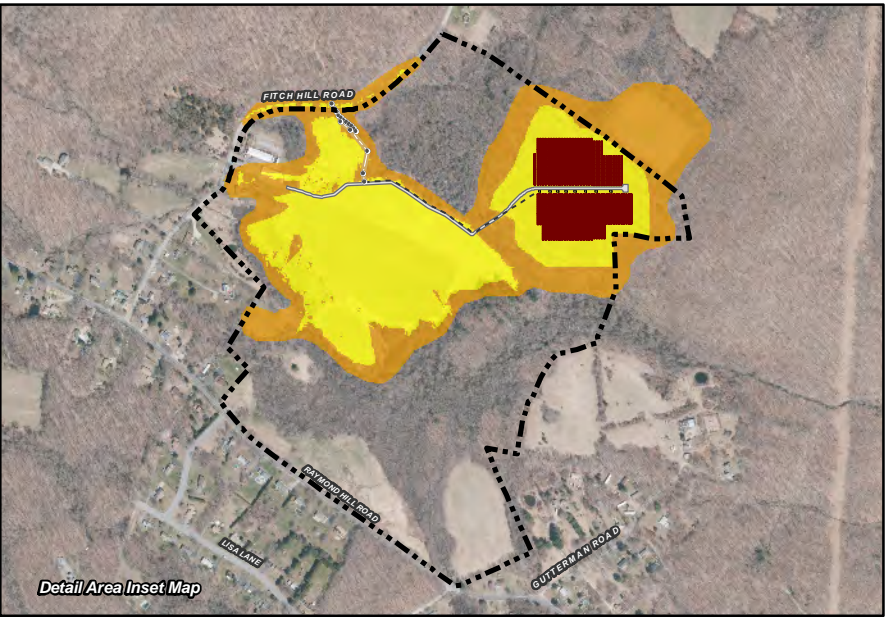
**PROPOSED**

**AERIAL PHOTOGRAPH  
SOURCE: PICTOMETRY 2020**





Statewide and Regional Overview Map



Detail Area Inset Map

## Viewshed Analysis Map

Proposed N Silver Brook Solar Facility  
486 Fitch Hill Road  
Uncasville, CT 06382

Proposed solar modules to be mounted on approximate 10' AGL support structures.  
Proposed interconnect utility poles to be approximately 40' AGL.  
Forest canopy height and topographic contours are derived from LiDAR data.  
Study area encompasses a 1-mile radius and includes 3,320 acres.  
Information provided on this map has not been field verified.  
Base Map Source: 2019 Aerial Photograph (CTECO)  
Map Date: January 2022

### Legend

Site	Trail
Interconnection Utility Pole	Scenic Highway
Interconnection Path (Underground)	DEEP Boat Launches
Interconnection Path (OVH)	Municipal and Private Open Space Property
Solar Modules	State Forest/Park
Concrete Pad	<b>Protected Open Space Property</b>
Gravel Access Road	Federal
Study Area (1-Mile Radius)	Land Trust
Predicted Year-Round Visibility (41 Acres)	Municipal
Areas of Potential Seasonal Visibility (31 Acres)	Private
Municipal Boundary	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)

