CONNECTICUT DEPARTMENT OF AGRICULTURE
450 Columbus Blvd, Suite 701 | Hartford, Connecticut 06103 | 860.713.2500
Office of the Commissioner
An Equal Opportunity Employer

April 25, 2025

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

Re: GCE – Racebrook Road in Woodbridge, Proposed 4-Megawatt AC Solar Generating Facility – No Material Affect Letter from the Department of Agriculture

Dear Executive Director Bachman:

Pursuant to 16-50k(a) of the Connecticut General Statutes, we have reviewed the above cited project with respect to agricultural impacts, specifically, to determine whether "…such project will not materially affect the status of such land as prime farmland…"

This project will be located on Racebrook Road in Woodbridge, on land owned by the Malcolm W Baldwin Family Trust. The entire 52.12-acre parcel contains approximately 30 acres of prime farmland soils. The proposed solar facility would occupy approximately 19.7 acres, of which 11 acres are classified as prime farmland soils.

In a letter to the Department of Agriculture, dated March 20, 2025, the Petitioner (Greenskies Clean Energy LLC) has agreed to design and manage a pollinator habitat, sustainable landscaping and removal of invasive plants within the Project Site.

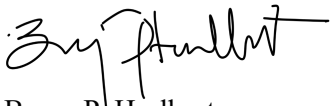
Based on preliminary information provided to the Agency (enclosed), and the successful implementation of the co-uses described above, the Department of Agriculture concludes this project **will not** materially affect the status of project land as prime farmland.

This letter is conditioned upon all dual use plans being fully implemented and operational for the duration of the solar installation. If the Petitioner sells the solar project to another entity, dual use programing and decommissioning responsibilities must carry over to the new owner.

Should any project changes raise concerns to the Agency, we reserve the right to modify our position on this project, including opposing it, as detailed plans are provided by the Petitioner. Nothing in this letter relieves the Petitioner of other obligations under applicable federal, state, and local law that may be necessary as part of the proposed project design and implementation.

If you have any questions, please feel free to contact Jaime Smith of my staff. Jaime can be reached at jaime.smith@ct.gov.

Sincerely,



Bryan P. Hurlburt
Commissioner

Enc.

Cc: Katie Dykes, Commissioner, Department of Energy and Environmental Protection
Gabe Rusk, Greenskies Clean Energy LLC

Soil Management Plan for Construction

Purpose: to outline procedures for the excavation, handling, segregation, stockpiling, grading, and reuse of soils during construction. These are also included within construction drawings for the project.

Soil Type & Quality: Soils are classified as poorly drained to well drained. Pesticide residues (4,4-DDE, 4,4-DDT, and Heptachlor Epoxide) have been detected in surface soils.

Soil Excavation Scope: ~7,600 cubic yards of soils are anticipated to be excavated during construction. Grading shall be limited to what is essential. Soil disturbance shall be sequenced such that earth materials are exposed for a minimum amount of time before they are covered, seeded, or otherwise stabilized. Heavy equipment shall utilize designated access drives for travel to minimize soil disruption or compaction. No soil disturbance shall occur until proper erosion control measures are in place. No soil is expected to be transported off-site or imported to the site for this project.

Health & Safety: Procedures shall be implemented to limit worker contact with soils and for dust suppression.

Dust Control: Ensure no visible dust is generated. Mist as necessary to prevent airborne dust without creating run-off. Any run-off resulting from dust control procedures are to be properly managed/collected as necessary.

Erosion and Sediment Control: Erosion control measures shall follow federal, state, and local requirements and comply with the project's Stormwater Pollution Prevention Plan (SWPPP). Temporary sediment traps and permanent stormwater basins are to be installed in accordance with project documents. Slopes should not exceed 3:1 and erosion control blankets are to be used for drainage swale sidewalls and steep slopes. Erosion and sediment controls are to be inspected by the Contractor daily. No sediment laden runoff shall be allowed to reach the wetlands or discharge off-site. Use of anti-tracking pads and cleaning of soils from equipment is to be conducted before allowing it to leave the site. No soil disturbance will be allowed until these controls have been put into place.

Soil Stockpiling: Stockpile areas are to be located within the limits of disturbance, outside the 100-foot buffer of any wetlands, and 100-feet from any watercourse. Snow-fence, haybales, and silt fence are to be installed around soil stockpiles. Stockpiles are to be covered with polyethylene sheeting and secured to prevent precipitation entering the stockpile and runoff occurring. If soils are excessively wet, earth berms are to be created to contain drainage. Stormwater runoff is to be diverted around stockpiles and managed to minimize water-related erosion. Extended stockpiling periods are to be avoided. All excavated soils are to remaining on-site and be reused to smooth grades for the solar field. Topsoil is to be stockpiled separately, retained, and reused for final grading and re-seeding.

Inspections: CTDEEP Approved Qualified Inspector shall perform weekly inspections of erosion controls and stockpile areas as well as required inspections within 24 hours of rain exceeding 0.5 inches for up to three months or until stabilization. Any deficiencies noted by the Inspector are to be addressed within 24 hours of the inspection.

Soil Stabilization: Reseed and regrade all disturbed areas as early as possible. Site soil stabilization is to be completed within 14 days of post-grading, using hydro-seeding, sodding, or biodegradable erosion control mats. Temporary erosion and sediment controls are to be removed after site stabilization. Secure effective establishment of vegetation with suitable topsoil, adequate lime, fertilizer, mulch, and water.

Racebrook – Proposed Agricultural Co Use Plan

Property Information

Description of property:

The proposed project would be built on 1010 and 1015 Racebrook Road, a golf course owned by the Malcolm W Baldwin Family Trust in Woodbridge, Connecticut. The parcels have been used as a golf course for at least the last 35 years. The 1010 Racebrook parcel consists of 42.1 acres and the 1015 parcel consists of 10.02 acres. The combined parcels contain approximately 30 acres of prime farmland based on NRCS Web Soil Survey, which can be observed in the Agricultural Map.

