

# PHOTOVOLTAIC ROOF MOUNT SYSTEM

14 MODULES-ROOF MOUNTED - 6.300 kW DC, 5.760 kW AC

450 SE MARGARET DR, LAKE CITY, FL 32025

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LUNEX POWER INC.  
4721 N GRADY AVE  
TAMPA FL 33614  
LIC #: CVC57085  
PHONE: 813-540-8807

## PROJECT DATA

PROJECT ADDRESS: 450 SE MARGARET DR, LAKE CITY, FL 32025

OWNER: MARGUERITE STEARMAN

CONTRACTOR: LUNEX POWER INC.  
4721 N GRADY AVE  
TAMPA FL 33614  
PHONE: 813-540-8807

DESIGNER: ESR

SCOPE: 6.300 KW DC ROOF MOUNT SOLAR PV SYSTEM WITH 14 PEIMAR SOLAR:DR10H450M (FB) 450W PV MODULES WITH 14 SOLAREEDGE: U650B POWER OPTIMIZERS 01 SOLAREEDGE: DCA USE5700H-USMNB78 INVERTER

AUTHORITIES HAVING JURISDICTION:  
BUILDING: COLUMBIA COUNTY  
ZONING: COLUMBIA COUNTY  
UTILITY: FPL

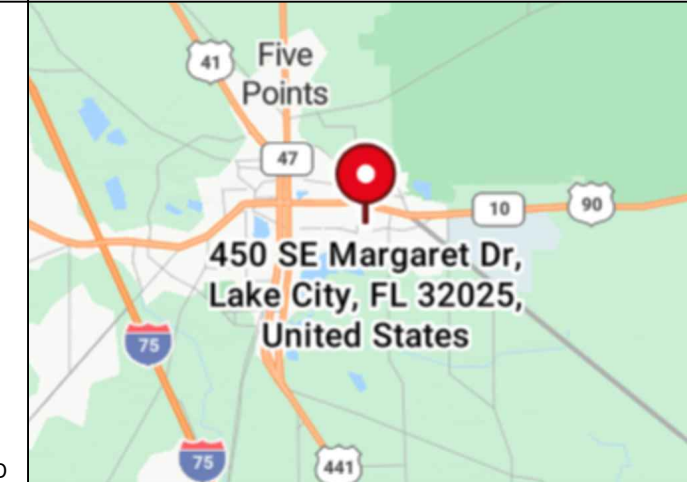
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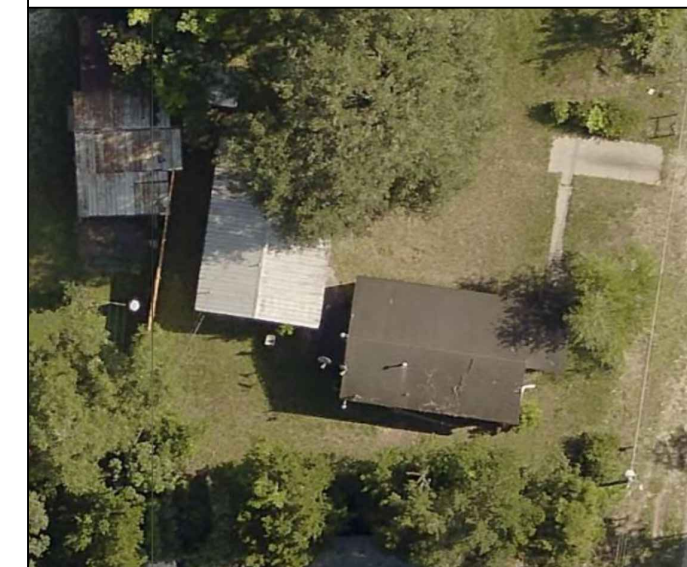
## GENERAL NOTES

