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November 7, 2017

VIA ELECTRONIC MAIL AND FIRST CLASS MAIL
Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition 1310 – Quinebaug Solar, LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction, maintenance and operation of a 50 megawatt AC solar photovoltaic electric generating facility on approximately 561 acres comprised of 29 separate and abutting privately-owned parcels located generally north of Wauregan Road in Canterbury and south of Rukstela Road and Allen Hill Road in Brooklyn, Connecticut.

Dear Ms. Bachman:

I am writing on behalf of the petitioner, Quinebaug Solar, LLC ("Quinebaug Solar") in connection with the above-referenced proceeding pending before the Connecticut Siting Council (the "Council").

As the Council is aware, this matter relates to Quinebaug Solar's June 15, 2017 petition (the "Petition") for a declaratory ruling by the Council that a Certificate of Environmental Compatibility and Public Need is not required for a proposed 50 megawatt AC solar project in the Towns of Brooklyn and Canterbury, Connecticut (the "Project"). To date, the Council has held two public hearings on the Petition, on September 19, 2017 and October 17, 2017.

During the public hearings Council Members and Staff inquired as to Quinebaug Solar's willingness to consider certain modifications to the Project, and expressed concerns related to the potential effect of the Project on wetlands, vernal pools, and habitat for certain state-listed species. Quinebaug Solar has considered these issues and offers the following changes to its original proposal in an effort to address the concerns. Quinebaug Solar believes that the changes not only address the Council's concerns, but underscore Quinebaug Solar's commitment to the State of Connecticut. As a Project selected by the Department of Energy and Environmental Protection ("DEEP") as part of the "Three State RFP," it represents an important step in Connecticut's path toward a clean energy future.

The information provided herein reflects the Petitioner's commitment to additional protection for vernal pools at the Project site, implementation of measures to avoid adverse impacts to certain species during construction, and mitigation for vernal pool impacts.

Vernal Pool Setbacks

In the June 2017 Petition, Quinebaug Solar proposed to maintain a 50 foot setback from delineated wetlands and vernal pools on the Project site. Based on feedback received from the Council, the Petitioner proposes to increase the no-work setback from the eight vernal pools within the Project area to 100 feet. Note that in the case of VP01_01, VP02_01, and VP03_01, the setbacks were previously greater than 100 feet; accordingly, these setbacks have not been changed. The setback from all other inland wetlands is proposed to remain at 50 feet, except in one instance where an existing access road is located in closer proximity.

Additionally, Quinebaug Solar proposes to reduce interrow spacing within the array from 15 feet to 14.5 feet, in an effort to reduce the overall footprint of the project and provide the greater setbacks from the vernal pools as noted above.

A revised proposed conditions figure is provided below. The figure shows the old and new limit of work. The Quinebaug Solar Project Proposed Design Updates table below provides a comparison of Project impacts and size between the Project as proposed in the Petition, and the Project following the increase of setbacks from vernal pools.

QUINEBAUG SOLAR PROJECT PROPOSED DESIGN UPDATES

	6/12/2017 Permit Plan Set	*Updated Project*	*Difference*
Development Area	±270 acres	±256 acres	±14 acres
Work in 0' to 50' Setback*	±19,113 S.F.	±19,113 S.F.	0*
Work in 50' to 100' Setback	29.31	25.7 AC	4.60
Number of Panels	±191,000 panels	±183,456 panels	±7,544 panels
Wattage of Modules	340 watts	355 watts	15
System Size (DC)	±65 MW	±65 MW	0 MW
System Size (AC)	50 MW	50 MW	–

* = Work within the 0 – 50 feet Setback is limited to improvements of an existing access road.

Note that despite the reduced development area, Quinebaug Solar proposes to modify the panels used in the Project from 340 watts to 355 watts, which allows the Project to maintain the system size originally identified in the Petition. Quinebaug will provide updated site/civil drawings

showing the revised layout and setbacks as part of the Development & Management Plan for the Project.

Updated Critical Terrestrial Habitat Analysis

To further evaluate the impact of the increased vernal pool setbacks, Quinebaug Solar has updated the Critical Terrestrial Habitat Analysis figures that were discussed in the Second Set of Interrogatories. The updated figures are attached as Attachment 1, and provide a comparison of work in the Critical Terrestrial Habitat to each vernal pool associated with the previous and currently proposed layout.

As identified by guidance provided in *Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States* (Calhoun and Klemens 2002)[1] and the *U.S. Army Corps of Engineers New England District's Vernal Pool Best Management Practices* (BMPs) document (U.S. Army Corps of Engineers 2015),[2] the revised Project design includes a no disturbance buffer of 100 feet around all vernal pools. Several vernal pools that have been identified as having a high ecological value will also include a critical terrestrial habitat buffer that extends up to 750 feet around the vernal pool as described in Calhoun and Klemens (2002). The importance of preserving critical terrestrial habitat, which occurs within the forested upland areas surrounding vernal pools, and the ranking of vernal pools for their relative ecological value based on the presence of locally rare or threatened species, egg mass counts of target amphibian species, and species diversity measures are described in Windmiller and Calhoun (2007)[3] and Calhoun and Klemens (2002). The vernal pool envelope and surrounding critical terrestrial habitat support the non-larval life cycle stages of vernal pool-breeding amphibians, and protect the water quality with the vernal pool (USACE 2015). The vernal pool envelope consists of the area within 0–100 feet of the vernal pool depression edge, and the critical terrestrial habitat area consists of the area within 100–750 feet

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[1] Calhoun, A. J. K. and M. W. Klemens. 2002. Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York. Available online at: http://www.nae.usace.army.mil/Portals/74/docs/regulatory/VernalPools/BestDevelopmentPractices20Oct2014.pdf. Accessed November 2, 2017.

[2] USACE. 2015. Vernal Pool Best Management Practices (BMPs). 5 pp. Available online at: http://www.nae.usace.army.mil/Portals/74/docs/regulatory/VernalPools/VPBMPsJan2015.pdf. Accessed November 2, 2017.

[3] B. Windmiller and A.J.K. Calhoun. 2007. Chapter 12. Conserving Vernal Pool Wildlife in Urbanizing Landscapes. 19 pp. In A.J.K. Calhoun and P.G. deMaynadier. 2007. Science and Conservation of Vernal Pools in Northeastern North America. CRC Press 2007

of the vernal pool depression edge (USACE 2015). The project as currently designed proposes no alteration within any vernal pool envelopes onsite.

During their life cycle, some vernal pool species require two or more distinct habitats in addition to the vernal pool and habitat within the vernal pool envelope, such as forested wetland and forested upland habitats (USACE 2015). To provide for protection of amphibians and other vernal pool-dependent fauna, the critical terrestrial habitat to remain around VP04_1, VP03_2, VP04_2, and VP-6_2 will be based on the "directional corridor" concept, as opposed to the "concentric circle" concept as described in USACE's Vernal Pool BMPs document (USACE 2015). This method was selected as the project is being developed in areas of existing clearing on and the existing disturbance within the areas (within several 100 feet) surrounding the pools. This is appropriate given the existing clearing that is present onsite and the active agriculture and land management that is ongoing around the vernal pools. Application of the concentric circle method may not provide for the terrestrial needs of vernal pool species. Directional corridors are designed to link habitats used by pool-breeding amphibians (i.e., breeding pools, forested wetlands, forested uplands) with forested travel corridors at appropriate migration scales (750 feet or greater).The 100-foot buffer around these vernal pools, based on the directional corridor method, will be designed based on the target species of the vernal pool that is to be conserved on a site-specific basis.

No disturbances will occur within 100 feet of all vernal pools. Quinebaug will:

- Maintain undeveloped forest habitat around the pool, including both canopy and understory;
- Avoid barriers to amphibian dispersal;
- Protect and maintain pool hydrology and water quality; and
- Maintain a pesticide-free environment (Calhoun and Klemens 2002).

In the critical terrestrial habitat area, Quinebaug will:

- Maintain or restore a minimum of 75% of the zone in contiguous (i.e. unfragmented) forest with undisturbed ground cover;
- Maintain or restore forested corridors connecting wetlands or vernal pools;
- Provide suitable terrestrial habitat for pool-breeding amphibian populations by maintaining or encouraging at least a partially-closed canopy stand that will provide shape, deep litter, and wood debris;

- Minimize disturbance to the forest floor; and
- Where possible, maintain native understory vegetation (e.g., shrubs and herbaceous vegetation) (Calhoun and Klemens 2002).

Quinebaug believes a change in use from active agriculture to a meadow habitat combined with the above guidelines will prevent degradation of onsite vernal pool habitat. While the historic forest canopy will not be restored in these agricultural areas, disturbance during the operation of the project would be reduced significantly. Herbaceous vegetation will re-establish and all forested wetlands present on site and adjacent to these vernal pools will remain intact. After construction, the operation of a solar generating facility will not result in increased risk to these habitats.

These measures also align with criteria used to assess conservation suitability for vernal pools that serve to mitigation for development impacts as described in *A Special Area Management Plan (SAMP) for Vernal Pools in Maine*, which include an undeveloped 100 foot water quality buffer and an undeveloped travel corridor from the pool to adjacent amphibian habitat to ensure that conserved pools are embedded within a landscape that provides habitat and access to it for all the life cycle stages of vernal pool breeding amphibians (Calhoun et al. 2016).[4]

Species Specific Presence/Absence/Impact Avoidance:

During the hearings, Council Members expressed concerns regarding two specific species, the eastern spadefoot toad (*Scaphiopus holbrookii*) and the pure-diploid blue-spotted Salamander (*Ambystoma laterale*). While Quinebaug Solar followed Connecticut standards and conformed to regional best practices and did not detect the presence of either species, it hopes to alleviate the Council's concerns through plans discussed below. Both the DEEP and Dr. Kevin Ryan (a subject matter expert) will be directly involved in formalizing and implementing the measures described herein.

