

23 Crossbar Road  
Hastings on Hudson, NY 10706

Village of Hastings on Hudson  
Building Department  
7 Maple Ave.  
Hastings on Hudson, NY 10706

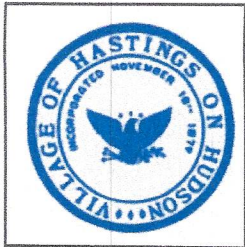
To Whom it May Concern,

This is to authorize Janet E. Glover to act on my behalf with respect to filling of a permit for a solar system on the roof at my home at 23 Crossbar Road, Hastings on Hudson, NY 10706

Thank you,

A handwritten signature in black ink, appearing to read 'Pablo Martinez', with a horizontal line extending to the right from the end of the signature.

Pablo Martinez



OFFICE OF THE BUILDING INSPECTOR  
 Village of Hastings On Hudson  
 Municipal Building  
 7 Maple Avenue  
 Hastings On Hudson, New York 10706  
 (914) 478-3400 Ext. 613  
 Fax: (914) 478-4624  
 BldgInsp@Hastingsgov.org

# LICENSED PROFESSIONAL AFFIDAVIT for RESIDENTIAL SOLAR SYSTEMS

TO BE SUBMITTED AS PART OF THE PERMIT APPLICATION

## AFFIDAVIT OF ARCHITECT OR ENGINEER

State of New York }  
 ss.: County of Westchester  
 }

I the undersigned, under penalty of perjury, do hereby affirm:

1. I am an the (architect)(engineer) duly licensed in the State of New York
  - a) I am the NYS licensed design professional named in the Application for a Building Permit for a residential solar system located at 23 Crossbar Road, Hastings-on-Hudson, New York 10706.
  - b) I have inspected the existing building and structure and find that the existing structure with the proposed solar panel installation and connections to the existing roof meet the minimum criteria set forth in:
 

Applicable Codes:	2010 Residential Code of New York State
	2001 Wood Frame Construction Manual
Design Roof Load:	30 psf live load, 115 psf dead load, 45 psf total load
Design Wind Load:	100 mph, 35spf

**OR** have proposed additional measures to ensure compliance with above.
  
4. I have reviewed the following submitted drawings and/or manufacturer specifications as part of the submission  
 List applicable plans with revision dates: \_\_\_\_\_ (rev date)  
 \_\_\_\_\_ (rev date)  
 \_\_\_\_\_ (rev date)  
 \_\_\_\_\_ (rev date)  
 \_\_\_\_\_ (rev date)  
 \_\_\_\_\_ (rev date)
  
5. The plans, drawings and specifications for the Building Permit are requested and listed above, as submitted (a)- were prepared by me or under my supervision, and (b)-to the best of my knowledge comply with the requirements of the Residential Building Code of New York State as adopted by the Village of Hastings-on-Hudson, applicable design loads and all other applicable laws, rules and regulations governing building construction.

Sunil Saigal - Enthink Engineering, LLC

Signature

(Architect)

(Engineer)

Sworn to before me this  
13th day of July, 2022

*Daniel J. Donohue*

Notary Public

DANIEL J. DONOHUE  
 NOTARY PUBLIC, State of New York  
 No. 01DO4731804  
 Qualified in Westchester County  
 Commission Expires Feb. 28, 2023



Enthink Engineering LLC

1266 Rahway Avenue, Westfield, NJ 07090

enthinkllc@gmail.com (646) 632-7738

July 12, 2022

Village of Hastings-on-Hudson  
Building Department  
7 Maple Avenue  
Hastings-on-Hudson, NY 10706

RE: Pablo Martinez  
23 Crossbar Road  
Hastings-on-Hudson, NY 10706

To Whom it May Concern,

The existing roof structure of the above captioned property is made of wood rafters. The roof of the house has 2"x 6" rafters at 20" oc, 3/4" plywood decking and an asphalt shingle roof. The roof will support the additional load of the solar panels of 2.45 PSF under the required loads of 100 MPH wind speed, and 30 PSF ground snow load without additional structural supports.

I have determined that the installation will meet the requirements of the 2020 NYS Energy Conservation Construction Code, 2020 NYS Residential Code, including Section R327, 2020 NYS Fire Code, 2020 NYS Building Code, NYS Existing Building Code, NEC 2017, and The Village of Hastings-on-Hudson building codes, when installed in accordance with the manufacturer's instructions.

If you have any further questions or require addition information, feel free to contact me.

Very truly yours,



# PHOTOVOLTAIC ROOF MOUNT SYSTEM

44 MODULES - SYSTEM SIZE STC (17.6 KW DC / 11.4 KW AC)  
23 CROSSBAR ROAD, HASTINGS-ON-HUDSON, NY 10706, US (40.9818787, -73.8779491)

## SYSTEM SUMMARY STC DC/AC

- (17.6 KW DC / 11.4 KW AC)
- 2X STRINGS OF 15 MODULES CONNECTED IN SERIES
  - 1X STRING OF 14 MODULES CONNECTED IN SERIES
  - (44) REC-400AA PURE BLACK MODULES
  - (44) SOLAREGE P405 OPTIMIZERS
  - (1) STOREDGE SE11400H-US (240) INVERTERS
  - (2) SOLAREGE ENERGY BANK 10KWH BATTERY (BAT-10K1P)
- STC DC: (44) 400 = 17.6 KW  
STC AC: (1) 11400 = 11.4 KW

## GOVERNING CODES

- 2017 NATIONAL ELECTRICAL CODE
- 2020 RESIDENTIAL CODE NEW YORK STATE
- 2020 FIRE CODE OF NEW YORK STATE
- 2020 BUILDING CODE OF NEW YORK STATE

## GENERAL NOTES

- 1) ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS IN COMPLIANCE WITH UL REQUIREMENTS TO ACCOMMODATE CONDUCTORS SHOWN.
- 2) THIS SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND UTILITY IS OBTAINED.
- 3) ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT INCLUDING THOSE THAT ARE EXPOSED TO OUTSIDE ENVIRONMENT SHALL BE WEATHERPROOF AND SHALL BE LISTED BY 'UL' FOR THE TYPE OF APPLICATION AND 'UL' LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.
- 4) WIRING METHOD SHALL BE EMT ABOVE GROUND MOUNTED IN CONCEALED SPACES (UNLESS APPROVED OTHERWISE) AND SCHEDULE 40 PVC FOR BELOW GROUND INSTALLATIONS UNLESS NOTED OTHERWISE.
- 5) AN OSHA APPROVED LADDER PROVIDING ACCESS TO ALL PORTIONS OF THE ARRAY SHALL BE SECURED IN PRIOR TO REQUESTING INSPECTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE CONDUCTOR IF NECESSARY.

## SAFETY PLAN NOTES

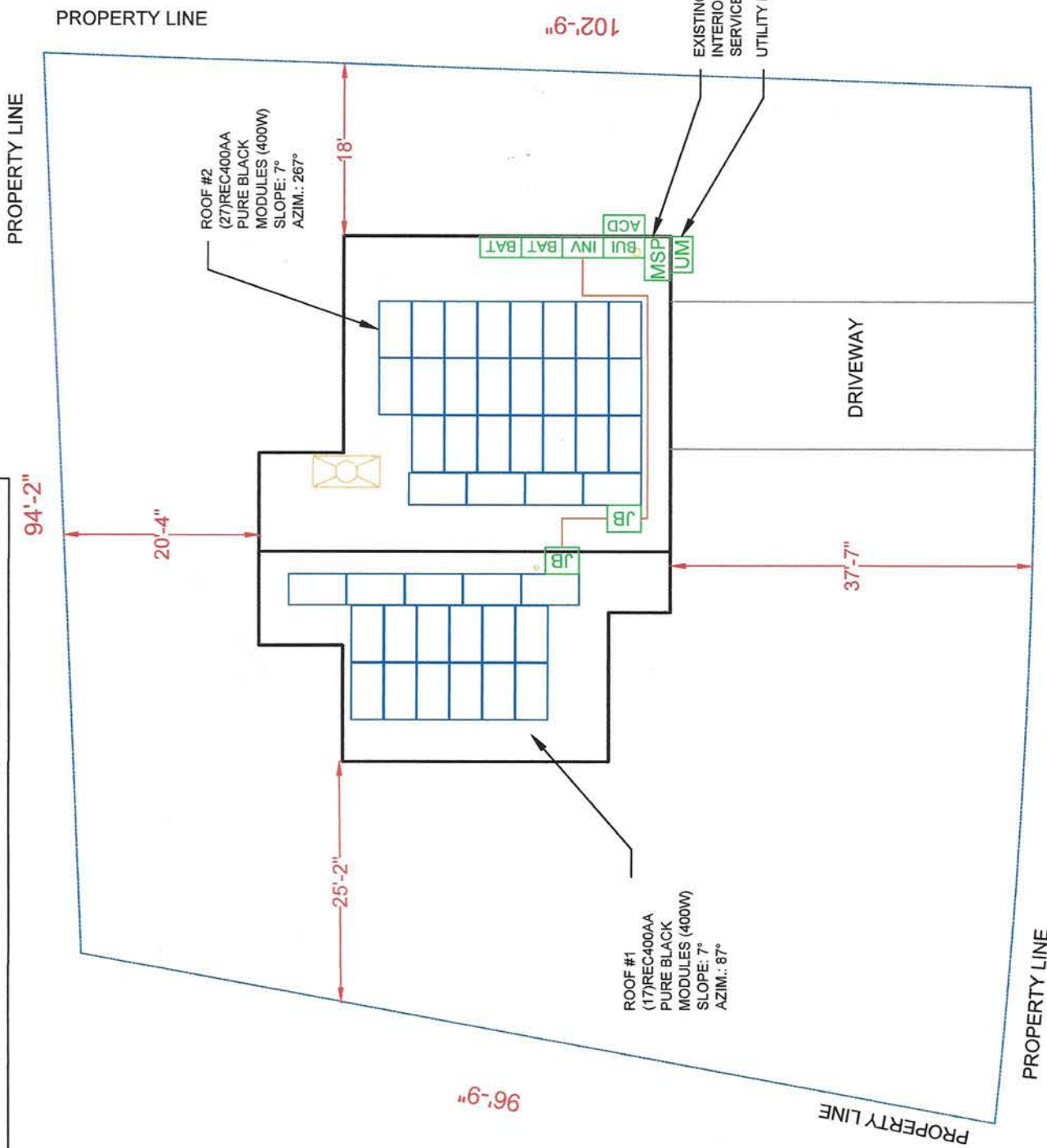
- INSTALLERS SHALL DRAW IN DESIGNATED SAFETY AREA AROUND HOME.
- INSTALLERS SHALL UPDATE NAME, ADDRESS AND PHONE NUMBER OF NEAREST URGENT CARE FACILITY RELATIVE TO THE SITE BEFORE STARTING WORK.

