# Development Plan Review Application
# 250 kW DC Ground-Mount Solar Photovoltaic Development

34 Kenyon Lane, Hopkinton, RI 02833
Plat 7, Lot 48
Project # 3652200284

Prepared for:

**Kenyon Lane Solar, LLC**
13 Bartlett Road, Middletown, RI 02842

September 11, 2020

September 11, 2020

Hopkinton Planning Department
Thayer House
482 Main Street, 2nd Floor
Hopkinton, RI 02833

**Re: Development Plan Review Application**
**250 kW DC Ground-Mount Solar Photovoltaic Development**
**34 Kenyon Lane, Hopkinton, RI 02833**
**Plat 7, Lot 48**

Dear Members of the Planning Board:

On behalf of Kenyon Lane Solar, LLC (the Applicant), Wood Environment & Infrastructure Solutions, Inc. (Wood) is submitting this Development Plan Review Application to the Town of Hopkinton Planning Board for a 250 kilowatt (kW) direct-current (DC) ground-mount solar photovoltaic (PV) development (the Project) located at 34 Kenyon Lane in Hopkinton, Rhode Island (the Site). An abutters map and list within 200 feet of the Project is included in **Attachment A**.

The Project consists of the construction and installation of a second 250 kW DC solar PV array on the Site which includes an existing farm and grass fields adjacent to a previously installed 250-kW solar array constructed in 2017. United States Geological Survey (USGS) and aerial site location maps are included in **Attachment B** as Figures 1 and 2, respectively. The Project is proposed to be constructed as shown in the enclosed Project Drawings included in **Attachment C**.

The Project will occupy approximately 0.9 acre of the 201-acre property and will require minor tree trimming and clearing to reduce shading of the proposed solar development. The solar PV array consists of approximately 700 PV modules mounted on racks which will be supported by ground-mounted posts that will be embedded into the existing ground surface. The solar panels will extend approximately 8.5 feet above the existing ground surface at their maximum height. The solar PV array will be connected between a proposed customer-owned transformer and utility pole through approximately 75 feet of underground electric conduit. Approximately 260 feet of overhead medium voltage line will connect the proposed customer-owned utility pole to two new utility poles and an existing National Grid utility pole located on Kenyon Lane. The proposed array will be surrounded by 750 linear feet of chain link fence installed in accordance with NFPA 70 with a locking gate will connect to the first array fence on the western side. Documentation of the proposed solar equipment is included in **Attachment D.** The Operation and Maintenance Plan and Decommissioning Plan is included in **Attachment E**. A letter of intent for property lease and farm tax documentation is included in **Attachment F.** Professional Engineering Documentation for Wood is included in **Attachment G.**

State and federal-level permitting is not anticipated to be required for this Project. According to the Rhode Island Department of Environmental Management (RIDEM) Wetlands Act Rule 4.00, a Riverbank is defined as "the area of land within two hundred feet (200') of the edge of any flowing body of water having a width of ten feet (10') or more, and the area of land within one hundred feet (100') of the edge of any flowing body of water having a width of less than ten feet (10') during normal flow." A Perimeter Wetland is defined

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as the line fifty feet (50') from the landward edge of any bog, marsh, swamp, or pond." Information obtained from the Rhode Island Geographic Information System (RIGIS) on-line database indicates that there is a stream located over 220 feet away from the Project limit of work and a forested wetland over 70 feet away, on the opposite south side of Kenyon Lane; therefore, it is assumed that a wetlands delineation and wetlands permitting through RIDEM will not be required.

Projects exceeding 1 acre of disturbance are required to submit application for Rhode Island Pollutant Discharge Elimination Systems Permit from the Department of Environmental Management. As the proposed development will disturb 0.9 acres of land, a RIPDES filing is not required.

Review under the Rhode Island Historic Preservation Act (RIGL 42:45 et seq.) is required where a state permit approval is being sought (e.g., RIDEM Wetlands). Since RIDEM permitting is understood to be not required, consultation with the Rhode Island Historical Preservation and Heritage Commission (RIHPHC) will not be required to determine the presence of potentially state or federal historic or archaeological (cultural) resources at the Site due to proposed earth disturbing activities in previously farmed agricultural land areas.

Projects authorized under RIDEM must determine if the Project is within or directly discharges to a Natural Heritage Area (NHA). RIDEM NHAs include known occurrences of state and federal rare, threatened, and endangered species. Based on a review of available on-line information, the project is mapped at the outer periphery of a RIDEM NHA. Based on the previous 2017 permitting iteration and the existing disturbed agricultural nature of the site, it is understood that consultation with the Rhode Island Natural History Survey (RINHS) and RIDEM will not be required to determine if there are other NHAs on or near the proposed construction site.

This Application was prepared in accordance with the Town of Hopkinton Zoning Ordinances: Chapter 246 (Non-Residential Photovoltaic Solar Energy Systems (PSES)), Chapter 247 (Farm Viability Ordinance Amendment), and Chapter 13.5, Article III (Development Plan Review). Information required in the Ordinances is included in the attached supporting documentation and narrative below.

## CHAPTER 247 – ORDINANCE AMENDMENT TO CHAPTER 5.5 FARM VIABILITY ORDINANCE

This Project is defined by the Farm Viability Ordinance as a large farm with land of at least 15 acres of principal and assessor buildings actively devoted to agriculture or horticulture production. Tax documentation of farm activity on the property is included in **Attachment F**.

Under the amended ordinance PSES are permitted on RFR-80 zoning districts and large farms may use up to two (2) acres of land for PSES and may use up to three (3) acres for farms in excess of fifty (50) acres. The Project will also comply with Chapter 246 (Non-Residential Photovoltaic Solar Energy Systems (PSES)) and Chapter 134 (Zoning Ordinance).

## CHAPTER 246 – NON-RESIDENTIAL PHOTOVOLTAIC SOLAR ENERGY SYSTEMS (PSES)

### A. General Requirements

1. The Project is located in the RFR-80 Zoning District and will conform to the minimum front (60 feet), side (40 feet), and rear (50 feet) yard depths maximum accessory structure height (25 feet) and maximum building height (40 feet) as provided in Chapter 134, Section 6, Dimensional regulations.

2. The proposed electrical connection is underground as much as possible to the proposed utility poles and interconnection point at the existing National Grid three-phase overhead electric line and utility pole.

3. Approximately 750 linear feet of chain link fence with a locking gate will be installed around the solar PV array to prevent unauthorized access.

4. There is no proposed exterior lighting.

5. The solar panels will extend approximately 8.5 feet above the existing ground surface at their maximum height. The panels will be constructed in straight line rows.

6. The Project will not be constructed, installed, or modified without obtaining development plan approval from the Planning Board. This letter and attachments represent the Development Plan Review Application for approval.

7. The construction and operation of the Project will be consistent with all applicable local, state, and federal requirements, including but not limited to, all applicable safety, construction, environmental, electrical, communications and aviation requirements. The Applicant will consult with the Fire Marshall prior to the submission of any material to the Planning Board for review, as needed. The proposed Project will be designed and constructed in accordance with all applicable fire codes, as such may be interpreted by the Fire Marshal. The construction of any Project will not be allowed until the design has been approved by the Fire Marshal.

8. The Applicant will provide documentation that the installation of the PSES is in accordance with the manufacturer's directions. Certificates of Design Compliance will be submitted with the Land Development plan. The PV modules will be mounted on racks which will be supported by ground-mounted posts that will be embedded into the existing ground surface. Documentation of the proposed solar equipment is included in **Attachment D.**

9. The Project is not anticipated to prevent normal and orderly use, development, or improvement of adjacent property for uses permitted in the district. The Project is not expected to take six or more months of construction.

10. The Project will be designed to prevent the misdirection of concentrated solar radiation onto nearby properties, public roads, or other areas accessible to the public. The solar PV panels are designed to absorb light; therefore, glare is not anticipated.

11. The Applicant will avoid any disruption, interference with, or loss of radio, telephone, television, or similar signals and shall mitigate any such harm caused by the Project.

12. The Applicant will take precautions to protect neighboring properties from exposure to any radiation produced as a result of the Project or related high voltage wires, including but not limited to, high levels of radio frequency electromagnetic radiation.

13. The Project is located in the RFR-80 Zoning District and on a Site with an existing PSES. The fenced in area of the Project is 0.9 acres, and the fenced in area of the existing array is also 0.9 acres for a total of less than 2.0 acres of lot coverage. PSES are allowable on RFR-80 zoning districts based on Chapter 247, An Ordinance Amendment of Chapter 5.5 Farm Viability Ordinance.

14. The fully constructed Project is not anticipated to yield a noise level above 40dB at the property line. The solar equipment proposed for this Project is the same that was used in the construction of the adjacent first array. The proposed string inverters emit a low decibel rating (as opposed to louder central inverters) of less than 50 dBA at 3 meters as shown in Attachment D.

15. The Applicant will comply with the notarized Stormwater Facility Maintenance Agreement requirements.

**C. PSES Design Guidelines**

1. Land Clearing and Environmental/Cultural Impact

The Project will be constructed and operated in a manner that minimizes any adverse visual, safety and environmental impacts. The Site is surrounded by existing wooded areas. Ground alteration will be limited to less than one acre and will be minor in nature. No soil is proposed to be removed. Tree clearing will be limited to the minimum required to reduce shading of the solar PV array. The PV modules will be mounted on racks which will be supported by ground-mounted posts that will be embedded into the existing ground surface. This installation will impact the Site's hydrology or other natural resources. The Project is not anticipated to have an impact on wildlife migration or habitat changes.

Notes and details regarding soil erosion and sediment control are provided on the Project Drawings. The Applicant will comply with the vegetation clearing requirements.

2. Appurtenant Structures

a. The Site currently has an existing 250 kW DC solar PV array with electrical equipment and pad-mounted transformer adjacent to the array within the chain link fence. The Project will include the development of a second 250 kW DC solar PV array to the east of the existing array, extension of the existing access road, additional fencing, utility poles, and transformer.

b. The Project will be located within the fence adjacent to the existing solar PV array. There are no residentially zoned or residentially purposed adjacent properties where the Project is viewable.

c. A 6-foot high chain link fence will be installed around the perimeter of the solar PV array. The Project is surrounded by wooded areas and not easily visible and will not require additional screening.

d. The solar equipment proposed for this Project is the same that was used in the construction of the adjacent first array. The transformer oil will consist of environmentally friendly biodegradable oil, such as vegetable oil.

3. Lighting and Signage

a. There is no proposed lighting for the Project.

b. The manufacturers' identification, installers' identification, equipment information, appropriate warning signage, and indication of ownership, shall be posted on or near the panels in a clearly visible manner and will comply with the prevailing sign regulations.

c. A Project will not be used to display advertising, including signage, or other ancillary materials. In no case will any identification be visible from a property line.

## D. Planning Board Review

In addition to the requirements under the Development Plan Review Ordinance, the Applicant will provide the Planning Board with the following information:

1. Site Control.

A letter of intent for property lease between the applicant and property owner is included in **Attachment F**. Documentation of farm activity on the property is also included in **Attachment F**.

2. Operation and Maintenance Plan.

The Operations and Maintenance Plan for the Project is included in **Attachment E**.

3. Landscape Plan.

All proposed changes to the landscape of the site are shown on the Project Drawings included in **Attachments C**. There is an existing grass field, farm, and the existing solar PV array on-site. Any minor disturbances will be reseeded with low maintenance grass. The Project is surrounded by wooded areas and not easily visible and will not require additional screening.

4. As-built Plan.

The applicant will submit an as-built plan upon completion of the Project.

5. Financial Security.

The Applicant will comply with the PSES General Requirements for financial security.

## E. Post PSES Approval Regulations

1. Maintenance.

The Operations and Maintenance Plan for the Project is included in **Attachment E**.

2. Abandonment.

The Applicant will comply with the Post PSES Approval Regulations for abandonment.

3. Decommissioning.

The Applicant will comply with the Post PSES Approval Regulations for decommissioning. The Decommissioning Plan for the Project is included in **Attachment E**. Based on conversations with the Town Planner, the Applicant is amenable to increasing the decommissioning cost estimate from $6,600 to $8,000 if required by the Board based on similar projects.

4. Removal Requirements.

The Applicant will comply with the Post PSES Approval Regulations removal requirements. The Operations and Maintenance Plan and Decommissioning Plan for the Project are included in **Attachment E**.

## Article III – DEVELOPMENT PLAN REVIEW

### Sec. 13.5-72. Application Procedure

A pre-application conference is scheduled for October 7, 2020 at the Planning Board meeting. This submissions for Development Plan Review will be accompanied by a fee of $100 under separate cover. Plan submission to the planning board will be in compliance with Chapter 13.5-72, B.4.a through h.

a. General.

Locus map and aerial map figures are included in **Attachment B**. Site plan drawings are included in **Attachment C**. Written development impact statements (DIS) that assess the Project's potential impact to the site has been addressed throughout the Application. There is no anticipated impact to land use, noise/air quality, traffic, soils, geology, groundwater/recharge, landscape, wetlands or surface waters, scenic preservation, schools, solid waste disposal, potable water facilities, natural heritage sites, vegetation/wildlife, drainage, historic areas, police/fire/lighting or fiscal impact.

b. Existing conditions plan.

Site plan drawings are included in **Attachment C**.

c. Access and parking.

There is an existing access road from the previous solar PV array development. No parking is required. The Project will be accessed 1-2 times per year for maintenance.

d. Architectural.

Site plan drawings are included in **Attachment C**. The fenced in area of the Project is 0.9 acres, and the fenced in area of the existing array is 0.9 acres for a total of less than 2.0 acres of lot coverage.

e. Environmental.

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the Site is not located in a flood hazard zone. The Project will not provide water supply, dispose of septic waste, or dispose of solid waste. Construction waste will be completed in accordance with applicable local, state, and federal regulations and is the contractor's responsibility. No soil is proposed to be removed. The PV modules will be mounted on racks which will be supported by ground-mounted posts that will be embedded into the existing ground surface. The Project is not anticipated to impact the Site's hydrology or other natural resources.

f. Landscaping.

No lighting installation is proposed for the Project. Signs with owner information and emergency contact will be posted.

g. Soil erosion and stormwater control plan.
Notes and details regarding soil erosion and sediment control are provided on the Project Drawings. The Applicant will enter into a Stormwater Facility Maintenance Agreement with the Town.

h. Supporting materials.
The Project is proposed on a Site with an existing solar PV array. An abutters map and list within 200 feet is provided in **Attachment A**. Locus and aerial map figures are included in **Attachment B**. Site plan drawings are included in **Attachment C**.

**Sec. 13.5-73. Design Standards**
The Project will comply with the site standards in Sec. 13.5-73, A though J.

A. Advertising Features.
Signs will conform with Section 27 of the Hopkinton Zoning Ordinance.

B. Disposal of Waste.
Construction waste will be completed in accordance with applicable local, state, and federal regulations and is the contractor's responsibility. No soil is proposed to be removed.

C. Ecological considerations.
The Project is not anticipated to adversely impact critical areas such as streams, wetlands, areas of aquifer recharge and discharge, steep slopes, highly erodible soils, areas with a high water table, mature stands of vegetation, and extraordinary wildlife nesting, feeding, or breeding grounds.

D. Landscape.
Tree clearing will be limited to what is required to reduce shading of the solar PV array.

E. Municipal services.
The Project will not have an adverse impact on the municipal road system, fire district, police department, solid waste program, schools, open spaces, recreational programs and facilities, or public utilities.