The information below is intended to broadly outline the procedures necessary to detect the presence of eastern spadefoots and blue-spotted salamanders within the Project area prior to the initiation of construction. If either or both of the species are detected, data obtained from the species detection surveys and subsequent follow-up surveys will be used to inform procedures to

[4] A.J.K. Calhoun, R.M. Ladd, and M. Mullen. 2016. A Special Area Management Plan (SAMP) for Vernal Pools in Maine. August 2016. Available online at: http://www.nae.usace.army.mil/Portals/74/docs/regulatory/VernalPools/Maine_Vernal_Pool_SAMP(2016-08-11).pdf. Accessed November 2, 2017.

avoid take of individual diploid blue-spotted salamanders and eastern spadefoot toads during the construction process.

Eastern Spadefoot Toad

Habitat and Behavior

The Eastern Spadefoot is the only member of the spadefoot family (Scaphiopodidae) east of the Mississippi River. While common from Tennessee west to the Mississippi Valley, New England populations are scattered and disjunct, and typically found in river valleys with sandy, well-drained soils (Klemens, 1993), also a preferred habitat for humans. Some of these already localized populations have been extirpated, presumably related to urban/suburban development (Klemens 1993).

Klemens (2002) observed that the eastern spadefoot occurrences in eastern Connecticut coincided with Hinckley Soils. Hinckley soils are sandy, gravelly, and well drained (NRCS, 2008), characteristics that are consistent with reports of soil types preferred by eastern spadefoots (e.g., Pearson [1955] and Jansen et al. [2001]). Building on Klemens' observations, Moran and Button (2011) used soils and digital elevation model data from known eastern spadefoot sites in Connecticut, Massachusetts, and Rhode Island to create a GIS model that identifies and predicts potential eastern spadefoot habitat in the region. Data movement patterns and habitat selection of eastern spadefoots in the northeast are sparse; however, Ryan et al. (in prep.) studied eastern spadefoot movement patterns and habitat selection in eastern Connecticut and Timm et al. (2014) conducted a similar study at Cape Cod, Massachusetts. Quinebaug Solar understands that DEEP considers the Connecticut model data to be proprietary. Provided it can be obtained from DEEP, the Project plans to utilize this predictive model to identify sections of the site to focus these efforts. (Please note however that searches will not be limited only to areas identified by the predictive model.)

Eastern Spadefoots do not breed on a rhythmic, annual cycle typical of the large majority of North American pool-breeding amphibian species, and can forgo breeding for numerous, consecutive years (Ball, 1936; Klemens, 1993). Even in years when breeding occurs, the activity is explosive, typically lasting only 1 or 2 days or nights, and can occur anytime from late March through October in southern New England (Klemens, 1993). Because of this irregular and contracted breeding pattern, calling anuran surveys (frogs and toads) are severely limited as a primary tool to document and monitor local Eastern Spadefoot populations (Cook et al., 2011).

Eastern Spadefoots spend the vast majority of their lives in the uplands surrounding breeding pools in self-dug underground burrows from which they emerge sporadically at night to feed.

When aboveground for feeding purposes, they tend to remain close (<1 to ca. 35 m) to their burrows (Pearson, 1955; Johnson, 2003). Ryan et al. (2015) monitored non-breeding burrow emergences of eastern spadefoots. The results from these studies indicate that the most productive searches for Eastern Spadefoots in New England would be conducted on rainy nights from mid-June through mid-September when the average air temperature is >20°C. Additionally, searches conducted during nights following observed emergences, even in the absence of precipitation, may be helpful, as their results indicate that Eastern Spadefoots are more likely to emerge during sequential nights.

Preconstruction Species Detection Surveys

Quinebaug Solar will conduct additional pre-construction surveys to assess the presence/absence of the eastern spadefoot within the Project areas. The implementation, techniques, and timing protocols will be determined in collaboration with DEEP and Dr. Kevin Ryan. However, to demonstrate Quinebaug Solar's intent to avoid adverse impact to the eastern spadefoot, Quinebaug Solar will conduct at least ten days of visual encounter surveys prior to construction during optimal survey conditions (i.e., suitable weather). These optimal conditions would be planned during rainy nights from mid-June through mid-September when the average air temperature is >20C. Surveys will be conducted by a team of 3-4 individuals led by Dr. Kevin Ryan, who has documented experience detecting eastern spadefoots. Surveys will be focused on, but not limited to, areas identified by the Moran and Button (2011) predictive model. If no eastern spadefoots are encountered during initial effort, additional visual encounter surveys may be necessary across the site to determine that eastern spadefoots likely do not occur within the project area.

If Eastern Spadefoots are detected as a result of the additional surveys, a subset of up to 15 individuals would be implanted with radio transmitters. Telemetry fixes on implanted individuals would then be obtained once a week and after rain events totaling 0.5 inches of precipitation or more. GPS locations would then be taken at each telemetry location along with a suite of corresponding habitat variables.

Collected telemetry data on Eastern Spadefoot movements can then be used to inform avoidance practices regarding construction of the solar field.

Pure-Diploid Blue-Spotted Salamander

Habitat and Behavior

Blue-spotted salamanders breed in the early spring, typically in fish-free pools similar to those used by other ambystomatids (Klemens, 1993; Bogart and Klemens, 1997; Gibbs et al., 2007). In eastern Connecticut, blue-spotted salamander breeding migrations typically begin during the first warm rains after ground thaw which typically occur from mid-March through early April. Subsequent migrations and breeding activity takes place usually occurs over the next 1-4 weeks.

Blue-spotted salamanders are reported to occur in or around wooded swamps (Klemens, 1993) and to be more tolerant of dry, sandy conditions than are other ambystomatid salamanders within their range (Minton 1972, 2001; Voght 1981, cited in Lannoo, 2005). They may also be more willing to move across open fields and roads than are other salamander species (Regosin et al., 2005). Klemens (1993) and Gibbs et al. (2007) report that blue-spotted salamanders tend to be more surficial than other *Ambystoma* species, being found more readily under cover objects (rocks, logs) in spring, summer, and fall.

Ryan and Calhoun (2014) collected habitat data on pure-diploid individuals at 1- and 10-m diameter plots centered on animal locations. At the 10-m scale, salamander presence was correlated positively with percent cover of slash and correlated negatively with percent cover of grass, total basal area of trees, and relative humidity. At the 1-m scale, salamanders were found in deeper leaf litter and moist soil.

Preconstruction Species Detection Surveys

Prior to construction, Quinebaug Solar will undertake additional surveys in the Spring to detect the presence of pure-diploid blue-spotted salamanders. These surveys will consist of trapping using aquatic funnel-traps (minnow traps), searching for deposited eggs, and searching under cover objects. Minnow trapping will consist of placing traps in suspected breeding areas (e.g., vernal pools) overnight to capture salamanders. Trapping is conducted when salamanders are known or expected to be in breeding pools. Traps will be checked at least once every 24 hours and removed from pools during non-trapping periods.

Egg and cover object searches will occur concurrently with minnow trapping. Eggs will be searched for by carefully examining submerged objects (e.g., branches, emergent shrubs and grasses) to which salamanders might deposit eggs and cover objects surrounding potential breeding areas are overturned in search of adult individuals.

Precautionary Avoidance Procedures During Construction

Again, Quinebaug Solar has not detected either species of concern on the Project site to date. Quinebaug Solar will also undertake avoidance measures, if either species above are determined to be present within the Project area. These measures will conform to regional best practices and are designed to minimize risk to these species. Additional avoidance measures would include, but not be limited to:

- Species-specific preconstruction training will be provided to all construction staff prior to the commencement of construction activities. The training will teach staff to identify these species, preferred habitat on the project, and proper avoidance procedures if these species are encountered during construction.
- Temporary barriers (e.g., heavy-duty silt fence) will be installed to exclude target species from entering the construction zone. The barrier may be constructed to fully discourage individuals from breaching the limit of work (e.g., angling fence ends outward to divert away from the work zone). The barrier will be toed-in to an acceptable depth (4 to 6 inches) and installation will minimize vegetation disturbance. Searches for blue-spotted salamanders and eastern spadefoots will be conducted within enclosed areas to sanitize the area of these species prior to construction activities. Other reptile and amphibian species incidentally encountered will also be removed from enclosures.
- Pre-construction surveys will be conducted to ensure that species are not present within the construction zone. Surveys will be conducted on during weather conditions characteristic of higher levels of target species activity. Pre-construction due diligence to identify areas to be subject to exclusion and sanitization and would be directed by Dr. Ryan.
- The temporary barrier will be removed in a timely fashion after all work is completed and will be disposed of properly.
- If either species is encountered within the construction zone (following initial sanitization), the subject matter expert will conduct a full survey within the limit of work to check for additional individuals that may have entered the area.
- Clearing and grubbing will occur in during winter.
- Contingency protocols will be developed in the instance that an Eastern Spadefoot is excavated during any digging activities or if an injured Spadefoot is

encountered. Contact information and emergency protocol will be available so that personnel may have access to the appropriate wildlife rehabilitation center/specialist.