## LOCATION OF NEAREST URGENT CARE FACILITY

- (FOR INSTALLER USE ONLY)
- NAME:
  - ADDRESS:
  - PHONE NUMBER:

LEGEND	
	PV MODULE
	ROOF ATTACHMENT
	PROPERTY LINE
	CONDUIT
	DRIVEWAY
	MAIN SERVICE PANEL (EXISTING, 200A)
	UTILITY METER (EXISTING)
	PRODUCTION METER (N/A)
	(2) BATTERY (NEW)
	(1) INVERTER (NEW)
	LOAD CENTER (COMBINER PANEL) (N/A)
	SOLAREGE METER (N/A)
	BACKUP INTERFACE (NEW)
	AC DISCONNECT UNFUSED (NEW)
	AC DISCONNECT FUSED (N/A)
	JUNCTION BOX (NEW)
	AUTO TRANSFORMER (N/A)
	SUBPANEL (N/A)
	DC DISCONNECT (N/A)
	DC COMBINER (N/A)
	EXISTING EQUIPMENT

ADDITIONAL NOTE: THE GARAGE HAS CINDER BLOCK & 5/8" SHEET ROCK WHICH IS 60 MINUTE FIRE RATED & MEETS BATTERY BUILDING CODE REQUIREMENTS.

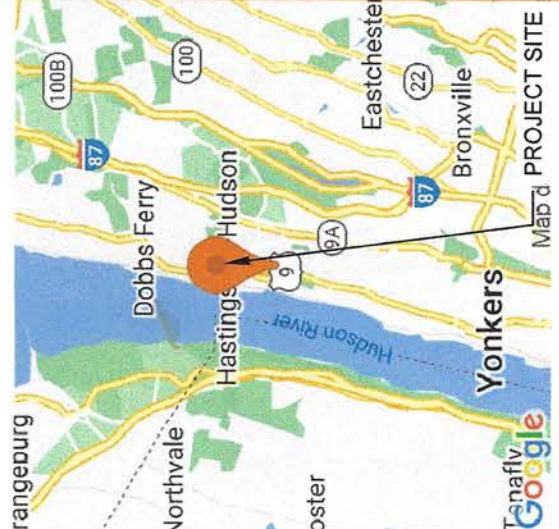


- SHEET INDEX**
- PV-1 COVER PAGE
  - PV-2 ROOF PLAN WITH MODULES
  - PV-3 ATTACHMENT DETAIL
  - PV-4 SINGLE LINE DIAGRAM
  - PV-5 WIRING CALCULATION
  - PV-6 PLACARDS
  - PV-7+ EQUIPMENT SPECIFICATION

AHJ: VILLAGE OF HASTINGS-ON-HUDSON  
UTILITY: CONSOLIDATED EDISON  
CO-NY INC  
PROJ. ID (INTERNAL): 70A252A5-2C14-4807-845B-DE4F857C5074



**HOUSE PHOTO**  
SCALE: NTS



**VICINITY MAP**  
SCALE: NTS

23 CROSSBAR ROAD

**SITE PLAN & SAFETY PLAN**  
SCALE: 1/16" = 1'



## CONTRACTOR

NAME: GREEN HYBRID ENERGY SOLUTIONS, INC.  
ADDRESS: 11 WASHINGTON PL, E. WHITE PLAINS, NY 10603, USA  
PHONE: 914-346-7598  
LICENSE #: WC-04683-H11

## REVISIONS

DESCRIPTION	DATE	REV
EQUIPMENT LOCATION FOR WORK AND NOTE ADDED	06/29/2023	01



## HOMEOWNER INFO

PABLO MARTINEZ & CELINE SUAREZ  
23 CROSSBAR ROAD,  
HASTINGS-ON-HUDSON, NY 10706, USA

APN: 4140-148-10  
EMAIL: -  
PHONE: -

## SHEET NAME

COVER PAGE

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER

PV-1

**MODULE AREA & WEIGHT CALCULATIONS**

PANEL TYPES (COUNT, AREA, WEIGHT):  
 - (44X) REC400AA PURE BLACK (71.7" X 40.0", 45 LBS)  
 OPTIMIZER TYPES (COUNT, WEIGHT):  
 - (44X) SOLAREDDGE P405 (1.5 LBS)  
 ATTACHMENT COUNT: 129  
 MOUNTING SYSTEM WEIGHT/MODULE: 1.5 LBS  
 TOTAL ROOF AREA: 1947.15 SF  
 TOTAL ARRAY AREA: (44) 71.7" X 40.0" = 876.33 SF  
 TOTAL ARRAY WEIGHT: (44) 45.0 + (44) 2.3 + (44) 1.5 = 2147.2 LBS  
 WEIGHT AT EACH CONNECTION: 2147.2 LBS / 129 = 16.64 LBS  
 DISTRIBUTED LOAD: 2147.2 LBS / 876.33 SF = 2.45 PSF  
 ROOF AREA COVERED BY ARRAY: 876.33 SF / 1947.15 SF = 45%

BILL OF MATERIALS	
SOLAR PV MODULES	44 REC400AA Pure Black
OPTIMIZERS	44 SOLAREDDGE P405
INVERTERS	01 STOREDGE SE11400H-US (240)
AC DISCONNECT	01 PV VISIBLE LOCKABLE LABELED DISCONNECT (60A UNFUSED 1PH 240VAC)
BACKUP INTERFACE	01 SOLAREDDGE BACKUP INTERFACE BI-EUSGN-01
ATTACHMENTS	129 ROOF TECH - RT MINI XR100
RAIL	28 IRONRIDGE RESOURCES - XR100
RAIL SPLICE	14 IRONRIDGE RAIL SPLICE
MID CLAMP	72 IRONRIDGE MID CLAMP
END CLAMP	28 IRONRIDGE END CLAMP
GROUNDING LUG	7 GROUNDING LUG

ROOF DESCRIPTION TABLE					
ROOF PLANE	RAFTER SIZE	RAFTER SPACING	MODULE COUNT	ARRAY TILT	AZIMUTH
#1	2" x 6"	20" O.C.	17	7°	87°
#2	2" x 6"	20" O.C.	27	7°	267°

**LEGEND**

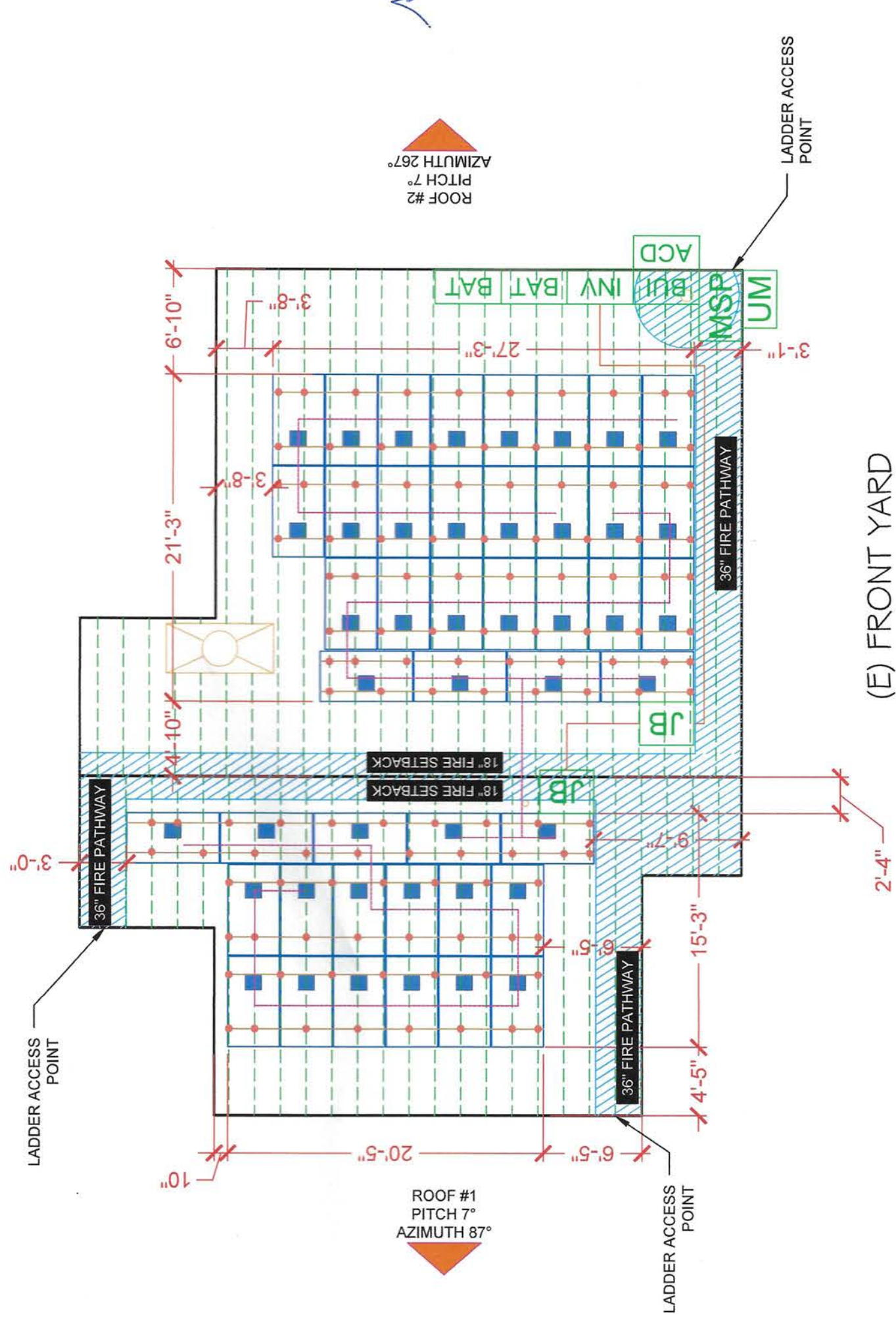
	PV MODULE		DIMENSIONS
	OPTIMIZER		RAFTER
	ROOF ATTACHMENT		CONNECTION
			CONDUIT
			RAIL