- ALL COMPONENTS ARE UL LISTED AND NEC CERTIFIED, WHERE WARRANTED.
- THE SOLAR PV SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH ARTICLE 690 OF THE NEC 2020.
- THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION.
- ALL CONDUCTORS OF A CIRCUIT, INCLUDING THE EGC, MUST BE INSTALLED IN THE SAME RACEWAY, OR CABLE, OR OTHERWISE RUN WITH THE PV ARRAY CIRCUIT CONDUCTORS WHEN THEY LEAVE THE VICINITY OF THE PV ARRAY.
- WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING, IT SHALL BE IDENTIFIED AS "CAUTION: SOLAR CIRCUIT" EVERY 10FT.
- HEIGHT OF THE AC DISCONNECT SHALL NOT EXCEED 6'-7" PER NEC CODE 240.24.
- A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 690.47 AND 250.50 THROUGH 60 AND 250-166 SHALL BE PROVIDED. PER NEC GROUNDING ELECTRODE SYSTEM OF EXISTING BUILDING MAY BE USED AND BONDED TO THE SERVICE ENTRANCE. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE A SUPPLEMENTAL GROUNDING ELECTRODE WILL BE USED AT THE INVERTER LOCATION CONSISTING OF A UL LISTED 8 FT. GROUND ROD WITH ACORN CLAMP. GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #8 AWG AND NO LARGER THAN #6 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM.
- PHOTOVOLTAIC MODULES ARE TO BE CONSIDERED NON-COMBUSTIBLE.
- PHOTOVOLTAIC INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE. WIRING MUST BE PERMANENTLY AND COMPLETELY HELD OFF THE ROOF SURFACE.
- ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.
- INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE UL 1741 LISTED.
- THE INSTALLATION OF EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE PERFORMED ONLY BY QUALIFIED PERSONS [NEC 690.4(C)]
- ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED (OR BETTER), INCLUDING ALL ROOF MOUNTED TRANSITION BOXES AND SWITCHES.
- ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250.
- SYSTEM GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.41.
- PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION IN ACCORDANCE WITH NEC 690.12
- DISCONNECTING MEANS SHALL BE LOCATED IN A VISIBLE, READILY ACCESSIBLE LOCATION WITHIN THE PV SYSTEM EQUIPMENT OR A MAXIMUM OF 10 FEET AWAY FROM THE SYSTEM [NEC 690.13(A)]
- ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC 690.31
- WORK CLEARANCES AROUND ELECTRICAL EQUIPMENT WILL BE MAINTAINED PER NEC 110.26(A)(1), 110.26(A)(2) AND 110.26(A)(3).
- ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED & IDENTIFIED IN ACCORDANCE WITH UL1703
- ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.
- IN ACCORDANCE WITH 2021 IFC 1205.5, 2018 IFC 1204.4, 2016 IFC 605.11.2 A CLEAR, BRUSH-FREE AREA OF 10FEET(3048MM) SHALL BE REQUIRED FOR ROOF-MOUNTED PHOTOVOLTAIC ARRAYS.

## VICINITY MAP



## HOUSE PHOTO



## CODE REFERENCES

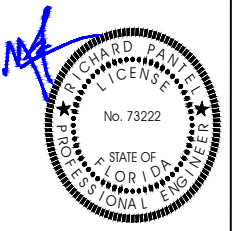
PROJECT TO COMPLY WITH THE FOLLOWING:

FLORIDA RESIDENTIAL CODE, 8TH EDITION 2023 (FRC)  
FLORIDA PLUMBING CODE, 8TH EDITION 2023 (FPC)  
FLORIDA BUILDING CODE, 8TH EDITION 2023 (FBC)  
FLORIDA MECHANICAL CODE, 8TH EDITION 2023 (FMC)  
2020 NATIONAL ELECTRICAL CODE  
FLORIDA FIRE PREVENTION CODE, 8TH EDITION 2023 (FFPC)

## PROFESSIONAL ENGINEER SEAL

### REVISIONS

DESCRIPTION	DATE	REV



Reviewed and approved  
Richard Pantel, P.E.  
FL Lic. No. 73222  
03/11/2026

DATE: 03/11/2026

### PROJECT NAME & ADDRESS

MARGUERITE  
STEARMAN RESIDENCE  
450 SE MARGARET DR,  
LAKE CITY, FL 32025

DRAWN BY

ESR

SHEET NAME

COVER SHEET

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

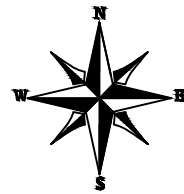
PV-1

# PROJECT DESCRIPTION:

14 X PEIMAR SOLAR: DR10H450M (FB) 450W PV MODULES  
 ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES  
 DC SYSTEM SIZE: 14 x 450 = 6.300 kW DC  
 AC SYSTEM SIZE: 01 x 5760 = 5.760 kW AC