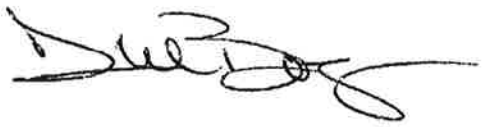
- Construction activity will not occur at night.

Compensation Payment

Quinebaug Solar believes the Project as proposed will not directly impact wetlands, watercourses, or vernal pools within the project area. The Project was designed with avoidance in mind and has been sited within existing agricultural fields and lands that have been previously altered by timber harvesting and gravel extraction. Nevertheless, to underscore its commitment, Quinebaug Solar will also agree to make a financial contribution in the amount of $75,000.00 to the Connecticut Audubon Society. In addition to the above-referenced avoidance measures, Quinebaug Solar's financial contribution will support Audubon's mission to increase the quality and extent of ecological restoration, enhancement, creation, and preservation projects throughout the state.

Thank you for your anticipated understanding and consideration of this supplementary filing. Please feel free to contact me if you have any questions regarding this correspondence.

Sincerely,



David W. Bogan

DWB

Enclosures

AM 67537255.3

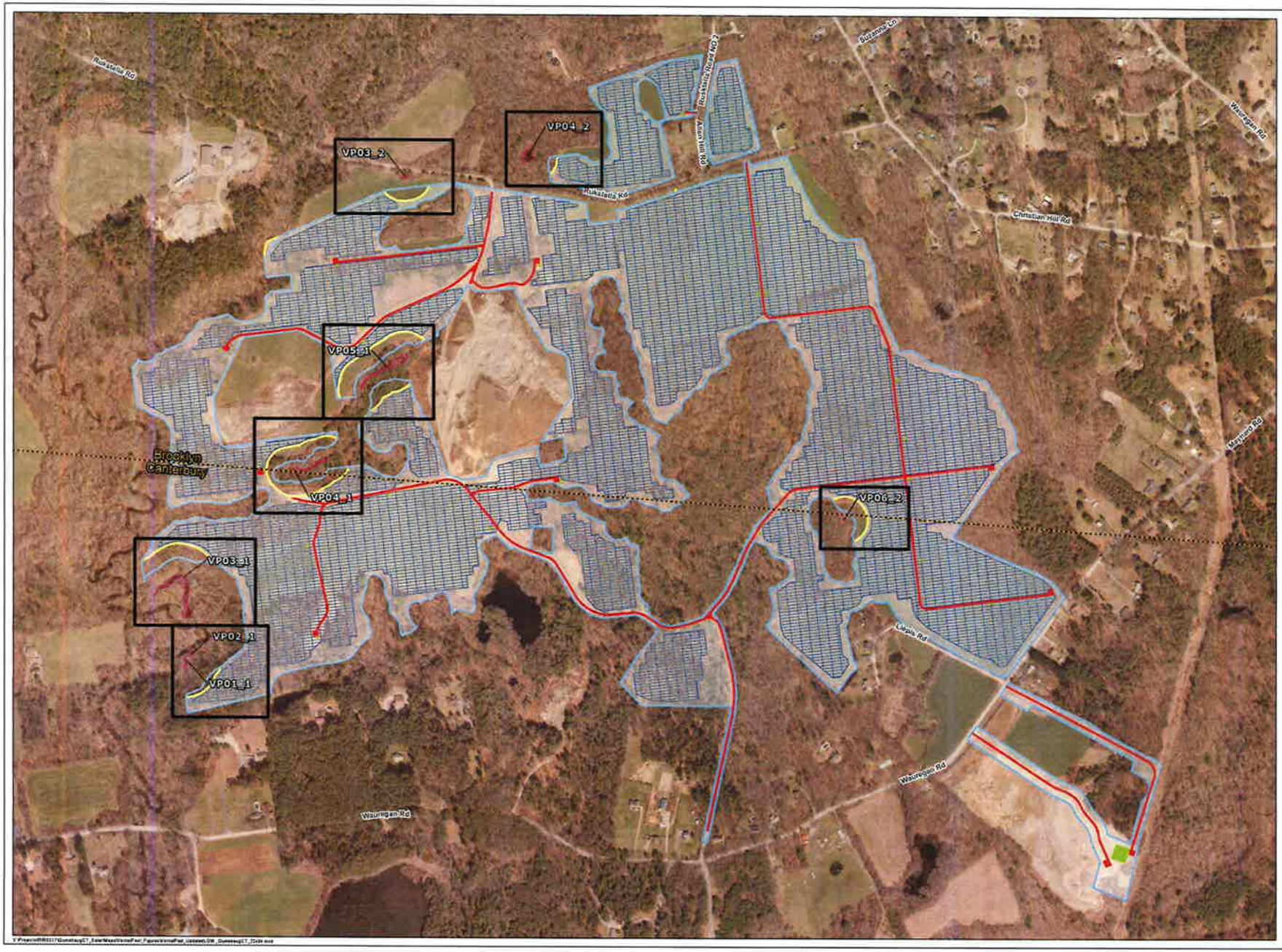
STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Petition No. 1310

Company: Quinebaug Solar, LLC

Submission Date: November 7, 2017

Quinebaug Solar Updated Overall Figure



LIMIT OF WORK

LEGEND

- Current Limit of Work
- Potential New Limit of Work
- Roads
- Equipment Pads
- Panels
- Vernal Pool
- Town Boundary
- Limit of Work Change Area

LOCUS MAP

0 300 600 Feet

1:3,600

NOTES

1. Based on 2016 Statewide Orthophotography, Courtesy of CTECO.

Comparison of Current Project (June 2017) and Updated Project (October 2017)
Quinebaug Solar
Brooklyn & Canterbury, Connecticut

November 2017

Tighe&Bond
Engineers | Environmental Specialists

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Petition No. 1310

Company: Quinebaug Solar, LLC

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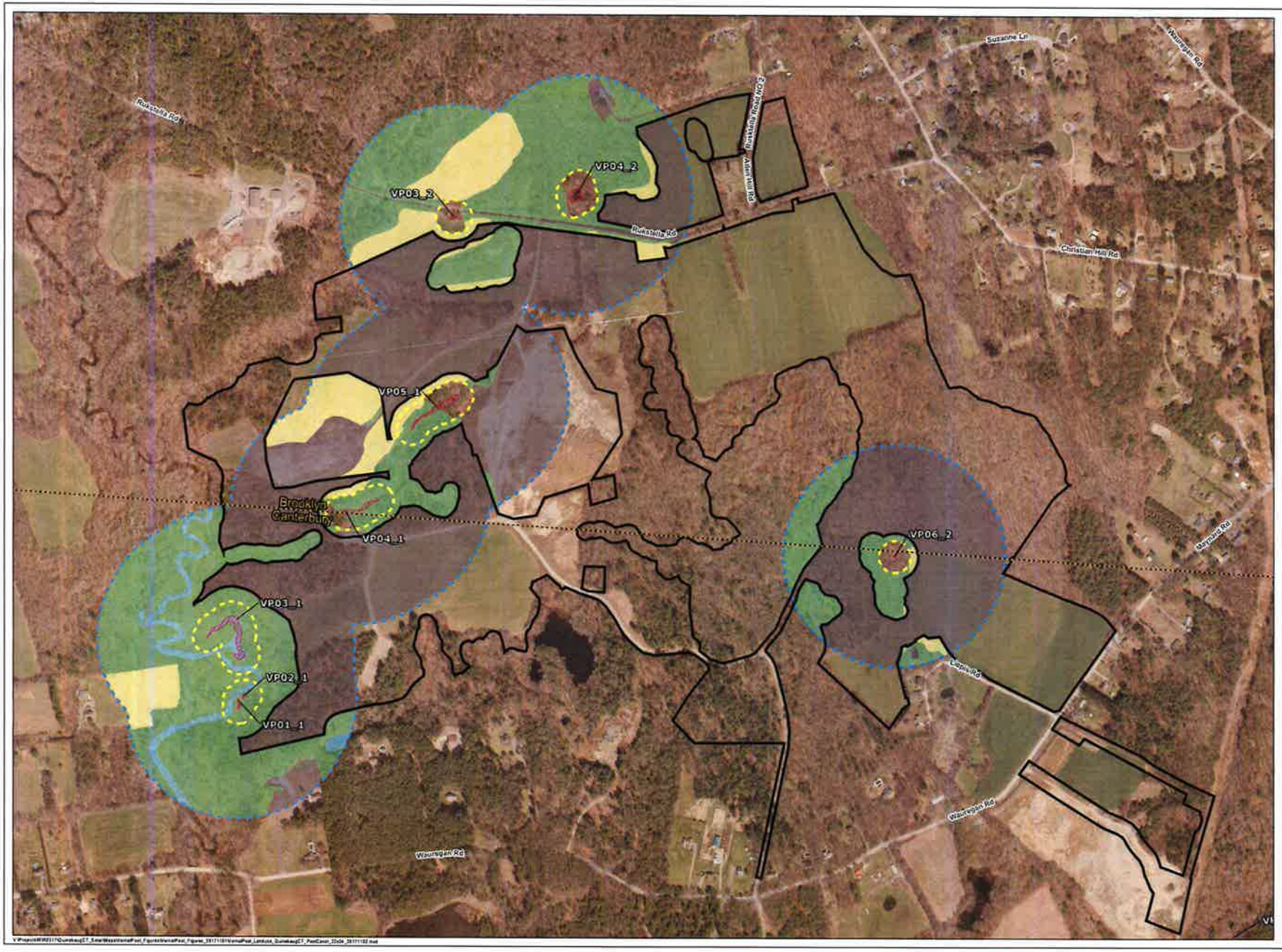
Quinebaug Solar Updated Vernal Pool Figures and Table

