BLUEWAVE

BWC Ashuela Brook, LLC Agricultural Solar Project

Field Engineering, Co. Inc.

Solar Agricultural Services, Inc.

Finicky Farm, LLC.

Agenda

- Ag-Solar Overview
- Project Details
- Q&A

BLUEWAVE

Founded in 2010.

Axium Infrastructure investment in 2022 allowed asset ownership and operations.

50+ **Community Solar Projects** developed in Massachusetts

60+ ***Agrivoltaic* Projects** developed or in development

225+ **Megawatts (MW)** operational solar developed

75+ **Landowner** partners

120k **Metric Tons of CO_2** avoided annually

Our Sustainable Solar Strategy

Combining solar development with land management rooted in conservation and agriculture to create a multifunctional system with a variety of **ecological**, **agricultural**, and **energy** benefits.

Dual Use: Pollinator-Friendly
Solar sites that maintain or seed wildflowers, pollinator-friendly plants, and native species to create habitat for native pollinators to thrive in.

Dual-Use: Conservation
Solar sites designed in consultation with conservation groups focused on restoring ecosystem integrity / vitality via on-site measures.

Dual-Use Agrivoltaics: Sheep Grazing
Solar sites that incorporate sheep grazing (and small-scale forage harvesting) as part of the overall landscape maintenance plan to replace mowing.

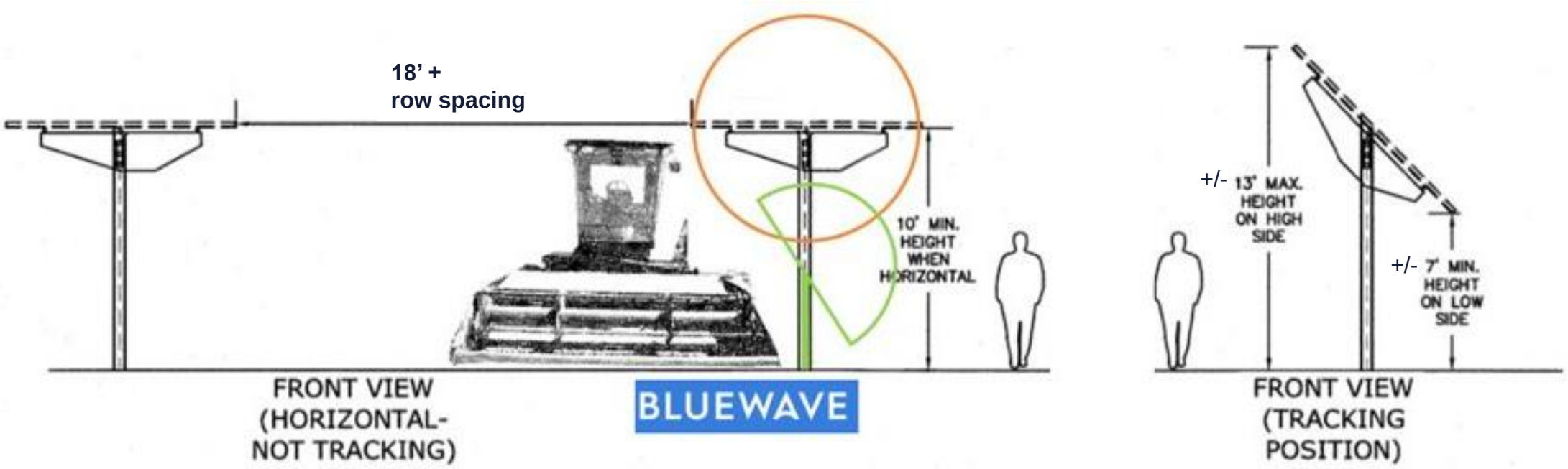
Adaptive Agrivoltaics: Crops & Cattle Grazing
Solar sites with specialized designs, construction and/or equipment that facilitate crop cultivation, cattle grazing, and/or forage harvesting under and around the panels (e.g. via people and equipment).

Ag-Ready Agrivoltaics: Large-scale Crops, Livestock & Equipment
Solar sites designed to accommodate a broad range of normal agricultural practices and equipment at typical scale of production, with only limited restrictions on agricultural use.