F. Parking and circulation.
There is an existing access road from the previous solar PV array development. No parking is required. The Project will be accessed 1-2 times per year for maintenance.

G. Soil erosion and stormwater control.
Notes and details regarding soil erosion and sediment control are provided on the Project Drawings. The Applicant will enter into a Stormwater Facility Maintenance Agreement with the Town.

H. Visual buffers.
A 6-foot high chain link fence will be installed around the perimeter of the solar PV array. The Project is surrounded by a wooded area and not easily visible and will not require additional screening.

I. Visual relationship of buildings.
There is an existing solar PV array at this Site and the Project is proposing a second array to the east.

J. Unique and cultural areas.
The Project will not adversely affect the scenic or natural beauty of the area, aesthetics, historic sites, or rare and irreplaceable natural areas. There is an existing solar PV array at this Site.

Should you have any questions regarding this application, please do not hesitate to contact me at (978) 392-5341 or andrew.vardakis@woodplc.com.

Sincerely,
**Wood Environment & Infrastructure Solutions, Inc.**

Andrew P. Vardakis, PE
Project Manager

Gregory Avenia, PE
Senior Engineer

Attachments:
A – Abutter Information
B – Figures
C – Project Drawings
D – Equipment Documentation
E – Operations and Maintenance Plan; Decommissioning Plan
F – Letter of Intent for Property Lease; Farm Tax Documentation
G – Professional Engineering Documentation

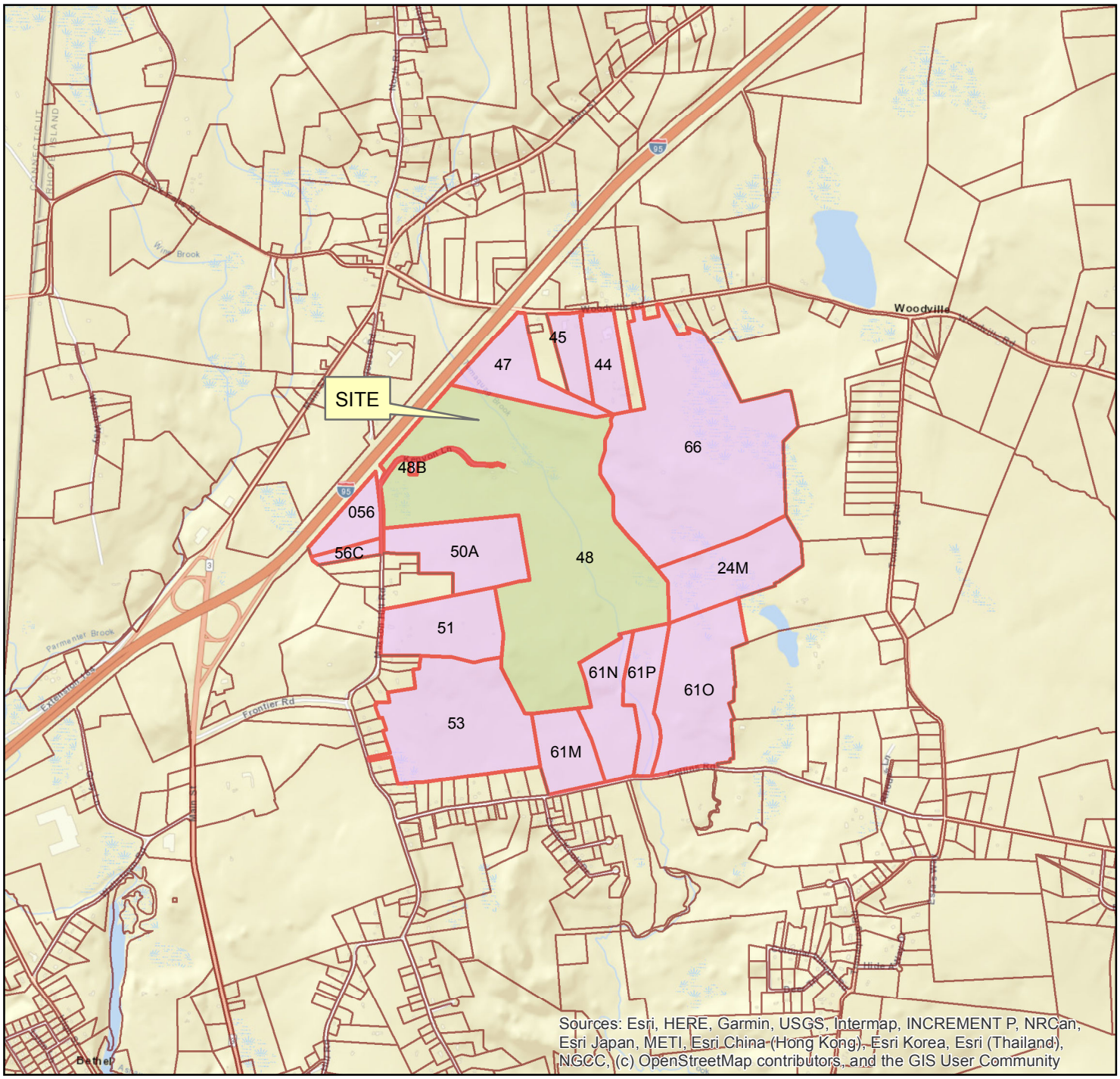
cc: Steve Kerr, Kenyon Lane Solar, LLC

**Attachment A**

**Abutter Information**

Abutting Properties for
34A,B KENYON LN HOPKINTON, RI 02833
(200 feet)

| OWNER_NAME | LOCATION | STREET | HOUSE_NO | MUNICIPALITY |
|---|---|---|---|---|
| JAMES THOMPSON NATIVE LUMBER | 385 WOODVILLE RD | WOODVILLE RD | 385 | HOPKINTON |
| TOWN OF HOPKINTON | 395 WOODVILLE RD | WOODVILLE RD | 395 | HOPKINTON |
| SMITH II, LESLIE B | 0 WOODVILLE RD | WOODVILLE RD | 0 | HOPKINTON |
| MARSH, TRINA M | 34A,B KENYON LN | KENYON LN | 34A,B | HOPKINTON |
| MARSH, TRINA M | 14 KENYON LN | KENYON LN | 14 | HOPKINTON |
| RICHARD C PANCIERA REVOC LIV TRUST | 0 MAXSON HILL RD | MAXSON HILL RD | 0 | HOPKINTON |
| TOWN OF HOPK-HOPKINTON LAND TRUST | 0 TOMAQUAG RD | TOMAQUAG RD | 0 | HOPKINTON |
| MARSH, GARY S + TRINA M | 0 MAXSON HILL RD | MAXSON HILL RD | 0 | HOPKINTON |
| THOMPSON, SCOTT W | 180-A MAXSON HILL RD | MAXSON HILL RD | 180-A | HOPKINTON |
| TOWN OF HOPKINTON LAND TRUST | 0 COLLINS RD | COLLINS RD | 0 | HOPKINTON |
| MARSH, GARY S + TRINA M | 0 COLLINS RD | COLLINS RD | 0 | HOPKINTON |
| PIERCE, GABRIELLE E & KENNETH J | 230 COLLINS RD | COLLINS RD | 230 | HOPKINTON |
| TARBOX, GLEN A + HENRY R JR | 0 COLLINS RD | COLLINS RD | 0 | HOPKINTON |
| RICHARD C PANCIERA REV LIV TR | 0 MAXSON HILL RD | MAXSON HILL RD | 0 | HOPKINTON |
| BANAH HOLDINGS LLC | 377 WOODVILLE RD | WOODVILLE RD | 377 | HOPKINTON |
| THOMPSON, SCOTT W | 0 MAXSON HILL RD | MAXSON HILL RD | 0 | HOPKINTON |




## Location of Site

# ABUTTERS MAP (WITHIN 200 FT OF 34 KENYON LANE)

Kenyon Lane Solar, LLC
Solar Project

34 Kenyon Lane
Hopkinton, Rhode Island

## Notes & Sources

Notes: Parcels shapefile from Town of Hopkinton, RI GIS & Real Property Information

0 500 1,000 Feet

N

wood.
Wood Environment & Infrastructure Solutions, Inc.
275 Promenade Street, Suite 100
Providence, RI 02908
+1 401-648-9240

FIGURE
1

H:\Econox\Hopkinton_34Kenyon\Task2\MXD\Fig1_Abutters - 34 kenyon.mxd August 27, 2020 DWN: ilana.ton CHKD: AKN

DATE

Property Owner's Name
Mailing Address
Town, State, Zip

**Re: Hopkinton Planning Department**
**Development Plan Review Application**
**250 kW DC Ground-Mount Solar Photovoltaic Development**
**34 Kenyon Lane, Hopkinton, RI 02833**
**Plat 7, Lot 48**

Dear Property Owner:

The purpose of this letter is to provide notification that the Hopkinton Planning Board is scheduled to hold a Pre-Application Meeting regarding a Development Plan Review Application for a 250 kilowatt (kW) direct-current (DC) ground-mount solar photovoltaic (PV) installation located at 34 Kenyon Lane in Hopkinton, RI (Plat 7, Lot 48). The proposed development may be revised by the Planning Board as a result of further study or because of the views expressed by the Pre-Application Meeting.

The Pre-Application Meeting is scheduled to be held on October 7, 2020 at 7:00 PM at Hopkinton Town Hall, 1 Town House Road in Hopkinton, RI 02833. The application and plans are on file for review in the Planning Department offices located at the Thayer House, 482 Main Street, 2nd Floor in Hopkinton, RI 02833.

Sincerely,
**Wood Environment & Infrastructure Solutions, Inc.**

Andrew P. Vardakis, PE
Project Manager

Gregory Avenia, PE
Senior Engineer

Wood Environment & Infrastructure Solutions, Inc.
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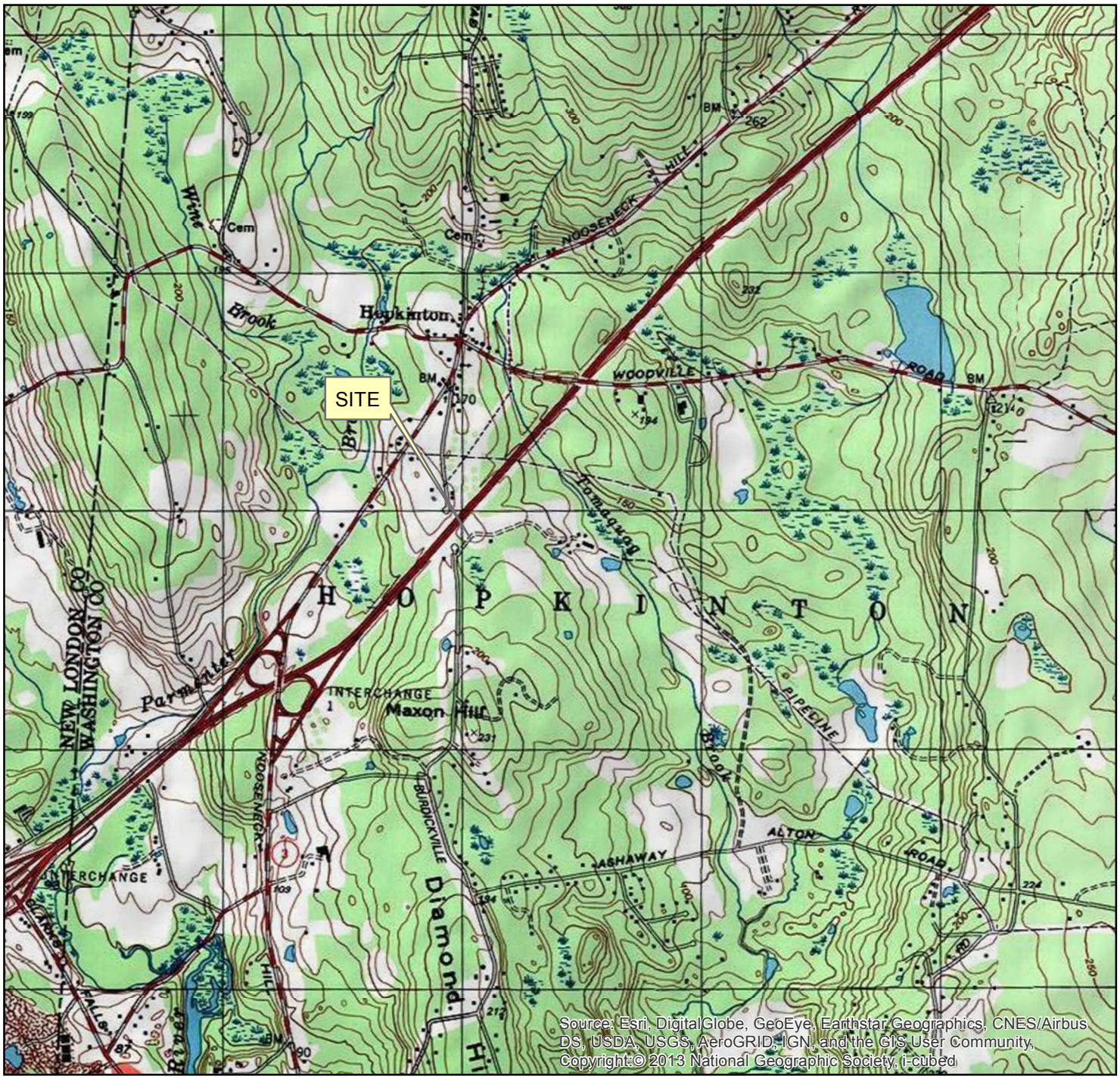
Providence, RI 02908
+1 401-648-9240
woodplc.com

**Attachment B**

**Site Location Maps**

Figure 1 – USGS Map

Figure 2 – Aerial Map




Location of Site

# SITE LOCATION MAP

Kenyon Lane Solar, LLC
Solar Project

34 Kenyon Lane
Hopkinton, Rhode Island

Notes & Sources

0 500 1,000
Feet

N

wood.
Wood Environment &
Infrastructure Solutions, Inc.
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Providence, RI 02908
+1 401-648-9240

FIGURE
1

H:\Econox\Hopkinton_34Kenyon\Task2\MXD\Fig1_USGS Site Location Map - 34 kenyon.mxd August 27, 2020 DWN: ilana.ton CHKD: AKN

Location of Site

# SITE LOCATION MAP

Kenyon Lane Solar, LLC
Solar Project

34 Kenyon Lane
Hopkinton, Rhode Island

Notes & Sources

0 400 Feet

N

wood.