Project overview:

The project is part of the SCEF program and will consist of a ±4 MW array. The project area is expected to consist of approximately 19.7 acres, of which approximately 11 acres will be on prime farmland. The project has an expected life of twenty years, with four options to extend the project five years. The project is expected to require an access road of crushed stone along with several utility poles outlined in the Agricultural Map. Should the project be sold to another entity, the Farm Plan requirements and decommissioning plan will carry over to the new owner.

Past Agriculture Activities

The site has been a working golf course for the past 35 years at least, and therefore has not conducted any agricultural activities.

Property Management

Description of farming activities:

As this property has not been used for agriculture in more than 35 years, Greenskies Clean Energy proposes regenerative land management of a Solar + Farming project through 1) planting of perennial forbs, with the possibilities of herbs and pollinator plants and 2) planting of perennial warm season grasses. At a very high level, maintenance would include the following:

- Delayed mowing, which would ensure that the selected plants can reach harvest stage
- Overseeding as needed to maintain sufficient land coverage of plants
- Removal of invasive plants as needed
- General monitoring of the soil and plant growth

The project plans to incorporate a variety of herbs, pollinator plants, and perennial warm season grasses along the boundary fence line. This planting strategy will help protect and regenerate the soil, ensuring its health and stability long after the solar project components are

decommissioned. Project Plans to displace soil on the property can be found in the Vegetation and Soil Management Plan.

Potential herbaceous plants being considered are mint, dandelion, mullein, oregano, purslane, red clover, rosemary, thyme, golden seal, yarrow, and lavender. The planting mix will also perform well for stormwater controls. Allowing these plants to grow will help rejuvenate the soil of the former golf course, which has been covered with nutrient-depleted sod for years, restoring its health and quality as prime farmland. The deep roots of the perennial plants will also improve water infiltration to the soil.

The spacing in between solar panel rows is sufficient to grow plants, provide high sunlight levels for farming, and provide workability for farmers while again balancing needs of required solar capacity. These rows will be on a single mount tracker modules aligned north to south.,

The site is being designed with farmer's safety in mind. All electrical feeders will be either secured to the modules/racking directly or be underground. There will be increased signage and fencing to ensure that farm workers are not exposed to unsafe conditions. Usually, at this stage of development, Greenskies has not yet selected an engineering, procurement, and construction (EPC) contractor, nor has Greenskies finalized its site design. Both of these activities would ordinarily take place in a project's development cycle after the initial round of permitting is completed. Nonetheless, Greenskies is developing this project with farming as a long-term integral aspect of the project and is committed to supporting sustainable farming use in parallel with the solar use for the life of the project.

Soil health is improved by using regenerative methods and native perennial plants by keeping living roots in the ground, providing year round ground cover, and increasing the absorption of water into soils. This approach also increases the micro and fungal biodiversity thus improving the quality of the soil and its ability to support vegetation health. Greenskies is putting forward this project because it represents a great example of the co-existence of solar and agriculture use.

Array Planting (Underneath the Solar Arrays)

For the area under the solar arrays, the planting strategy will focus on a mix of perennial forbs, native pollinator plants, and warm-season grasses aimed at regenerating soil health and supporting water infiltration. The vegetation mix will include low-growing species like mint, oregano, red clover, thyme, yarrow, and warm-season grasses such as ernst. These plants will be seeded in late spring (April to May), with the initial planting of perennial forbs and grasses

taking place in early summer (June). The project will sow seeds uniformly using no-till methods to avoid further soil disturbance. Equipment such as a drill seeder and broadcast seeder will be used to plant these species, with hand tools utilized for any specialized planting. Maintenance will include delayed mowing to allow plants to reach their full growth potential, overseeding as necessary, removal of invasive species, and monitoring of soil and plant health to ensure sustainable land management.

Border Area Planting (Along Fence Lines)

Along the boundary fence lines, a diverse planting strategy will be employed to enhance soil stability, provide habitat for pollinators, and provide stormwater residence time and treatment. The planting mix will consist of a variety of native perennial forbs combined with warm-season grasses like ernst. Planting will begin in the spring (April to May) with soil preparation followed by the establishment of the plants in late spring (May to June). The project will sow seeds uniformly using no-till methods to avoid further soil disturbance. Ongoing maintenance will involve delayed mowing, overseeding as needed, removal of invasive species, and regular monitoring of the soil and plants to ensure optimal growth and soil health.

Stormwater Detention Area Planting

In the stormwater detention areas, the planting plan focuses on native perennial plants that will aid in water retention, reduce erosion, and enhance soil stability. This area will be seeded with deep-rooted warm-season grasses such as ernst, along with perennial forbs like mullein, red clover, and dandelion. The planting will take place starting in late spring (May to June) with initial establishment followed by additional planting in early fall (September to October) if necessary. The project will sow seeds uniformly using no-till methods to avoid further soil disturbance. Regular maintenance will include overseeding to maintain coverage, removal of invasive species, and monitoring for any signs of erosion. The plantings in this area will play a crucial role in stormwater management, ensuring that the land remains stable and healthy over time.

Design Specifications

Although the system's design may change due to project needs, Greenskies anticipates using a single axis tracking system with 10-foot row clear spacing and height to panel center of around 5 feet from grade. Panel dimensions will be approximately 96.9 in x 44.6 in x 1.38 in. The use of a tracking system combined with this configuration will maximize sunlight exposure for the proposed agricultural use.

Greenskies, in partnership with Spade Agrivoltaics employed a ray tracing algorithm to calculate weather data and irradiance levels over the course of a Typical Meteorological Year to establish the maximum sunlight reduction from panel shading on every square foot of land directly beneath, behind, and in the areas adjacent to and within the arrays design.