Ag-Solar in Massachusetts

- **SMART**
  - Solar Massachusetts Renewable Target Program
  - Tariff amount assigned to project, *example $0.16 kWh*
- **ASTGU Adder**
  - Agricultural Solar Tariff Generation Unit additional SMART tariff, *example $0.06 kWh*
- **UMass Amherst CEE**
  - Clean Energy Extension advises farmers in developing agricultural plan
- **MA DOER**
  - Massachusetts Department of Energy Resources, created SMART and qualifies dual-use projects. Receives annual reporting on farm productivity for the 20-year subsidy
- **MDAR**
  - Massachusetts Department of Agriculture Resources, consults with DOER to qualify dual-use projects; Receives annual reporting on farm productivity

Designing for Agriculture



1-In Portrait Single Axis Tracker system with ~10' torque-tube height

- ~8' length panels on 18'+ centers at 10'+ clear-height row spacing
- Tracker dispatch can avoid conflicts by allowing clearance for tractors & harvesters
- "Tilted-away" position can accommodate work at much lower tracker height
- Example: 12' mower-conditioner, to scale. Note clearance from panel rotation

Pictured: BWC Swift River, LLC

BURGUNDY BROOK FARM

- Palmer, MA
- 2023 Construction
- Beef cattle and hay production
- Same landowner & farmer, same agricultural uses
- 30’ fence clearances allow equipment turns, etc

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CZAJKOWSKI FARM

- Hadley, MA
- 2023 Construction
- Well-established vegetable grower (organic & conventional)
- Sandy section of larger field
- 2.2 acres
- 460 kW DC
- Developer/builder: Hyperion Systems (Jake Marley)

FINICKY FARM, LLC

A family farm, now making a home in Northfield.



Sustainably growing food since 1998. Transitioning to the second generation.
Specializing in agrivoltaics to fight the climate crisis.