Wood Environment &
Infrastructure Solutions, Inc.
275 Promenade Street, Suite 100
Providence, RI 02908
+1 401-648-9240

FIGURE
2

**Attachment C**

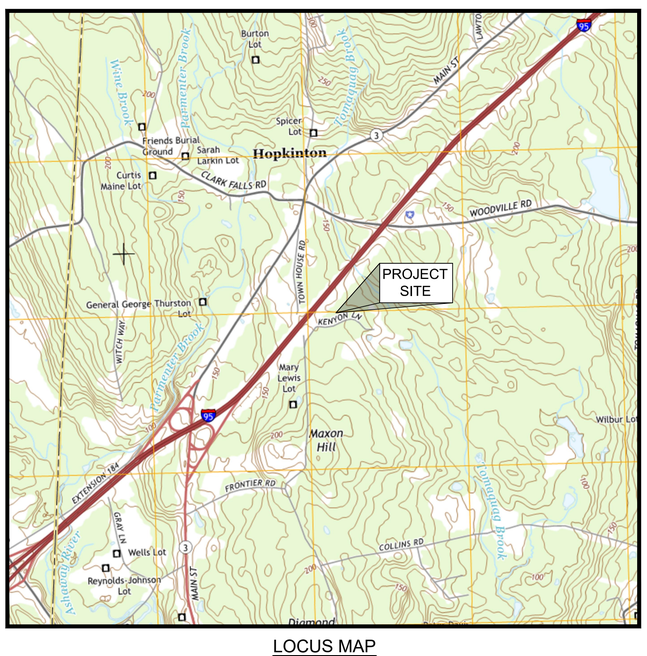
**Project Drawings**

**(11″ x 17″; 24″ x 36″ Bound Separately)**

PROPRIETARY INFORMATION: THIS DRAWING IS THE PROPERTY OF AMEC ENVIRONMENT & INFRASTRUCTURE AND IS NOT TO BE LOANED OR REPRODUCED IN ANY WAY WITHOUT THE PERMISSION OF AMEC ENVIRONMENT & INFRASTRUCTURE.

# KENYON LANE SOLAR, LLC

## 250 KW DC SOLAR PV DEVELOPMENT
## 34 KENYON LANE
## PLAT 7 LOT 48
## HOPKINTON, RHODE ISLAND 02808
## SEPTEMBER 11, 2020
## ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION




LOCUS MAP
NOT TO SCALE

AERIAL IMAGE
NOT TO SCALE

DRAWING INDEX

| SHEET NUMBER | DRAWING TITLE | DRAWING NUMBER |
|---|---|---|
| | COVER SHEET | |
| 1 | PROPOSED SITE PLAN | C-101 |
| 2 | NOTES AND DETAIL PLAN | C-501 |

PROPERTY OWNERS

TRINA M MARSH

PO BOX 424
ASHAWAY, RHODE ISLAND 02804-0005

DEVELOPED BY

**KENYON LANE SOLAR, LLC**

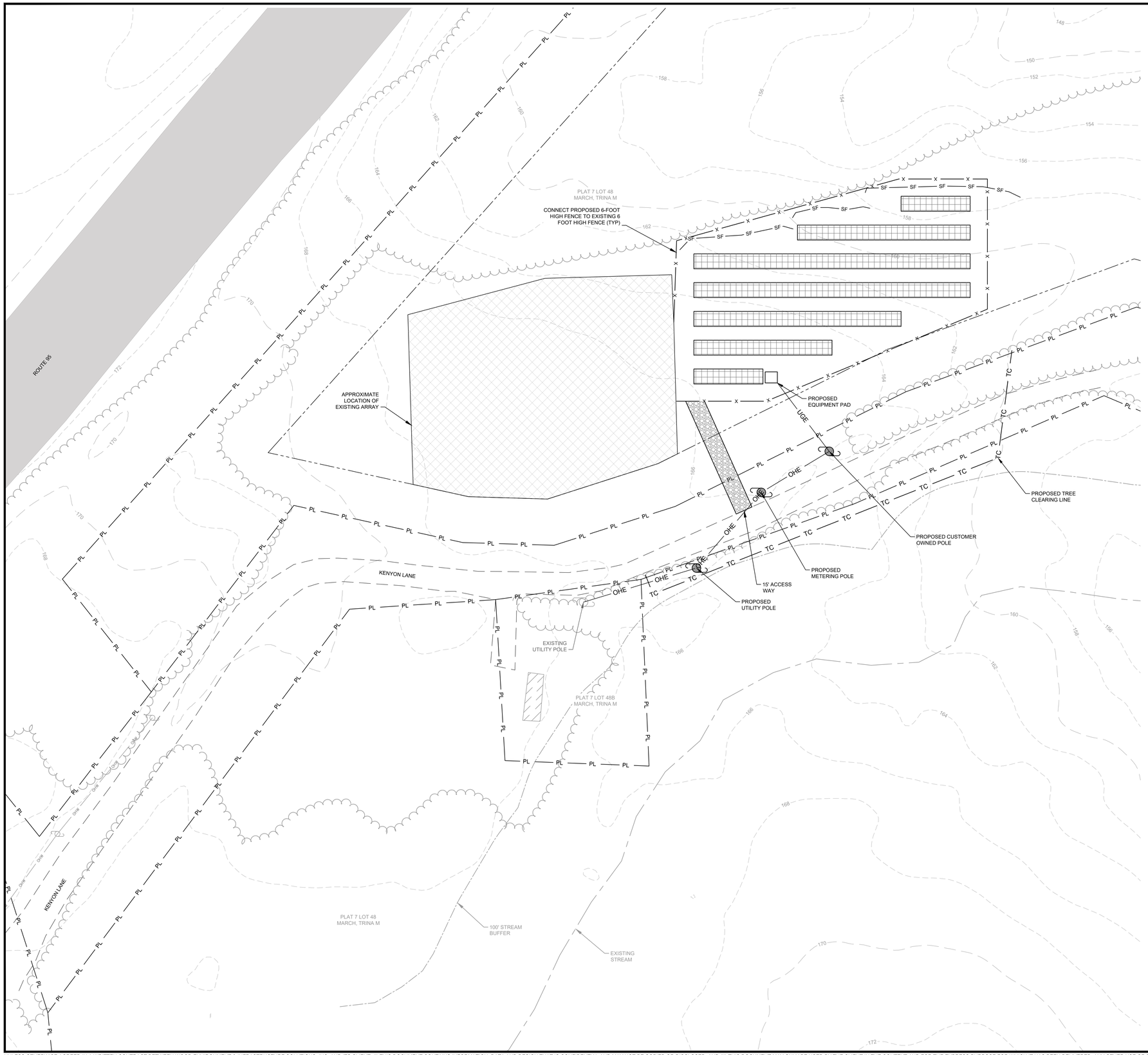
13 BARTLETT ROAD
MIDDLETOWN, RHODE ISLAND 02842

PREPARED BY

wood.

WOOD ENVIRONMENT &
INFRASTRUCTURE SOLUTIONS, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE, RHODE ISLAND 02908

C:\Users\dana.dempsey\Documents_Projects\Work from Home Starting 2020-03-18\Econox\Econox - 34 Kenyon Lane, Hopkinton\7.1 Design - Permitting\Sheets\0 - 363220028\34 Kenyon Lane G-000.dwg - G-000 - Sep. 11, 2020 10:21am - dana.dempsey




LEGEND:

- EXISTING ROAD
- EXISTING EDGE OF GRAVEL
- EXISTING BUILDING
- 100 — EXISTING 10-FOOT CONTOUR
- 104 — EXISTING 2-FOOT CONTOUR
- PL — PROPERTY LINE
- PROPERTY LINE SETBACK
- OHW — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING STREAM (RIGIS)
- RIVERBANK (RIGIS)
- EXISTING SOLAR PV PANELS
- x — PROPOSED 6' HIGH FENCE (DESIGN BY OTHERS)
- UGE — PROPOSED UNDERGROUND ELECTRIC
- OHE — PROPOSED OVERHEAD ELECTRIC
- SF — PROPOSED SILT FENCE (2 / C-501)
- PROPOSED CONSTRUCTION ENTRANCE (1 / C-501)
- PROPOSED SOLAR PV PANELS

NOTES:

1. THIS PLAN WAS PREPARED FOR LOCAL PERMITTING AND IS NOT SUITABLE FOR CONSTRUCTION.
2. THIS PLAN IS NOT THE RESULT OF AN ON THE GROUND TOPOGRAPHICAL OR BOUNDARY SURVEY. ALL FEATURES AND LOCATIONS ARE APPROXIMATE.
3. ALL INFORMATION SHOWN ON THIS PLAN IS FROM WEB BASED GIS AND/OR AERIAL IMAGES AND SHOULD BE CONSIDERED APPROXIMATE. WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC. HAS NOT INDEPENDENTLY VERIFIED THE INFORMATION SHOWN AND MAKES NO GUARANTEE TO THE COMPLETENESS OR ACCURACY OF ANY FEATURE SHOWN.
4. WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC. HAS NOT INDEPENDENTLY VERIFIED THE LOCATION, EXISTENCE, OR SERVICEABILITY OF ANY UTILITIES, AND MAKES NO GUARANTEE TO THE COMPLETENESS OR ACCURACY OF ANY UTILITIES. ADDITIONAL UTILITIES MAY EXIST IN THE FIELD, WHICH ARE NOT SHOWN ON THIS PLAN. SEE ADDITIONAL NOTES ON SHEET 2 OF 2.
5. SOLAR PV LAYOUT AND ELECTRICAL DESIGN, INCLUDING COMPLIANCE WITH APPLICABLE CODES, HAVE BEEN PERFORMED BY OTHERS. ELECTRICAL EQUIPMENT AND COMPONENTS ARE SHOWN TO ILLUSTRATE LOCATIONS ONLY. REFER TO ELECTRICAL DRAWINGS FOR DETAILED ELECTRICAL SYSTEM INFORMATION.

0' 20' 40' 60'
SCALE: 1" = 40' WHEN PLOTTED 24"x36"

**ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION**


wood.

WOOD
ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE, RHODE ISLAND 02908
TELEPHONE: (401) 648-9240
WEB: WWW.WOODPLC.COM


| REVISION | DATE | ISSUE / REVISION DESCRIPTION | ISSUED | APPROVED |
|---|---|---|---|---|
| 0 | 08/11/2020 | ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION | GAA | APV |

PROJECT: 250 KW SOLAR PV DEVELOPMENT
34 KENYON LANE
PLAT 7, LOT 48
HOPKINTON, RI 02833

TITLE: PROPOSED SITE PLAN

CLIENT: KENYON LANE SOLAR, LLC
13 BARTLETT ROAD
MIDDLETOWN, RI 02842

SEAL: ANDREW P. VARDAKIS No. 12219 REGISTERED PROFESSIONAL ENGINEER CIVIL 9/11/2020

| | |
|---|---|
| DESIGNED BY: APV | DRAWN BY: DED |
| CHECKED BY: GAA | SCALE: AS SHOWN |
| PROJECT NUMBER: 3652200284 | |
| DRAWING NUMBER: C-101 | |
| SHEET NUMBER: 1 OF 2 | |

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**GENERAL NOTES:**

1. PLANS HAVE BEEN COMPILED FROM AVAILABLE ONLINE INFORMATION INCLUDING RIGIS AND LIDAR.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER, INCLUDING DISCREPANCIES TO ANY CODE/REGULATORY REQUIREMENTS. IF ANY DISCREPANCIES ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. ALL ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH THE DRAWINGS. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL, STATE, AND FEDERAL JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
4. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM OWNER AND/OR ENGINEER TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL WORK.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED BY THE OWNER, ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
7. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH, AND EQUIPMENT AS SPECIFIED, CONTRACTOR SHALL CLEAN AND SUPPLY A ROLL-OFF CONTAINER OR DUMPSTER TO BE EMPTIED AS NEEDED. CLEANING SHALL BE IN COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM TRASH, DEBRIS, DUST, OR OTHER HAZARDS OF ANY NATURE AT PROJECT COMPLETION.
8. DISPOSAL OF ALL MATERIALS SHALL BE COMPLETED IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
9. THE CONTRACTOR SHALL COMPLY WITH ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
10. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND EXISTING FEATURES PRIOR TO THE START OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER. CONTRACTOR SHALL VERIFY ACTUAL FIELD CONDITIONS PRIOR TO CONSTRUCTION.
11. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL UTILITIES AND SERVICES THROUGHOUT THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL PROTECT ALL UTILITY LINES THROUGHOUT ALL PHASES OF WORK.
12. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES WITHIN THE PROJECT SITE.
13. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND PIPING AND STRUCTURES PRIOR TO ANY EXCAVATION ACTIVITIES BY CONTACTING THE TOWN OF HOPKINTON AND RHODE ISLAND DIG-SAFE (1-800-DIG-SAFE) SEVENTY TWO (72) HOURS BEFORE STARTING CONSTRUCTION ACTIVITIES FOR FIELD MARKING UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES THAT MAY NOT BE MARKED BY THE UTILITY COMPANIES. SUBSURFACE CONDITIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL REPAIR CONTRACTOR-CAUSED DAMAGE ACCORDING TO LOCAL STANDARDS AT CONTRACTOR'S EXPENSE.
14. UNLESS OTHERWISE NOTED, ALL EXISTING FEATURES DESIGNATED ON THE PLANS ARE TO REMAIN. INCLUDING, BUT NOT LIMITED TO, TREES, SIGNS, FENCING/GATES, AND SIGN POSTS. FEATURES SHALL BE VERIFIED, LOCATED, AND PROTECTED DURING ALL PHASES OF CONSTRUCTION.
15. ALL CONSTRUCTION ACTIVITIES MUST BE COMPLETED WITH RESPECT TO THE ONGOING ACTIVITIES OF THE SURROUNDING AREAS. ACCESS ROADWAYS SHALL REMAIN OPEN AND FREE OF DEBRIS AS MUCH AS PRACTICABLE.
16. ALL ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT SOIL EROSION AND SEDIMENT CONTROL PLAN (SESC), RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, AND THE RHODE ISLAND POLLUTION DISCHARGE ELIMINATION SYSTEM (RIPDES) CONSTRUCTION GENERAL PERMIT, IF APPLICABLE.
17. CONTRACTOR SHALL LIMIT ALL CONSTRUCTION ACTIVITIES TO THE PROPOSED FENCE LINE, LIMITS OF TREE CLEARING (IF REQUIRED), AND THE ELECTRICAL INTERCONNECTION ROUTE.
18. CONTRACTOR TO DISABLE AND SECURE ALL EQUIPMENT PRIOR TO DAILY SHUTDOWN. CLIENT IS NOT RESPONSIBLE FOR VANDALISM, OR LOSS DUE TO TRESPASSING.
19. JOB SITE OR NEIGHBORHOOD COMPLAINTS OF EXCESSIVE NOISE, VIBRATION, OR ODORS MUST BE COMMUNICATED WITH ENGINEER UPON RECEIPT OF FIRST COMPLAINT EACH PROJECT DAY. CONTRACTOR MUST HAVE CONTINGENCY PLANS FOR EXCESSIVE NOISE AND ODORS AS APPLICABLE.