The model to estimate solar availability and shade reduction was created by Sanbox Solar LLC in partnership with Ladybug Tools developed Spade Agrivoltaics. Powered by Ladybug Tools' Honeybee application that utilizes Grasshopper, a visual programming language and environment that runs within the Rhinoceros 3D computer-aided design (CAD) application, as the graphical user Interface (GUI). The SPADE script is a generative algorithm that allows for efficient parametric manipulation to the model space. Honeybee creates, runs and visualizes the results of daylight and radiation simulations using Radiance (Ward & Shakespeare, 1998) and energy models using EnergyPlus (USDOE, 2017) and OpenStudio (2008).

The analysis found the following percentage shading reductions

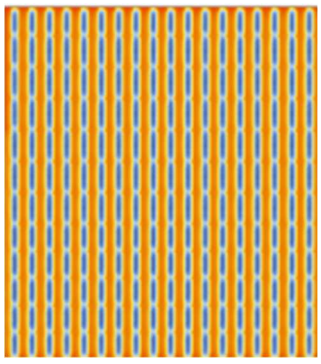
Outside 0-5%

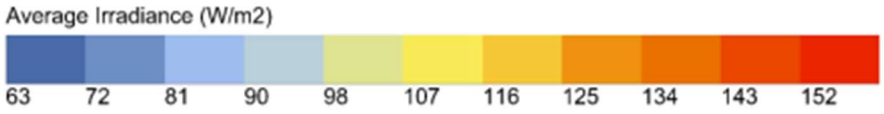
Beneath: 53%

Adjacent: 32%

Between Rows: 14%

Below is a heat map of a sample of the array with a radiance key. Based on our model, we believe the available light will provide sufficient radiance for the proposed planting.





Site Access

In the event that a person authorized by the state of Connecticut would like to request access to the site for data collection purposes related to Agrivoltaics, they may reach out to Steve Martineau of Greenskies Clean Energy's Asset & Monitoring Team
steven.martineau@greenskies.com


Play

January 21, 2025

Ref: 43509.00

Jean-Paul La Marche
Vice President of Development
Greenskies Clean Energy
127 Washington Avenue, West Building, Garden Level
North Haven, CT 06473

Re: ±4.1 MW-AC Solar Project Racebrook Road in Woodbridge, Connecticut – Soil Health Assessment

Dear Greenskies Clean Energy:

VHB has completed a Soil Health Assessment for the above referenced property to document existing soil health prior to construction of the proposed solar array. We understand the purpose of the SHA is to establish baseline conditions for soil restoration that may be needed upon future decommissioning of the solar array. The SHA was conducted in general conformance with the Natural Resource Conservation Services Soil Health Assessment guidance.

The SHA was conducted for approximately 20 acres of land that is part of an existing golf course. A portion of the 20 acres was used for agriculture from at least 1934 until approximately 1970 when the land was converted to a golf course. At the time of the SHA the golf course was active and appeared to be well maintained.

VHB collected soil samples for this SHA on November 7, 2024. A sampling grid was established along the perimeter of the existing golf greens as not to interfere with golf activities occurring at the time of sampling. A total of 48 samples were collected and each set of 12 discrete samples was composited into one soil sample for laboratory analysis (total 4 composite samples). Refer to the attached Figure for approximate sample locations. Samples were collected from 0-8 inches below grade and were submitted to the UCONN Laboratory and Connecticut Agriculture Experiment Station for analysis of the following parameters: Texture Analysis, organic matter, pH, nitrogen, phosphorus, potassium, calcium, and magnesium. Furthermore, during soil sampling observations were documented with regard to soil structure, organic matter, as well as evidence of roots or biological activity.

In general, soils consisted of light brown to medium brown, uniformly dry fine to coarse sand with trace cobbles and gravel. The textural analysis identified samples as sandy loam based on USDA criteria. Evidence of roots along with minor organic material was identified in each of the 48 samples and biological activity (worms) were observed in 17 of the samples collected.

Laboratory analytical results are summarized below, and laboratory reports are attached.

Parameter	**Results**
Soil Texture	Sandy Loam
Organic Matter	Medium (4.1 to 5.8%)
pH	5.4 to 6.1

Nitrate Nitrogen	5-12ppm (medium low to medium high)
Ammonium Nitrogen	12-80ppm (low to medium high)
Phosphorus	25ppm (medium)
Potassium	60-180ppm (low to medium high)
Calcium	1400ppm (high)
Magnesium	125ppm (high)
Soluble Salts	0.3-0.6ms/cm (low)

ppm = parts per million
ms/cm – millisiemens per centimeter

It is anticipated that following decommissioning of the solar facility, another Soil Health Assessment will be conducted, and results will be compared to those above to determine if soil amendments or improvements are needed to restore the health of the soil following decommissioning.

Please let us know if you have any questions or require addition information.

Sincerely,

Vanasse Hangen Brustlin, Inc.