EQUIPMENT SUMMARY  
 14 PEIMAR SOLAR: DR10H450M (FB) 450W MONO MODULES  
 14 SOLAREEDGE: U650B POWER OPTIMIZERS  
 01 SOLAREEDGE: DCA USE5700H-USMNB78 INVERTER

ROOF ARRAY AREA #1:- 279.12 SQ FT.  
 ROOF ARRAY AREA #2:- 46.52 SQ FT.  
 NOTE: VISIBLE, LOCKABLE, LABELED AC DISCONNECT  
 LOCATED WITHIN 10' OF UTILITY METER



(E) DETACHED STRUCTURE (TYP.)  
 (E) TREES

ROOF #2  
 (02) PEIMAR SOLAR: DR10H450M (FB) 450W  
 MONO MODULES WITH  
 SOLAREEDGE: U650B POWER OPTIMIZERS

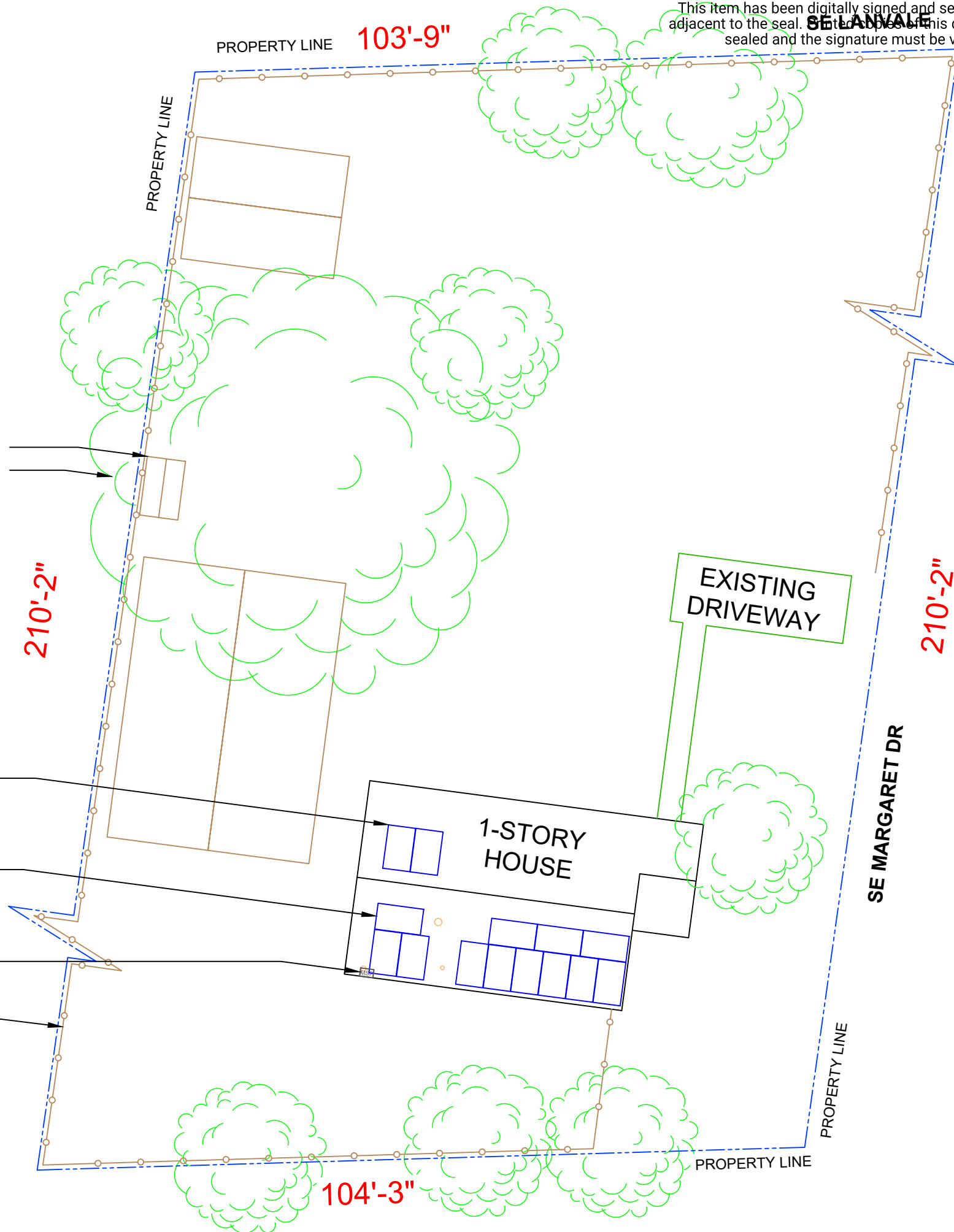
ROOF #1  
 (12) PEIMAR SOLAR: DR10H450M (FB) 450W  
 MONO MODULES WITH  
 SOLAREEDGE: U650B POWER OPTIMIZERS