	MAIN SERVICE PANEL (EXISTING, 200A)		AC DISCONNECT UNFUSED (NEW)
	UTILITY METER (EXISTING)		AC DISCONNECT FUSED (N/A)
	PRODUCTION METER (N/A)		JUNCTION BOX (NEW)
	(2) BATTERY (NEW)		AUTO TRANSFORMER (N/A)
	(1) INVERTER (NEW)		SUBPANEL (N/A)
	LOAD CENTER (COMBINER PANEL) (N/A)		DC DISCONNECT (N/A)
	SOLAREDDGE METER (N/A)		DC COMBINER (N/A)
	BACKUP INTERFACE (NEW)		EXISTING EQUIPMENT

**ADDITIONAL NOTE:** THE GARAGE HAS CINDER BLOCK & 5/8" SHEET ROCK WHICH IS 60 MINUTE FIRE RATED & MEETS BATTERY BUILDING CODE REQUIREMENTS.

**DESIGN CRITERIA**  
 EXPOSURE CATEGORY = B  
 WIND SPEED = 115MPH  
 SNOW LOAD = 30LBS



(E) FRONT YARD  
 23 CROSSBAR ROAD

**ROOF PLAN WITH MODULES**  
 SCALE: 1/8" = 1'-0"

**CONTRACTOR**  
 NAME: GREEN HYBRID ENERGY SOLUTIONS, INC.  
 ADDRESS: 11 WASHINGTON PLE, WHITE PLAINS, NY 10603, USA  
 PHONE: 9143487588  
 LICENSE #: WC-24685-H11

REVISIONS	DATE	REV
DESCRIPTION	09/26/2022	01
EQUIPMENT LOCATION AND NOTE ADDED		



**HOMEOWNER INFO**  
 PABLO MARTINEZ & CELINE SUAREZ  
 23 CROSSBAR ROAD,  
 HASTINGS-ON-HUDSON, NY  
 10706, USA

APN: 4-140-148-10  
 EMAIL: .  
 PHONE: .  
**SHEET NAME**  
 ROOF PLAN WITH MODULES  
**SHEET SIZE**  
 ANSIB  
 11" X 17"  
**SHEET NUMBER**  
 PV-2



**CONTRACTOR**

NAME: GREEN HYBRID ENERGY SOLUTIONS, INC.  
 ADDRESS: 11 WASHINGTON PLE, WHITE PLAINS, NY 10603, USA  
 PHONE: 9143467588  
 LICENSE #: WC-24883-H11

REVISIONS	DATE	REV
DESCRIPTION		
EQUIPMENT LOCATION	06/26/2022	01
PROJECT NUMBER		
AND NOTE NUMBER		



**PABLO MARTINEZ & CELINE SUAREZ**  
 23 CROSSBAR ROAD,  
 HASTINGS-ON-HUDSON, NY  
 10706, USA

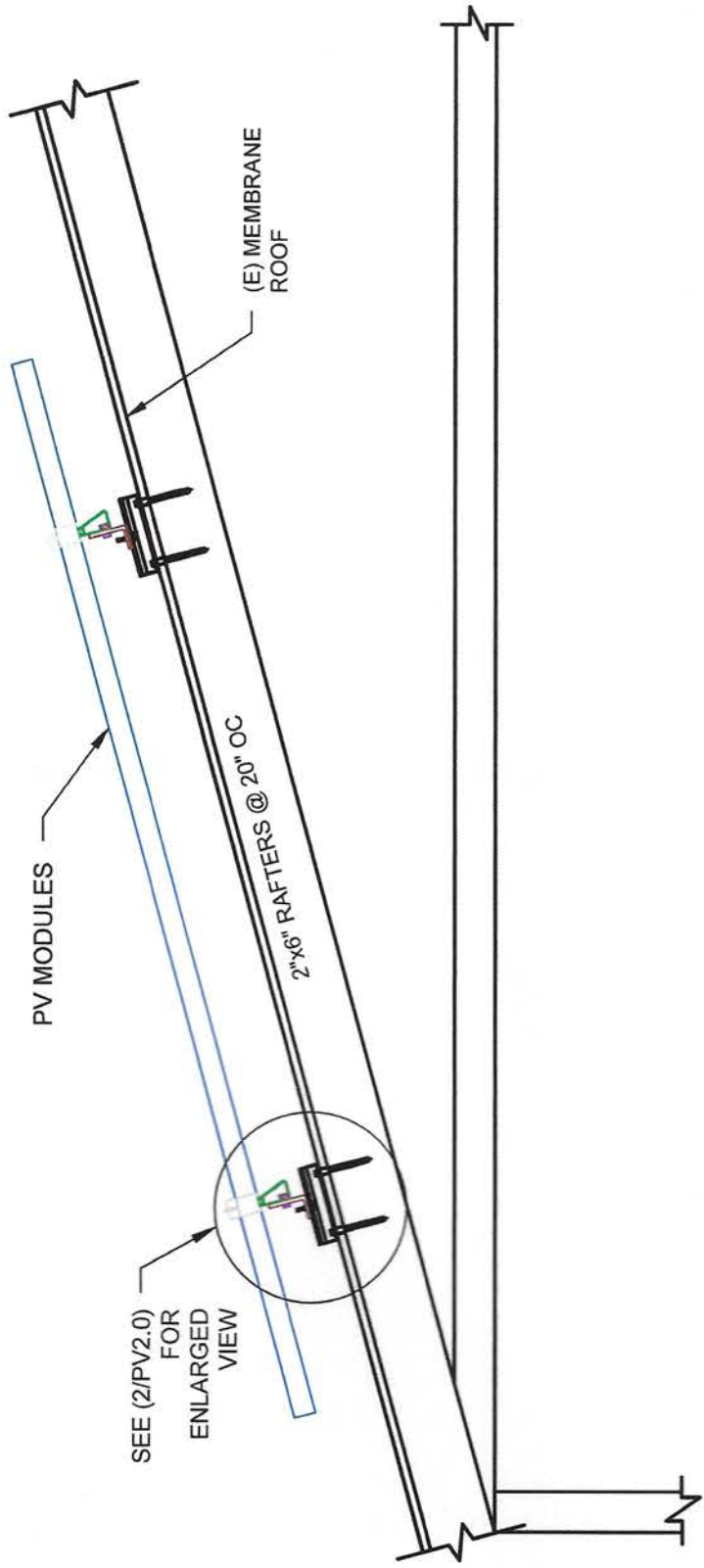
APN: 4140-148-10  
 EMAIL: -  
 PHONE: -