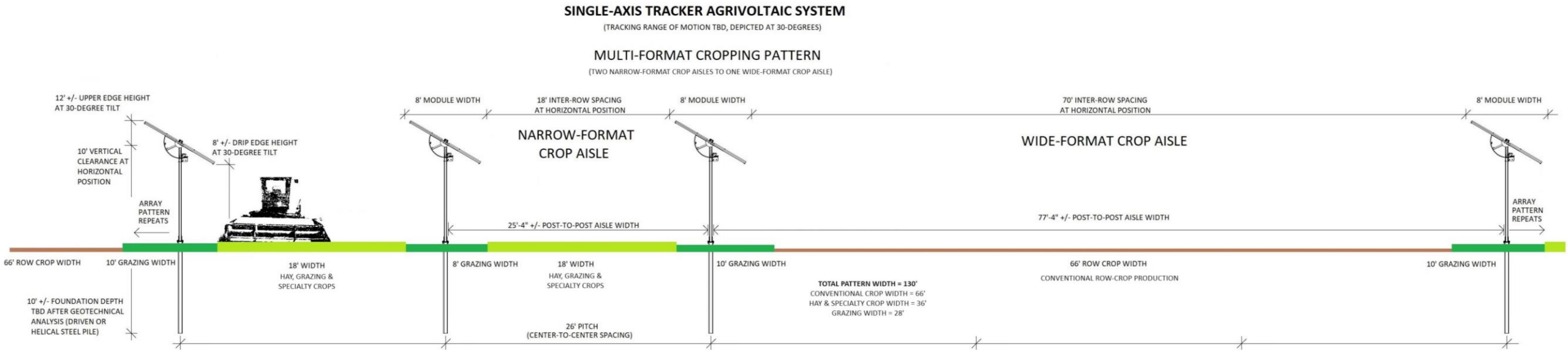




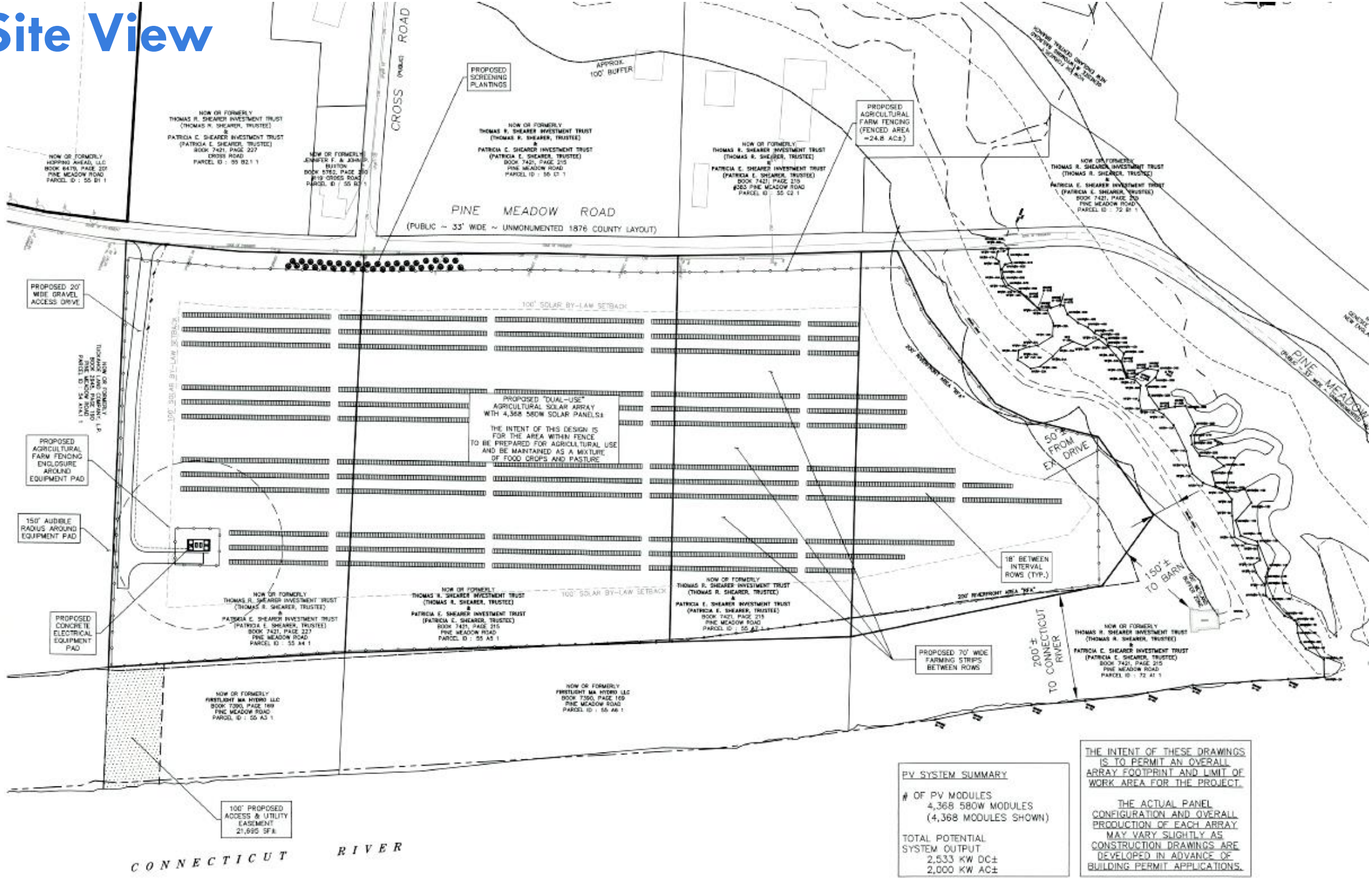
All photos courtesy of Finicky Farm, LLC