(E) MAIN SERVICE PANEL  
 (INSIDE)

(E) FENCE

## 1 | SITE PLAN

PV-2 | SCALE: 1/16" = 1'-0"

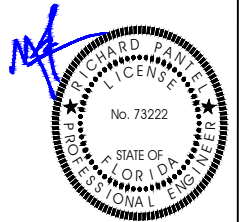


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**ESR**

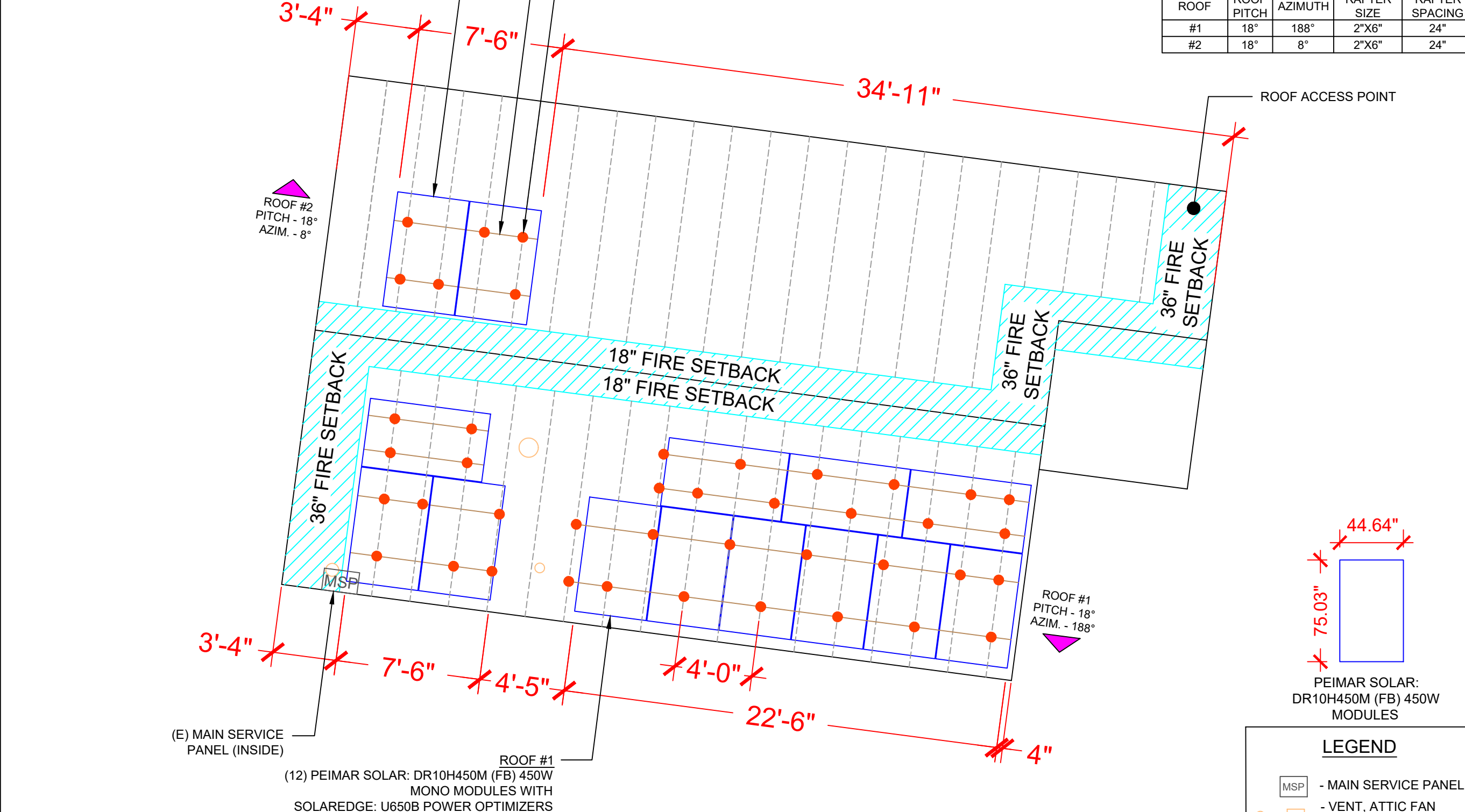
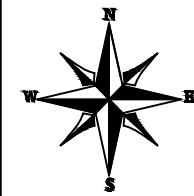
SHEET NAME  
**SITE PLAN**