QUINEBAUG SOLAR PROJECT
CRITICAL TERRESTRIAL HABITAT (CTH) IMPACT COMPARISON: June 2017 vs. October 2017

Vernal Pool Identifier	Critical Terrestrial Habitat (Total Acres)	Existing CTH (Pre-Solar Development)		June 2017 Permit Plan Set		October 2017 Updated Project		Reduced Impacts based on October 2017 Updated Project	
		CTH Developed (Acres)	CTH Developed (%)	CTH Developed (Acres)	CTH Developed (%)	CTH Developed (Acres)	CTH Developed (%)	CTH Developed (Acres)	CTH Developed (%)
VP01_1	42.24	1.79	4.24	10.86	25.72	9.66	22.88	1.2	2.84
VP02_1	41.37	1.36	3.29	12.13	29.33	10.86	26.26	1.27	3.07
VP03_1	52.75	0	0	18.83	35.7	17.55	33.28	1.28	2.42
VP03_2	41.55	0.64	1.54	12.48	30.04	12.13	29.19	0.35	0.85
VP04_1	48.54	7.45	15.35	38.03	78.36	35.39	72.92	2.64	5.44
VP04_2	44.57	1.91	4.29	18.53	41.58	18.33	41.12	0.2	0.46
VP05_1	52.24	16.99	32.54	41.93	80.26	35.39	72.92	6.54	7.34
VP06_2	40.52	0.08	0.2	31.49	77.71	30.98	76.44	0.51	1.27



VERNAL POOLS POST-CONSTRUCTION

LEGEND

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water
- 100 ft Buffer Zone
- 750 ft Buffer Zone
- Vernal Pool
- Limit of Work
- Town Boundary

LOCUS MAP

0 300 600 Feet

1:3,600

NOTES

1. Based on 2016 Statewide Orthophotography, Courtesy of CTECO.
2. Landuse approximately digitized from 2015 statewide CT ortho.

Quinebaug Solar
Brooklyn & Canterbury, Connecticut

November 2017

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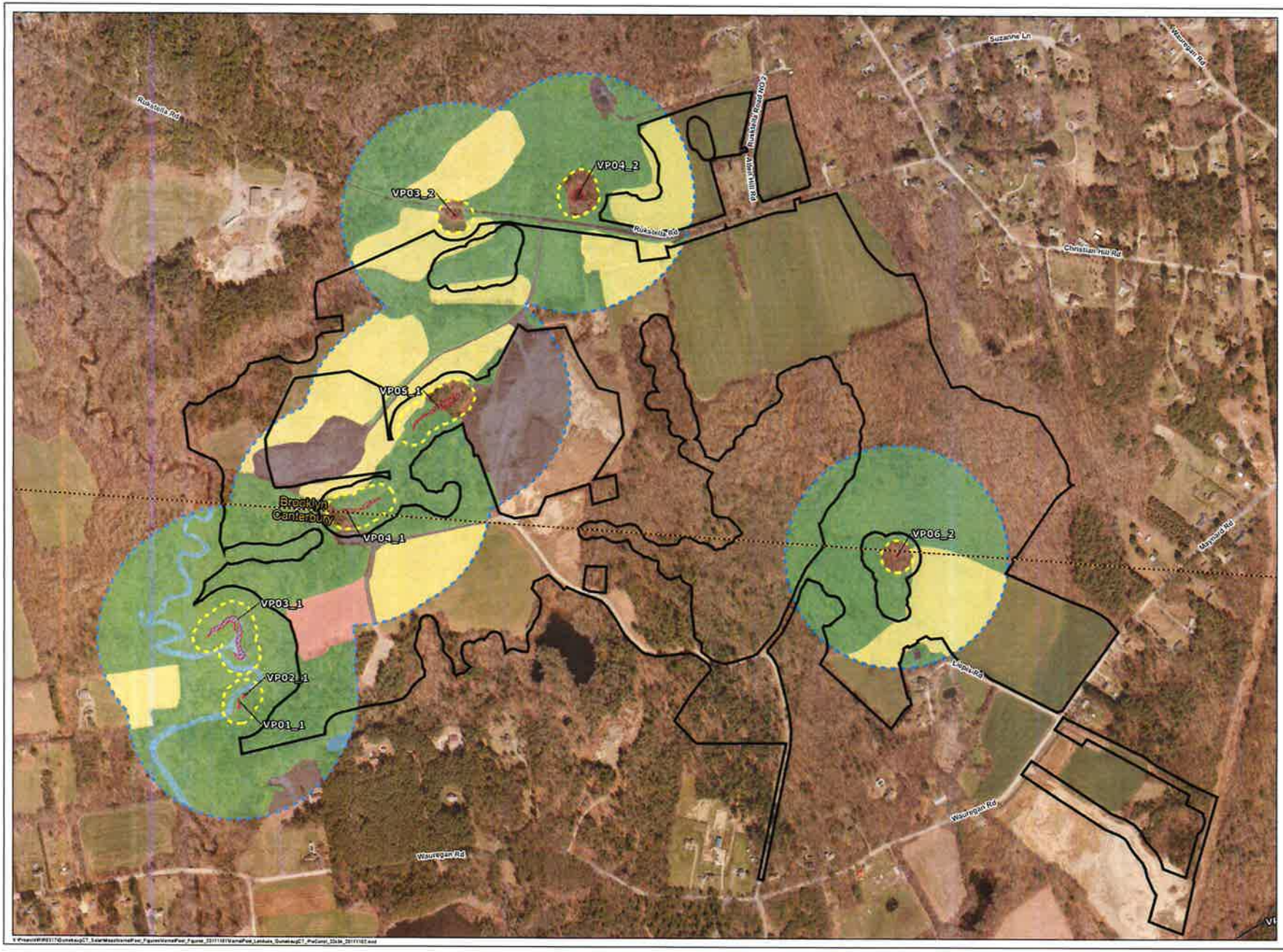

VERNAL POOLS PRE-CONSTRUCTION

LEGEND

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water
- 100 ft Buffer Zone
- 750 ft Buffer Zone
- Vernal Pool
- Limit of Work
- Town Boundary

LOCUS MAP

0 300 600 Feet

1:3,600

NOTES

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Quinebaug Solar
Brooklyn & Canterbury, Connecticut

November 2017

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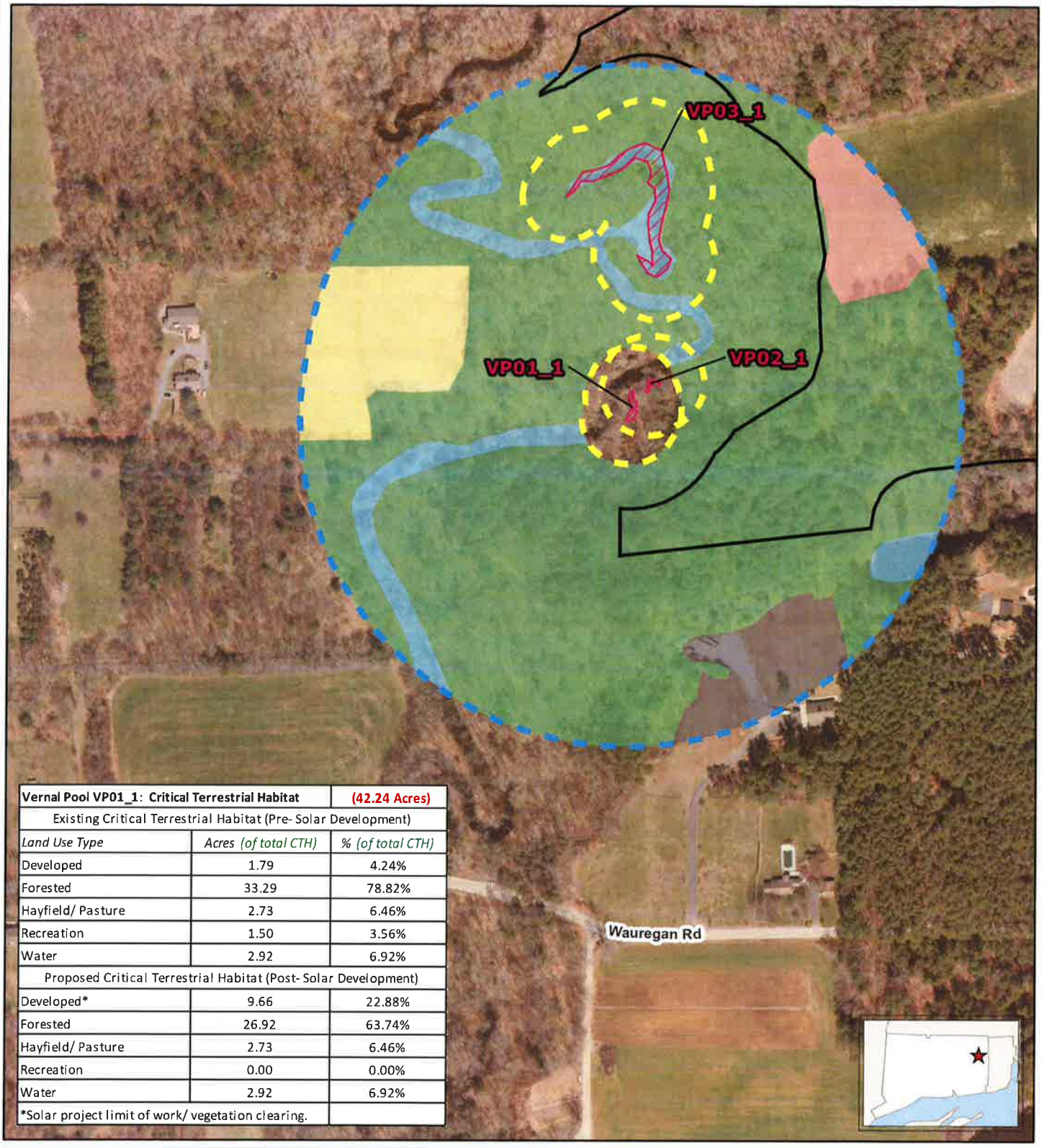