BWC Ashuela Brook, LLC Ag-Solar Plan

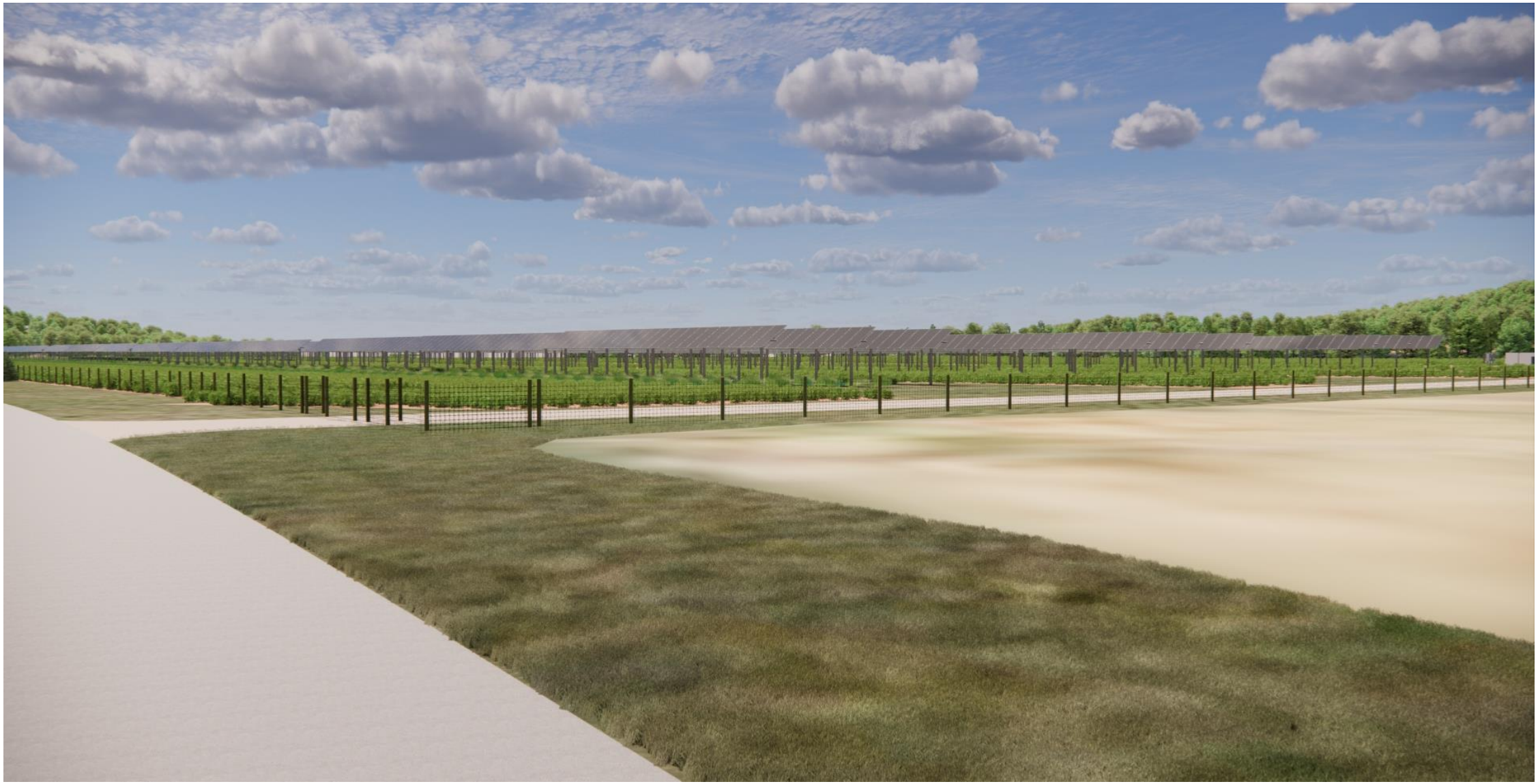
- Managed by Finicky Farm, LLC
- Historical crops (potatoes, grain corn, peppers, pumpkins), new crops, livestock grazing, hay & pasture
- Wide-format crop aisles will fit boom sprayer & commercial potato equipment
- Narrow-format crop aisles will fit hay & smaller crop equipment