**GRADING, DRAINAGE, AND EROSION CONTROL NOTES:**

1. NO VEGETATION SHALL BE DISTURBED EXCEPT AS NECESSARY FOR CONSTRUCTION AND ONLY AS APPROVED BY THE ENGINEER. NO HEAVY EQUIPMENT SHALL BE OPERATED OR STORED AND NO MATERIALS SHALL BE HANDLED OR STORED WITHIN THE DRIP LINES OF UNDISTURBED TREES OR WITHIN 100 FEET FROM THE LIMIT OF STREAMS.
2. PERMANENT CONTROLS OR SURFACE STABILIZATION SHALL COMMENCE AS SOON AS PRACTICABLE BUT IN NO CASE MORE THAN 14 DAYS AFTER COMPLETION OF FILLING AND GRADING ACTIVITIES. AREAS WHICH WILL NOT BE REWORKED FOR 14 CALENDAR DAYS SHALL BE TEMPORARILY SEEDED AND MULCHED AS SOON AS IT IS KNOWN WITH REASONABLE CERTAINTY THAT WORK WILL BE STOPPED FOR AT LEAST 14 CALENDAR DAYS.
3. CONSTRUCT TEMPORARY EROSION CONTROLS AS SHOWN ON THE DRAWINGS PRIOR TO STARTING WORK. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION. WHEN LAND IS EXPOSED DURING CONSTRUCTION, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. LAND SHOULD NOT BE LEFT EXPOSED DURING THE WINTER MONTHS IF APPLICABLE.
4. SILT FENCE SHALL BE INSTALLED AND MAINTAINED WHERE SHOWN. ADDITIONAL PERIMETER CONTROLS SHALL BE ADDED AS REQUIRED BY THE ENGINEER PRIOR TO ANY ON SITE DISTURBANCE OF EXISTING SURFACE MATERIAL. SILT FENCE SHALL BE MAINTAINED DURING AND AFTER CONSTRUCTION TO REMOVE SEDIMENT FROM RUNOFF WATER AND FROM LAND UNDERGOING CONSTRUCTION. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN ITS DEPTH REACHES 50% OF THE HEIGHT OF THE FENCE. REPLACE DAMAGED SILT BARRIERS AS REQUIRED BY THE ENGINEER AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WHERE POSSIBLE, NATURAL DRAINAGE WAYS SHOULD BE UTILIZED AND LEFT OPEN TO REMOVE CLEAN EXCESS SURFACE WATER.
5. ALL LOCATIONS OF TEMPORARY EROSION CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER, AND SHALL BE REPLACED IF NECESSARY.
6. TEMPORARY EROSION AND SEDIMENT CONTROL BMPS (INCLUDING SILT FENCE AND CONSTRUCTION ENTRANCE) SHALL BE REMOVED WITHIN 30 CALENDAR DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED AS DETERMINED BY THE ENGINEER. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED (95% VEGETATION DENSITY).
7. EXISTING CONTOUR LINES ARE SHOWN BASED ON GIS AND LIDAR DATA. SHOULD THE CONTRACTOR HAVE ANY QUESTIONS OF THEIR INTENT OR ANY PROBLEMS WITH CONTINUITY OF GRADES, THE ENGINEER SHALL BE CONTACTED PRIOR TO BEGINNING WORK.
8. STORMWATER DRAINAGE SHALL BE CONTROLLED ON-SITE, SUCH THAT THERE IS NO CHANNELIZED FLOW OF RUNOFF.
9. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS AND WHEREVER CONSTRUCTION TRAFFIC ENTERS AND LEAVES THE SITE. EXISTING CONSTRUCTION ENTRANCES SHALL BE INSPECTED AND MAINTAINED.
10. THE EROSION CONTROL DEVICES SHOWN ON THE DRAWING REPRESENT THE MINIMUM REQUIRED FOR EROSION CONTROL AND SHALL BE INSTALLED AS REQUIRED. THE CONTRACTOR SHALL ADD TO THESE DEVICES ANY AND ALL MEASURES AS REQUIRED BY THE ENGINEER TO EFFECTIVELY PREVENT EROSION AND MIGRATION OF SEDIMENT FROM THE WORK AREA.
11. EROSION CONTROL MATTING SHALL BE INSTALLED ON ALL SLOPES 3:1 OR GREATER. IF EROSION IS OBSERVED ALONG THE LOWER EDGE OF THE SOLAR PANEL ARRAY ("DRIP EDGE"), EROSION CONTROL MATTING SHALL BE INSTALLED ALONG THE LENGTH OF THE DRIP EDGE.
12. EXCESS SOILS REMOVED FOR UNDERGROUND ELECTRICAL CONDUIT SHALL BE REUSED FOR TRENCH BACKFILL AND SHALL BE BACKFILLED THE SAME DAY OF EXCAVATION. SOILS EXCAVATED FROM TRENCH SHALL BE PLACED ON THE UPGRADIENT SIDE OF THE TRENCH TO MITIGATE THE POTENTIAL FOR EROSION BEYOND THE TRENCH. BACKFILLED TRENCH SURFACE SHALL BE MULCHED PRIOR TO VEGETATIVE GROWTH IF NECESSARY TO PREVENT EROSION.

**DUST CONTROL:**

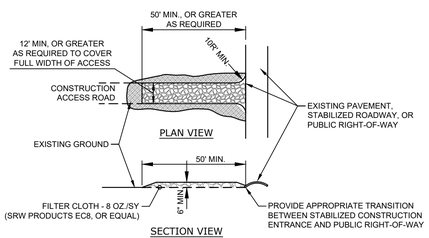
1. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED SO THAT A MINIMUM OF DISTURBED SOIL IS EXPOSED AT ONE TIME.
2. DUST SHALL BE CONTROLLED ON CONSTRUCTION ROUTES AND OTHER DISTURBED AREAS SUBJECT TO SURFACE DUST MOVEMENT AND DUST BLOWING.
3. MAINTAIN DUST CONTROL MEASURES PROPERLY THROUGH DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
4. DUST CONTROL METHODS SHALL INCLUDE VEGETATIVE COVER, MULCH (INCLUDING GRAVEL MULCH), WATER SPRINKLING, STONE, AND BARRIERS.
5. VEGETATIVE COVER - FOR DISTURBED AREAS NOT SUBJECT TO TRAFFIC, VEGETATION PROVIDES THE MOST PRACTICAL METHOD OF DUST CONTROL.
6. MULCH (INCLUDING GRAVEL MULCH) - WHEN PROPERLY APPLIED, MULCH OFFERS A FAST, EFFECTIVE MEANS OF CONTROLLING DUST.
7. SPRINKLING - THE SITE MAY BE SPRINKLED WITH WATER UNTIL THE SURFACE IS WET. SPRINKLING IS ESPECIALLY EFFECTIVE FOR DUST CONTROL ON HAUL ROADS AND OTHER TRAFFIC ROUTES.
8. STONE - USED TO STABILIZE CONSTRUCTION ROADS; CAN ALSO BE EFFECTIVE FOR DUST CONTROL.
9. BARRIERS - A BOARD FENCE, WIND FENCE, SEDIMENT FENCE, OR SIMILAR BARRIER CAN CONTROL AIR CURRENTS AND BLOWING SOIL. ALL OF THESE FENCES ARE NORMALLY CONSTRUCTED OF WOOD AND THEY PREVENT EROSION BY OBSTRUCTING THE WIND NEAR THE GROUND AND PREVENTING THE SOIL FROM BLOWING OFFSITE.

SEEDING AND REVEGETATION PLAN:

UPON COMPLETION OF SITE CONSTRUCTION, ALL AREAS PREVIOUSLY DISTURBED SHALL BE TREATED AS STATED BELOW PER THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK (RI SESC). THESE AREAS WILL BE CLOSELY MONITORED BY THE CONTRACTOR UNTIL SUCH TIME AS A SATISFACTORY GROWTH OF VEGETATION IS ESTABLISHED. SATISFACTORY GROWTH SHALL MEAN APPROXIMATELY 95% OF THE AREA IS VEGETATED WITH VIGOROUS GROWTH.

1. DISTURBED AREAS SHALL BE PREPARED FOR SEEDING BY RAKING 3-4" OF THE GROUND SURFACE TO LOOSEN THE EXISTING SOIL.
2. SLOW RELEASE FERTILIZER SHALL BE APPLIED AT A 10-20-20 PROPORTION AT A RATE NOT TO EXCEED 1,500 LBS. PER ACRE. GROUND LIMESTONE SHALL BE APPLIED AT A RATE OF 1-3 TONS PER ACRE DEPENDING ON SOIL TYPE AS SPECIFIED IN THE RI SESC.
3. HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE FOR MAXIMUM MOISTURE RETENTION RESULTS. CELLULOSE FIBER MULCH APPLICATION RATE SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS.
4. DISTURBED AREAS SHALL BE SEEDED USING THE FOLLOWING MIX OR OTHER APPROVED MIX AS DIRECTED BY THE OWNER AND ENGINEER DEPENDING ON THE TIME OF YEAR AND AMOUNT OF SEEDING REQUIRED:

   AT THE RATE OF 3.5 LBS. PER 1,000 SQ. FT. OF THE FOLLOWING MIXTURE: KENTUCKY BLUE GRASS (0.5LB/1,000 SF), CREEPING RED FESCUE (2.5 LB/1,000 SF), PERENNIAL RYE GRASS (0.5 LB/1,000 SF). SEEDING SHOULD BE PLANTED TO A DEPTH OF 0.25" TO 0.5" INCHES. SEEDING METHODS MAY BE DRILL SEEDINGS, BROADCASTS AND ROLLED, CULTIPACKED, OR TRACKED WITH A SMALL TRACK PIECE OF CONSTRUCTION EQUIPMENT.
5. SEEDING FOR NON-NATIVE SPECIES SHALL BE COMPLETED BETWEEN THE DATES OF APRIL 1 THROUGH JUNE 1 AND AUGUST 15 THROUGH SEPTEMBER 30. SEEDING FOR NATIVE SPECIES SHALL BE COMPLETED IN AUGUST AND SEPTEMBER. WATERING MAY BE REQUIRED DURING DRY PERIODS.
6. IF FINAL SEEDING OF THE DISTURBED AREA IS NOT COMPLETED BY OCTOBER 1ST OF THE YEAR OF CONSTRUCTION THEN TEMPORARY VEGETATIVE COVER SHALL BE INSTALLED PER THE RI SESC.
7. STEEP SLOPES (3:1 AND STEEPER) SHALL BE STABILIZED BY INSTALLING EROSION CONTROL MATTING (E.G., NORTH AMERICAN GREEN OR EXCELSIOR).
8. INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEED IMMEDIATELY. CONDUCT A FOLLOW-UP SURVEY AFTER ONE YEAR AND RESEED WHERE NECESSARY.
9. IF THERE ARE AREAS WITH LESS THAN 40% COVER, REEVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER. IF THE SEASON PREVENTS RESOWING, MULCH OR JUTE NETTING IS AN EFFECTIVE TEMPORARY COVER.
10. LIME AND FERTILIZE THEREAFTER AT PERIODIC INTERVALS, AS NEEDED.
11. ALL SEDIMENT CONTROL STRUCTURES WILL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED. ESTABLISHED MEANS APPROXIMATELY 95%, AS DETERMINED BY CONSTRUCTION INSPECTOR, OF THE AREA IS VEGETATED WITH VIGOROUS GROWTH.

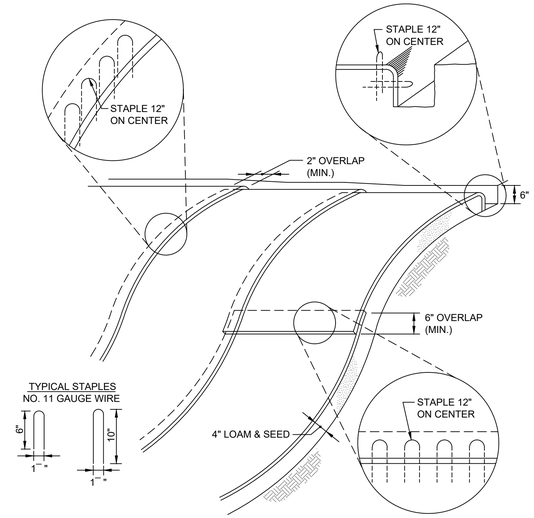



NOTES:

1. STONE SIZE - TO BE 1"-3" STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FT.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FT. MIN, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS OR BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SIDE SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - IF WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.

STABILIZED CONSTRUCTION ENTRANCE (1)

NOT TO SCALE

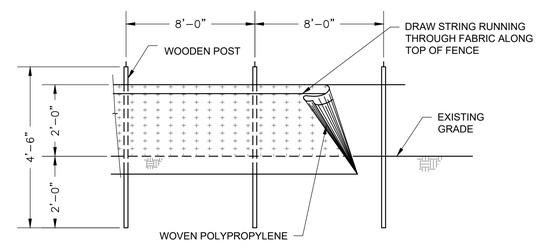



NOTES:

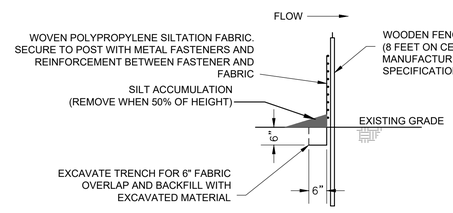
1. BEGIN AT THE TOP OF MATTING INSTALLATION AREA BY ANCHORING MATTING IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE MATTING DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF MATTINGS MUST BE STAPLED WITH A MINIMUM OF 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN MATTINGS MUST BE SPLICED DOWN THE SWALE, PLACE MATTING END OVER END WITH 6 INCH (MIN) OVERLAP AND ANCHOR DOWN SLOPE MATTING IN A 6 INCH DEEP TRENCH.
5. EROSION CONTROL MATTING SHALL BE INSTALLED ON STEEP SLOPES (3:1 AND STEEPER) AND MANUFACTURED BY NORTH AMERICAN GREEN, EXCELSIOR,OR APPROVED EQUAL.

EROSION CONTROL MATTING SLOPE INSTALLATION (3)

NOT TO SCALE




ELEVATION




SECTION

NOTE:
SEE MANUFACTURER'S SPECIFICATION FOR REINFORCEMENT REQUIREMENTS.

SILT FENCE (2)

NOT TO SCALE

**ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION**


wood.

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| REVISION | DATE | ISSUE / REVISION DESCRIPTION | ISSUED | APPROVED |
|---|---|---|---|---|
| 0 | 08/11/2020 | ISSUED FOR PERMITTING/NOT FOR CONSTRUCTION | GAA | APV |

PROJECT: 250 KW SOLAR PV DEVELOPMENT
34 KENYON LANE
PLAT 7, LOT 48
HOPKINTON, RI 02833

TITLE: **NOTES & DETAIL PLAN**

CLIENT: **KENYON LANE SOLAR, LLC**
**13 BARTLETT ROAD**
**MIDDLETOWN, RI 02842**

SEAL: ANDREW P. VARDAKIS No. 12219 REGISTERED PROFESSIONAL ENGINEER 8/11/2020

| | |
|---|---|
| DESIGNED BY: APV | DRAWN BY: DED |
| CHECKED BY: GAA | SCALE: AS SHOWN |
| PROJECT NUMBER: 3652200284 | |
| DRAWING NUMBER: C-501 | |
| SHEET NUMBER: 2 OF 2 | |

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**Attachment D**

**Equipment Documentation**

# B.LINE PLUS L-G4.2 330-340

## Q.ANTUM SOLAR MODULE

**The B.LINE solar module B.LINE PLUS L-G4.2 with power classes up to 340 Wp is the strongest module of its type on the market globally. Powered by 72 Q CELLS solar cells B.LINE PLUS L-G4.2 was specially de signed for large solar power plants to reduce BOS costs. Only Q CELLS offers German engineering quality with our unique triple Yield Security.**

### LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area and lower BOS costs thanks to higher power classes and an efficiency rate of up to 17.4 %.

### INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

### ENDURING HIGH PERFORMANCE

Long-term yield security with Anti-PID Technology[1], Hot-Spot-Protect and Traceable Quality Tra.Q™.

### LIGHT-WEIGHT QUALITY FRAME

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).