Vernal Pool VP01_1: Critical Terrestrial Habitat		(42.24 Acres)
Existing Critical Terrestrial Habitat (Pre- Solar Development)		
Land Use Type	*Acres (of total CTH)*	*% (of total CTH)*
Developed	1.79	4.24%
Forested	33.29	78.82%
Hayfield/ Pasture	2.73	6.46%
Recreation	1.50	3.56%
Water	2.92	6.92%
Proposed Critical Terrestrial Habitat (Post- Solar Development)		
Developed*	9.66	22.88%
Forested	26.92	63.74%
Hayfield/ Pasture	2.73	6.46%
Recreation	0.00	0.00%
Water	2.92	6.92%
*Solar project limit of work/ vegetation clearing.		

Legend

- Limit of Work
- Vernal Pool
- 100' Vernal Pool Envelope
- 100' - 750' Critical Terrestrial Habitat Area
- Town Boundary

Pre-Construction Land Use Type

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water

1:3,600

0 150 300

Feet

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Based on 2016 Statewide Leaf-Off Orthophotography, Courtesy of CTECO.

VERNAL POOL ANALYSIS MAP VP01_1

Quinebaug Solar
Brooklyn & Canterbury, Connecticut

November 2017

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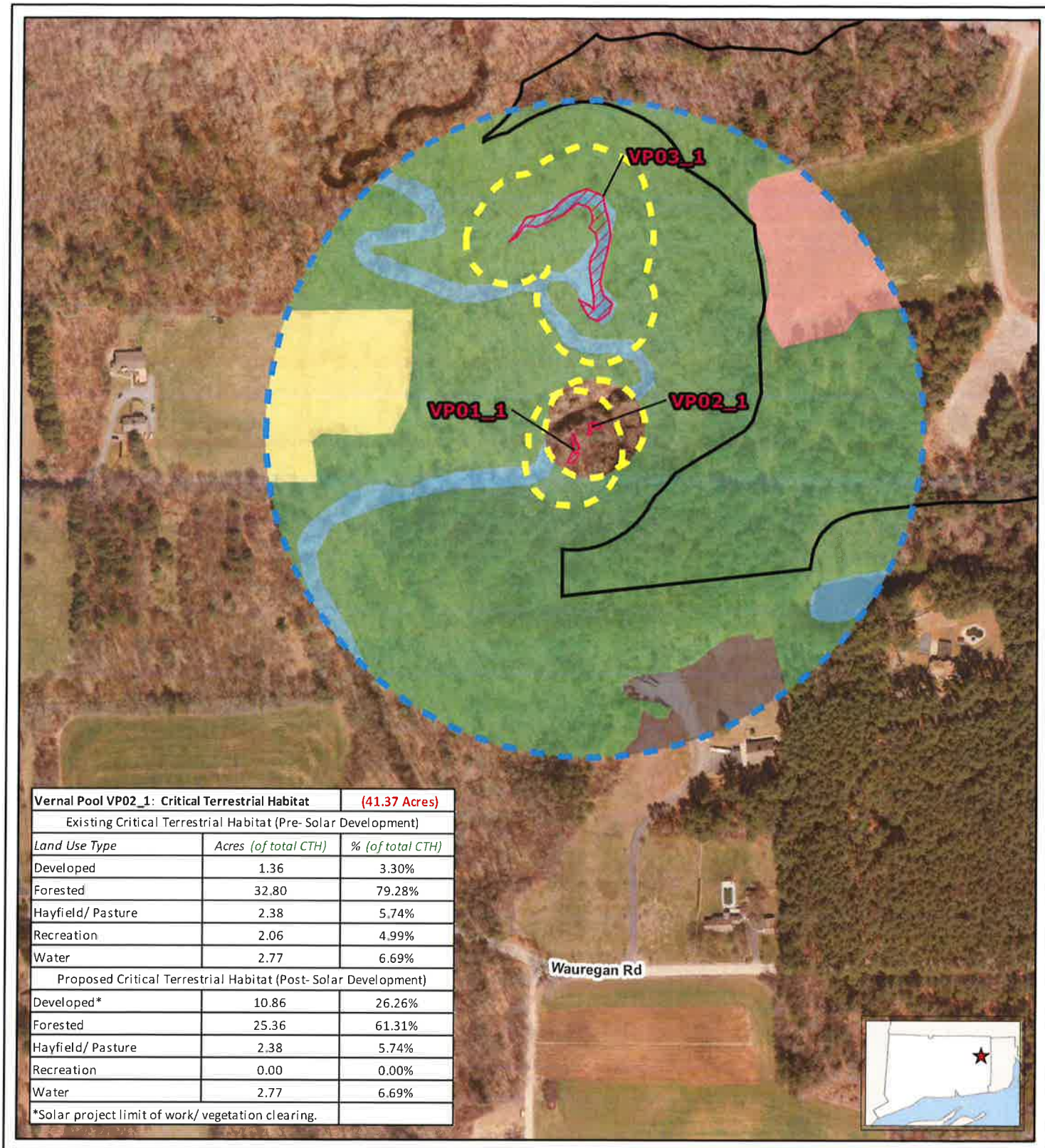
R-0317



Vernal Pool VP02_1: Critical Terrestrial Habitat		(41.37 Acres)
Existing Critical Terrestrial Habitat (Pre- Solar Development)		
Land Use Type	*Acres (of total CTH)*	*% (of total CTH)*
Developed	1.36	3.30%
Forested	32.80	79.28%
Hayfield/ Pasture	2.38	5.74%
Recreation	2.06	4.99%
Water	2.77	6.69%
Proposed Critical Terrestrial Habitat (Post- Solar Development)		
Developed*	10.86	26.26%
Forested	25.36	61.31%
Hayfield/ Pasture	2.38	5.74%
Recreation	0.00	0.00%
Water	2.77	6.69%
*Solar project limit of work/ vegetation clearing.		

Legend

- Limit of Work
- Vernal Pool
- 100' Vernal Pool Envelope
- 100' - 750' Critical Terrestrial Habitat Area
- Town Boundary

Pre-Construction Land Use Type

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water

Tighe&Bond
Engineers | Environmental Specialists

Based on 2016 Statewide Leaf-Off Orthophotography, Courtesy of CTECO.

1:3,600
0 150 300
Feet

N

VERNAL POOL ANALYSIS MAP VP02_1

Quinebaug Solar
Brooklyn & Canterbury, Connecticut

November 2017

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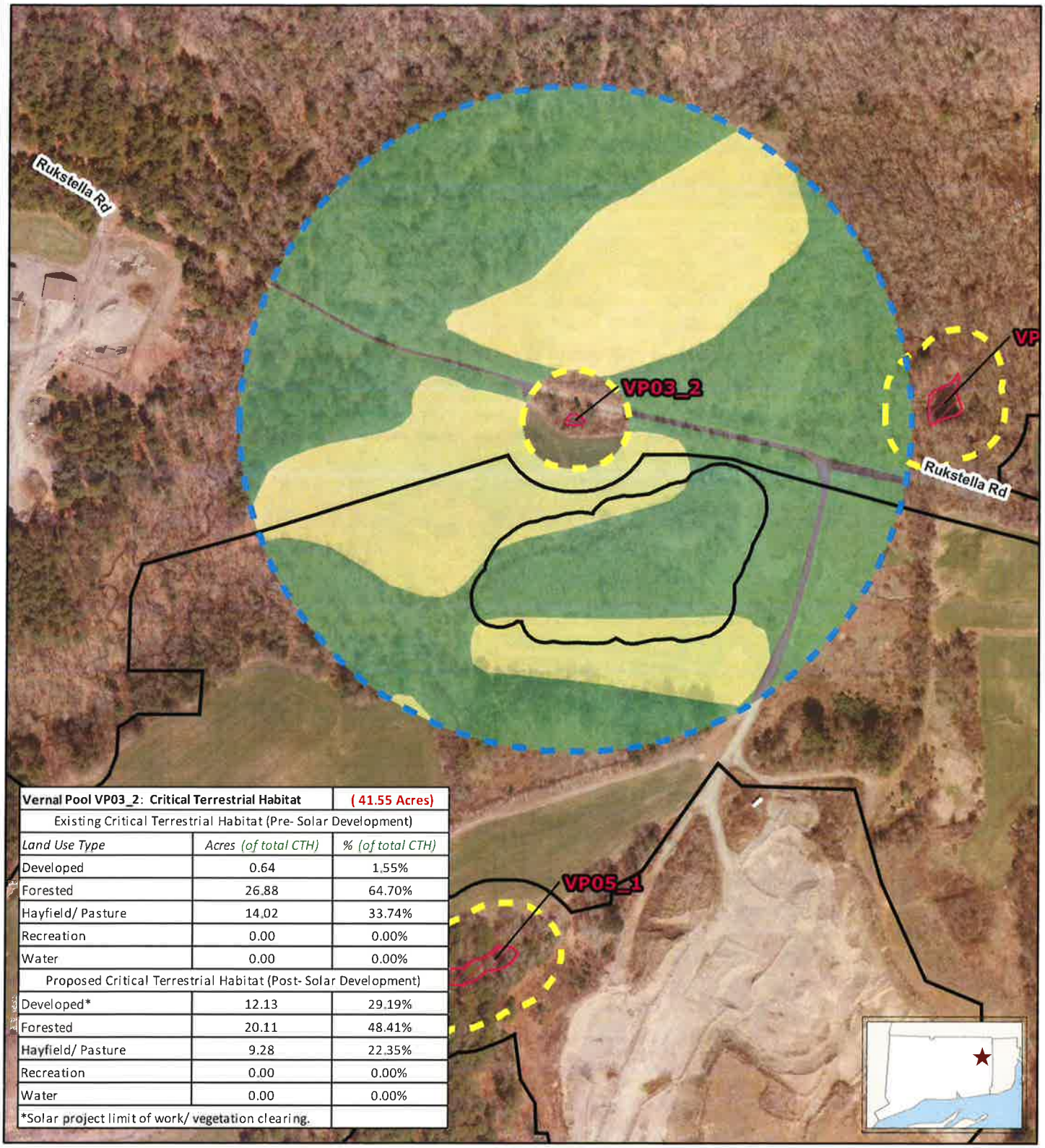