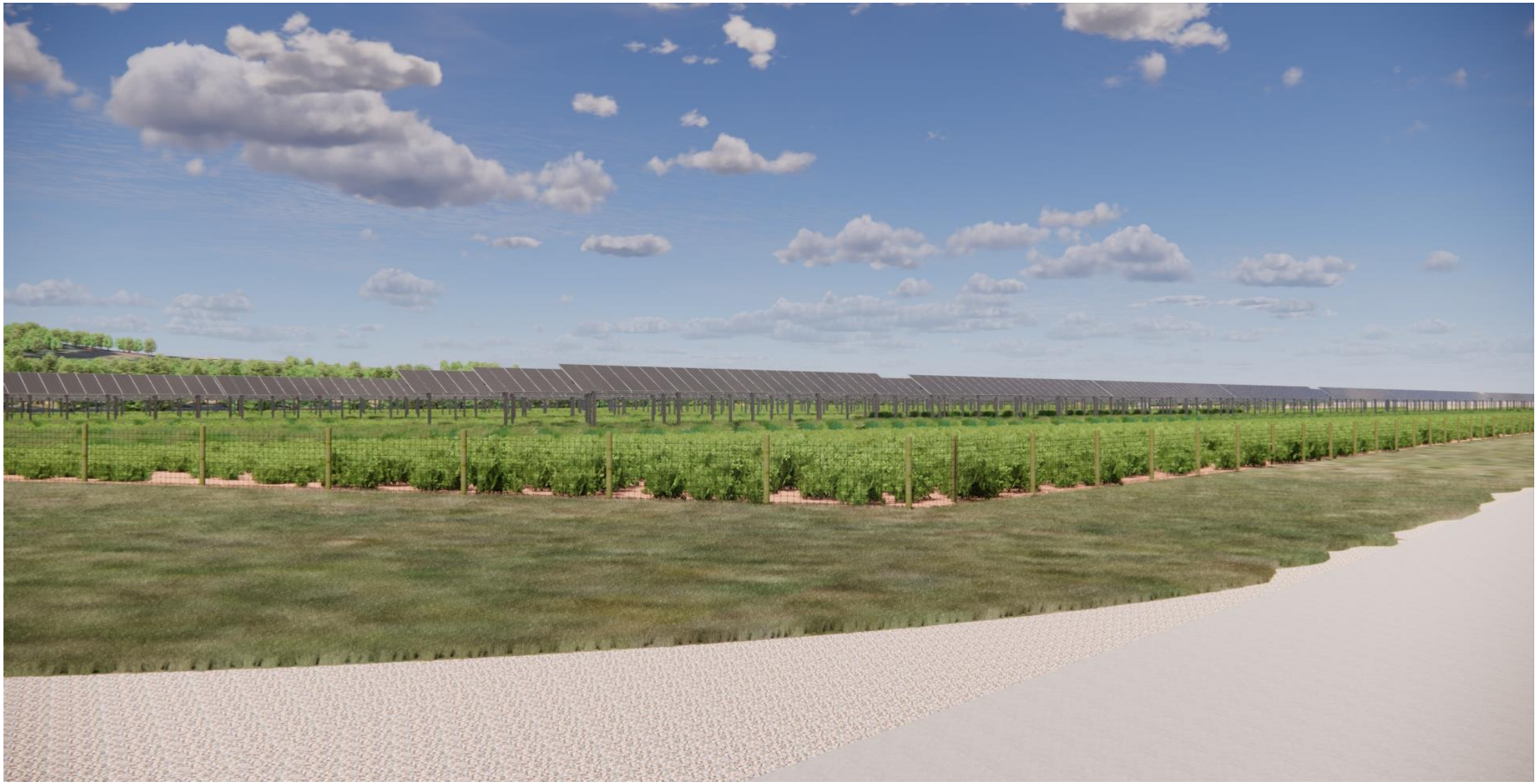
Site View


PROPOSED SCREENING PLANTINGS
APPROX. 100' BUFFER
CROSS ROAD
PINE MEADOW ROAD
(PUBLIC ~ 33' WIDE ~ UNMONUMENTED 1876 COUNTY LAYOUT)
PROPOSED AGRICULTURAL FARM FENCING (FENCED AREA =24.8 AC±)
PROPOSED 20' WIDE GRAVEL ACCESS DRIVE
100' SOLAR BY-LAW SETBACK
PROPOSED "DUAL-USE" AGRICULTURAL SOLAR ARRAY WITH 4,368 580W SOLAR PANELS±
THE INTENT OF THIS DESIGN IS FOR THE AREA WITHIN FENCE TO BE PREPARED FOR AGRICULTURAL USE AND BE MAINTAINED AS A MIXTURE OF FOOD CROPS AND PASTURE
PROPOSED AGRICULTURAL FARM FENCING ENCLOSURE AROUND EQUIPMENT PAD
150' AUDIBLE RADIUS AROUND EQUIPMENT PAD
PROPOSED CONCRETE ELECTRICAL EQUIPMENT PAD
18' BETWEEN INTERVAL ROWS (TYP.)