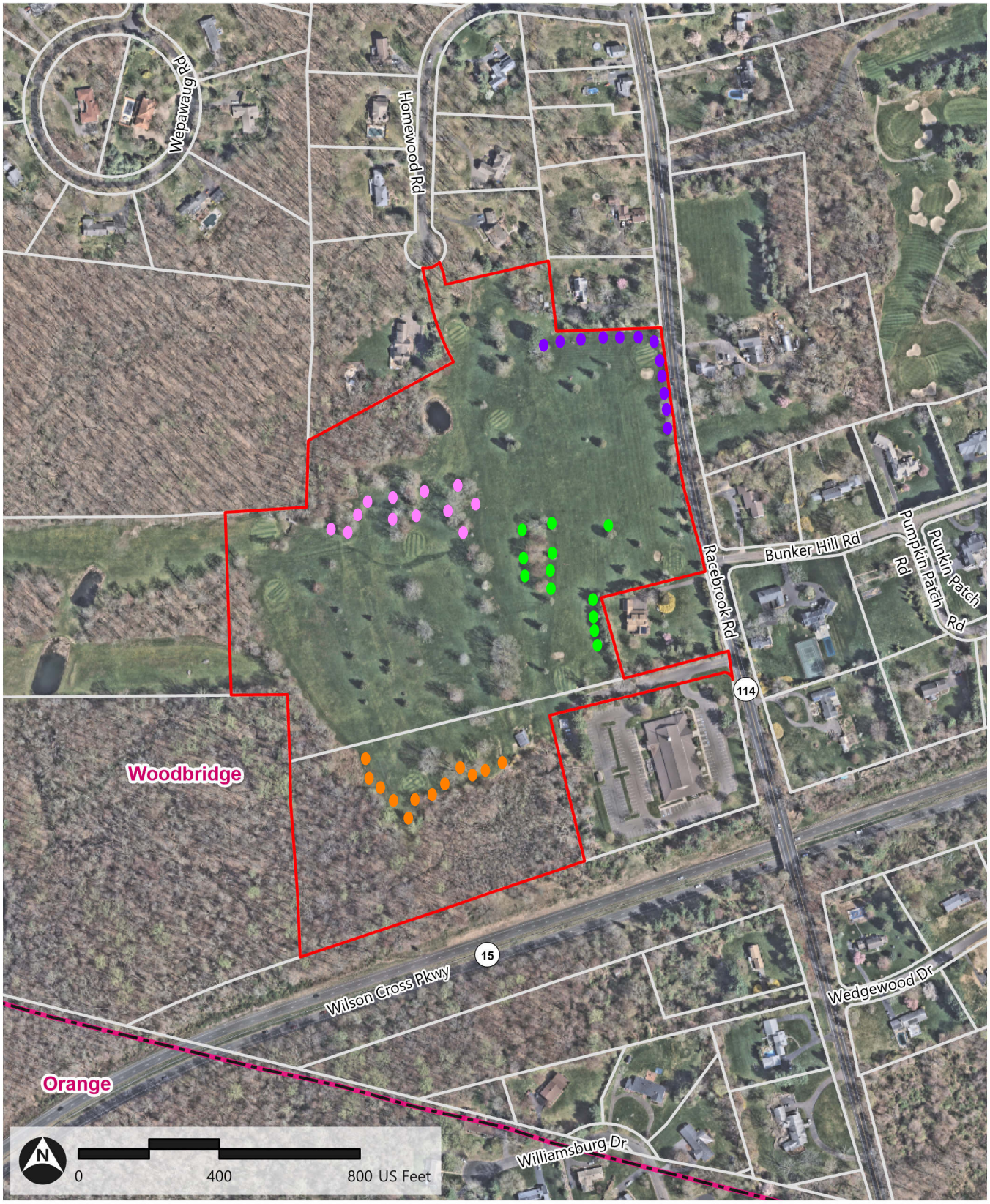
Sara Berryman, CSS
Wetland Scientist
Sberryman@vhb.com

Amy Vaillancourt, LEP
Director, Environmental Services
Availlancourt@vhb.com

Attachments:
Sample Location Map
Laboratory Report

Figure 2: Subject Property Site Map

Greenskies Solar | Woodbridge, CT



Path: \\vhb.com\gis\proj\Wethersfield\43485.00\Project\1010 & 994 Racebrook Road.aprx (srao, 7/1/2024)

Project Area

Parcel Boundary

Municipal Boundary

● = proposed soil health sample locations (12 total - Area 1)

● = proposed soil health sample locations (12 total - Area 2)

● = proposed soil health sample locations (12 total - Area 3)

● = proposed soil health sample locations (12 total - Area 4)

Source: CT DEEP, VHB

portal.ct.gov/caes

THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION

FERTILITY OF YOUR SOIL MEASURED BY THE MORGAN METHOD. A PRODUCT OF RESEARCH AT THIS STATION

"Putting Science to Work for Society"

Amy Vaillancourt
100 Great Meadow Road Suite #200
Wethersfield, CT 06109

THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION
123 HUNTINGTON ST.
NEW HAVEN, CT 06511
TELEPHONE (203) 974-8512

CAES-56-N Rev. 1/22

DATE 11/22/2024 PAGE: 2 of: 2	TEST RESULTS *(see back of report for explanation)*			
LABORATORY NUMBER:	6634	6635	6636	6637
YOUR SAMPLE	Artillery CS-A	Artillery CS-B	Artillery CS-C	Artillery CS-D
CROP TO BE GROWN	N/A	N/A	N/A	N/A
SOIL TEXTURE	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
ORGANIC MATTER	Medium	Medium	Medium	Medium
pH	7.2	7.2	7.3	7.3
NITRATE NITROGEN	High (18 ppm)	High (25 ppm)	High (18 ppm)	Medium High (12 ppm)
AMMONIUM NITROGEN	Medium Low (24 ppm)	Medium Low (24 ppm)	Low (12 ppm)	Low (12 ppm)
PHOSPHORUS	High (100 ppm)	High (75 ppm)	Medium High (50 ppm)	Medium High (50 ppm)
POTASSIUM	High (250 ppm)	High (250 ppm)	High (220 ppm)	High (220 ppm)
CALCIUM	High (1600 ppm)	High (1600 ppm)	High (1600 ppm)	High (1600 ppm)
MAGNESIUM	High (125 ppm)	High (125 ppm)	High (125 ppm)	High (125 ppm)
SOLUBLE SALTS	Low (0.5 ms/cm)	Low (0.6 ms/cm)	Low (0.3 ms/cm)	Low (0.3 ms/cm)

SUGGESTED TREATMENTS (pounds per 1000 square feet)				
pH ADJUSTMENT				
FERTILIZER GRADE				
FERTILIZER AMOUNT				

Remarks:
ppm (parts per million) values are approximate.

EXPLANATION OF RESULTS

Soil tests serve as a guide to intelligent and environmentally sensitive use of fertilizers and other soil amendments. Information from soil tests cannot correct plant problems caused by insects or disease or site limitations such as not enough sunlight.