**SHEET NAME**

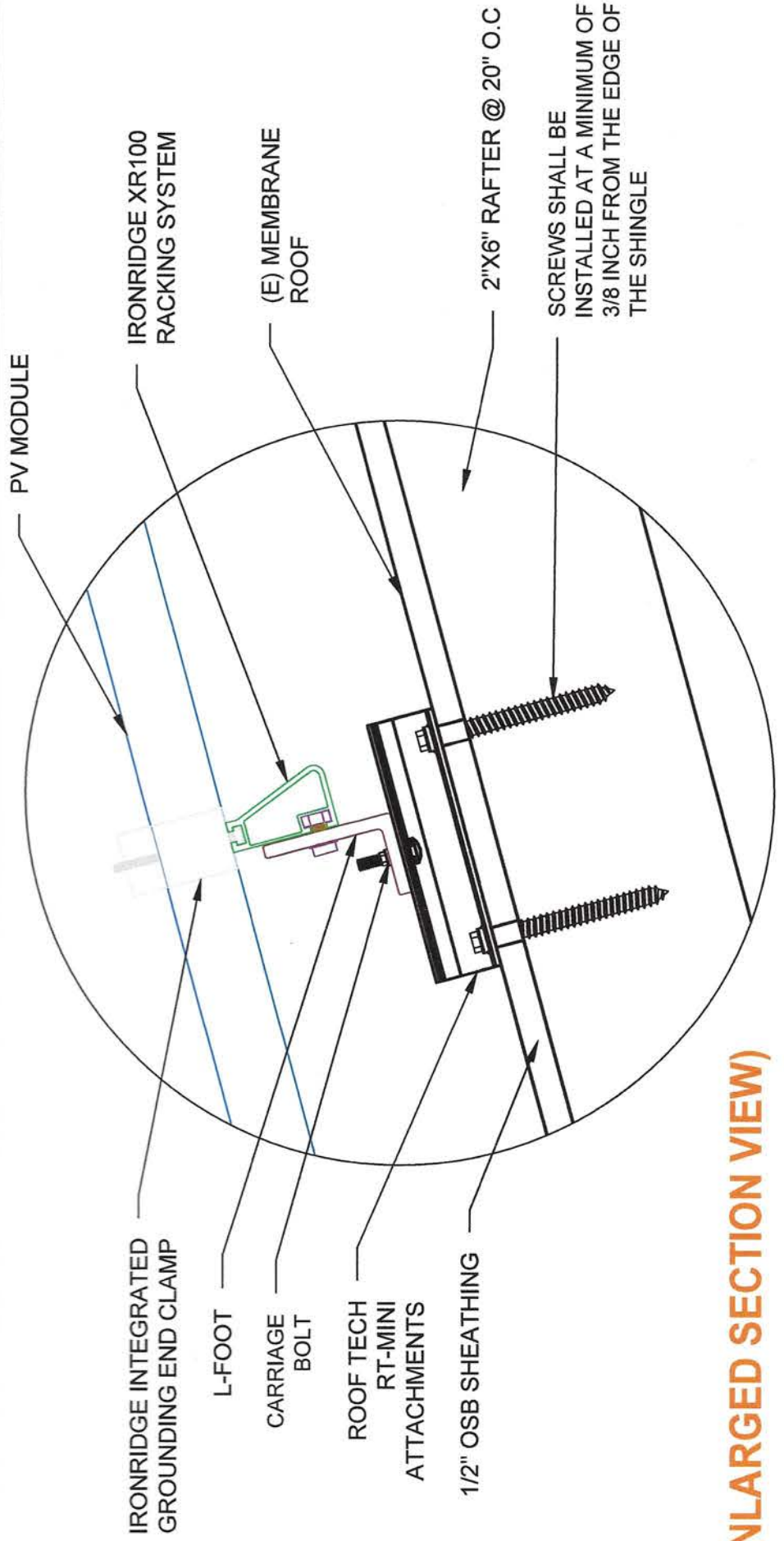
ATTACHMENT  
 DETAIL

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-3



**ATTACHMENT DETAIL**  
 SCALE: NTS



**ATTACHMENT DETAIL (ENLARGED SECTION VIEW)**  
 SCALE: NTS

Module Specifications	
Module Manufacturer:	REC
STC Watts:	400
VOC Temp Coefficient:	-0.24% / C
Module Model:	REC400AA PURE BLACK
REC Watts:	381
48.8 Vdc:	54.77 Vdc
42.1 Vdc:	37.25 Vdc
Max Power:	150.00 W
Temperature Coefficient:	-0.0056 W/W
Temperature Scale:	10.10 A
Local Temperature Range:	9.51 A

String	OPT/STRING	Current Per String	VMAX	Wire Size	Ohms/ft	Wire Length One Way	Total Ohms	Extr. VD	%VD
String 1-1	15	15.00	400	#10	1.24	40	0.0992	1.488	0.372%
String 1-2	15	15.00	400	#10	1.24	35	0.0868	1.302	0.326%
String 1-3	14	14.00	400	#10	1.24	130	0.3224	4.514	1.128%
TOTALS	44	44.00							

AC Voltage Drop Calculations				
Length one way (L)	Current (I)	K <sup>2</sup>	Wire Size	CM
10	47.5	25.8	#6	26240
40	47.5	25.8	#6	26240
				1.8681
				240
				240
				0.195%
				0.778%
				AC DISCONNECT
				INVERTER #1

**DC VOLTAGE**  
 PV MODULE Vmp = 48.8 VDC STC  
 PV MODULE Voc = 42.1 VDC STC  
 MAXIMUM PV MODULES PER STRING = 15  
 CORRECTION FACTOR PER NEC 909.7 (A) FOR 28°C = 1.1224%  
 1.1224 X (PV MODULE Voc @ 25°C) = 54.77 VDC  
 MAXIMUM DC VOLTAGE = 1 X (64.77) = 64.77 VDC

**PV SOURCE CIRCUIT (DC COMBINER) NOT USED**  
 TOTAL DC CURRENT = 6A TIMES 1.25 X 1.25 = 0.9A  
 TEMPERATURE CORRECTION FACTOR FOR 35°C AMBIENT = 0.76  
 CORRECTED AMPACITY (FOR AWG#15 A X 0.76 = 57 A > 0.9 A

**PV SOURCE CIRCUIT (OPTIMIZER STRINGS)**  
 PV MODULE Isp = 6.81A  
 PV MODULE Imp = 10.1A  
 # OF MODULES IN LARGEST OPTIMIZER STRING = 15  
 MAX Imp = (15 X 6.81) / 1.25 X 1.25 = 23.4A  
 DUAL COATED PV WIRE, 105°/90°C RATED  
 TEMPERATURE CORRECTION FACTOR FOR 90°C AMBIENT = 0.58  
 CORRECTED AMPACITY (FOR #10 AWG) = 40A X 0.58 = 23.2 A > 23.4A

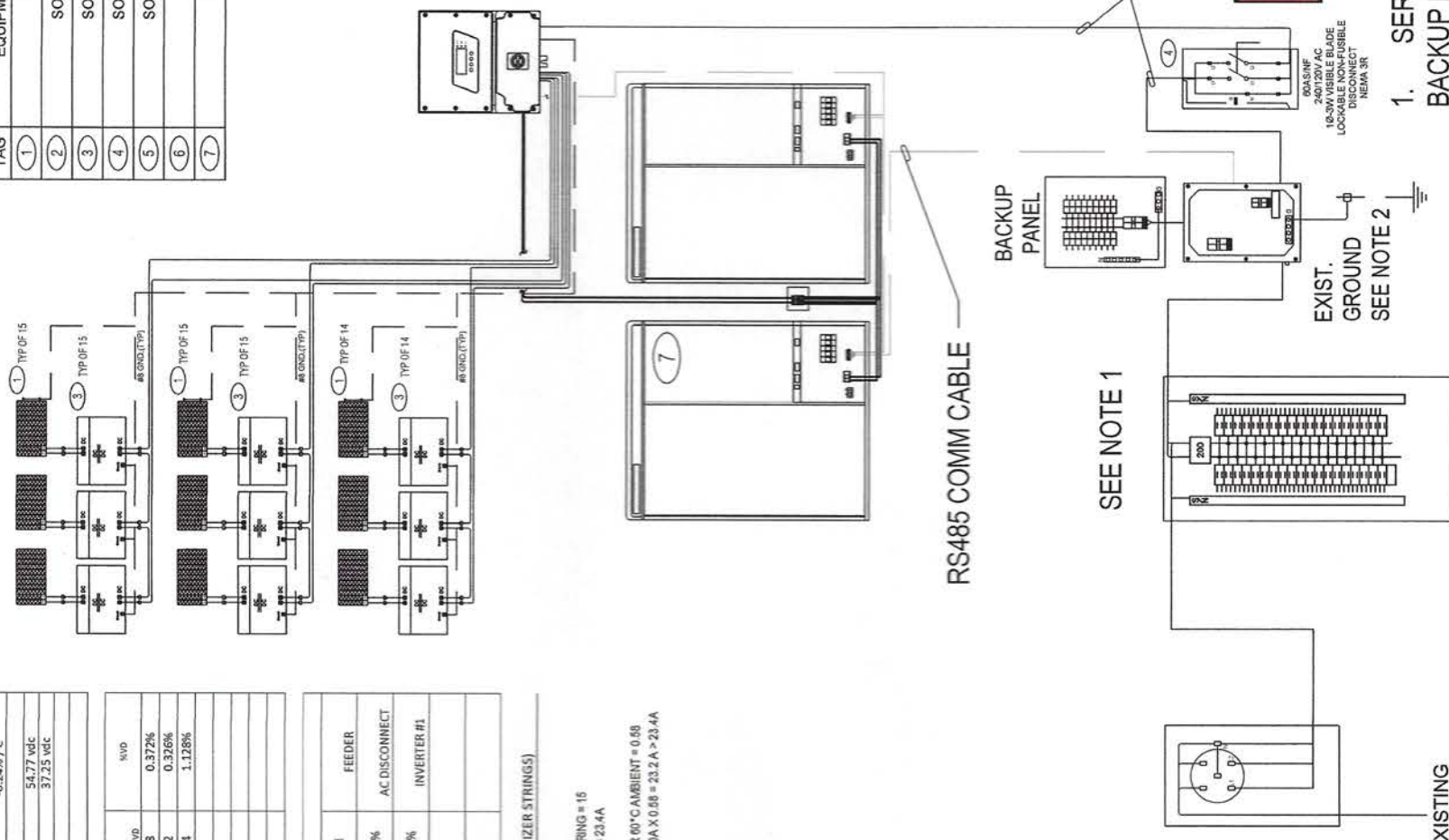
**INVERTER #1 OUTPUT CIRCUIT**  
 MAX CONTINUOUS CURRENT = 47.5A  
 INVERTER OUTPUT CIRCUIT OVER CURRENT PROTECTION = 60 A OCPD  
 80% OF OVER CURRENT PROTECTION RATING = 48A  
 OUTPUT CIRCUIT CONTINUOUS CURRENT = 47.5A < 48A  
 INVERTER OUTPUT WIRING TO AC DISCONNECT = #6 THWN-2, 90°C RATED  
 TEMPERATURE CORRECTION FACTOR FOR 41°C AMBIENT = 0.87  
 CORRECTED AMPACITY = 75 X 0.87 X 0.8 = 52.2A > 47.5A