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

SHEET NUMBER  
**PV-2**

**MODULE TYPE, DIMENSIONS & WEIGHT**

NUMBER OF MODULES = 14 MODULES  
 MODULE TYPE = PEIMAR SOLAR: DR10H450M (FB) 450W MONO MODULES  
 MODULE WEIGHT = 52.9 LBS / 24.0 KG.  
 MODULE DIMENSIONS = 75.03" x 44.64" = 23.26 SF



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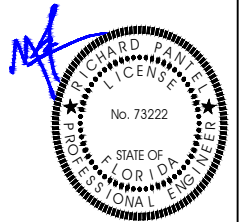
ROOF	# OF MODULES	AREA (Sq. Ft.)	AREA (Sq. Ft.)	AREA COVERED BY ARRAY (%)
#1	12	279.12	503.50	55
#2	02	46.52	563.26	8
TOTAL	14	325.64	1126.53	29

ROOF DESCRIPTION				
ROOF TYPE		ASPHALT SHINGLE		
ROOF	ROOF PITCH	AZIMUTH	RAFTER SIZE	RAFTER SPACING
#1	18°	188°	2"X6"	24"
#2	18°	8°	2"X6"	24"



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 ESR

SHEET NAME  
 ROOF PLAN &  
 MODULES

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-3

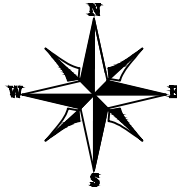
**LEGEND**

- MSP - MAIN SERVICE PANEL
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- - ROOF ATTACHMENT
- - RAFTER

**1 ROOF PLAN & MODULES**

PV-3 SCALE: 3/16" = 1'-0"

STRING LEGENDS	
	STRING #1
	STRING #2



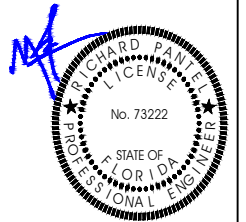
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BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULES	14	PEIMAR SOLAR: DR10H450M (FB) 450W MODULE
POWER OPTIMIZERS	14	SOLAREEDGE: U650B POWER OPTIMIZERS
INVERTER	01	SOLAREEDGE: DCA USE5700H-USMNB78 INVERTER
JUNCTION BOXES	2	JUNCTION BOXES - (JB-1.2)
RAILS	10	UNIRAC NXT UMount RAILS
SPLICES	4	SPLICE KIT
MID MODULE CLAMPS	18	MID MODULE CLAMPS
END CLAMPS	20	END CLAMPS / STOPPER SLEEVE
ATTACHMENTS	42	UNIRAC STRONGHOLD ATTACHMENTS