### A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance guarantee[2].

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2015

Q CELLS YIELD SECURITY

Photon Q CELLS Best polycrystalline solar module 2013 Q.PRO-G2 235 151 modules tested

[1] APT test conditions: Cells at -1000 V against grounded, with conductive metal foil covered module surface, 25 °C, 168 h

[2] See data sheet on rear for further information.

### THE IDEAL SOLUTION FOR:

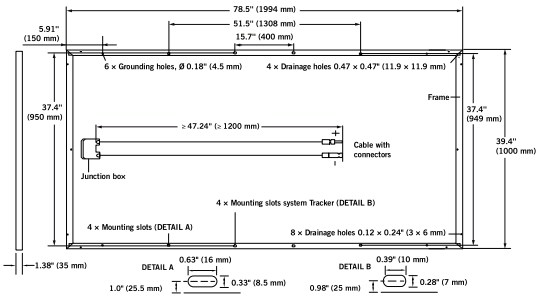
Ground-mounted solar power plants

Engineered in **Germany**

Q CELLS

## MECHANICAL SPECIFICATION

| | |
|---|---|
| **Format** | 78.5 in × 39.4 in × 1.38 in (including frame)<br>(1994 mm × 1000 mm × 35 mm) |
| **Weight** | 52.9 lb (24 kg) |
| **Front Cover** | 0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology |
| **Back Cover** | Composite film |
| **Frame** | Anodised aluminum |
| **Cell** | 6 × 12 Q.ANTUM solar cells |
| **Junction box** | 3.35-4.13 in × 2.36-3.15 in × 0.59-0.67 in (85-105 mm × 60-80 mm × 15-17 mm), Protection class ≥ IP67, with bypass diodes |
| **Cable** | 4 mm² Solar cable; (+) ≥ 47.24 in (1200 mm), (-) ≥ 47.24 in (1200 mm) |
| **Connector** | Amphenol H4 UTX, IP68 |

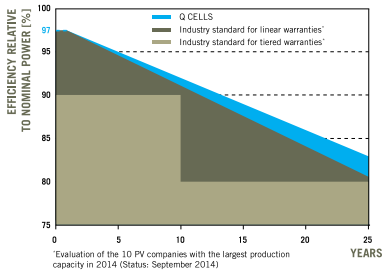



## ELECTRICAL CHARACTERISTICS

| POWER CLASS | | | | 330 | 335 | 340 |
|---|---|---|---|---|---|---|
| **MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / -0 W)** | | | | | | |
| Minimum | Power at MPP[2] | $P_{MPP}$ | [W] | 330 | 335 | 340 |
| Minimum | Short Circuit Current* | $I_{SC}$ | [A] | 9.49 | 9.54 | 9.59 |
| Minimum | Open Circuit Voltage* | $V_{OC}$ | [V] | 46.55 | 46.81 | 47.07 |
| Minimum | Current at MPP* | $I_{MPP}$ | [A] | 8.91 | 8.97 | 9.03 |
| Minimum | Voltage at MPP* | $V_{MPP}$ | [V] | 37.02 | 37.33 | 37.63 |
| Minimum | Efficiency[2] | η | [%] | ≥ 16.5 | ≥ 16.8 | ≥ 17.1 |
| **MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC[3]** | | | | | | |
| Minimum | Power at MPP[2] | $P_{MPP}$ | [W] | 244.7 | 248.4 | 252.1 |
| Minimum | Short Circuit Current* | $I_{SC}$ | [A] | 7.65 | 7.69 | 7.73 |
| Minimum | Open Circuit Voltage* | $V_{OC}$ | [V] | 43.44 | 43.68 | 43.92 |
| Minimum | Current at MPP* | $I_{MPP}$ | [A] | 6.99 | 7.04 | 7.09 |
| Minimum | Voltage at MPP* | $V_{MPP}$ | [V] | 35.01 | 35.29 | 35.56 |

[1] 1000 W/m², 25°C, spectrum AM 1.5 G [2] Measurement tolerances STC ± 3%; NOC ± 5% [3] 800 W/m², NOCT, spectrum AM 1.5 G * typical values, actual values may differ

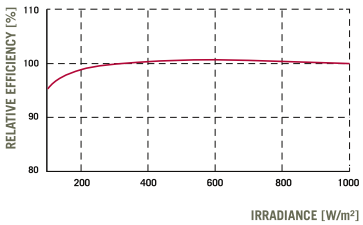
### Q CELLS PERFORMANCE WARRANTY




At least 97 % of nominal power during frst year. Thereafter max. 0.7 % degradation per year.
At least 91 % of nominal power after 10 years.
At least 81 % of nominal power after 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

### PERFORMANCE AT LOW IRRADIANCE




Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

### TEMPERATURE COEFFICIENTS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Temperature Coefficient of $I_{SC}$** | α | [%/K] | +0.04 | **Temperature Coefficient of $V_{OC}$** | β | [%/K] | −0.29 |
| **Temperature Coefficient of $P_{MPP}$** | γ | [%/K] | −0.40 | **Normal Operating Cell Temperature** | NOCT | [°F] | 113 ± 5.4 (45 ± 3 °C) |

## PROPERTIES FOR SYSTEM DESIGN

| | | | | |
|---|---|---|---|---|
| **Maximum System Voltage $V_{SYS}$** | [V] | 1500 (IEC) / 1500 (UL) | **Safety Class** | II |
| **Maximum Series Fuse Rating** | [A DC] | 15 | **Fire Rating** | C / TYPE 1 |
| **Max Load (UL)[2]** | [lbs/ft²] | 75 (3600 Pa) | **Permitted module temperature on continuous duty** | -40 °F up to +185 °F<br>(-40 °C up to +85 °C) |
| **Load Rating (UL)[2]** | [lbs/ft²] | 33 (1600 Pa) | [2] see installation manual | |

## QUALIFICATIONS AND CERTIFICATES

IEC 61215 (Ed. 2); IEC 61730 (Ed. 1), Application class A
This data sheet complies with DIN EN 50380.

C Certified UL 1703 (254141) US

## PACKAGING INFORMATION

| | |
|---|---|
| **Number of Modules per Pallet** | 29 |
| **Number of Pallets per 40' Container** | 22 |
| **Pallet Dimensions ( L × W × H )** | 81.3 × 45.3 × 46.9 in<br>(2065 × 1150 × 1190 mm) |
| **Pallet Weight** | 1671 lbs (758 kg) |

**NOTE:** Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.


**Hanwha Q CELLS USA Corp.**
300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA I **TEL** +1 949 748 59 96 I **WEB** www.q-cells.com


Engineered in **Germany**


Specifications subject to technical changes © Hanwha Q CELLS

YASKAWA

# PVI 23TL, PVI 28TL & PVI 36TL

## 3-Ph Transformerless Commercial String Inverters

### Features

- 1000 VDC
- Best in class efficiency
- Touch-safe fuses
- Dual & wide MPP tracking zones
- Modbus communications
- Integrated DC fused string combiner
- DC arc-fault protection
- PVI 36TL - UL 1741SA listed

### Options

- Web-based monitoring
- Shade cover
- DC/AC disconnect covers
- Roof mount array brackets
- DC combiners bypass

Yaskawa Solectria Solar's PVI 23TL, PVI 28TL, and PVI 36TL are compact, transformerless three-phase inverters with a dual MPP tracker. These inverters come standard with AC and DC disconnects, user-interactive LCD, and an integrated fused string combiner. Its small, lightweight design makes for quick and easy installation and maintenance. These inverters include an enhanced DSP control, comprehensive protection functions, and advanced thermal design enabling highest reliability and uptime. They also come with a standard 10 year warranty. Options include web-based monitoring, shade cover, DC/AC disconnect covers, DC combiners bypass, and roof mount array bracket.

SOLECTRIA SOLAR

# PVI 23/28/36TL

## Specifications

| | PVI 23TL | PVI 28TL | PVI 36TL |
|---|---|---|---|
| **DC Input** | | | |
| Absolute Maximum Input Voltage | 1000 VDC | 1000 VDC | 1000 VDC |
| Maximum Power Input Voltage Range (MPPT) | 480-800 VDC | 500-800 VDC | 540-800 VDC |
| Operating Voltage Range (MPPT) | 240-950 VDC | 240-950 VDC | 240-950 VDC |
| MPP Trackers | 2 with 4-fused inputs per tracker | 2 with 4-fused inputs per tracker | 2 with 5-fused inputs per tracker |
| Maximum Operating Input Current | 25 A per MPPT (50 A) | 29 A per MPPT (58 A) | 35 A per MPPT (70 A) |
| Maximum Available PV Current (Isc x 1.25) | 41 A per MPPT (82 A) | 48 A per MPPT (96 A) | 62.5 A per MPPT (125 A) |
| Maximum PV Power (per MPPT) | 15.5 kW | 19 kW | 27 kW |
| Strike Voltage | 330 V | 330 V | 330 V |
| **AC Output** | | | |
| Nominal Output Voltage | 480 VAC, 3-Ph | 480 VAC, 3-Ph | 480 VAC, 3-Ph |
| AC Voltage Range | -12/+10% | -12/+10% | -12/+10% |
| Continuous Output Power | 23 kW | 28 kW | 36 kW |
| Maximum Output Current | 27.7 A | 33.7 A | 43.5 A |
| Maximum Backfeed Current | 0 A | 0 A | 0 A |
| Nominal Output Frequency | 60 Hz | 60 Hz | 60 Hz |
| Output Frequency Range | 59.3-60.5 Hz (adjustable 55-65 Hz) | 59.3-60.5 Hz (adjustable 55-65 Hz) | 57-63 Hz |
| Power Factor | Unity, >0.99 (±0.8 adjustable) | Unity, >0.99 (±0.8 adjustable) | Unity, >0.99 (±0.8 adjustable) |
| Total Harmonic Distortion (THD) @ Rated Load | <3% | <3% | <3% |
| Grid Connection Type | 3-Ph + N/GND (4-wire) | 3-Ph + N/GND (4-wire) | 3-Ph + N/GND (4-wire) |
| **Efficiency** | | | |
| Peak Efficiency | 98.6% | 98.6% | 98.5% |
| CEC Efficiency | 98.0% | 98.0% | 98.0% |
| Tare Loss | 2 W | 2 W | 2 W |
| **Integrated String Combiner** | | | |
| Fused Positions | 8 fused positions (4 positions per MPPT) 15 A (fuse by-pass available) | | 10 fused positions (5 positions per MPPT) 15 or 30 A (30 A only for combined inputs) |
| **Temperature** | | | |
| Ambient Temperature Range | -22°F to +140°F (-30°C to +60°C); Derating occurs over +45°C | | |
| Storage Temperature Range | No low temp minimum to +158°F (+70°C) | | |
| Relative Humidity (non-condensing) | 0-95% | | |
| Operating Altitude | 13,123 ft (4,000 m); Derating occurs from 6,562 ft (2,000 m) | | |
| **Data Monitoring** | | | |
| SolrenView Web-Based Monitoring | Optional, External | | |
| Revenue Grade Monitoring | Optional, External | | |
| External Communication Interface | RS-485 Modbus RTU | | |
| **Testing & Certifications** | | | |
| Safety Listings & Certifications | UL 1741 / IEEE 1547, CSA C22.2#107.1, FCC part 15 B | | |
| Advanced Grid Support Functionality | - | | UL 1741SA |
| Testing Agency | CSA | | |
| **Warranty** | | | |
| Standard Limited Warranty | 10 Years | | |
| **Enclosure** | | | |
| dBA (Decibel) Rating | < 50 dBA @ 3 m | | |
| DC Disconnect | Standard, fully-integrated | | |
| Mounting Angle/Installation Angle | 15° to 90° measured from horizontal | | |
| Dimensions (H x W x D) | 39.4 in. x 23.6 in. x 9.1 in. (1001 x 600 x 232 mm) | | |
| Weight | 104 lbs (47.2 kg) | | 121 lbs (55 kg) |
| Enclosure Rating | Type 4 | | Type 4X |
| Enclosure Finish | Polyester Powder Coated Aluminum | | |

SOLECTRIA SOLAR

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Lawrence, MA 01843
**solectria.com**

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YASKAWA

RBI SOLAR

*Solar Mounting Systems*

# GROUND MOUNT

DESIGN • ENGINEERING • MANUFACTURING • INSTALLATION

www.rbisolar.com

**RBI Solar designs, engineers, manufactures and installs solar mounting systems. This single-source responsibility is focused on delivering value throughout the solar value chain.**

## Features & Benefits

- **Custom engineered to specific site conditions**
- **High strength steel with corrosion protection**
- **Designed to minimize field installation labor**
  - Reduced number of posts compared to traditional racking
  - Follows contours to mitigate civil/site work
  - Same hardware throughout
  - Optional pre-assembly
- **Design and engineering at every step of the way**
  - In-house engineers
  - Stamped drawings including foundation
- **Pile driving test available**
- **Flexible to mount any module type**
- **Nationwide installation**
- **Various foundation options**
- **UL 2703 classification available**
- **Procurement and manufacturing:**
  - Leverage with national and international facilities
  - Material certification available
  - ARRA compliant; "Made in the USA" certification available

## RBI Solar Background

Family owned and operated, we pride ourselves in 80+ years of experience in commercial design-build specialty structures. RBI Solar's unique design capabilities and multiple manufacturing facilities help us develop the most economical, reliable and robust solutions for any structural solar mounting challenge. We are committed to taking single point responsibility for the entire project starting from the initial design to complete installation of solar modules.

## Engineered Foundation Options

Our engineers consider many factors when determining the most reliable and cost-effective foundation solution for our projects. Incorporating and analyzing data from available certified geotechnical reports, on-site pile testing, wind tunnel testing, and all applicable codes and loading considerations, our team can provide various foundation options:

- Driven post
- Concrete pier
- Dual post
- Screw piles
- Pre-cast or cast-in-place concrete ballast
- Spread footings

## Installation Services

With experience of completing multiple solar racking jobs for commercial, institutional and utility customers, RBI Solar is the most trusted name when it comes to solar racking installation. Our highly trained project managers and installation crews work with your on-site engineers to install custom engineered solar racking systems. Racking installation is essential for meeting project time and budget goals. Advantages of using RBI Solar for installation include:

- Company owned post driving equipment
- Highly skilled construction crews that specialize in solar racking
- Dedicated project managers

## Technical Specifications

| | |
|---|---|
| **Description of product** | Fixed tilt racking |
| **Efficient designs** | GM-I, GM-T and GM-B |
| **Module configuration** | Landscape or portrait ; designed to accomodate any module type |
| **Tilt angle** | $0^{o}$ to $45^{o}$ |
| **Array height** | Project specific design |
| **Ground cover ratio** | Project specific design |
| **Installation options** | Posts, racking and module mounting |
| **Geographical range** | Nationwide |
| **Grounding** | Continuously bonded racking; tested by ETL to UL2703 standards (GM-I & GM-T) |
| **Wire management** | Built-in wire management options |
| **Design criteria** | Engineered to meet applicable structural codes |
| **Warranty** | 20-year limited warranty |

**Contact Us** 5513 Vine Street Cincinnati, OH 45217 | www.rbisolar.com *call* 513.242.2051 *email* info@rbisolar.com

# SINGLE SOURCE PROVIDER

## DESIGN

System classified to UL 2703, with in-house designers and engineers. Our focus is to deliver the most effective and efficient racking solution based upon the array layout and site conditions.