CON ED ACCOUNT  
 # 1100-0067-14192  
 METER # 9515138

TAG	EQUIPMENT MANUFACTURE	EQUIPMENT DESCRIPTION	MODEL
1	REC	400W 132 CELL SOLAR AC MODULE	REC400AA PURE BLACK
2	SOLAREDEGE	11.4KW ENERGY HUB INVERTER AFCI w/DISCO	SE11400H-US
3	SOLAREDEGE	405W DC OPTIMIZER	P401
4	SOLAREDEGE	BACKUP INTERFACE UNIT	BI-EUSGN-01 100A
5	SOLAREDEGE	BATTERY PACK 10 KWH	BAT-10K1P50B-01
6	EATON	60AS/NF FUSIBLE DISCONNECT	DG222URB OR EQUAL
7	EATON	100A BACKUP LOADS PANEL	240/120V 125A BUS W/ 100A MAIN 1ø 3W NEMA 1

**PV SYSTEM DC DISCONNECT**

OPERATING CURRENT:	44.00A
OPERATING VOLTAGE:	400VDC
MAXIMUM SYSTEM VOLTAGE:	480VDC
SHORT CIRCUIT CURRENT:	45A



- SERVICE PANEL HAS 200A BUS 200A OCPD. 120% OF 200=240. BACKUP INTERFACE IS RATED FOR SERVICE EQUIPMENT. INSTALL FEEDER FROM THE MAIN BREAKER OF THE SERVICE PANEL TO THE BACKUP INTERFACE UNIT. FEED BACKUP PANEL OUT OF THE LOAD SIDE OF THE BIU. TRANSFER CIRCUITS TO BE BACKED UP INTO THE BACKUP PANEL. TOTAL AC CURRENT FOR SOLAR IS 47.5A X 125% = 59.375A OR 60A OCPD INSTALL A 60A SOLAR BREAKER IN THE BIU.
- BOND NEUTRAL TO EXISTING BLDG GROUND IN BIU AND REMOVE NEUTRAL BOND IN EXISTING SERVICE PANEL.

# 1 & 3 LINE DIAGRAM

SCALE: NONE

1 -

General Notes



1 & 3 LINE DIAGRAM		
No.	Revision/Issue	Date

**GHES GREEN HYBRID ENERGY SOLUTIONS**

Jamie Glover \_\_\_\_\_ Date \_\_\_\_\_

17.6KW DC STC 11.4 KW AC  
 RESIDENTIAL SOLAR FOR  
 Celine Suarez & Pablo Martinez  
 23 Crossbar Rd  
 Hastings on Hudson, NY 10706

Project	PV-1.0
Date	06/22/2022
Sheet	R-1

**1** **WARNING**  
ELECTRICAL SHOCK HAZARD  
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION  
LABEL LOCATION: INVERTERS, AC DISCONNECTS, AC COMBINER BOXES, AC JUNCTION BOXES  
CODE REF: NEC 2017 - 690.13(B)

**2** **WARNING**  
ELECTRICAL SHOCK HAZARD  
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION  
DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT  
LABEL LOCATION: DC DISCONNECTS, DC COMBINER BOXES  
CODE REF: NEC 2017 - 690.13(B)

**3** **PHOTOVOLTAIC DC DISCONNECT**  
MAXIMUM SYSTEM VOLTAGE: 600V AC  
MAXIMUM CIRCUIT CURRENT: 100A AC  
MAXIMUM OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-DC CONVERTER IF INSTALLED: 100A DC  
LABEL LOCATION: DC DISCONNECTS, INVERTERS  
CODE REF: NEC 2017 - 690.53

**4** **WARNING**  
ELECTRICAL SHOCK HAZARD  
IF GROUND FAULT IS INDICATED ALL NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED  
LABEL LOCATION: AC DISCONNECTS, AC COMBINER BOXES, SERVICE PANELS  
CODE REF: NEC 2017 - 690.5(C)

**5** **PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH**  
MAXIMUM AC OPERATING CURRENT: 100A AMP  
NOMINAL OPERATING AC VOLTAGE: 120V VAC  
LABEL LOCATION: INTERCONNECTION Placard (MSP BACKFEED BREAKER OR TAP BOX IF LINE SIDE TAP), AC DISCONNECTS  
CODE REF: NEC 2017 - 690.54

**6** **PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH**  
LABEL LOCATION: AC DISCONNECTS FOR UTILITY ACCESS  
CODE REF: UTILITY

**7** **PHOTOVOLTAIC SYSTEM METER**  
LABEL LOCATION: PV PRODUCTION METER  
CODE REF: NEC 2017 - 690.4(B)

**8** **WARNING:**  
PHOTOVOLTAIC POWER SOURCE  
LABEL LOCATION: DC JUNCTION/PULL BOXES, DC CONDUIT (EVERY 10 FT, AT EACH TURN, ABOVE AND BELOW PENETRATIONS)  
CODE REF: NEC 2017 - 690.31(G)(3), NEC 2017 - 690.31(G)(4)

**9** **WARNING**  
INVERTER OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE  
LABEL LOCATION: FIRST BACKFEED BREAKER (MSP/SUBPANEL) IF NO LINE SIDE TAP  
CODE REF: NEC 2017 - 705.12(B)(2)(3)(b), NEC 2017 - 705.12(B)(3), CEC 2019 - 705.12(B)(2)(3)(b), CEC 2019 - 705.12(B)(3)

**10** **CAUTION**  
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFEED  
LABEL LOCATION: INTERCONNECTION Placard (MSP BACKFEED BREAKER OR TAP BOX IF LINE SIDE TAP)  
CODE REF: NEC 2017 - 705.2(4)

**11** **PV SOLAR BREAKER**  
DO NOT RELOCATE THIS OVERCURRENT DEVICE  
LABEL LOCATION: FIRST BACKFEED BREAKER (MSP/SUBPANEL) IF NO LINE SIDE TAP  
CODE REF: NEC 2017 - 705.12(B)(2)(3)(b)

**12** **RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**  
LABEL LOCATION: MSP  
CODE REF: NEC 2017 - 690.56(C)(3)

**13** **CAUTION**  
DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC  
LABEL LOCATION: MSP, UTILITY METER (IF SEPARATE)  
CODE REF: UTILITY

**SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN**

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.

LABEL LOCATION: INTERCONNECTION POINT (MSP OR AC DISCONNECT IF LINE SIDE TAP)  
CODE REF: NEC 2017 - 690.12, NEC 2017 - 690.56(C)

**CAUTION:**  
POWER TO THIS SERVICE IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS AS SHOWN

LABEL LOCATION: MSP  
CODE REF: NEC 2017 - 705.10

NOTES AND SPECIFICATIONS:  
SIGNS AND LABELS SHALL MEET THE REQUIREMENTS OF NEC 110.21(B), UNLESS SPECIFIC INSTRUCTIONS ARE REQUIRED BY SECTION 690, OR IF REQUESTED BY THE LOCAL AHJ.  
SIGNS AND LABELS SHALL ADEQUATELY WARN OF HAZARDS USING EFFECTIVE WORDS, COLORS AND SYMBOLS.  
LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD AND SHALL NOT BE HAND WRITTEN.  
LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.  
SIGNS AND LABELS SHALL COMPLY WITH ANSI Z535.4 - 2011, PRODUCT SAFETY SIGNS AND LABELS, UNLESS OTHERWISE SPECIFIED.  
DO NOT COVER EXISTING MANUFACTURER LABELS.

**CONTRACTOR**  
NAME: GREEN HYBRID ENERGY SOLUTIONS, INC.  
ADDRESS: 11 WASHINGTON PL, E, WHITE PLAINS, NY 10603, USA  
PHONE: 914-467-5888  
LICENSE # WC-24683-111