Vernal Pool VP03_2: Critical Terrestrial Habitat		(41.55 Acres)
Existing Critical Terrestrial Habitat (Pre- Solar Development)		
Land Use Type	*Acres (of total CTH)*	*% (of total CTH)*
Developed	0.64	1.55%
Forested	26.88	64.70%
Hayfield/ Pasture	14.02	33.74%
Recreation	0.00	0.00%
Water	0.00	0.00%
Proposed Critical Terrestrial Habitat (Post- Solar Development)		
Developed*	12.13	29.19%
Forested	20.11	48.41%
Hayfield/ Pasture	9.28	22.35%
Recreation	0.00	0.00%
Water	0.00	0.00%
*Solar project limit of work/ vegetation clearing.		

Legend

- Limit of Work
- Vernal Pool
- 100' Vernal Pool Envelope
- 100' - 750' Critical Terrestrial Habitat Area
- Town Boundary

Pre-Construction Land Use Type

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water

Tighe&Bond
Engineers | Environmental Specialists

Based on 2016 Statewide Leaf-Off Orthophotography, Courtesy of CTECO.

1:3,600
0 150 300
Feet

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VERNAL POOL ANALYSIS MAP VP03_2

Quinebaug Solar
Brooklyn & Canterbury, Connecticut

November 2017

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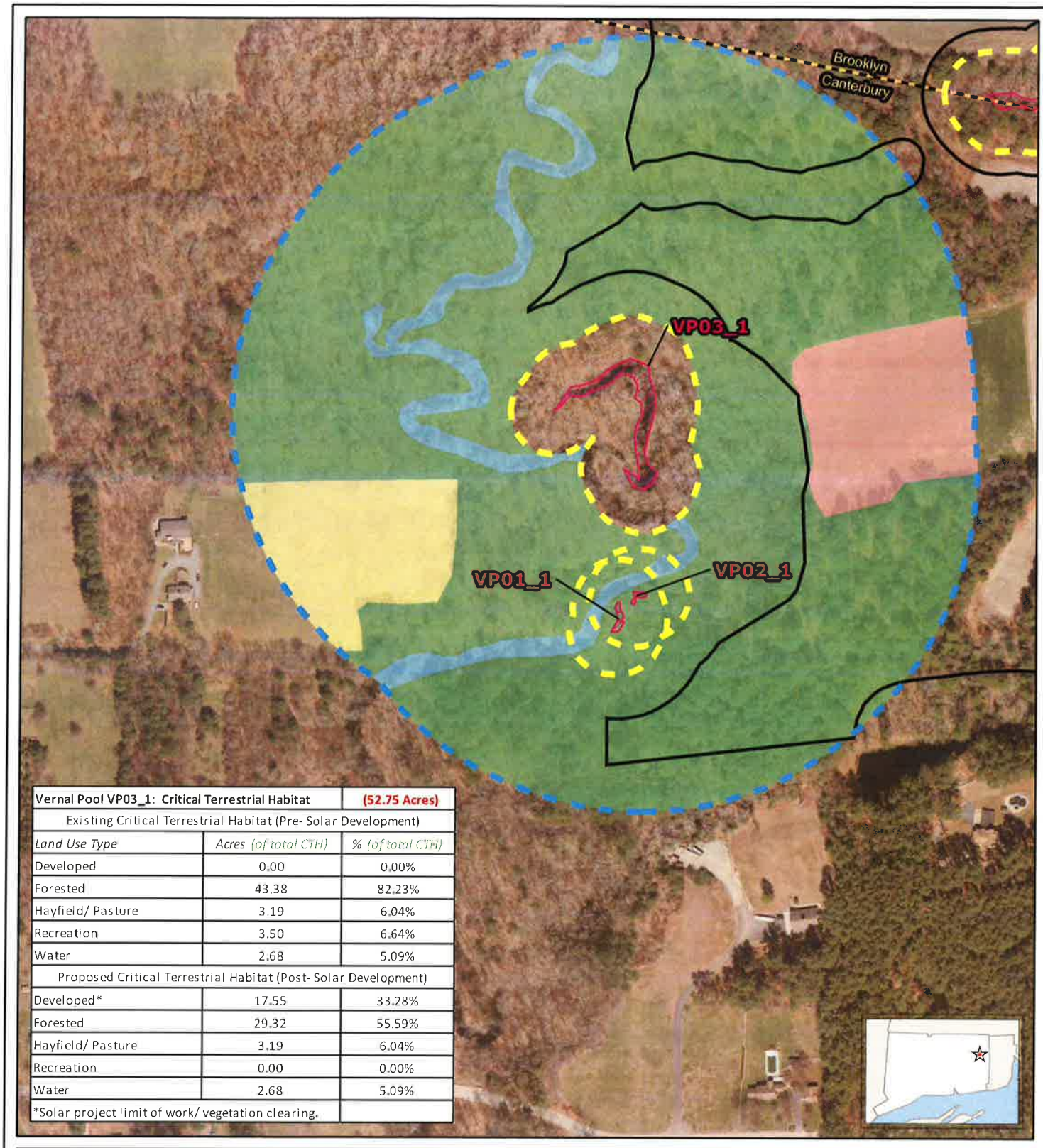

Vernal Pool VP03_1: Critical Terrestrial Habitat		(52.75 Acres)
Existing Critical Terrestrial Habitat (Pre- Solar Development)		
Land Use Type	*Acres (of total CTH)*	*% (of total CTH)*
Developed	0.00	0.00%
Forested	43.38	82.23%
Hayfield/ Pasture	3.19	6.04%
Recreation	3.50	6.64%
Water	2.68	5.09%
Proposed Critical Terrestrial Habitat (Post- Solar Development)		
Developed*	17.55	33.28%
Forested	29.32	55.59%
Hayfield/ Pasture	3.19	6.04%
Recreation	0.00	0.00%
Water	2.68	5.09%
*Solar project limit of work/ vegetation clearing.		

Legend

- Limit of Work
- Vernal Pool
- 100' Vernal Pool Envelope
- 100' - 750' Critical Terrestrial Habitat Area
- Town Boundary

Pre-Construction Land Use Type

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water

Tighe&Bond
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Based on 2016 Statewide Leaf-Off Orthophotography, Courtesy of CTECO.

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0 150 300
Feet

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VERNAL POOL ANALYSIS MAP VP03_1