## ENGINEERING

Our in-house engineers, licensed and registered in all states, provide structural calculations applying RBI proprietary wind tunnel analysis and focus on delivering appropriate racking and foundation design based on existing soil conditions.

## MANUFACTURING

Multiple state-of-the-art manufacturing facilities, along with a vertically integrated procurement and manufacturing protocol, ensures overall quality of product with reduced lead times for material.

## INSTALLATION

Single source responsibility, with in-house project management and installation crews. This approach reduces duplication of efforts throughout the enterprise, focused on delivering projects on time and within budget.

**GROUND MOUNT • ROOF MOUNT • SPECIALTY STRUCTURES • LANDFILL**

**Racking questions? We are here to answer.**
**Contact us at info@rbisolar.com or call (513)242-2051**

www.rbisolar.com

RBI SOLAR

**Attachment E**

**Operations and Maintenance Plan**

**Decommissioning Plan**

# Photovoltaic System Operations and Maintenance Plan

## 250 kW Ground Mount Solar Array

## 34 Kenyon Lane
## Hopkinton, RI

# OPERATIONS AND MAINTENANCE

## Service Life and Availability

The Project's expected service life of the proposed facility is 25-30 years. The minimum specifications for the solar module production warranty are estimated at 90 percent of nameplate capacity at year 10 and 80 percent of nameplate capacity at year 25. Similarly, the inverters are factory warranted to be free from defects in material and workmanship for a period of 20 years. Inverter components can be replaced and repaired if maintenance is required. The racking system and associated piers are galvanized steel and have a useful life in excess of 25 years.

# Operations and Maintenance Plan

The maintenance plan for the Project is created to ensure the performance of the solar facilities. It includes a scheduled check of the main items and a predictive maintenance approach of the devices subjected to derating/degradation. The main scheduled activities are listed below:

- Housekeeping of the site: road maintenance, grass cutting, fence and gate inspection and PV panel washing (if required).
- Performance monitoring: weekly or monthly download of the data acquired by the on-site customer owned data acquisition system (energy produced, alarms, faults, etc.).
- Inspection of the main equipment:
  - PV panels: visual check of the panels, racking system and surrounding grounds to verify the integrity of the panels and racking structure, the presence of animals and nests, etc.
  - Inverters, transformer and electrical panels:
    - Visual check of the devices including the connection cabinet and the grounding network. Check for presence of water and dust;
    - Electrical check: measurement of the insulation level and dispersion. Check of the main switches and safety devices (fuses);
    - Noise: check of abnormal sounds.
- Cabling and Wiring: visual check of the buried and aerial electrical line and connection box to verify their status.

All maintenance activities will be performed by qualified personnel. Notably, maintenance can be performed without shutting down the entire plant. As an example, if a module needed repair, that particular section of the array can be disconnected from the array by opening the combiner box circuit. The module can then be replaced and the combiner cox circuit closed.
This temporary shutdown would affect a small percent of the array's production capability for the plant. This allows the photovoltaic modules to operate during an unscheduled outage.
The generation plant will be remotely operated through a real time control system. All the monitored data will be managed by a qualified subcontractor.

## Vegetation Maintenance Plan

In order to minimize mowing frequency, as well as the potential fire threat posed by dry vegetation in the immediate vicinity of the solar panels, the solar farm has been seeded with a mix specifically designed to maintain a low height. See attached seed description.

Additionally, inspections and mowing frequencies will be maintained in order to ensure that the average height is maintained at 12" or less with the maximum height of vegetation being 18". The low side of the modules are at least 36" from the ground, so this provides a buffer of at least 18". Inspections will be at least quarterly and mowing will be a minimum of 2x per year.

Site inspections and mowing frequency may be adjusted if necessary to maintain the above limits. Additionally, if necessary we may employ additional measures for weed control to maintain safety while considering aesthetics, cost, and environmental responsibility.

# EMERGENCY INFORMATION

**Emergency Contact:**

_____

**Site Operator (Lessee):**

_____
_____
_____

**EMERGENCY SHUTDOWN PROCEDURE**

The following steps are required to shut the system down in an emergency; for each inverter:

1 Turn the AC Disconnect Switch to the "OFF" position.

2 Turn the DC Disconnect Switch to the "OFF" position.

These steps will power off the inverter; however, AC power from the grid and DC power from the array will still be present in the inverter wire termination section.

The next step will disconnect power from the utility transformer to the inverters:

1 Open the main overhead disconnect switch. Or disconnect the individual inverter circuit breakers located inside the switchboards within the site.

IMPORTANT NOTES:
WHILE THE ABOVE STEPS ISOLATE THE PV ARRAY CIRCUITS FROM THE INVERTERS, ALL CIRCUITS BETWEEN THE PV MODULES AND THE INVERTERS WILL BE ENERGIZED DURING DAYLIGHT HOURS. HIGH VOLTAGE WILL BE PRESENT EVEN AT LOW LEVELS OF SUNLIGHT.
IT IS IMPERATIVE TO FOLLOW SAFE WORK PRACTICES AND USE PROPER SAFETY EQUIPMENT DURING ANY EMERGENCY OPERATIONS, WHICH INVOLVE ANY PORTION OF THE PV ARRAY.

**Operations and Maintenance Tasks and Frequency**

| ***Plant device and job*** | ***Frequency*** |
|---|---|
| Photovoltaic Field | |
| PV modules visual/Torque check | *Once Yearly* |
| Wirings and Junction boxes visual check | *Once Yearly* |
| PV strings measurement of the insulation | *Once Yearly* |
| PV strings and string boxes faults | *Once Yearly* |
| PV panels washing | *Yearly (if required)* |
| Grass cutting | *As noted above* |
| Vegetative Screening Upkeep *(if applicable at site)* | *Once in spring, once in summer* |
| Replace dead screening trees | *As required* |
| Electric boards | |
| Case visual check | *Once Yearly* |
| Fuses check | *Once Yearly* |
| Surge arresters check | *Once Yearly* |
| Torque check | *Once Yearly* |
| DC voltage and current check | *Once Yearly* |
| Grounding check | *Once Yearly* |
| Inverter | |
| Case visual inspection | *Once Yearly* |
| Air intake and filters inspections | *Once Yearly* |
| Conversion stop for lack of voltage | *Once Yearly* |
| AC voltage and current check | *Once Yearly* |
| Conversion efficiency inspection | *Once Yearly* |
| Data-logger memory download | *Once Yearly* |
| Fuses check | *Once Yearly* |
| Grounding check | *Once Yearly* |
| Torque check | *Once Yearly* |
| Support structures | |
| Visual check | *Once Yearly* |
| | |

# Solar Project
# Facility Decommissioning Plan

250 kW Ground Mount Solar project
Hopkinton, Rhode Island

# Contents

**Solar Project Facility Decommissioning Plan**


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# 1. Introduction

## 1.1. Background

As a condition of approval of the Planning Board a Decommissioning Plan for the Solar facility has been developed for review. The Decommissioning Plan is required to include a detailed plan with time frames or milestones after termination of operations for restoring the property to the conditions that existed prior to the plant construction.

The useful life of the solar plant is expected to be 25 years or more. At the end of useful life,the system owner will suspend operations and decommission the plant including necessary demolition and site reclamation.

## 1.2. Plan Purpose

The purpose of this document is to establish a detailed plan for decommissioning and reclamation activities after the useful life of the project has ended. Refinement of these activities will be required to reflect the future best practices or improvements are discovered by the solar industry during the life of the project. It will be necessary to update and finalize this demolition and reclamation plan.

# 2. Decommissioning Project Elements and Milestones

The key tasks of the project are divided into related activities that represent milestones in the process. We describe the activities in each of the tasks in more detail below process.

The key Project components to be affected by decommissioning activities are discussed below. In general, decommissioning would attempt to maximize the recycling of all facility components. Specific opportunities for recycling are discussed below in the context of various site components. The individual Project components to be decommissioned will be recycled to the maximum extent practicable or removed from the site and disposed of at an appropriately licensed disposal facility. The general decommissioning approach would be the same whether a portion of the Project or the entire Project would be decommissioned.

## 2.1. Planning

The activities involved in the facility closure will depend on the expected future use of the site. Certain facility equipment and features may be left in place for future uses, such as transmission facilities and roads. At the time of decommissioning, a plan will be submitted to the Town proposing the equipment that will be removed and, if applicable, equipment that will remain, based on expected future use of the site.

Pre-closure activities, include final closure and reclamation planning, that identifies measures to be taken to restore the site to near pre-construction conditions or compatible with surrounding land and land use that may have evolved during the period the plant is in service. This includes several activities;

- Complete an analysis of the project materials and their composition to identify those specific components that may be recycled, scrapped, or sent to disposal sites. Identify specific recycling facilities and disposal sites for materials.

- Develop specifications for demolition and reclamation, which will serve as the basis for contractor bids for the decommissioning project and establish the scope of demolition and reclamation, including developing reclamation plans in compliance with local, state, and federal regulations.

## 2.2. Permitting

During the planning process the Town will be briefed and other applicable agencies on the decommissioning process and plans. The permits and approvals required for the decommissioning will be identified and permits will be obtained prior to commencing operations.

## 2.3. Site Preparation for Decommissioning

The first step in the decommissioning process would be to assess existing site conditions and prepare the site for demolition. While planning of decommission may take up to one (1) year actual site decommissioning and equipment removal will be completed within 180 days from the date of discontinued operation. Therefore, access roads, fencing, some electrical power, and other facilities will temporarily remain in place for use by the decommissioning workers until no longer needed. Demolition debris will be placed in temporary onsite storage area(s) pending final transportation and disposal and/or recycling according to the procedures listed below.

A plan for de-energizing portions of the facility to allow safe decommissioning and formal lock out and tag out procedures will be implemented. This will ensure all electrical components are placed and maintained in a safe condition for demolition activities prior start of work.

## 2.4. Disassembly and Demolition

**PV Module and Racking Removal and Recycling**

During decommissioning, Project components that are no longer needed would be removed from the site and recycled or disposed of at an appropriately licensed disposal facility. The first operation is to disconnect and remove modules from the racking assemblies. Modules are segregated for transportation to the nearest storage facility

Next comes the disassembly of the racking and mounting structures, DC wiring materials, and combiner boxes. The material will be segregated for disposal or salvage. Steel piles that support the PV racking system will be removed. Below ground portions of the supports will be removed.

The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried with the onsite equipment being used. The debris and equipment will be processed for transportation and delivery to an appropriately licensed disposal facility or recycling center. Modules will be recycled or disposed of in accordance with applicable laws at the time of decommissioning.

**Internal Power Collection System**

The combiner boxes that convey DC power generated from the solar arrays will be dismantled. The inverters that convert the DC power to AC power and the transformers that convert the output of the inverter and convey the power to the substation will also be dismantled and removed. The cast-in-place concrete foundations of the transformer. Will be broken up, removed and recycled.

Any overhead portions of the collection system will be removed. Overhead conductors will be removed from the poles, and the poles and pole foundations will be removed. Aluminum from the conductors will be recycled or removed from the site to an appropriately licensed disposal facility. If not planned for other use, the utility interconnection will be deactivated and restored to the extent agreed upon with the local utility or to the point of change of ownership

Medium voltage collector system electrical components will be electrically disconnected and made safe for removal. The switches will be disassembled and removed from the site. The underground conduit and metal dead-end structures will also be disassembled and removed. Concrete foundations for equipment will be broken up and removed from the site. Steel, aluminum, copper and other materials will be temporarily stockpiled at or near a designated processing location pending transport to an appropriate offsite recycling facility. All metals will be recycled to the extent practical given the recycling options available at the time of decommissioning.

**Roads**
Onsite access roads will remain in place to accomplish decommissioning at the end of the Project's life. At the time of decommissioning, if the roads will be beneficial for future use of the site; those roads may remain after decommissioning. Roads that will not be used will be restored during contouring operations at the end of the process.

**Fencing**
Project site perimeter fencing will be removed at the end of the decommissioning project, unless it may be utilized for future use of the site. Since the project site was not originally fenced, this includes removal of all posts, fencing material, gates etc. to return the site to pre-project condition.

## 2.5. Transportation and Clean up

During the disassembly and demolition process materials are segregated and temporarily place in gathering areas for transportation. The various materials including concrete, steel, aluminum, copper and other materials will be temporarily stockpiled at or near a designated processing location pending transport to an appropriate offsite recycling facility. All such materials will be transported from the site to approved designated facilities for recycling, scrapping or disposal. All metals will be recycled to the extent practical given the recycling options available at the time of decommissioning. Modules will be collected and transported to storage sites for final recycling.

Clean-up of soils and site, if identified will be completed to ensure that clean closure is accomplished.

## 2.6. Re-contouring and vegetation

In general, the decommissioning will be undertaken using traditional heavy construction equipment including but not limited to front end loaders, track mounted and rubber tired excavators. Where excavation is required those areas of removal will be backfilled with natural material. Any voids left from the removal of foundations will be backfilled with surrounding subsoil and topsoil and fine graded to ensure suitable drainage and reclamation of natural grades.

Soil management and re-contouring operations will be conducted so as to minimize the surface area disturbance and implement the activities in the safest and most efficient manner and in accordance withal applicable local requirements. Major earthwork is not anticipated as construction of the site will not alter the general grade across the site.

To provide for post-decommissioning dust control on the site, areas of exposed soils will be revegetated, consistent with the expected future use of the site. For example, future site use is expected to be agricultural, a revegetation approach will be implemented that will not conflict with the expect agricultural use. The native dry grass vegetation will be re-established to prevent the spread of weeds and long-term monitoring will be conducted to confirm reclamation and weed control are successful. Mulching may be used for temporary dust control until vegetation is established.

We have assumed that the planning process would be initiated one year prior to the anticipated end of commercial operation. Planning for the decommissioning activities and the associated permitting is scheduled far in advance to allow for meaningful consultation with the Town or other applicable agencies. Permitting will be finalized prior to the start of on-site activities. Actual site decommissioning and equipment removal will be completed within 180 days from the date of discontinued operation.