REVISIONS	DATE	REV
DESCRIPTION	08/26/2022	01
EQUIPMENT LOCATION AND WIRING		
AND WIRING		



HOMEOWNER INFO

**PABLO MARTINEZ & CELINE SUAREZ**  
23 CROSSBAR ROAD,  
HASTINGS-ON-HUDSON, NY  
10706, USA

APN: 4-140-148-10  
EMAIL: -  
PHONE: -

**SHEET NAME**  
PLACARDS

**SHEET SIZE**  
ANSI B  
11" X 17"

**SHEET NUMBER**  
PV-6



SOLAR'S MOST TRUSTED



# REC ALPHOX<sup>®</sup> PURE BLACK SERIES PRODUCT SPECIFICATIONS



**400 WP**  
**20.3 W/FT<sup>2</sup>**

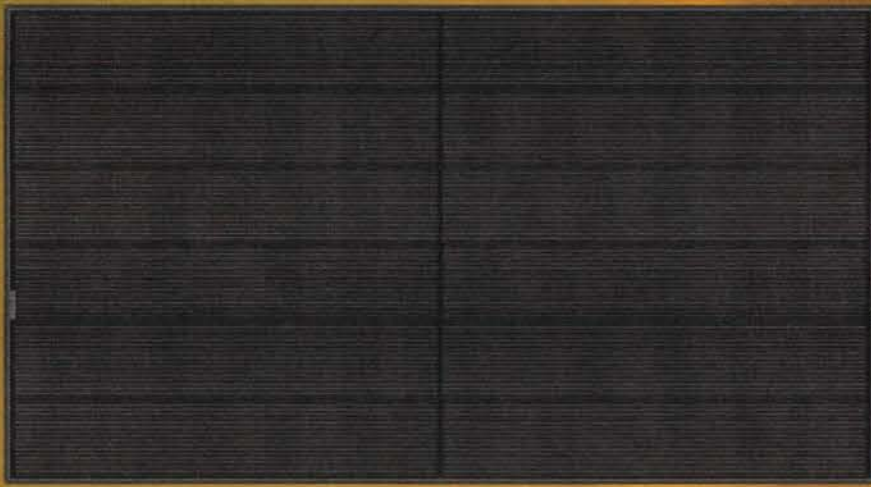
EXPERIENCE



PERFORMANCE

**LEAD-FREE**  
ROHS COMPLIANT

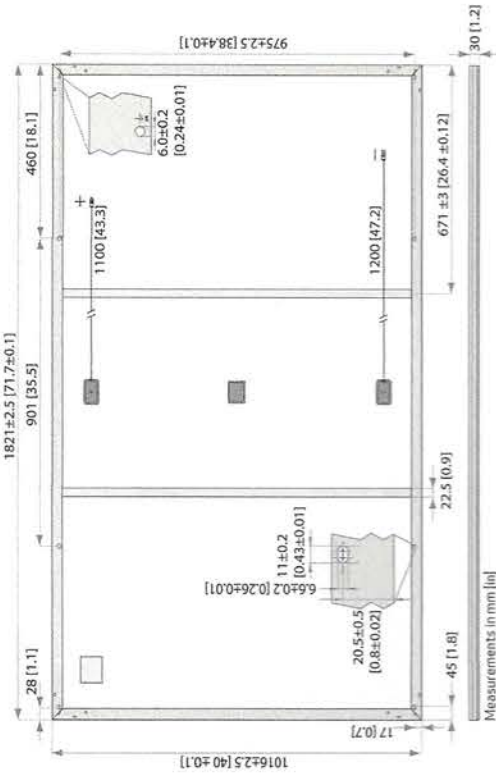
ELIGIBLE



SOLAR'S MOST TRUSTED

## PRODUCT SPECIFICATIONS

REC ALPHA PURE BLACK SERIES - PRODUCT SPECIFICATIONS



### GENERAL DATA

Cell type:	132 half-cut REC heterojunction cells with lead-free, gapless technology 6 strings of 22 cells in series	Connectors:	StabiMCA(PV-KB74/KS14, 12AWG (4mm <sup>2</sup> ) in accordance with IEC 62852 IP68 only when connected
Glass:	0.13 in (3.2 mm) solar glass with anti-reflection surface treatment	Cable:	12AWG (4mm <sup>2</sup> ) PV wire, 43+47 in (11+1.2 m) in accordance with EN 50618
Backsheet:	Highly resistant polymer (black)	Dimensions:	717 x 40 x 1.2 in (1821 x 1016 x 30 mm)
Frame:	Anodized aluminum (black)	Weight:	45 lbs (20.5 kg)
Junction box:	3-part, 3 bypass diodes, IP67 rated in accordance with IEC 62790	Origin:	Made in Singapore

### ELECTRICAL DATA

	Product Code : RECxxxxA Pure Black									
Power Output - P <sub>max</sub> (Wp)	385	390	395	400	405					
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5	0/+5					
Nominal Power Voltage - V <sub>mp</sub> (V)	41.2	41.5	41.8	42.1	42.4					
Nominal Power Current - I <sub>mp</sub> (A)	9.35	9.40	9.45	9.51	9.56					
Open Circuit Voltage - V <sub>oc</sub> (V)	48.5	48.6	48.7	48.8	48.9					
Short Circuit Current - I <sub>sc</sub> (A)	9.99	10.03	10.07	10.10	10.14					
Power Density (W/sq ft)	19.3	19.6	19.8	20.1	20.3					
Panel Efficiency (%)	20.8	21.1	21.3	21.6	21.9					
Power Output - P <sub>max</sub> (Wp)	293	297	301	305	309					
Nominal Power Voltage - V <sub>mp</sub> (V)	38.8	39.1	39.4	39.7	40.0					
Nominal Power Current - I <sub>mp</sub> (A)	7.55	7.59	7.63	7.68	7.72					
Open Circuit Voltage - V <sub>oc</sub> (V)	45.7	45.8	45.9	46.0	46.1					
Short Circuit Current - I <sub>sc</sub> (A)	8.07	8.10	8.13	8.16	8.19					

Values at standard test conditions (STC): air mass AM1.5, irradiance 1075 W/sq ft (1000 W/m<sup>2</sup>), temperature 77°F (25°C), based on a production spread with a tolerance of P<sub>max</sub>, V<sub>oc</sub>, I<sub>sc</sub> ±3% within one watt class. Nominal module operating temperature (NMOT, air mass AM1.5, irradiance 800 W/m<sup>2</sup>, temperature 68°F (20°C), wind speed 3.3 ft/s (1 m/s). \*Where xxx indicates the nominal power class (P<sub>max</sub>) at STC above.

### CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730 (Pending)  
ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941



### WARRANTY

Installed by an REC Certified Solar Professional	Standard	REC ProTrust
System Size	All	<25 kW, 25-500 kW
Product Warranty (yrs)	20	25
Power Warranty (yrs)	25	25
Labor Warranty (yrs)	0	25
Power in Year 1	98%	98%
Annual Degradation	0.25%	0.25%
Power in Year 25	92%	92%

See warranty documents for details. Conditions apply

### MAXIMUM RATINGS

Operational temperature:	-40 ... +185°F (-40 ... +85°C)
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (146 lbs/sq ft)
Maximum test load (rear):	-4000 Pa (83.5 lbs/sq ft)
Max series fuse rating:	25 A
Max reverse current:	25 A

\*See installation manual for mounting instructions. Design load = Test load / 1.5 (safety factor)

### TEMPERATURE RATINGS\*

Nominal Module Operating Temperature:	44°C (±2°C)
Temperature coefficient of P <sub>max</sub> :	-0.26 %/°C
Temperature coefficient of V <sub>oc</sub> :	-0.24 %/°C
Temperature coefficient of I <sub>sc</sub> :	0.04 %/°C

\*The temperature coefficients stated are linear values

### LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



Ref: PM-DS-12-01-Rev-A-03.21



Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

### CONTRACTOR

NAME: GREEN HYBRID ENERGY SOLUTIONS, INC.  
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PHONE: 914-967-5888  
LICENSE #: WC-24683-H11

REVISIONS	DESCRIPTION	DATE	REV
	EQUIPMENT LOCATION, EQUIPMENT NUMBER AND NOTE ADDED	06/29/2022	01



### HOMEDOWNER INFO

**PABLO MARTINEZ & CELINE SUAREZ**  
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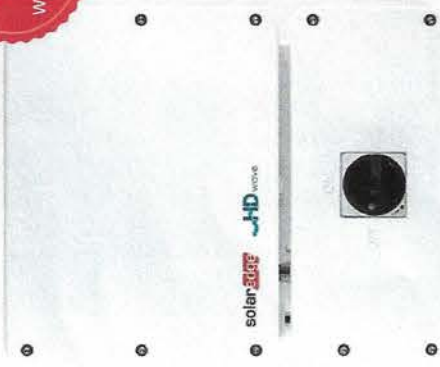
**SHEET NAME**  
EQUIPMENT  
SPECIFICATION

**SHEET SIZE**  
ANSI B  
11" X 17"

**SHEET NUMBER**  
PV-7

# Single Phase Energy Hub Inverter with Prism Technology

For North America  
 SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE14000H-US<sup>(1)</sup>



## Optimized battery storage with HD-Wave technology

- Record-breaking 99% weighted efficiency with 200% DC oversizing
- Small, lightweight, and easy to install
- Modular design, future ready with optional upgrades to:
  - DC-coupled storage for full or partial home backup
  - Built-in consumption monitoring
  - Direct connection to the SolarEdge smart EV charger
- Multi-inverter, scalable storage solution
- With enhanced battery power up to 10kW
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020, per article 690.11 and 690.12
- Embedded revenue grade production data, ANSI C12.20 Class 0.5

[solaredge.com](http://solaredge.com)



# Single Phase Energy Hub Inverter with Prism Technology For North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE14000H-US<sup>(1)</sup>

SE3000H-US	SE3800H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE14000H-US	UNITS
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### OUTPUT - AC ON GRID

Rated AC Power	3000	3800 @ 240V 3500 @ 208V	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	W
Maximum AC Power Output	3000	3600 @ 240V 3300 @ 208V	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	W
AC Frequency Range (min - nom - max)	12.5	16	25	32	42	47.5	Hz
Maximum Continuous Output Current @ 240V	-	16	24	-	-	48.5	A
Maximum Continuous Output Current @ 208V	-	16	24	-	-	48.5	A
GFDI Threshold	1						A
Total Harmonic Distortion (THD)	<3						%
Power Factor	1, adjustable -0.85 to 0.85						
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes						
Charge Battery from AC (if allowed)	Yes						
Typical Nighttime Power Consumption	<2.5						W

### OUTPUT - AC BACKUP<sup>(1)</sup>

Rated AC Power in Backup Operation <sup>(6)</sup>	3000	3800	6000	7600	10000	10300	W
AC L-L Output Voltage Range in Backup		211 - 264					Vac
AC L-N Output Voltage Range in Backup		105 - 132					Vac
AC Frequency Range in Backup (min - nom - max)	12.5	16	25	32	42	43	Hz
Maximum Continuous Output Current in Backup Operation		32*	43*				A
GFDI	1						A
THD	<5						%

### OUTPUT - SMART EV CHARGER AC

Rated AC Power	9600						W
AC Output Voltage Range	211 - 264						Vac
On-Grid AC Frequency Range (min - nom - max)	59.3 - 60 - 60.5						Hz
Maximum Continuous Output Current @ 240V (grid, PV and battery)	40						Aac

### INPUT - DC (PV AND BATTERY)

Transformer-less, Ungrounded	Yes						Vdc
Max Input Voltage	480						Vdc
Nom DC Input Voltage	380						Vdc
Reverse-Polarity Protection	Yes						
Ground-Fault Isolation Detection	600kΩ Sensitivity						