SOIL TEXTURE: Texture describes the amount of sand, silt and clay in the soil. It influences the amount of water and nutrients a soil can hold. *Sands*, *loamy sands* and *sandy loams* require more frequent watering and lose nutrients more readily by leaching than do *fine sandy loams* and *loams*. *Silt loams*, *silty clay loams* and *clay loams* often retain excessive moisture and reduce air movement to plant roots.

ORGANIC MATTER: Organic matter also influences the amount of water and nutrients held by the soil. *High* organic soils have better structure and retain nutrients and water better than *Medium* and *Low* organic soils. Soil organic matter may be improved by the addition of materials such as compost. A yearly addition of organic matter to gardens promotes soil improvement.

pH: Soil pH affects the availability of nutrients and, when interpreted with texture and organic matter, indicates the limestone needs of the soil. The results are expressed in pH units, with pH 7.0 being neutral. Connecticut soils are generally somewhat acidic in the pH range of 4.5 to 6.5. Most plants except for rhododendrons, azaleas, mountain laurel and blueberries grow best at a soil pH between 6.0 and 7.0.

NUTRIENT TESTS

The Morgan Test provides an estimate of nutrient availability to plants. Results are given in relative terms such as *Low*, *Medium*, and *High*. *Excessive* is used when nutrient concentrations may damage plants. Generally, plant nutrients should be high during periods of rapid plant growth.

NITRATE NITROGEN: Plants generally take up nitrogen in the form of nitrate (NO_3-N), either from applied fertilizers or microbial conversion of other forms of organic nitrogen in the soil. The Morgan Test indicates how much nitrogen is immediately available to plants, but not the ability of the soil to provide nitrogen throughout the growing season. Excess nitrate nitrogen can be harmful to plants and may leach to ground water.

AMMONIUM NITROGEN: Soils generally do not contain high concentrations of ammonium unless they have been recently fertilized, over fertilized or received fresh manure. High ammonium levels are sometimes harmful to plants.

PHOSPHORUS: Optimal levels of phosphorus favor strong seedlings, abundant fruit and colorful flowers. Phosphorus can be over applied resulting in micronutrient deficiencies.

POTASSIUM: Plant hardiness is improved with proper amounts potassium. Over application of potassium can result in excessive soil salinity.

CALCIUM: Calcium levels in conjunction with the pH test, will determine the need for limestone or gypsum.

MAGNESIUM: This test identifies soils where magnesium treatments such as dolomitic limestone or Epsom salts may be beneficial.

SALTS: Measurements of soluble salts are sometimes reported on our tests where over-fertilization or other sources of salt may have injured plants.

CORRECTING DEFICIENCIES OR EXCESSES

The soil test suggests additions of fertilizers and other amendments based on site and crop specific needs.

pH ADJUSTMENT: Limestone suggestions are based on the use of dolomitic limestone. Rates of pelletized limestone are the same as pulverized limestone. Hydrated lime may be used if the rate is reduced to three-fourths of that for limestone. Aluminum sulfate or sulfur is suggested when soil acidification is needed.

FERTILIZER: The principal plant nutrients in mixed fertilizers are nitrogen (N), phosphorus (P) and potassium (K). Although they may be present in various forms, the formula is always expressed as percent of N, P (as P2O5) and K (as K2O) in that order. Thus a 5-10-5 fertilizer would contain 5 lbs. of N, 10 lbs. of P2O5 and 5 lbs. of K2O per 100 lbs. Fertilizers other than those suggested on the report may be used if the amounts of nutrients applied are similar.

Organic fertilizers are usually slower acting and lower in nutrients. They are often recycled waste products. Multiple materials such as cottonseed meal and bone meal are often needed. Recently, commercially prepared organic fertilizers containing various ratios of N, P and K have become available. These fertilizers can be substituted if the amount of nutrients applied is similar. Fresh manure may damage some plants and should be worked into the soil well in advance of planting.

https://portal.ct.gov/caes

https://portal.ct.gov/CAES/Soil-Office/Soil-Office/Soil-Testing-Offices-Instructions

10/20/23

UConn Soil Nutrient Analysis Laboratory
6 Sherman Place, Union Cottage, Unit 5102
Storrs, CT 06269-5102
860-486-4274
soiltesting.cahnr.uconn.edu

UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
EXTENSION & PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 23240

Prepared For:

Amy Vaillancourt
VHB
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

availlancourt@vhb.com
860.807.4327

Sample Information:

Sample Name: Art-CS-A
Lab Number: 8481
Area Sampled:
Received: 11/18/2024
Reported: 12/3/2024

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**2583 lbs/acre**				
Magnesium	**> 500 lbs/acre**				
Phosphorus	**111 lbs/acre**				
Potassium	**> 600 lbs/acre**				

**** Excessive only defined for Phosphorus (>40 lbs/acre)***

Soil pH (1:1, H2O)	7.0
Est. Cation Exch. Capacity (meq/100g soil)	9.8
Buffered pH (Mod. Mehlich)	6.6

Base Saturation	***%***	***Suggested***
Potassium	12	2.0 - 7.0
Magnesium	22	10 - 30
Calcium	66	40 - 50

Element	***ppm***	***Soil Range in CT***
Boron (B)	0.5	0.1 - 2.0
Copper (Cu)	0.6	0.3 - 0.8
Iron (Fe)	1.9	1.0 - 40.0
Manganese (Mn)	5.7	3.0 - 20.0
Zinc (Zn)	2.4	0.1 - 70.0
Sulfur (S)	48.2	10 - 100
Aluminum (Al)	12.1	10 - 300
Est. Total Lead (Pb)	low	

UConn Soil Nutrient Analysis Laboratory
6 Sherman Place, Union Cottage, Unit 5102
Storrs, CT 06269-5102
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soiltesting.cahnr.uconn.edu

UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
EXTENSION & PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 23240

Prepared For:

Amy Vaillancourt
VHB
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

availlancourt@vhb.com
860.807.4327

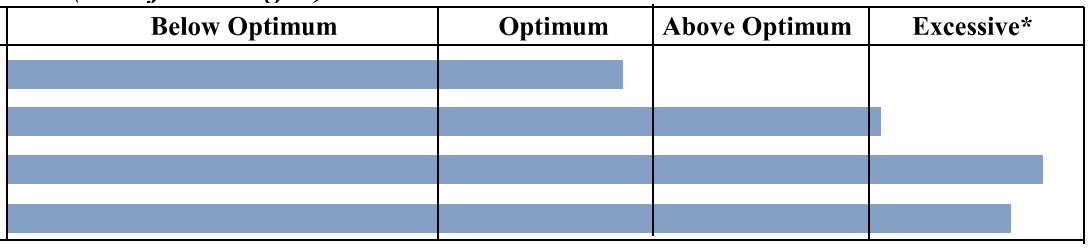
Sample Information:

Sample Name: Art-CS-B
Lab Number: 8482
Area Sampled:
Received: 11/18/2024
Reported: 12/3/2024

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**2314 lbs/acre**				
Magnesium	**> 500 lbs/acre**				
Phosphorus	**88 lbs/acre**				
Potassium	**> 600 lbs/acre**				



**** Excessive only defined for Phosphorus (>40 lbs/acre)***

Soil pH (1:1, H2O)	7.1
Est. Cation Exch. Capacity (meq/100g soil)	9.2
Buffered pH (Mod. Mehlich)	6.7

Base Saturation	***%***	***Suggested***
Potassium	14	2.0 - 7.0
Magnesium	23	10 - 30
Calcium	63	40 - 50

Element	***ppm***	***Soil Range in CT***
Boron (B)	0.4	0.1 - 2.0
Copper (Cu)	0.8	0.3 - 0.8
Iron (Fe)	1.5	1.0 - 40.0
Manganese (Mn)	5.7	3.0 - 20.0
Zinc (Zn)	1.8	0.1 - 70.0
Sulfur (S)	42.5	10 - 100
Aluminum (Al)	14.2	10 - 300
Est. Total Lead (Pb)	low	

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EXTENSION & PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 23240

Prepared For:

Amy Vaillancourt
VHB
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

availlancourt@vhb.com
860.807.4327

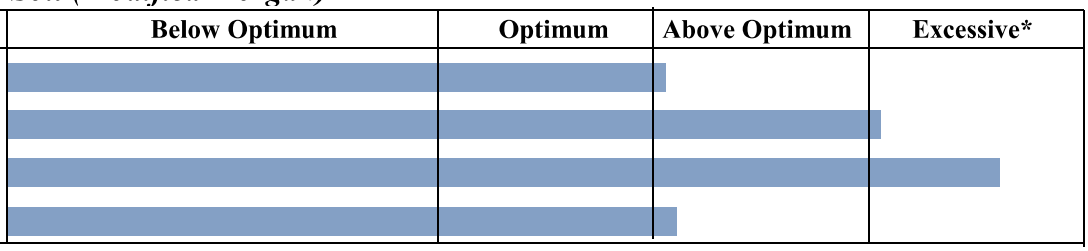
Sample Information:

Sample Name: Art-CS-C
Lab Number: 8483
Area Sampled:
Received: 11/18/2024
Reported: 12/3/2024

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**2489 lbs/acre**				
Magnesium	**> 500 lbs/acre**				
Phosphorus	**77 lbs/acre**				
Potassium	**369 lbs/acre**				



**** Excessive only defined for Phosphorus (>40 lbs/acre)***

Soil pH (1:1, H2O)	7.2
Est. Cation Exch. Capacity (meq/100g soil)	8.8
Buffered pH (Mod. Mehlich)	6.6

Base Saturation	***%***	***Suggested***
Potassium	5	2.0 - 7.0
Magnesium	24	10 - 30
Calcium	70	40 - 50

Element	***ppm***	***Soil Range in CT***
Boron (B)	0.4	0.1 - 2.0
Copper (Cu)	0.5	0.3 - 0.8
Iron (Fe)	1.5	1.0 - 40.0
Manganese (Mn)	3.2	3.0 - 20.0
Zinc (Zn)	2.9	0.1 - 70.0
Sulfur (S)	37.3	10 - 100
Aluminum (Al)	15.0	10 - 300
Est. Total Lead (Pb)	low	

UConn Soil Nutrient Analysis Laboratory
6 Sherman Place, Union Cottage, Unit 5102
Storrs, CT 06269-5102
860-486-4274
soiltesting.cahnr.uconn.edu

UCONN
COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES
EXTENSION & PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

Soil Test Report

Order Number: 23240

Prepared For:

Amy Vaillancourt
VHB
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

availlancourt@vhb.com
860.807.4327

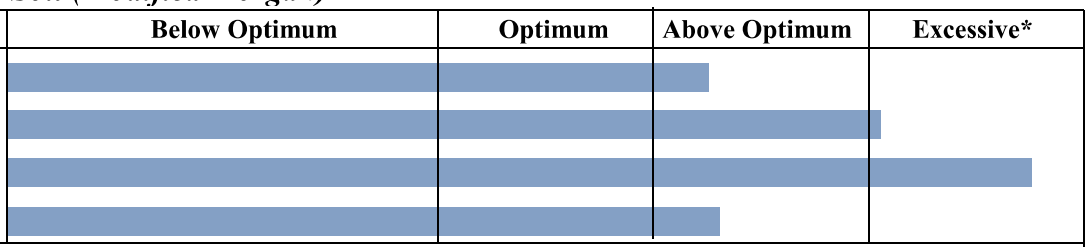
Sample Information:

Sample Name: Art-CS-D
Lab Number: 8484
Area Sampled:
Received: 11/18/2024
Reported: 12/3/2024

Results

Nutrients Extracted From Your Soil (Modified Morgan)

		Below Optimum	Optimum	Above Optimum	Excessive*
Calcium	**2803 lbs/acre**				
Magnesium	**> 500 lbs/acre**				
Phosphorus	**85 lbs/acre**				
Potassium	**429 lbs/acre**				