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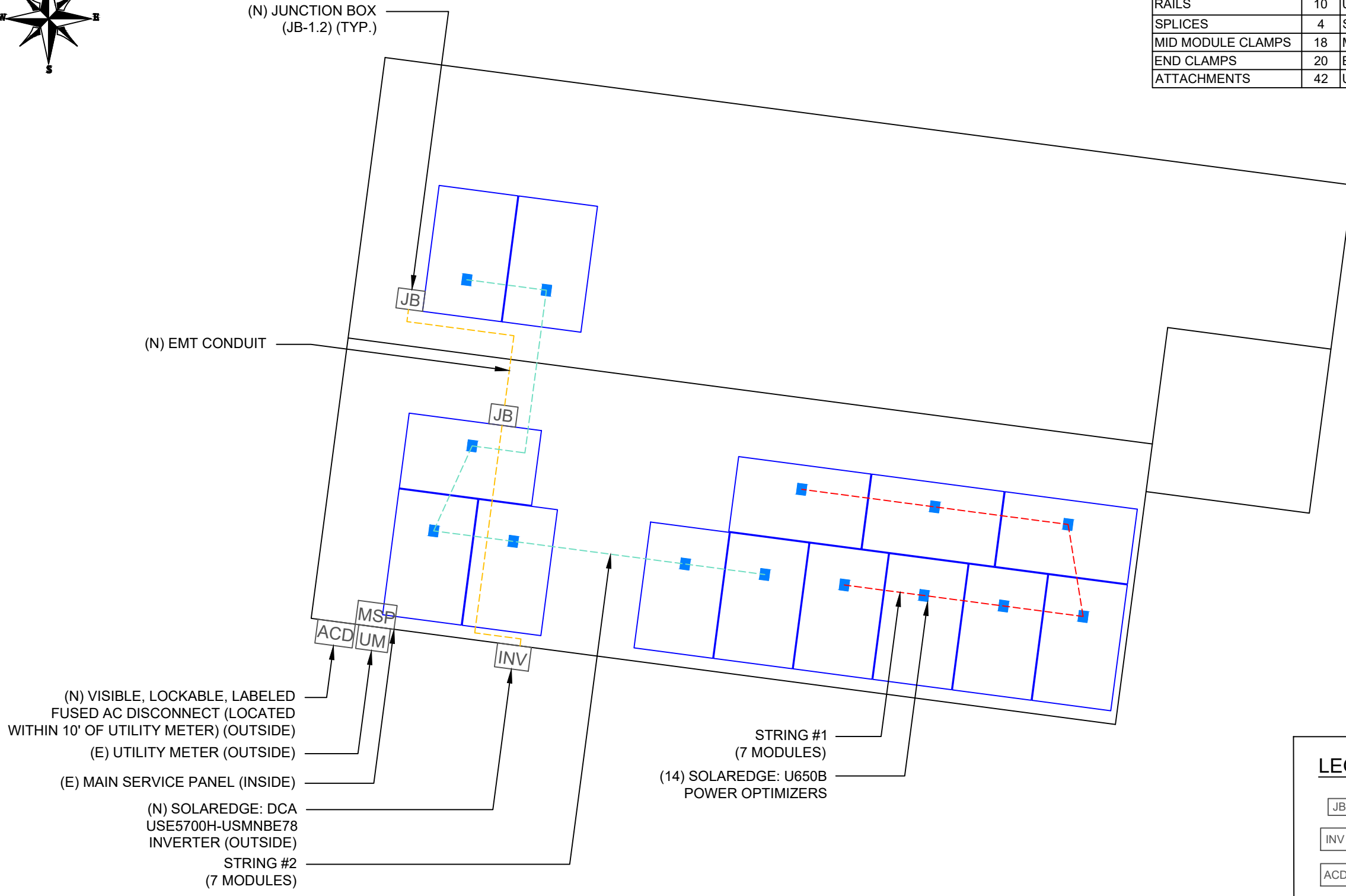
MARGUERITE  
 STEARMAN RESIDENCE  
 450 SE MARGARET DR,  
 LAKE CITY, FL 32025

DRAWN BY  
 ESR

SHEET NAME  
 ELECTRICAL PLAN







SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-4



- (N) VISIBLE, LOCKABLE, LABELED FUSED AC DISCONNECT (LOCATED WITHIN 10' OF UTILITY METER) (OUTSIDE)
- (E) UTILITY METER (OUTSIDE)
- (E) MAIN SERVICE PANEL (INSIDE)
- (N) SOLAREEDGE: DCA USE5700H-USMNB78 INVERTER (OUTSIDE)
- STRING #2 (7 MODULES)