PROPOSED 70' WIDE FARMING STRIPS BETWEEN ROWS
50'± FROM EX. DRIVE
150'± TO BARN
200'± TO CONNECTICUT RIVER
100' PROPOSED ACCESS & UTILITY EASEMENT 21,695 SF±
CONNECTICUT RIVER
PV SYSTEM SUMMARY
OF PV MODULES
4,368 580W MODULES
(4,368 MODULES SHOWN)
TOTAL POTENTIAL SYSTEM OUTPUT
2,533 KW DC±
2,000 KW AC±
THE INTENT OF THESE DRAWINGS IS TO PERMIT AN OVERALL ARRAY FOOTPRINT AND LIMIT OF WORK AREA FOR THE PROJECT.
THE ACTUAL PANEL CONFIGURATION AND OVERALL PRODUCTION OF EACH ARRAY MAY VARY SLIGHTLY AS CONSTRUCTION DRAWINGS ARE DEVELOPED IN ADVANCE OF BUILDING PERMIT APPLICATIONS.

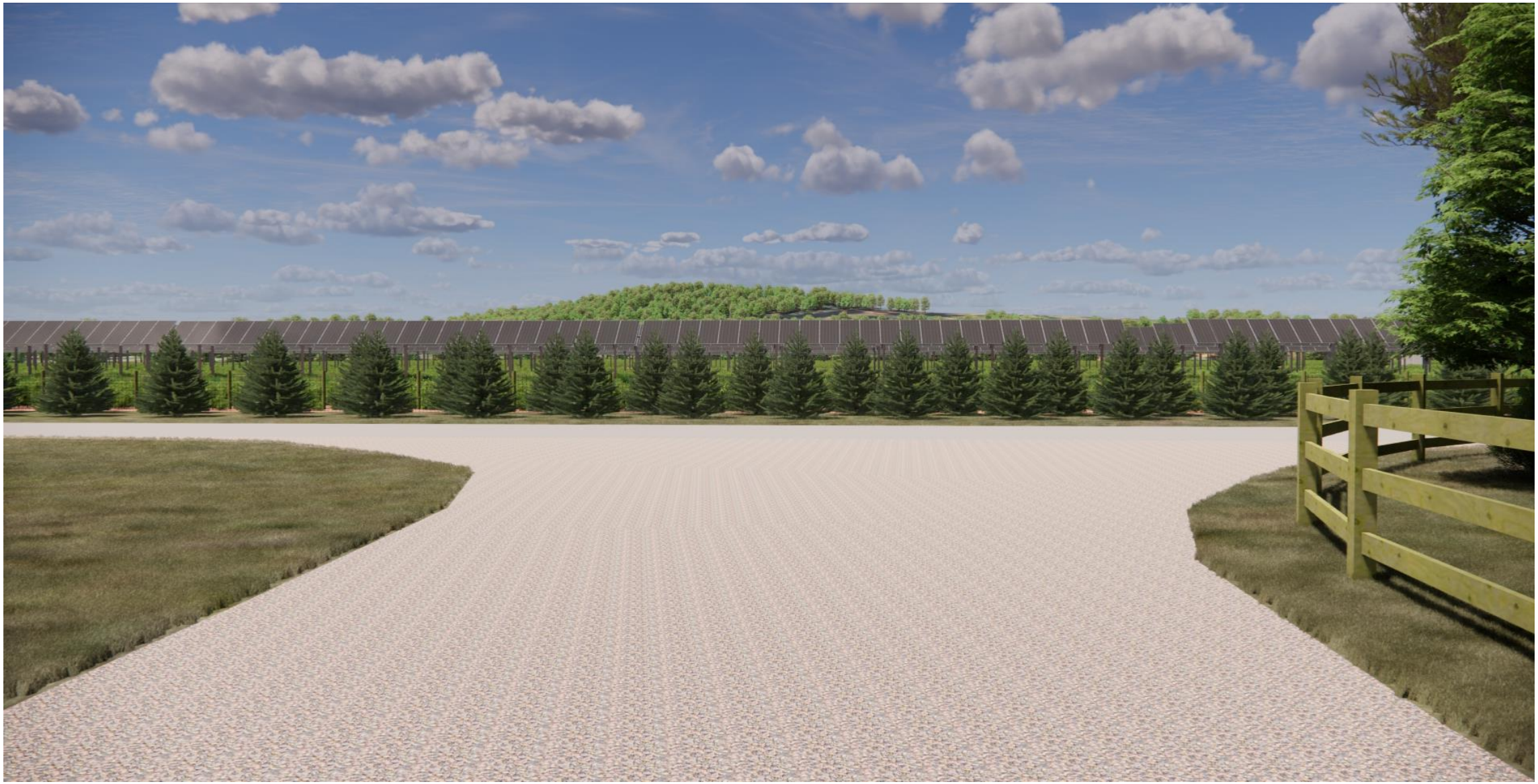
Rendering: At North side of Pine Meadow Road, view Southwest