**** Excessive only defined for Phosphorus (>40 lbs/acre)***

Soil pH (1:1, H2O)	7.2
Est. Cation Exch. Capacity (meq/100g soil)	9.7
Buffered pH (Mod. Mehlich)	6.7

Base Saturation	***%***	***Suggested***
Potassium	6	2.0 - 7.0
Magnesium	22	10 - 30
Calcium	72	40 - 50

Element	***ppm***	***Soil Range in CT***
Boron (B)	0.5	0.1 - 2.0
Copper (Cu)	0.6	0.3 - 0.8
Iron (Fe)	2.7	1.0 - 40.0
Manganese (Mn)	3.7	3.0 - 20.0
Zinc (Zn)	4.1	0.1 - 70.0
Sulfur (S)	44.8	10 - 100
Aluminum (Al)	13.5	10 - 300
Est. Total Lead (Pb)	low	

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PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

RESULTS REPORT

December 5, 2024

Name: Amy Vaillancourt
VHB
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

Order Number: **23240**

Lab Number: MA24-460

Sample Name: Artillery-CS-A

Textural Analysis

Percentages are based on the Fine Earth Fraction (Less than 2mm)

Sand:	66.2 %
Silt:	24.4 %
Clay:	9.4 %

According to USDA criteria, this sample classifies as a **SANDY LOAM**. Classification is based on particles that are sand size or finer (i.e. Less than 2 millimeters in diameter.)

Organic Matter

The organic matter as determined by loss on ignition is 3.7 %

University of Connecticut Soil Nutrient Analysis Laboratory

6 Sherman Place Unit 5102 Storrs, CT 06269-5102

Tel: (860) 486-4274 Fax: (860) 486-4562 Web: www.soiltest.uconn.edu

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PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

RESULTS REPORT

December 5, 2024

Name: Amy Vaillancourt
VHB
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

Order Number: **23240**

Lab Number: MA24-461

Sample Name: Artillery-CS-B

Textural Analysis

Percentages are based on the Fine Earth Fraction (Less than 2mm)

Sand:	67.6 %
Silt:	23.6 %
Clay:	8.8 %

According to USDA criteria, this sample classifies as a **SANDY LOAM**. Classification is based on particles that are sand size or finer (i.e. Less than 2 millimeters in diameter.)

Organic Matter

The organic matter as determined by loss on ignition is 3.1 %

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PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

RESULTS REPORT

December 5, 2024

Name: Amy Vaillancourt
VHB
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

Order Number: **23240**

Lab Number: MA24-462

Sample Name: Artillery-CS-C

Textural Analysis

Percentages are based on the Fine Earth Fraction (Less than 2mm)

Sand:	66.2 %
Silt:	26.8 %
Clay:	7.0 %

According to USDA criteria, this sample classifies as a **SANDY LOAM**. Classification is based on particles that are sand size or finer (i.e. Less than 2 millimeters in diameter.)

Organic Matter

The organic matter as determined by loss on ignition is 3.9 %

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PLANT SCIENCE AND LANDSCAPE ARCHITECTURE

RESULTS REPORT

December 5, 2024

Name: Amy Vaillancourt
VHB
100 Great Meadow Road, Suite 200
Wethersfield, CT 06109

Order Number: **23240**

Lab Number: MA24-463

Sample Name: Artillery-CS-D

Textural Analysis

Percentages are based on the Fine Earth Fraction (Less than 2mm)

Sand:	66.6 %
Silt:	27.0 %
Clay:	6.4 %

According to USDA criteria, this sample classifies as a **SANDY LOAM**. Classification is based on particles that are sand size or finer (i.e. Less than 2 millimeters in diameter.)

Organic Matter

The organic matter as determined by loss on ignition is 4.1 %

3/20/2025

Ref: 43485.00

Attn: Gabe Rusk
Greenskies Clean Energy, LLC
127 Washington Avenue
West Building, Garden Level
North Haven, CT 06473

Re: Greenskies Solar Project – Racebrook Road, Woodbridge, CT
Soil and Vegetation Management Plan Post-Construction

Mr. Rusk,

Please refer to the below guidance for Soil and Vegetation Management Post-Construction for the solar project located on Racebrook Road in Woodbridge, CT.

Purpose: to outline procedures for revegetation as well as vegetation maintenance methods and frequency. The goal is to maximize energy production while minimizing environmental impact.

Soil Type & Quality: Soils are classified as poorly drained to well drained. Surface soils were found to have medium organic matter, sandy loam texture, pH of 5.4-6.1, medium to low ammonium nitrogen and soluble salts, as well as medium nitrate nitrogen, phosphorus, medium to low potassium, and high calcium and magnesium.

Soil Stabilization: Reseed and regrade all disturbed areas as early as possible. Site soil stabilization is to be completed within 14 days of post-grading, using hydro-seeding, sodding, or biodegradable erosion control mats. Temporary erosion and sediment controls are to be removed after site stabilization. Secure effective establishment of vegetation with suitable topsoil, adequate lime, fertilizer, mulch, and water.

Revegetation: Ernst grass seed mix along with perennial forbs will be utilized to revegetate the site. This seed mix offers various native and naturalized seeds ensuring compatibility with solar infrastructure while promoting ecological benefits. This selected grass and perennial species will besuited to the local climate and site conditions and those that can thrive under the shade of solar panels.

Establishment Phase (0-6 months)
- Site Preparation: address any remaining soil disturbances from construction activities by leveling and grading.
- Planting: sow seeds uniformly using no-till methods to avoid further soil disturbance.
- Mulching: apply mulch to reduce soil erosion, retain moisture, and suppress weeds.
- Erosion Control Blankets: use biodegradable erosion control blankets on steep slopes to stabilize soil until vegetation is established.
- Water as necessary to achieve seed germination and growth.

Maintenance Phase (6 months-5 years)
- Irrigation: provide supplemental watering to ensure germination and plant growth. Use drip irrigation to minimize water usage.