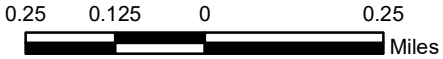
#### Notes

**\*\*Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.**

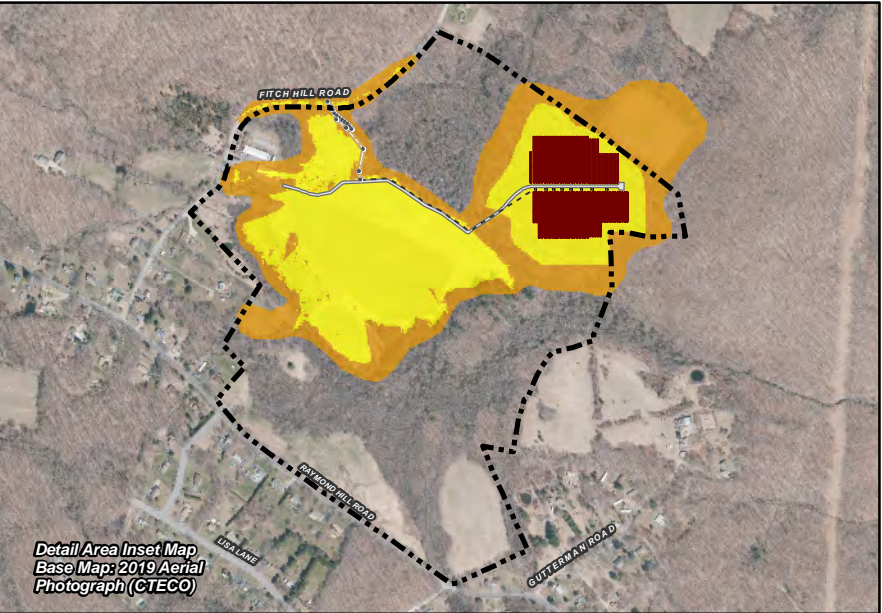
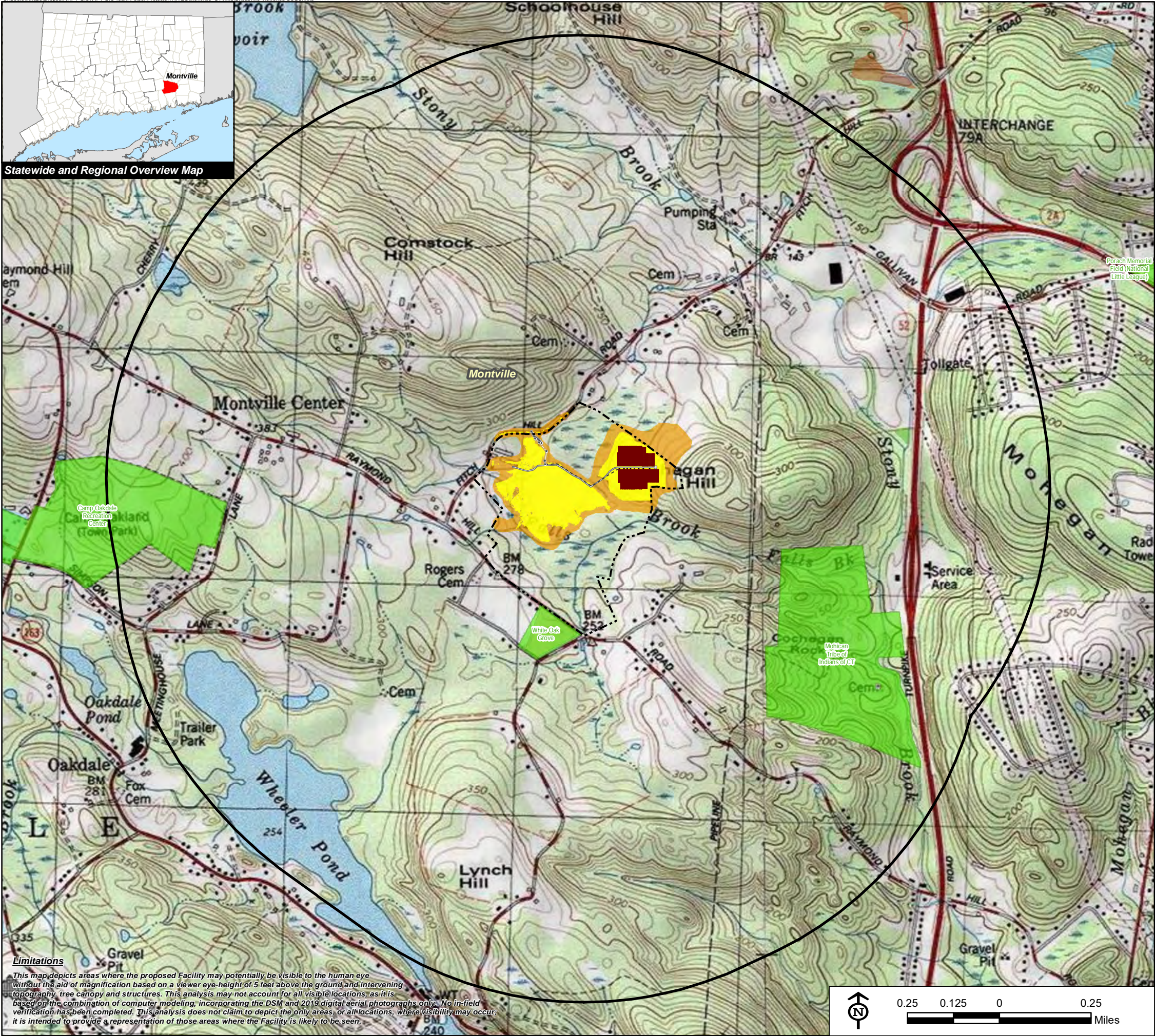


### Limitations

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 and 2019 digital aerial photographs only. No in-field verification has been completed. 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.







## Viewshed Analysis Map

Proposed N Silver Brook Solar Facility  
486 Fitch Hill Road  
Uncasville, CT 06382

Proposed solar modules to be mounted on approximate 10' AGL support structures.  
Proposed interconnect utility poles to be approximately 40' AGL.  
Forest canopy height and topographic contours are derived from LiDAR data.  
Study area encompasses a 1-mile radius and includes 3,320 acres.  
Information provided on this map has not been field verified.  
Base Map Source: Montville, CT (1983) and Uncasville, CT (1984)  
Map Date: January 2022