# 3.0 Decommissioning Cost Estimate:

**DECOMMISSIONING COST ESTIMATE**
**– 250 kW GROUND MOUNT SOLAR –**
**Hopkinton, RI**

| | Item Description | Unit | Quantity | Unit Cost | Extended Cost | Comments |
|---|---|---|---|---|---|---|
| **1** | **Equipment Removal** | | | | | |
| 1.1 | Utility Disconnect from Grid | lump sum | 1 | $1,000 | $1,000 | Includes removal of wire, poles, transformers, appurtenances, with all equipment retained by utility. |
| 1.2 | Removal/Salvage of Inverters | lump sum | 1 | $500 | $500 | |
| 1.3 | Removal of Conduit Runs | crew days | 0.5 | $1,000 | $500 | Removal crew = service truck, skid steer loader, foreman, 3 laborers, tools, misc. materials |
| 1.4 | Removal of Solar Panels | crew days | 1 | $1,500 | $1,500 | Removal crew = service truck, skid steer loader, foreman, 3 laborers, tools, misc. materials |
| 1.5 | Remove Racks/Cable Trays and Haul Steel and Aluminum Away for Salvage | crew days | 1 | $1,500 | $1,500 | Estimated total of 76 racks being removed. |
| 1.6 | Salvage of Racks and Cable Trays | ton | 17 | ($200) | ($3,400) | Assumes 135,000 lbs of racking equipment per MW. .25 MW x 135,000 lbs = 17 Tons x $200 per ton = $3,400 |
| 1.7 | Salvage - other materials | lump sum | 1 | ($1,250) | ($1,250) | Copper or aluminum conductors, smaller metal pieces. |
| 1.8 | Salvage/Dispose of Solar Panels | ton | 18 | $25 | $450 | Assume hauled off with salvage at least of aluminum frames and landfill disposal of remaining materials as non-hazardous solid waste (Crystalline panels). 714 panels @ 50 lbs. each |
| | | | | **Task 1 Total (Equipment Removal)** | **$800** | |
| **2** | **Site Restoration** | | | | | |
| 2.1 | Seeding, Fertilizer | acres | 1.7 | $500 | $850 | Applies to the minimal areas disturbed by the decommissioning work. Assume existing soils capable of supporting vegetation are available to re-grade under item 2.2, and no additional topsoil is needed. |
| 2.2 | Minor Erosion Repairs | lump sum | 1 | $500 | $500 | Assume minor repairs needed at access road areas, by regrading existing material. |
| 2.3 | Final As-Built Survey Map | lump sum | 1 | $500 | $500 | Assume revision of existing CAD drawing showing the final restored site. |
| | | | | **Task 2 Total (Site Restoration)** | **$1,850** | |
| **3** | **Engineering Oversight and QA/QC** | | | | | |
| 8.1 | Resident Engineer/Inspector and Engineering Project Management | days | 1 | $1,000 | $1,000 | |
| 8.2 | Final Engineer's Report (RI PE) | lump sum | 1 | $1,500 | $1,500 | |
| | | | | **Task 3 Total (Engineering Oversight and QA/QC)** | **$2,500** | |

| | |
|---|---|
| **CAPITAL COST SUBTOTAL** | **$5,150** |
| **Contingency (5% of Capital Cost Subtotal)** | **$258** |
| | |
| **TOTAL CAPITAL COST ESTIMATE** | **$5,408** |
| **FUTURE CAPITAL COST ESTIMATE (20 YR - 1% inflation)** | **$6,598** |

**NOTES:**

1 Costs shown above are based on conceptual design assumptions, and are considered suitable for overall project evaluation. Actual costs are expected to vary from these conditions due to scope details, market conditions, and conditions at the time of construction.

2 Costs assume fencing to remain in place, roadways to remain in place, and all drainage components in place to control storm water runoff.

**DiPrete Engineering**
David A. Russo. P.E. RI
PE License #11355

**Attachment F**

**Letter of Intent for Property Lease**

**Farm Tax Documentation**

**ECONOX RENEWABLES INC.**

RE: LETTER OF INTENT FOR PROPERTY LEASE FOR A 250 kW SOLAR PV GROUND-MOUNT INSTALLATION

This letter of Intent ("LOI") is intended to confirm recent discussions between Econox Renewables Inc. with principal offices at 48 Waterfield Road P.O. Box 808 Winchester, Ma 01890 and Trina M Marsh with his principal address at 34 Kenyon Lane Hopkinton, Rhode Island regarding the terms which will form the basis of the Parties' efforts to cooperate with respect to the development of a 250 kW ground mount solar project at 34A,B Kenyon Lane Hopkinton ,Rhode Island (Exhibit A) referenced as the "Site" to generate electrical energy and associated environmental attributes, if any (hereafter referenced as the "Project").

Whereas, Econox Renewables Inc. (hereafter referenced as the developer) is a Renewable Energy Developer. Landlord wishes to lease the site to Econox Renewables Inc. so that Econox Renewables Inc. may Engineer, Procure and Construct the Project. Econox Renewables Inc. desires and mandates that it must perform a due diligence with respect to the Site and to perform other evaluations to determine the viability of the Project.

Thus, for purposes of this LOI, Econox Renewables Inc., and the Landlord are each a "Party" and jointly the "Parties" and agree that the following terms will be the basis for negotiations towards a definitive lease agreement or other agreement(s) such as a Final Agreement for the Project as described below:

**PROJECT DUE DILIGENCE**

The Due Diligence period shall be Twelve (12) months and will begin at the execution of this LOI, during which time the developer shall investigate the feasibility of the project. The developer will perform certain tasks such as legal, development, engineering, administrative tasks for due diligence to determine the Project's viability at the particular Site. This investigation shall include but not be limited to interconnection investigation, wetland investigation, environmental investigation, feasibility studies, and permitting analysis and geotechnical studies. As part of this due diligence, the Landlord shall disclose any conditions at the Site that may adversely affect or impact the Project, including but not limited to:

Any undisclosed legal matters; any lease, license, or easement agreements; any unpaid property taxes, encumbrances or mortgages; any hazardous waste disclosures, obligations for remediation, and indemnifications; any undisclosed employee or contractor matters at the Site; any other interested parties who have a claim to the Site or a proprietor interest.

Not withstanding anything to the contrary herein, this LOI shall be extended Six (6) months if the following is achieved before the last day of the Due Diligence Period

*Impact Study Agreement with National grid has been executed.

This LOI shall terminate and shall no longer be binding on Owner or Developer if a Lease Agreement is not fully executed on or before the last day of the Due Diligence Period. Lessee shall not allow any liens to be placed on the Leased Area by any contractors, agents, or by anyone on the property on its behalf during the Lease terms

Marsh grants to Econox and its agents access to and from site for the purpose of performing its due diligence as contemplated above. Such work shall be performed during normal business hours, unless permission form Marsh is obtained prior to work performed nights, weekends or holidays. Should Econox determine after its due diligence that the project is not feasible and that that no lease agreement will be signed, Econox agrees to leave the site in a clean, neat and presentable condition and in the same condition the site was in prior to Econox working on site.

Econox shall hold harmless, defend, and indemnify Marsh against any suits, liabilities, claims, demands, or damages, including but not limited to personal injuries and attorneys' fees, arising from

Econox's exercise of rights herein. Further, Econox shall provide Marsh with certificates of insurance evidencing that it and its contractors and agents have the necessary insurance to cover the anticipated work to be performed at the site and during access and egress from said site. Said certificates shall be provided prior to any work performed.

## SITE LIABILITY DISCLOSURE MATTERS

Landlord hereby agrees to disclose fully any and all liabilities and debts associated with the Site in writing before any lease agreement is negotiated, finalized and executed by the Parties.

## EXPENSES OF PARTIES

Except as provided in the definitive Agreements, the Parties shall each bear their own costs and expenses (including legal, and accounting and real estate brokerage fees) incurred in connection with this LOI and the Project, whether or not Final Agreements are executed, and any actions taken by either Party in reliance on this LOI shall be at such Party's sole risk and expense.

## LEASE TERMS AND RENT

In order to permit the installation and operation of the Generating Facility on the Leased Area the Owner will enter into a Lease, which will provide that during the Lease term, the Lessee will have the right to enter and occupy all of the portions of the Leased Area that is needed to install, operate to its maximum efficiency, maintain, replace and have access to the Generating Facility. In addition to such normal and customary terms and conditions, supplemental to the LOI as reasonably required by Lessee in order for the Lessee to engage in the Generating Facility Activities and to assure that its occupancy of the Leased Area is not disturbed for the duration of the Lease Agreement by the Owner or anyone acting on the Owner's behalf. It is understood that the Owner will disclose if there are any mortgages, encumbrances, or other security interests by third parties on the land. (iii) It is understood that the Lessee will be permitted access at all times to the Leased Area throughout the term of the LOI. The Lessee will be permitted access to the Property to remove the Generating Facility, at its option, if the lease is terminated or if the Property is foreclosed upon or title to the Property is otherwise transferred on terms and conditions reasonably acceptable to Owner and security interest holder.

If, following completion of due diligence, Econox Renewables Inc., elects to lease the Site for the construction and operation of a 250 kW Project, a estimated early buyout payment of $75,000 will be payable at Commercial Operation (to be defined after due diligence phase in final agreement) and a estimated lease payment at an annualized rate of $7,000 with a 1% Escalator (to be defined in final agreement) will be made to the Landlord. The lease payments to Landlord will begin on the commencement of commercial operations of the Project and will continue through the end of the term of the Final Agreements, which is anticipated to be twenty (20) years from the date of commercial operations. In addition, Lessee will have the right to Three (3) Five (5) year renewal options following the initial term of the Lease, at the commencement of the Second (2) extension a $3,750 adder will be added to the lease payment. Assuming the Lease is initiated by Lessee, Lessee's obligation to pay rent shall commence upon COD (Commercial Operating Date) of the Generating Facility. All other business terms of the Final Agreements will be negotiated by the parties in good faith if Econox Renewables Inc., elects to lease the Site.

## OPERATION AND MAINTENANCE

Lessee or its assignee, at its sole cost and expense, will be solely responsible for designing, constructing, installing, maintaining, replacing and upgrading the Generating Facility and land area subject to the lease during the Term of the Lease. Lessee or its assignee will also comply with all required laws, rules and regulations regarding such designing, constructing, installing, operating, maintaining, replacing and upgrading the

Generating Facility, including but not limited to compliance with any and all environmental, wildlife, health, safety and energy generation laws. Following the expiration of the lease term, Lessee shall have 180 days to return the Leased Area to the Owner in a clean condition and in substantially the same state as at the commencement of the Lease except if and to the extent Owner notifies Lessee that any improvements made to the property shall remain on the Leased Area (excluding any trade fixtures, which Owner shall not be able to require Lessee to leave on the Leased Area).

## TAXES

The Landlord shall remain responsible for real estate taxes and assessments during the term of the Lease, provided, however, that the Lessee shall pay or cause to be paid all increase in taxes and special assessments upon the land and improvements directly attributable to the installation of the Generating Facility upon the Property.

## MAINTENANCE OF LEASED AREA

During the Due Diligence Period, Owner will operate and maintain the Property in its present condition.

## WARRANTY OF TITLE

The Landlord warrants that he/she has sole and exclusive ownership/title to the Site and landlord further warrants that he/she has the authority to lease the Site to Econox Renewables Inc., free and clear of liens, easements and encumbrances for the term of the Final Agreements.

## EXCLUSIVE NEGOTIATING RIGHTS

In recognition and consideration that the development of the Project will require significant effort and expenditures by Econox Renewables Inc., for a period of Twelve(12) months from the execution of this LOI by the Parties (the "Exclusivity Period') landlord shall not directly or indirectly, solicit, initiate, seek, encourage or support an inquiry, proposal, offer or bid from, negotiate with, provide any information to, or enter into any agreement with (verbal or written), any party in connection with the lease of the site or development of the Project. Landlord agrees that any such negotiations in progress with other third parties as of the date hereof will be terminated during such Exclusivity Period. Landlord will promptly disclose to Econox Renewables Inc., any unsolicited inquiry or proposal regarding an offer to lease the Site including the identity of the interested party and the terms of its inquiry or proposal. At the expiration of the Exclusivity Period, exclusivity shall extend if the Parties are continuing to negotiate in good faith to execute the Final Agreements.

## CONFIDENTIALITY AGREEMENT AND LIMITED BINDING EFFECT

The Parties agree not to release any information to the general public with regards to this LOI or any potential agreements or discussions without the mutual written consent of the Parties. Any writings and negotiations are strictly confidential between Parties and their legal representation.

Both Parties agree that this LOI contains sufficient terms and conditions regarding the subject matter of this LOI to be considered a binding agreement between the parties, recognizing that the Lease will contain additional provisions and terms, and subject to the termination of this LOI as provided herein.

**ECONOX RENEWABLES INC.**

## JURISDICTION LAW

The laws of the Rhode Island shall govern the matters pertaining to this LOI. Exclusive jurisdiction is vested in the Courts of Rhode Island.

## CATCH ALL PROVISIONS

a. Changes to this LOI can be only done in writing.

b. No waiver of any terms of this LOI can be done verbally or claimed by lack of enforcement.

c. Econox Renewables Inc., in reliance of this LOI will expend legal, engineering and banking services for purposes of being able to negotiate and enter into a Final Agreement with landlord, and intent is to maximize the use of the acreage.

d. Landlord will at all times within the LOI period cooperate with Econox Renewables Inc., for purposes of obtaining any and all permits/authorizations, reports or any other consent necessary for purposes of achieving the purpose of this LOI.

This LOI does not constitute a firm proposal, offer or enforceable agreement to enter into any transactions with respect to the subject matter hereof, and imposes no duty or obligation except as specifically provided in the sections above. Both Parties agree to act in good faith to negotiate and execute a Final Agreement with the Exclusivity Period described herein.

---

The Parties having read and agreed to the terms of this LOI hereby place their signatures and return this document to 48 Waterfield Road PO 808, Winchester, MA 01890.

Company: Econox Renewables Inc.

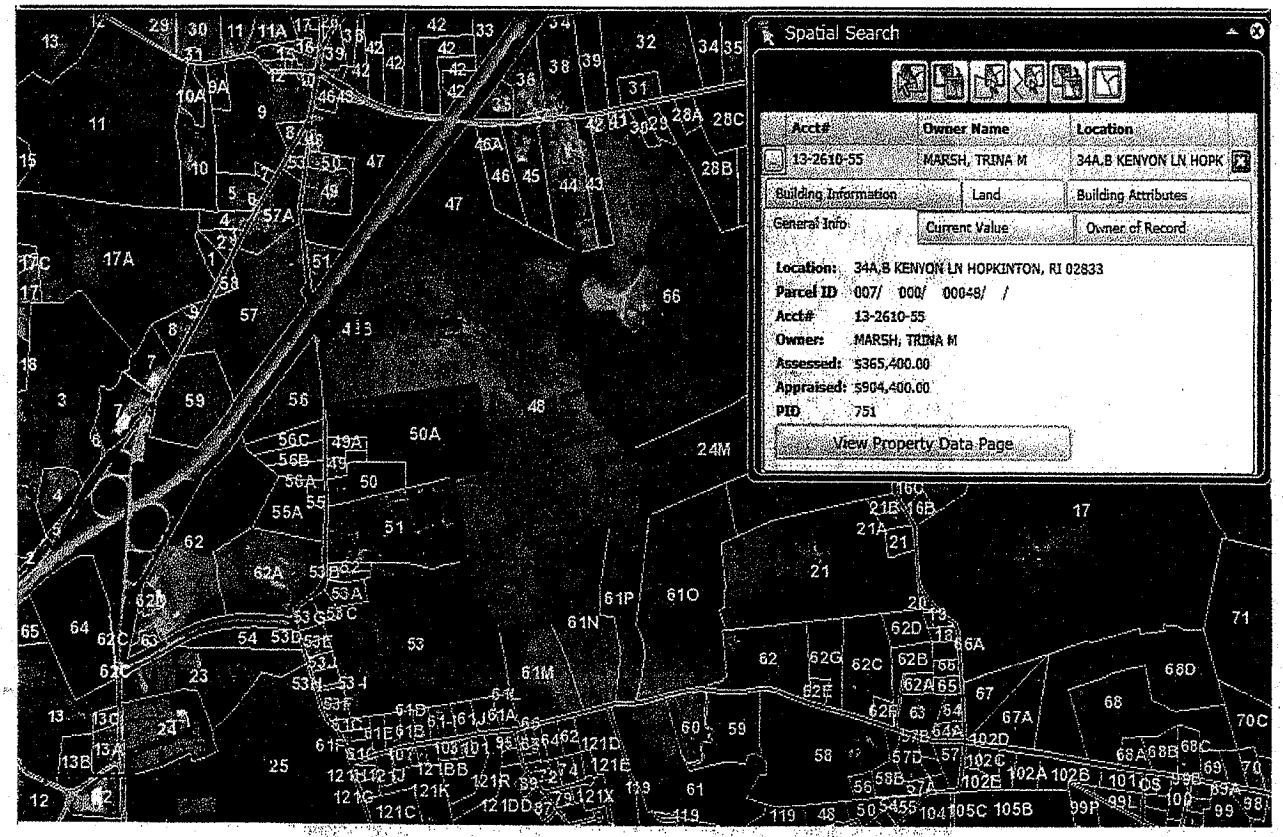
By: Scott Milnes Dated 3-2-2020
Scott Milnes, President

Owner: Trina M Marsh

By: Trina M. Marsh Dated 2-27-2020

# ECONOX RENEWABLES INC.

**Exhibit A-Proposed Site**



Kenyon Ln
Kenyon Ln
Kenyon Ln
Kenyon Ln
Kenyon Ln

**SCHEDULE F (Form 1040)**

Department of the Treasury
Internal Revenue Service (99)

# Profit or Loss From Farming

▶ Attach to Form 1040, Form 1040NR, Form 1041, or Form 1065.
▶ Go to *www.irs.gov/ScheduleF* for instructions and the latest information.