Rendering: At South side of Pine Meadow Road, view Northwest



Rendering: View at Cross Road and Pine Meadow Road



BWC Ashuela Brook, LLC Project Summary

System	2.5 MWDC / Panel Count: 4,368 / Fenced Acres ~25 / No Energy Storage / ~4,000 MWh annual energy production
Agricultural Use	Historical crops (potatoes, grain corn, peppers, pumpkins), new crops, livestock, hay & pasture.
Height	10’ (minimum at panel edge in horizontal stow position)
Row Spacing	70’ panel edge to panel edge (Historical Crops) 18’ panel edge to panel edge (Pasture/Forage)
Seeding	Forage Area: Ernst “Fuzz & Buzz” pollinator- and livestock-friendly pasture mix
Sunlight Availability	Minimum of 50% of natural direct sunlight available on every square foot of soil within the Array

F.A.Q

- ***With BlueWave as the potential landowner for this development, what's the ownership plan?***
  - We don't intend to be the long-term owner. We are committed to entering into an agreement with a local land trust to conserve the land for agricultural use during the operation span of the solar array and following decommissioning of the project, in perpetuity.

- ***Will there be a community solar offering?***
  - For this project we expect to offer community solar under the SMART incentive program to low to moderate income utility bill rate payers.
  - There will also be a participation opportunity for an "anchor" customer. This is a customer with a large amount of electric demand, such as municipal buildings or community partner accounts.

- ***Are there any health and safety issues from "electromagnetic fields" associated from a large-scale solar array?***
  - Solar panels emit minimal levels of electromagnetic radiation and are safe for plants, animals, and humans. They emit considerably less electromagnetic radiation than everyday appliances such as smartphones, microwaves, or televisions.
  - The World Health Organization (WHO) states exposure to low-level electromagnetic fields has been studied extensively, with no evidence of any conclusive harm to human health.

F.A.Q. Continued…

- ***Where are solar modules sourced?***
  - It depends on market supply for when modules are acquired for a project, but we source only “Tier 1” solar panels. These are built with higher standards and have a highly regarded reputation within the solar industry for quality and service, and areas without labor rights violations.
  - Dependent upon availability, we will be looking to source domestically made modules in 2025 and beyond.

- ***What happens at the end of the project?***
  - There is a decommissioning bond posted by the Project with the Town so at the end of the project life, materials will be removed and then reused, refurbished, or recycled. BlueWave is committed to recycling, or the reuse of the solar panels installed at the end of a project’s life.

- ***How do you guarantee that it will be farmed for 20-year SMART incentive?***
  - SMART program AGSTU adder is $0.06 kWh for the project. If BlueWave as the operator doesn't get this incentive each year, the project loses money, which as a business we do not intend to let happen to the farm.

Thank you

Contact:
Michael Zhe
mzhe@bluewave.energy
617- 431- 8758