Quinebaug Solar
Brooklyn & Canterbury, Connecticut

November 2017

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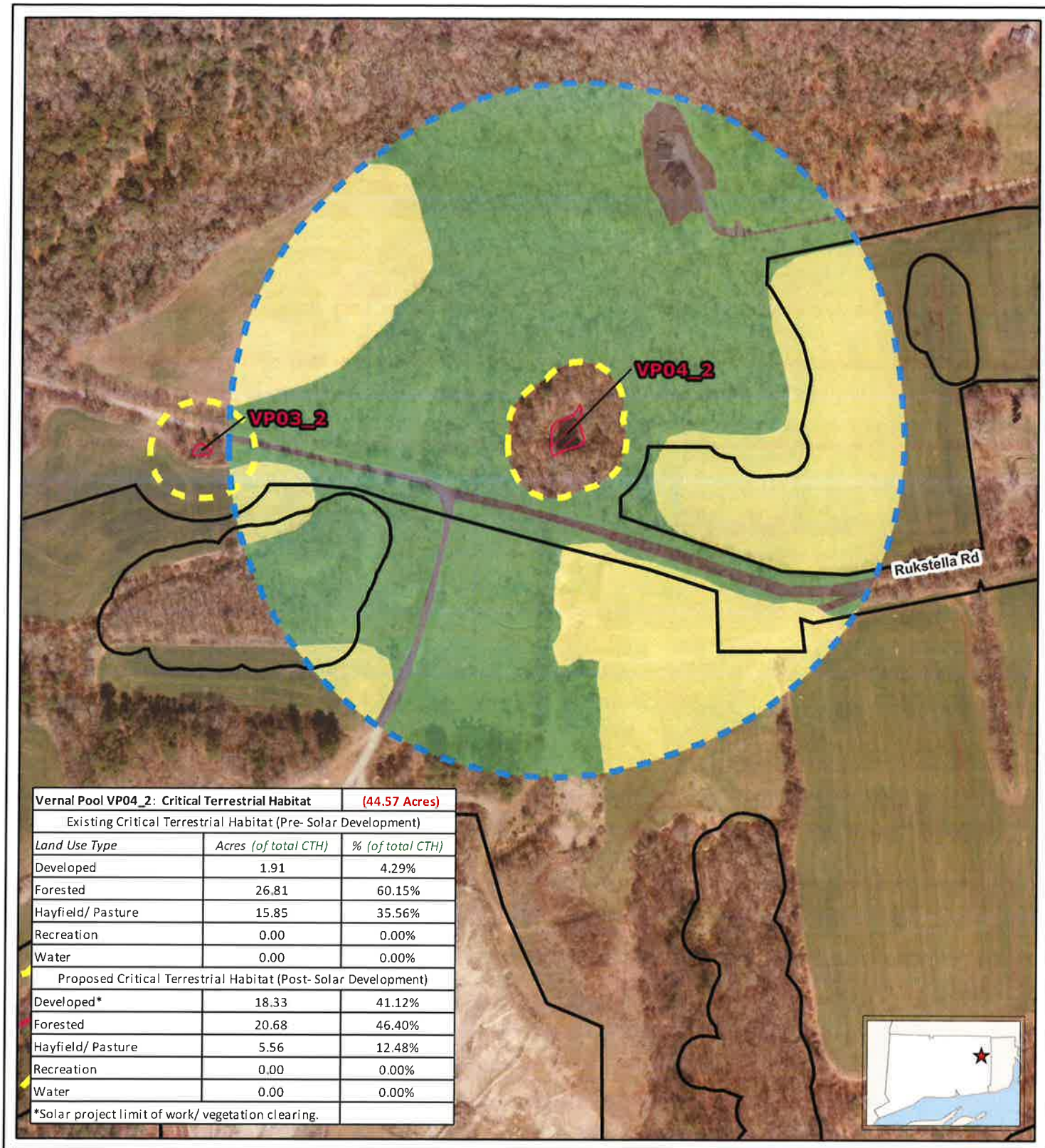

Vernal Pool VP04_2: Critical Terrestrial Habitat		(44.57 Acres)
Existing Critical Terrestrial Habitat (Pre- Solar Development)		
Land Use Type	*Acres (of total CTH)*	*% (of total CTH)*
Developed	1.91	4.29%
Forested	26.81	60.15%
Hayfield/ Pasture	15.85	35.56%
Recreation	0.00	0.00%
Water	0.00	0.00%
Proposed Critical Terrestrial Habitat (Post- Solar Development)		
Developed*	18.33	41.12%
Forested	20.68	46.40%
Hayfield/ Pasture	5.56	12.48%
Recreation	0.00	0.00%
Water	0.00	0.00%
*Solar project limit of work/ vegetation clearing.		

Legend

- Limit of Work
- Vernal Pool
- 100' Vernal Pool Envelope
- 100' - 750' Critical Terrestrial Habitat Area
- Town Boundary

Pre-Construction Land Use Type

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water

Tighe&Bond
Engineers | Environmental Specialists

Based on 2016 Statewide Leaf-Off Orthophotography, Courtesy of CTECO.

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Feet

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VERNAL POOL ANALYSIS MAP
VP04_2

Quinebaug Solar
Brooklyn & Canterbury, Connecticut

November 2017

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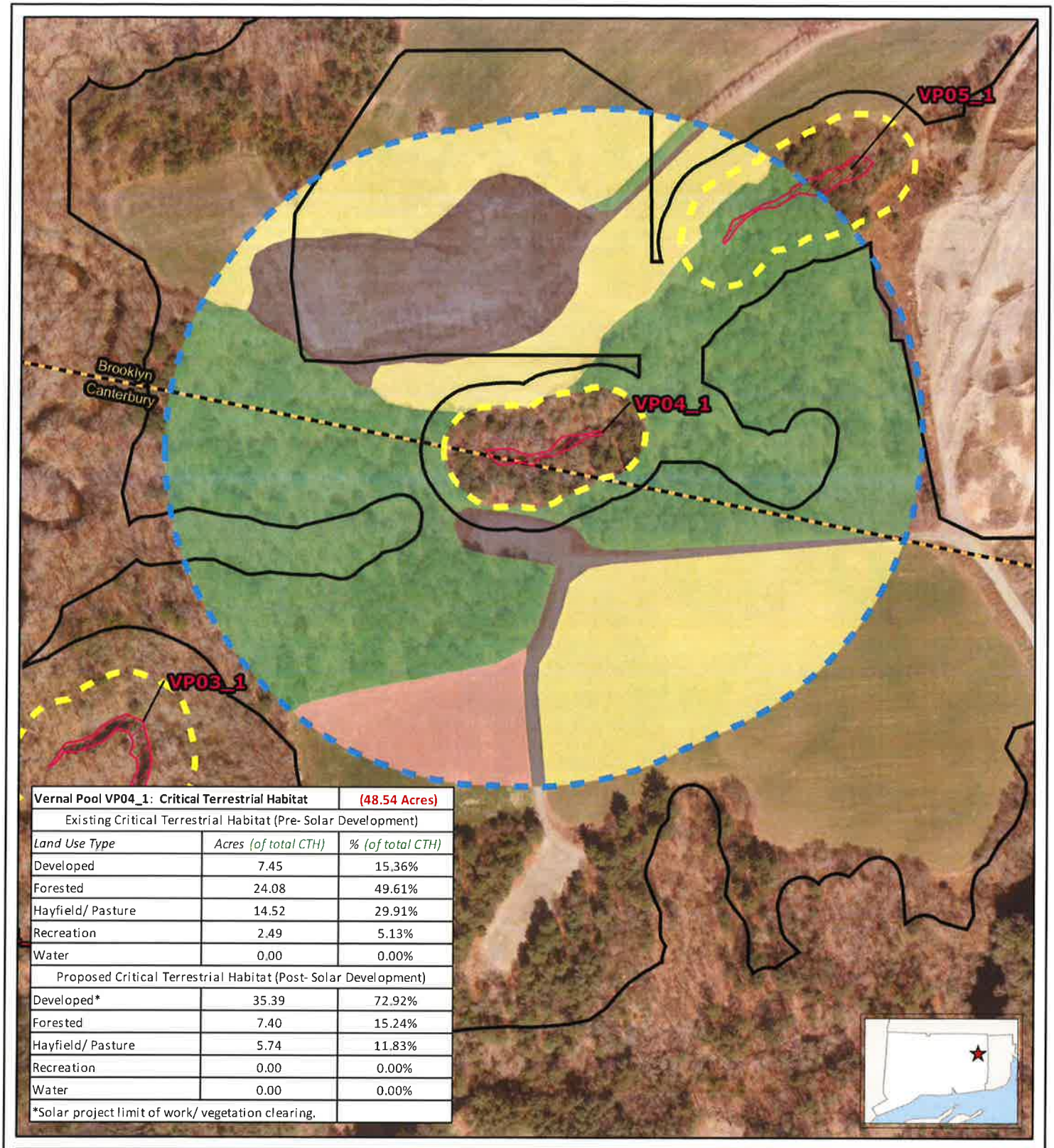

Vernal Pool VP04_1: Critical Terrestrial Habitat		(48.54 Acres)
Existing Critical Terrestrial Habitat (Pre- Solar Development)		
Land Use Type	*Acres (of total CTH)*	*% (of total CTH)*
Developed	7.45	15.36%
Forested	24.08	49.61%
Hayfield/ Pasture	14.52	29.91%
Recreation	2.49	5.13%
Water	0.00	0.00%
Proposed Critical Terrestrial Habitat (Post- Solar Development)		
Developed*	35.39	72.92%
Forested	7.40	15.24%
Hayfield/ Pasture	5.74	11.83%
Recreation	0.00	0.00%
Water	0.00	0.00%
*Solar project limit of work/ vegetation clearing.		