OMB No. 1545-0074

**2018**

Attachment Sequence No. **14**

Name of proprietor: Trina Marsh

Social security number (SSN):

A Principal crop or activity: Dairy Cattle

B Enter code from Part IV ▶ 112120

C Accounting method: ☑ Cash ☐ Accrual

D Employer ID number (EIN), (see instr): 270546040

E Did you "materially participate" in the operation of this business during 2018? If "No," see instructions for limit on passive losses ☑ Yes ☐ No

F Did you make any payments in 2018 that would require you to file Form(s) 1099 (see instructions)? ☐ Yes ☑ No

G If "Yes," did you or will you file required Forms 1099? ☐ Yes ☐ No

## Part I Farm Income—Cash Method. Complete Parts I and II (Accrual method. Complete Parts II and III, and Part I, line 9.)

| | | | | | | |
|---|---|---|---|---|---|---|
| 1a | Sales of livestock and other resale items (see instructions) | 1a | | | | |
| b | Cost or other basis of livestock or other items reported on line 1a | 1b | | | | |
| c | Subtract line 1b from line 1a | | | 1c | | |
| 2 | Sales of livestock, produce, grains, and other products you raised | | | 2 | 6,709 | 42 |
| 3a | Cooperative distributions (Form(s) 1099-PATR) | 3a | | 3b Taxable amount | 3b | 51,535 | 51 |
| 4a | Agricultural program payments (see instructions) | 4a | | 4b Taxable amount | 4b | 1,253 | 00 |
| 5a | Commodity Credit Corporation (CCC) loans reported under election | | | | 5a | | |
| b | CCC loans forfeited | 5b | | 5c Taxable amount | 5c | | |
| 6 | Crop insurance proceeds and federal crop disaster payments (see instructions) | | | | | | |
| a | Amount received in 2018 | 6a | | 6b Taxable amount | 6b | | |
| c | If election to defer to 2019 is attached, check here ▶ ☐ | | | 6d Amount deferred from 2017 | 6d | | |
| 7 | Custom hire (machine work) income | | | | 7 | | |
| 8 | Other income, including federal and state gasoline or fuel tax credit or refund (see instructions) | | | | 8 | | |
| 9 | **Gross income.** Add amounts in the right column (lines 1c, 2, 3b, 4b, 5a, 5c, 6b, 6d, 7, and 8). If you use the accrual method, enter the amount from Part III, line 50. See instructions ▶ | | | | 9 | 59,497 | 93 |

## Part II Farm Expenses—Cash and Accrual Method. Do not include personal or living expenses. See instructions.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10 | Car and truck expenses (see instructions). Also attach Form 4562 | 10 | | | 23 | Pension and profit-sharing plans | 23 | |
| 11 | Chemicals | 11 | | | 24 | Rent or lease (see instructions): | | |
| 12 | Conservation expenses (see instructions) | 12 | | | a | Vehicles, machinery, equipment | 24a | |
| 13 | Custom hire (machine work) | 13 | | | b | Other (land, animals, etc.) | 24b | 300 |
| 14 | Depreciation and section 179 expense (see instructions) | 14 | | | 25 | Repairs and maintenance | 25 | 283 | 67 |
| 15 | Employee benefit programs other than on line 23 | 15 | | | 26 | Seeds and plants | 26 | 1416 | 32 |
| 16 | Feed | 16 | 19,635 | 00 | 27 | Storage and warehousing | 27 | |
| 17 | Fertilizers and lime | 17 | 6,158 | 31 | 28 | Supplies | 28 | 1,194 | 00 |
| 18 | Freight and trucking | 18 | | | 29 | Taxes | 29 | 8,380 | 06 |
| 19 | Gasoline, fuel, and oil | 19 | 1900 | 00 | 30 | Utilities | 30 | 3,100 | 00 |
| 20 | Insurance (other than health) | 20 | | | 31 | Veterinary, breeding, and medicine | 31 | 614 | 00 |
| 21 | Interest (see instructions) | | | | 32 | Other expenses (specify): | | |
| a | Mortgage (paid to banks, etc.) | 21a | | | a | | 32a | |
| b | Other | 21b | | | b | | 32b | |
| 22 | Labor hired (less employment credits) | 22 | 14,900 | 00 | c | | 32c | |
| | | | | | d | | 32d | |
| | | | | | e | | 32e | |
| | | | | | f | | 32f | |

| | | | | |
|---|---|---|---|---|
| 33 | **Total expenses.** Add lines 10 through 32f. If line 32f is negative, see instructions ▶ | 33 | 57883 | 35 |
| 34 | **Net farm profit or (loss).** Subtract line 33 from line 9 | 34 | 1,614 | 58 |

If a profit, stop here and see instructions for where to report. If a loss, complete lines 35 and 36.

35 Reserved for future use.

36 Check the box that describes your investment in this activity and see instructions for where to report your loss.

a ☐ All investment is at risk. b ☐ Some investment is not at risk.

**For Paperwork Reduction Act Notice, see the separate instructions.**

Cat. No. 11346H **Schedule F (Form 1040) 2018**

**SCHEDULE F**
**(Form 1040 or 1040-SR)**

Department of the Treasury
Internal Revenue Service (99)

# Profit or Loss From Farming

▶ Attach to Form 1040, Form 1040-SR, Form 1040-NR, Form 1041, or Form 1065.
▶ Go to *www.irs.gov/ScheduleF* for instructions and the latest information.

OMB No. 1545-0074
**2019**
Attachment Sequence No. **14**

Name of proprietor: Trina Marsh

Social security number (SSN):

A Principal crop or activity: Dairy Farming

B Enter code from Part IV ▶ 1 1 1 2 1 2 0

C Accounting method: ☑ Cash ☐ Accrual

D Employer ID number (EIN) (see instr.): 2 7 0 5 4 6 0 4 0

E Did you "materially participate" in the operation of this business during 2019? If "No," see instructions for limit on passive losses ☑ Yes ☐ No

F Did you make any payments in 2019 that would require you to file Form(s) 1099? See instructions ☐ Yes ☑ No

G If "Yes," did you or will you file required Form(s) 1099? ☐ Yes ☐ No

## Part I Farm Income—Cash Method. Complete Parts I and II. (Accrual method. Complete Parts II and III, and Part I, line 9.)

| | | | | | |
|---|---|---|---|---|---|
| 1a | Sales of livestock and other resale items (see instructions) | | 1a | | |
| b | Cost or other basis of livestock or other items reported on line 1a | | 1b | | |
| c | Subtract line 1b from line 1a | | | 1c | |
| 2 | Sales of livestock, produce, grains, and other products you raised | | | 2 | 7,204.46 |
| 3a | Cooperative distributions (Form(s) 1099-PATR) | 3a | 3b Taxable amount | 3b | 48,716.05 |
| 4a | Agricultural program payments (see instructions) | 4a | 4b Taxable amount | 4b | 16,619.19 |
| 5a | Commodity Credit Corporation (CCC) loans reported under election | | | 5a | |
| b | CCC loans forfeited | 5b | 5c Taxable amount | 5c | |
| 6 | Crop insurance proceeds and federal crop disaster payments (see instructions): | | | | |
| a | Amount received in 2019 | 6a | 6b Taxable amount | 6b | |
| c | If election to defer to 2020 is attached, check here ▶ ☐ | | 6d Amount deferred from 2018 | 6d | |
| 7 | Custom hire (machine work) income | | | 7 | |
| 8 | Other income, including federal and state gasoline or fuel tax credit or refund (see instructions) | | | 8 | |
| 9 | **Gross income.** Add amounts in the right column (lines 1c, 2, 3b, 4b, 5a, 5c, 6b, 6d, 7, and 8). If you use the accrual method, enter the amount from Part III, line 50. See instructions ▶ | | | 9 | 72,539.70 |

## Part II Farm Expenses—Cash and Accrual Method. Do not include personal or living expenses. See instructions.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10 | Car and truck expenses (see instructions). Also attach **Form 4562** | 10 | | 23 | Pension and profit-sharing plans | 23 | |
| 11 | Chemicals | 11 | | 24 | Rent or lease (see instructions): | | |
| 12 | Conservation expenses (see instructions) | 12 | | a | Vehicles, machinery, equipment | 24a | |
| 13 | Custom hire (machine work) | 13 | | b | Other (land, animals, etc.) | 24b | 450.00 |
| 14 | Depreciation and section 179 expense (see instructions) | 14 | | 25 | Repairs and maintenance | 25 | 1530.43 |
| 15 | Employee benefit programs other than on line 23 | 15 | | 26 | Seeds and plants | 26 | 1786.00 |
| 16 | Feed | 16 | 18,982.13 | 27 | Storage and warehousing | 27 | |
| 17 | Fertilizers and lime | 17 | 4,570.43 | 28 | Supplies | 28 | 581.68 |
| 18 | Freight and trucking | 18 | | 29 | Taxes | 29 | 6,500.00 |
| 19 | Gasoline, fuel, and oil | 19 | 1760.00 | 30 | Utilities | 30 | 2153.00 |
| 20 | Insurance (other than health) | 20 | 916.10 | 31 | Veterinary, breeding, and medicine | 31 | 1,569.56 |
| 21 | Interest (see instructions): | | | 32 | Other expenses (specify): | | |
| a | Mortgage (paid to banks, etc.) | 21a | | a | | 32a | |
| b | Other | 21b | | b | | 32b | |
| 22 | Labor hired (less employment credits) | 22 | 16,900 | c | | 32c | |
| | | | | d | | 32d | |
| | | | | e | | 32e | |
| | | | | f | | 32f | |

| | | | |
|---|---|---|---|
| 33 | **Total expenses.** Add lines 10 through 32f. If line 32f is negative, see instructions ▶ | 33 | 57,599.37 |
| 34 | **Net farm profit or (loss).** Subtract line 33 from line 9 | 34 | 14,940.37 |

If a profit, stop here and see instructions for where to report. If a loss, complete lines 35 and 36.

35 Reserved for future use.

36 Check the box that describes your investment in this activity and see instructions for where to report your loss:

a ☐ All investment is at risk. b ☐ Some investment is not at risk.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ADMINISTRATION
DIVISION OF TAXATION
ONE CAPITOL HILL
PROVIDENCE, RI 02908

**TRINA M MARSH**
**ELM ROCK FARM**
**34B KENYON LANE**
**ASHAWAY, RI 02804**

# CERTIFICATE OF EXEMPTION FARM EQUIPMENT

## FARM LEVEL 2 - AGRICULTURAL

THIS IS TO CERTIFY THAT THE ABOVE-NAMED QUALIFIES FOR THE FARM EQUIPMENT EXEMPTION PURSUANT TO THE PROVISIONS OF THE RHODE ISLAND SALES AND USE TAX ACT, TITLE 44, CHAPTER 18, SECTION 30 OF THE GENERAL LAWS OF 1956, AS AMENDED, AND IS ACCORDINGLY EXEMPT FROM THE PAYMENT OF THE SALES TAX ON SALES MADE TO IT AND FROM THE USE TAX ON THE STORAGE, USE OR OTHER CONSUMPTION OF MACHINERY AND EQUIPMENT, INCLUDING REPLACEMENT PARTS USED DIRECTLY FOR COMMERCIAL FARMING AND AGRICULTURAL PRODUCTION.

THE EXEMPTION INCLUDES BUT IS NOT LIMITED TO TRACTORS, PLOUGHS, HARROWS, SPREADERS, SEEDERS, MILKING MACHINES, SILAGE CONVEYORS, BALERS, BULK MILK STORAGE TANKS, TRUCKS WITH FARM PLATES, MOWERS, COMBINES, IRRIGATION EQUIPMENT, GREENHOUSES AND GREENHOUSE COVERINGS, GRADERS AND PACKAGING MACHINES, TOOLS AND SUPPLIES, AND OTHER FARMING EQUIPMENT, INCLUDING REPLACEMENT PARTS, APPURTENANT TO OR USED IN CONNECTION WITH COMMERCIAL FARMING.

THE EXEMPTION ALSO INCLUDES LUMBER, HARDWARE AND OTHER MATERIALS USED IN THE NEW CONSTRUCTION OF ANY FARM STRUCTURES USED IN COMMERCIAL FARMING.

**A COPY OF YOUR CERTIFICATE MUST ACCOMPANY ALL PURCHASES.**

David M. Sullivan
Tax Administrator

Steven A. Cobb
Chief Revenue Agent
Office Audit and Discovery

CERTIFICATE NUMBER: 64538867F - Farm Level 2 - Agricultural

DATE OF ISSUANCE: 11/09/2017

**REQUIRED TO BE RENEWED ON: 11/09/2021**

**Attachment G**

**Professional Engineering Documentation**

***State of Rhode Island and Providence Plantations***
***Board of Registration for Professional Engineers***

BE IT KNOWN THAT

# Andrew P. Vardakis

*having given satisfactory evidence of having the education, training, and/or qualifications required by law is hereby authorized to practice as a*

**Professional Engineer**
**Civil**

***IN THE STATE OF RHODE ISLAND***

**Registration No.:** PE.0012219 **Issued:** 7/1/2019 **Expires:** 6/30/2021

Chairperson

Secretary

***State of Rhode Island and Providence Plantations***
***Board of Registration for Professional Engineers***

BE IT KNOWN THAT

# GREGORY A. AVENIA, PE

*having given satisfactory evidence of having the education, training, and/or qualifications required by law is hereby authorized to practice as a*

**Professional Engineer**

***IN THE STATE OF RHODE ISLAND***

**Registration No.:** PE.0009562 **Issued:** 7/1/2019 **Expires:** 6/30/2021

Chairperson

Secretary

# Lookup Detail View

**Name and Address**

| Name | City/Town | State | Zip Code | Country |
|---|---|---|---|---|
| Wood Environment & Infrastructure,Solutions Inc. | OAKVILLE ON L6H6X7 | ON | | CANADA |

**Registration Information**

| License | License Type | First Issuance Date | Expiration Date | Status |
|---|---|---|---|---|
| PE.0005756-COA | PE Certificate of Authorization | 12/17/2004 | 06/30/2022 | ACTIVE |

Generated on: 9/8/2020 10:11:41 AM