### INPUT - DC (PV)

Maximum DC Power @ 240V	6000	7600	12000	15200	22000	22800	W
Maximum DC Power @ 208V	-	15200*	10000	22800*	-	20000	W
Maximum Input Current <sup>(5)</sup> @ 240V	8.5	10.5	16.5	20	27	31	Aac
Maximum Input Current <sup>(5)</sup> @ 208V	-	20*	9	31*	-	27	Aac
Max. Input Short Circuit Current	99			45			Aac
Maximum Inverter Efficiency	99			99.2			%
CEC Weighted Efficiency	99			99			%
2-pole Disconnection	Yes						

\* Supported with PN SExxxxH-USMxxxxxx or SExxxxH-USMxxxxxx  
 (1) These specifications apply to inverters with part numbers SExxxxH-USMxxxxxx or SExxxxH-USMxxxxxx and connection unit model number DCO-PH-US-PvH-F-x  
 (2) For other regional settings please contact SolarEdge support  
 (3) Not designed for standalone applications and requires AC for commissioning. Backup functionality is only supported for 240V grid  
 (4) Rated AC power in Backup Operation are valid for installations with multiple inverters. For a single backup inverter operation, rated AC power in Backup is 90% of the value stated  
 (5) A higher current source may be used; the inverter will limit its input current to the values stated

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REVISIONS	DESCRIPTION	DATE	REV
	EQUIPMENT LOCATION AND WIRE ADDRESS	06/25/2022	01



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 HASTINGS-ON-HUDSON, NY  
 10706, USA  
 APN: 4-140-148-10  
 EMAIL: -  
 PHONE: -

**SHEET NAME**  
 EQUIPMENT SPECIFICATION  
**SHEET SIZE**  
 ANSIB 11" X 17"  
**SHEET NUMBER**  
 PV-8

# SolarEdge Energy Bank 10kWh Battery

For North America



## Optimized for SolarEdge Energy Hub Inverters<sup>(1)</sup>

- Maximized system performance, gaining more energy to store and use for on-grid and backup power applications
- Integrates with the complete SolarEdge residential offering, providing a single point of contact for warranty, support, training, and simplified logistics & operations
- DC coupled battery featuring superior overall system efficiency, from PV to battery to grid
- Scalable solution for increased power and capacity with multiple SolarEdge inverters and batteries
- Solar, storage, EV charging, and smart devices all monitored and managed by a single app to optimize solar production, consumption and backup\* power
- Wireless communication to the inverter, reducing wiring, labor and installation faults
- Simple plug and play installation, with automatic SetApp-based configuration
- Includes multiple safety features for battery protection

\* Backup applications are subject to local regulation and may require additional components and firmware upgrade.

solaredge.com



# HOME BACKUP

## SolarEdge Energy Bank 10kWh Battery For North America

BAT-10KIP(2)

### BATTERY SPECIFICATION

Usable Energy (100% depth of discharge)	Wh	9700
Continuous Output Power	W	5000
Peak Output Power (for 10 seconds)	W	7500
Peak Roundtrip Efficiency	%	>94.5
Warranty <sup>(3)</sup>	Years	10
Voltage Range	Vdc	350-450
Communication Interfaces		Wireless*
Batteries per Inverter		Up to 3 <sup>(4)</sup>
<b>STANDARD COMPLIANCE</b>		
Safety		UL1642, UL1973, UL9540, UN38.3
Emissions		FCC Part 15 Class B
<b>MECHANICAL SPECIFICATIONS</b>		
Dimensions (W x H x D)	in / mm	31.1 x 46.4 x 9.84 / 790 x 1179 x 250
Weight	lb / kg	267 / 121
Mounting <sup>(5)</sup>		Floor or wall mount <sup>(6)</sup>
Operating Temperature <sup>(7)</sup>	*F / °C	+14 to +122 / -10 to +50
Storage Temperature (more than 3 months)	*F / °C	+14 to +86 / -10 to +30
Storage Temperature (less than 3 months)	*F / °C	-22 to +140 / -30 to +60
Altitude	ft / m	6562 / 2000
Enclosure Protection		IP55 / NEMA 3R - indoor and outdoor (water and dust protection)
Cooling		Natural convection
Noise (at 1m distance)	dB(A)	<25

\* The SolarEdge Energy Bank is designed for use with SolarEdge Energy Net for wireless communication. The inverter might require a matching SolarEdge Energy Net Plug-in (more details below). Using RS485 could reduce the usable energy to 9500Wh.

(1) Please refer to the SolarEdge Energy Bank battery connections and configuration application note for compatible inverters.

(2) These specifications apply to part number BAT-10KIP(SB-01).

(3) For warranty details please refer to the SolarEdge Energy Bank battery limited warranty.

(4) Installation with multiple SolarEdge Energy Bank batteries connected to a single inverter require a pair of branch connectors (DC + and DC -) per battery including the full battery. Support for 3 batteries is pending supporting inverter firmware. The branch connectors should be purchased separately.

(5) Installation and mounting requires handles that should be purchased separately. Please refer to the Accessories-PN table below.

(6) The floor stand is purchased separately. One floor stand is required per SolarEdge Energy Bank battery. Please refer to the Accessories-PN table below.

(7) Please note that operating the SolarEdge Energy Bank at extreme temperatures for extended durations of time may void the Energy Bank's warranty coverage. Please see the Energy Bank Limited Product Warranty for additional details.

### SolarEdge Energy Bank Battery - Accessories (purchased separately)

Accessory	PN
Floor stand	IAC-RBAT-FLRSTD-01
Branch connectors set (includes a pair of DC + and DC - connectors)	IAC-RBAT-USYCBL-01
Required for installations with multiple SolarEdge Energy Bank batteries with a single inverter	IAC-RBAT-HANDLE-01
SolarEdge Energy Net Plug-in	ENET-HBNP-01
Battery inverter extension cable 2m long (MC4 to terminal block)	IAC-RBAT-10M420-01

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CE RoHS



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LICENSE #: WC-24685-H11

DESCRIPTION	DATE	REV
EQUIPMENT LOCATION AND DATE ADDED	06/29/22	01



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10706, USA

APN: 4-140-148-10  
EMAIL: -  
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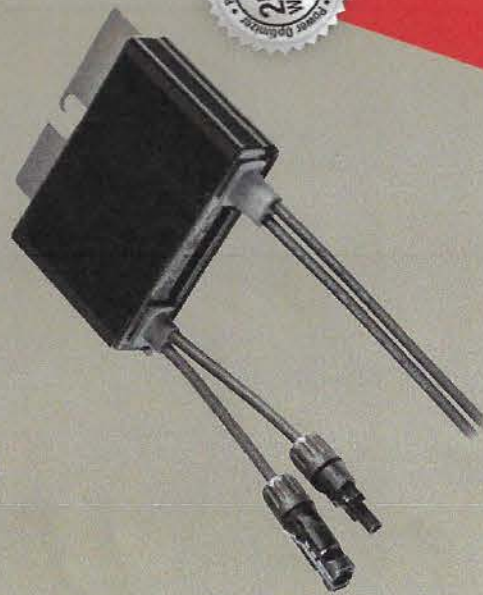
SHEET NUMBER  
PV-9

**solar**edge

**SolarEdge Power Optimizer  
Module Add-On**

P300 / P350 / P370 / P404 / P405 / P500

**POWER OPTIMIZER**



**PV power optimization at the module-level**

- Specifically designed to work with SolarEdge inverters
- Up to 2.5% more energy
- Superior efficiency (99.5%)
- Mitigates all types of modules mismatch-loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module level monitoring
- Module-level voltage shutdown for installer and firefighter safety

USA-CANADA-GERMANY-ITALY-FRANCE-JAPAN-CHINA-AUSTRALIA-THE NETHERLANDS-UK-ISRAEL-TURKEY-SOUTH AFRICA-BULGARIA-INDIA

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**solar**edge

**SolarEdge Power Optimizer Module Add-On**  
P300 / P350 / P370 / P404 / P405 / P500

INPUT	P300 (for 60-cell modules)	P350 (for high-power 60-cell and for 72-cell modules)	P370 (for higher- power 60 and 72-cell modules)	P500 (for 96-cell modules)	P404 (for 60-cell and 72-cell, short strings)	P405 (for thin film modules)
Rated Input DC Power <sup>(1)</sup>	300	350	370	500	405	405
Absolute Maximum Input Voltage (Voc at lowest temperature)	48	60	60	80	80	125
MPP Operating Range	8 - 48	8 - 60	8 - 60	8 - 80	12.5 - 80	12.5 - 105
Maximum Continuous Input Current (Isc)	10	11	11	10.1	10.1	10.1
Maximum Efficiency	99.5	99.5	99.5	99.5	99.5	99.5
Weighted Efficiency	98.8	98.8	98.8	98.8	98.8	98.8
Overvoltage Category	II					

OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREGE INVERTER)	P300		P350		P370		P500		P404		P405	
Maximum Output Current	15		15		15		15		15		15	
Maximum Output Voltage	85		85		85		85		85		85	

**OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR SOLAREGE INVERTER OFF)**

Safety Output Voltage per Power Optimizer: 1 Vdc

STANDARD COMPLIANCE	P300		P350		P370		P500		P404		P405	
EMC	FCC Part15, Class B, IEC61000-6-2, IEC61000-6-3											
Safety	IEC62109-1 (class II safety), UL1741											
Rohs	Yes											
Fire Safety	VDE-AR-E 2100-712:2013-05											

**INSTALLATION SPECIFICATIONS**

Maximum Allowed System Voltage: 1000 Vdc

Dimensions (W x L x H): 128 x 152 x 27.5 / 5 x 5.97 x 1.08

Weight (including cables): 630 / 1.4 / 655 / 1.5 / 750 / 1.7

Input Connector: MC4<sup>(2)</sup>

Output Connector: MC4

Operating Temperature Range: -40 - +85 / -40 - +185

Protection Rating: IP68 / NEMA6P

Relative Humidity: 0 - 100 %

<sup>(1)</sup> Based on STC power of the module. Module of up to 15% power tolerance allowed.  
<sup>(2)</sup> For other options, please contact SolarEdge.  
<sup>(3)</sup> Dual version for parallel connection of 2 thin film modules; P/N: P405-SRMD08RM.