- Weed Control: monitor and manage invasive species by selective weeding, mowing or target application of environmentally safe herbicides.
- Mowing: to be conducted as necessary to ensure a full growing cycle through to seed and will be selective in areas where full term growth of perennial pollinator plantings is planned for regenerative seeding. The vegetative cuttings will be left as mulch so that nutrients are returned to the soil contributing to soil fertility and reducing the need for additional fertilizer inputs. This practice ensures that the vegetation management is sustainable and requires minimal intervention.
- Fertilization: apply organic fertilizers as needed to promote healthy plant growth.
- Watering as necessary to maintain vegetation.

Soil Amendments

- Organic Matter: incorporate compost or mulch to improve soil structure and fertility, enhance microbial activity and increase water retention.
- pH Adjustment: adjust soil pH using lime or sulfur as needed to optimize conditions for grass.
- Fertilize: in April and November.

General Monitoring and Maintenance

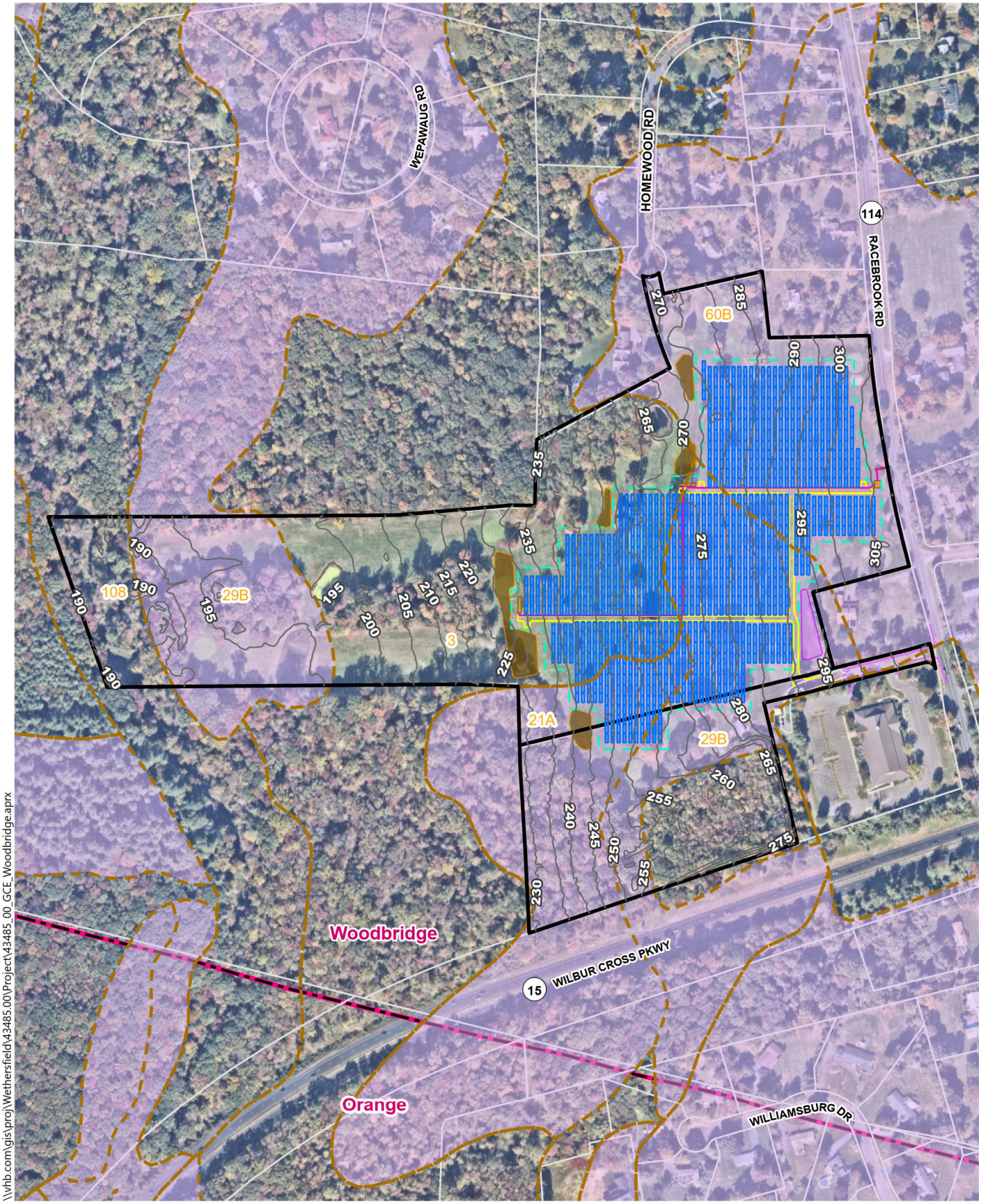
- Inspections: perform routine inspections of vegetation, soil conditions, and erosion control measures 3 to 4 times per year (April to November). Once plantings are established, inspections will be on a yearly basis as needed in conjunction with mowing efforts.
- Adaptive Management: adjust vegetation and soil management practices based on monitoring results to ensure continued health of vegetation and reduction of invasive species.
- Documentation and Reporting: maintain detailed records of inspections as well as soil and vegetation management activities.

Sincerely,

Tom D'Aguiar, PE
Site/Civil Engineer

Amy Vaillancourt
Director of Environmental Services

cc: Steve Kochis, Project Manager, VHB



0 200 400 800 Feet

- Edge of Roadway
- Gravel Road
- Fence
- Proposed Gravel Road
- Underground Electric
- Overhead Electric
- Pole
- Property Boundary
- Solar Panels
- Basin
- Equipment Pad
- Proposed Soil Stockpile
- 5-foot Contour
- NRCS Soils Boundary
- Prime Farmland
- Parcel Boundary
- Town Boundary

GCE Solar | Woodbridge, Connecticut

Proposed Project Layout

Source: VHB. CTDEEP, ESRI