Legend

- Limit of Work
- Vernal Pool
- 100' Vernal Pool Envelope
- 100' - 750' Critical Terrestrial Habitat Area
- Town Boundary

Pre-Construction Land Use Type

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water

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Feet

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VERNAL POOL ANALYSIS MAP
VP04_1

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Brooklyn & Canterbury,
Connecticut

November 2017

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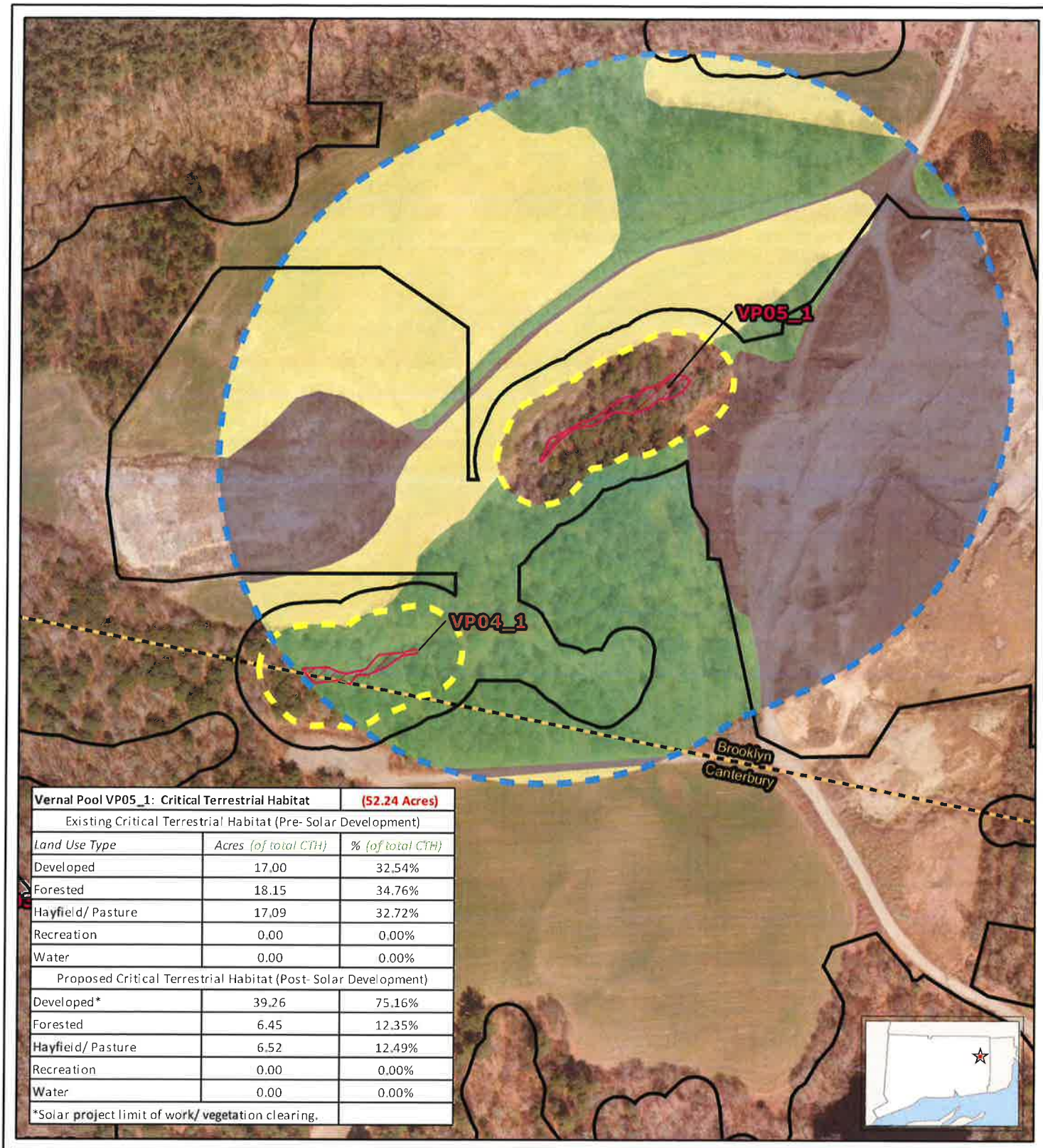

Vernal Pool VP05_1: Critical Terrestrial Habitat		(52.24 Acres)
Existing Critical Terrestrial Habitat (Pre- Solar Development)		
Land Use Type	*Acres (of total CTH)*	*% (of total CTH)*
Developed	17.00	32.54%
Forested	18.15	34.76%
Hayfield/ Pasture	17.09	32.72%
Recreation	0.00	0.00%
Water	0.00	0.00%
Proposed Critical Terrestrial Habitat (Post- Solar Development)		
Developed*	39.26	75.16%
Forested	6.45	12.35%
Hayfield/ Pasture	6.52	12.49%
Recreation	0.00	0.00%
Water	0.00	0.00%
*Solar project limit of work/ vegetation clearing.		

Legend

- Limit of Work
- Vernal Pool
- 100' Vernal Pool Envelope
- 100' - 750' Critical Terrestrial Habitat Area
- Town Boundary

Pre-Construction Land Use Type

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water

Tighe&Bond
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Based on 2016 Statewide Leaf-Off Orthophotography, Courtesy of CTECO.

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0 150 300
Feet

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VERNAL POOL ANALYSIS MAP
VP05_1

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Brooklyn & Canterbury,
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November 2017

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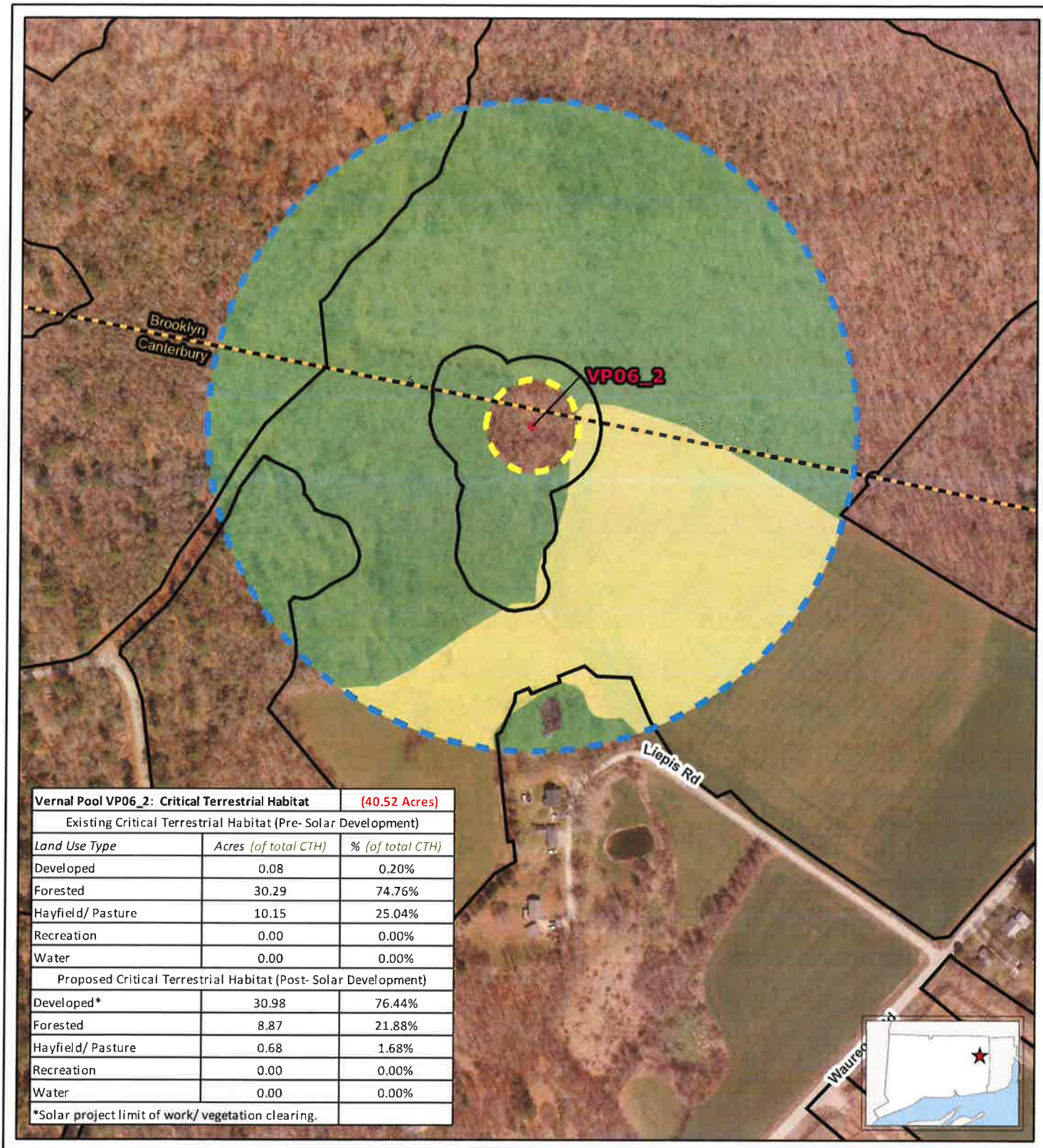

Vernal Pool VP06_2: Critical Terrestrial Habitat		(40.52 Acres)
Existing Critical Terrestrial Habitat (Pre- Solar Development)		
Land Use Type	*Acres (of total CTH)*	*% (of total CTH)*
Developed	0.08	0.20%
Forested	30.29	74.76%
Hayfield/ Pasture	10.15	25.04%
Recreation	0.00	0.00%
Water	0.00	0.00%
Proposed Critical Terrestrial Habitat (Post- Solar Development)		
Developed*	30.98	76.44%
Forested	8.87	21.88%
Hayfield/ Pasture	0.68	1.68%
Recreation	0.00	0.00%
Water	0.00	0.00%
*Solar project limit of work/ vegetation clearing.		

Legend

- Limit of Work
- Vernal Pool
- 100' Vernal Pool Envelope
- 100' - 750' Critical Terrestrial Habitat Area
- Town Boundary

Pre-Construction Land Use Type

- Developed
- Forested
- Hayfield or Pasture
- Recreation
- Water

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0 150 300
Feet

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VERNAL POOL ANALYSIS MAP VP06_2

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November 2017

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