PV SYSTEM DESIGN USING A SOLAREGE INVERTER <sup>(4)</sup>	P300, P350, P370, P500 <sup>(3)</sup> (Power Optimizers)		P404, P405 (Power Optimizers)	
Minimum String Length	8		16	
Maximum String Length (Power Optimizers)	6		13 (12 with SE3K)	
Maximum Power per String	5700		5250	
Parallel Strings of Different Lengths or Orientations	Yes		Yes	

<sup>(4)</sup> It is not allowed to mix P404/P405 with P300/P350/P370/P500/P600/P700 in one string.  
<sup>(5)</sup> The P300/P350/P370/P500 cannot be used with the SE3K three phase inverter (available in some countries; refer to E-Series inverter datasheet).



Sold in India by:  
Nitashi Solar  
Call: +91-9834653792  
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Web: www.nitashi.in

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REVISIONS	DESCRIPTION	DATE	REV
01	EQUIPMENT LOCATION NUMBER AND NOTE ADDED	06/26/2022	01



**PABLO MARTINEZ & CELINE SUAREZ**  
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**SHEET NAME**  
EQUIPMENT SPECIFICATION

**SHEET SIZE**  
ANSI B  
11" X 17"

**SHEET NUMBER**  
PV-10



# Flush Mount System



### Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Every component has been tested to the limit and proven in extreme environments. Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 20-year warranty.



#### Strength Tested

All components evaluated for superior structural performance.



#### Class A Fire Rating

Certified to maintain the fire resistance rating of the existing roof.



#### UL 2703 Listed System

Entire system and components meet newest effective UL 2703 standard.



#### PE Certified

Pre-stamped engineering letters available in most states.



#### Design Assistant

Online software makes it simple to create, share, and price projects.



#### 20-Year Warranty

Twice the protection offered by competitors.

Datasheet

### XR Rails

#### XR10 Rail



A low-profile mounting rail for regions with light snow.

- 6' spanning capability
- Moderate load capability
- Clear and black finish

#### XR100 Rail



The ultimate residential solar mounting rail.

- 8' spanning capability
- Heavy load capability
- Clear and black finish

#### XR1000 Rail



A heavyweight mounting rail for commercial projects.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish

#### Bonded Splices



All rails use internal splices for seamless connections.

- Self-drilling screws
- Varying versions for rails
- Forms secure bonding

### Clamps & Grounding

#### UFOs



Universal Fastening Objects bond modules to rails.

- Fully assembled & lubed
- Single, universal size
- Clear and black finish

#### Stopper Sleeves



Snap onto the UFO to turn into a bonded end clamp.

- Bonds modules to rails
- Sized to match modules
- Clear and black finish

#### Grounding Lugs



Connect arrays to equipment ground.

- Low profile
- Single tool installation
- Mounts in any direction

#### Microinverter Kits



Mount MIs or POs to XR Rails.

- Bonds devices to rails
- Kit comes assembled
- Listed to UL 2703

### Attachments

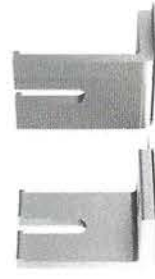
#### FlashFoot2



Flash and mount XR Rails with superior waterproofing.

- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

#### Slotted L-Foot



Drop-in design for rapid rail attachment.

- Secure rail connections
- Slot for vertical adjusting
- Clear and black finish

#### Bonding Hardware



Bond and attach XR Rails to roof attachments.

- T & Square Bolt options
- Nut uses 7/16" socket
- Assembled and lubricated

#### Flush Standoffs



Raise Flush Mount System to various heights.

- Works with vent flashing
- 4" and 7" lengths
- Ships assembled

### Resources



#### Design Assistant

Go from rough layout to fully engineered system. For free. [Go to IronRidge.com/design](http://Go to IronRidge.com/design)



#### NABCEP Certified Training

Earn free continuing education credits, while learning more about our systems. [Go to IronRidge.com/training](http://Go to IronRidge.com/training)

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REVISIONS	DESCRIPTION	DATE	REV
01	ISSUED TO CONTRACTOR AND NOTE ADDED	06/29/2022	



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10706, USA

APN: 4-140-148-10  
EMAIL: -  
PHONE: -

### SHEET NAME

EQUIPMENT SPECIFICATION

### SHEET SIZE

ANSI B  
11" X 17"

### SHEET NUMBER

PV-11

# RT-MINI

Self-flashing base for asphalt & metal roof-top PV mounting systems

RT-MINI is suitable for mounting any rail system with a conventional L-Foot.



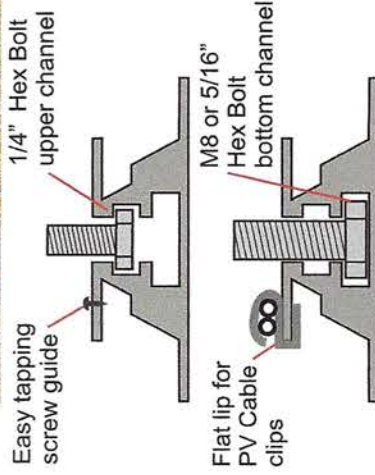
Dual bolt design: M8 or 5/16" for L-Foot & 1/4" for EMC



Installation Manual



ICC ESR 3575



# RT-MINI

Flexible Flashing certified by the International Code Council (ICC)

Engineered to **ASTM D 1761** (Standard Test Methods for Mechanical Fasteners in Wood)

## Components

RT2-00-MINIBK



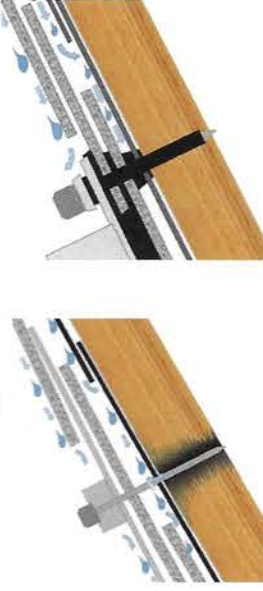
MINI base : 20 ea.  
Screw : 40 ea.  
Extra RT-Butyl : 10 ea.

Optional item

5 x 60mm Mounting screw (RT2-04-SD5-60) : 100 ea./Bag  
5/16" Hex bolt, washer & nut set (RT-04-BN30SL-US) : 100 ea./Bag  
RT-Butyl (RT2-04-BUTYL) : 10 ea./Box

RT-Butyl is Roof Tech's flexible flashing used in one million residential PV systems for the last 26 years. It is the first PV mounting system with Flexible Flashing certified by the ICC. Engineered to withstand wind speeds up to 180 mph and ground snow up to 90 psf.

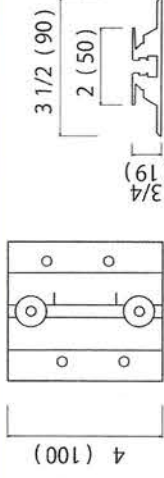
## Metal Flashing Retrofit Flexible Flashing



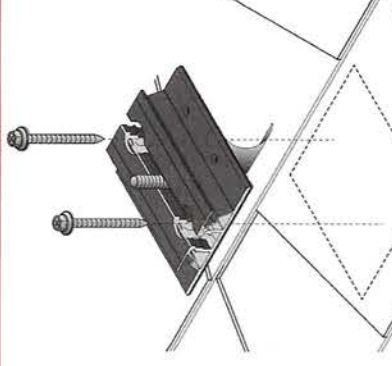
Shedding water? **100% Waterproof**  
ICC ESR-3575 ASTM2140 testing UV testing (7500 hrs.)



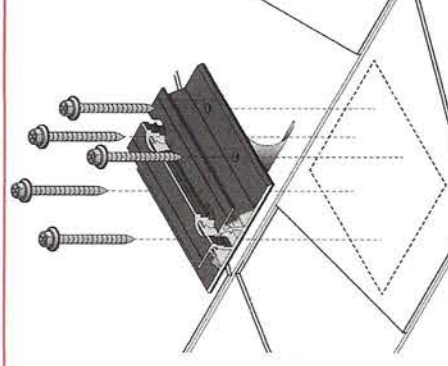
## Dimensions in (mm)



## Rafter installation



## Deck installation



P.E. Stamped Letters available at [www.roof-tech.us/support](http://www.roof-tech.us/support)  
TAS 100 A on metal and asphalt roof.

**Roof Tech**  
The Standard for Waterproof Flexible Flashing Since 1994  
[www.roof-tech.us](http://www.roof-tech.us) [info@roof-tech.us](mailto:info@roof-tech.us)

**Roof Tech Inc.**  
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858.935.6064

March 2020



## CONTRACTOR

NAME: GREEN HYBRID ENERGY SOLUTIONS, INC.  
ADDRESS: 11 WASHINGTON PLE, WHITE PLAINS, NY 10603, USA  
PHONE: 914-967-5888  
LICENSE #: WC-24683-H11

REVISIONS	DATE	REV
DESCRIPTION		
EQUIPMENT LOCATION, APPROX AND NOTE ADDRESS	06/19/2022	01



**PABLO MARTINEZ & CELINE SUAREZ**  
23 CROSSBAR ROAD,  
HASTINGS-ON-HUDSON, NY  
10706, USA

APN: 4-140-148-10  
EMAIL: -  
PHONE: -

SHEET NAME  
EQUIPMENT SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"  
SHEET NUMBER  
PV-12