STRING #1 (7 MODULES)  
 (14) SOLAREEDGE: U650B POWER OPTIMIZERS

LEGEND	
	- JUNCTION BOX
	- INVERTER
	- AC DISCONNECT
	- UTILITY METER
	- MAIN SERVICE PANEL
	- CONDUIT

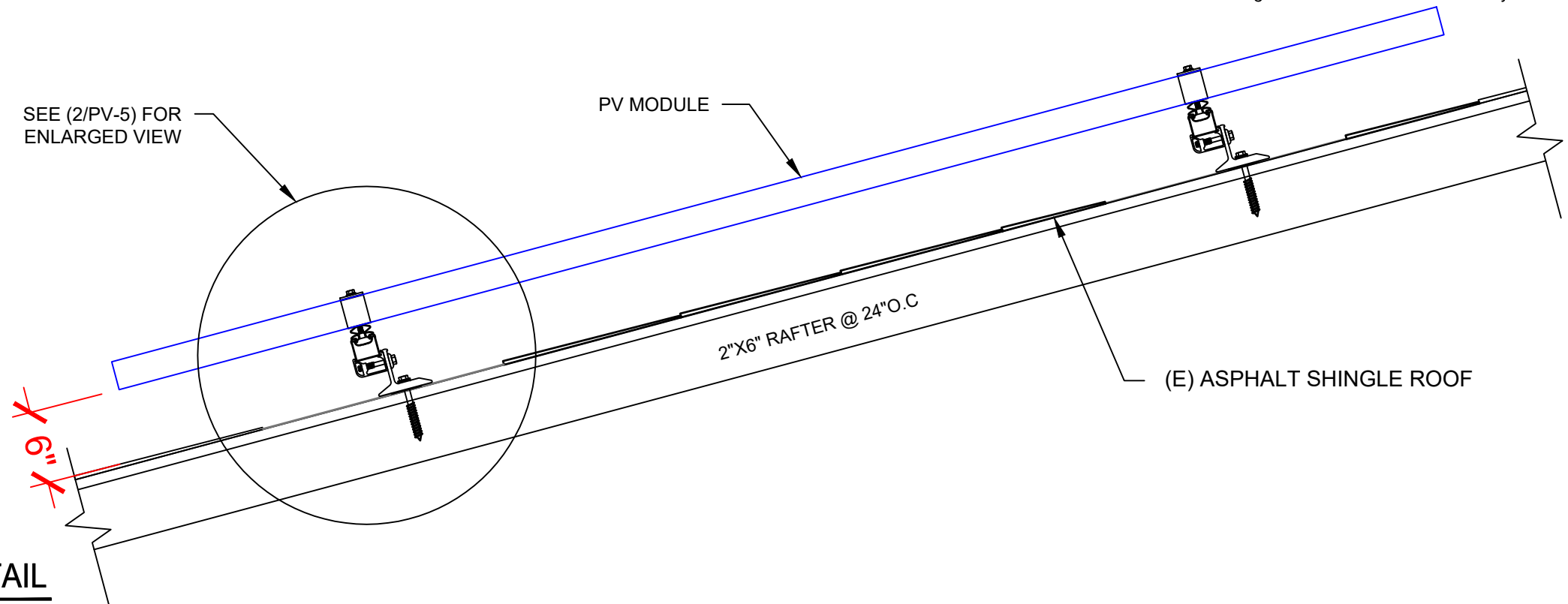
**DESCRIPTION:** CANTILEVER  
 CANTILEVER CONSIDER 1/3<sup>RD</sup> OF ROOF ATTACHMENT SPACING.  
 ATTACHMENT SPACING= 48" O/C  
 CANTILEVER = 16"

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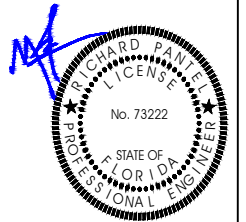


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**1** | **ATTACHMENT DETAIL**  
 PV-5 | SCALE: NTS



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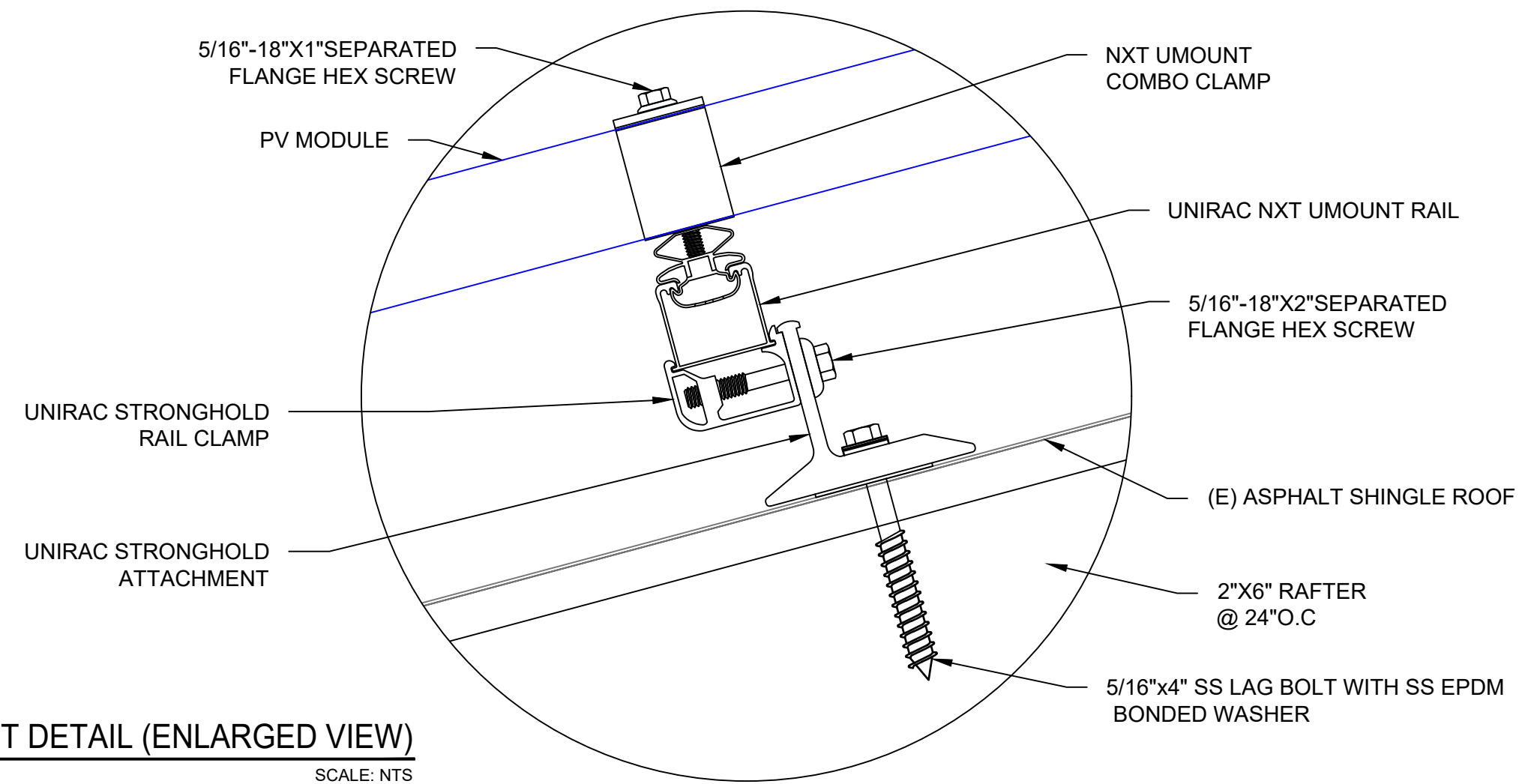
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DRAWN BY  
**ESR**

SHEET NAME  
**STRUCTURAL DETAIL**

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

SHEET NUMBER  
**PV-5**



**2** | **ATTACHMENT DETAIL (ENLARGED VIEW)**  
 PV-5 | SCALE: NTS

DC SYSTEM SIZE: 14 x 450 = 6.300KW DC  
 AC SYSTEM SIZE: 01 x 5760 = 5.760KW AC

- (14) PEIMAR SOLAR: DR10H450M (FB) 450W MONO MODULES WITH
- (14) SOLAREEDGE: U650B POWER OPTIMIZERS
- (01) SOLAREEDGE: DCA USE5700H-USMNB78 INVERTER
- (02) STRING OF 07 MODULES ARE CONNECTED IN SERIES

**INTERCONNECTION NOTES:**

1. INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.59].
2. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9], [NEC 230.95].
3. ALL EQUIPMENT TO BE RATED FOR BACKFEEDING.
4. PV BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUSBAR RELATIVE TO THE MAIN BREAKER.

**DISCONNECT NOTES:**

1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS)
2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
3. DISCONNECT MEANS AND THEIR LOCATION SHALL BE IN ACCORDANCE WITH [NEC 225.31] AND [NEC 225.32].

**RACKING NOTE:**

1. BOND EVERY OTHER RAIL WITH #6 BARE COPPER

**INSTALLER / ELECTRICIAN NOTE:**

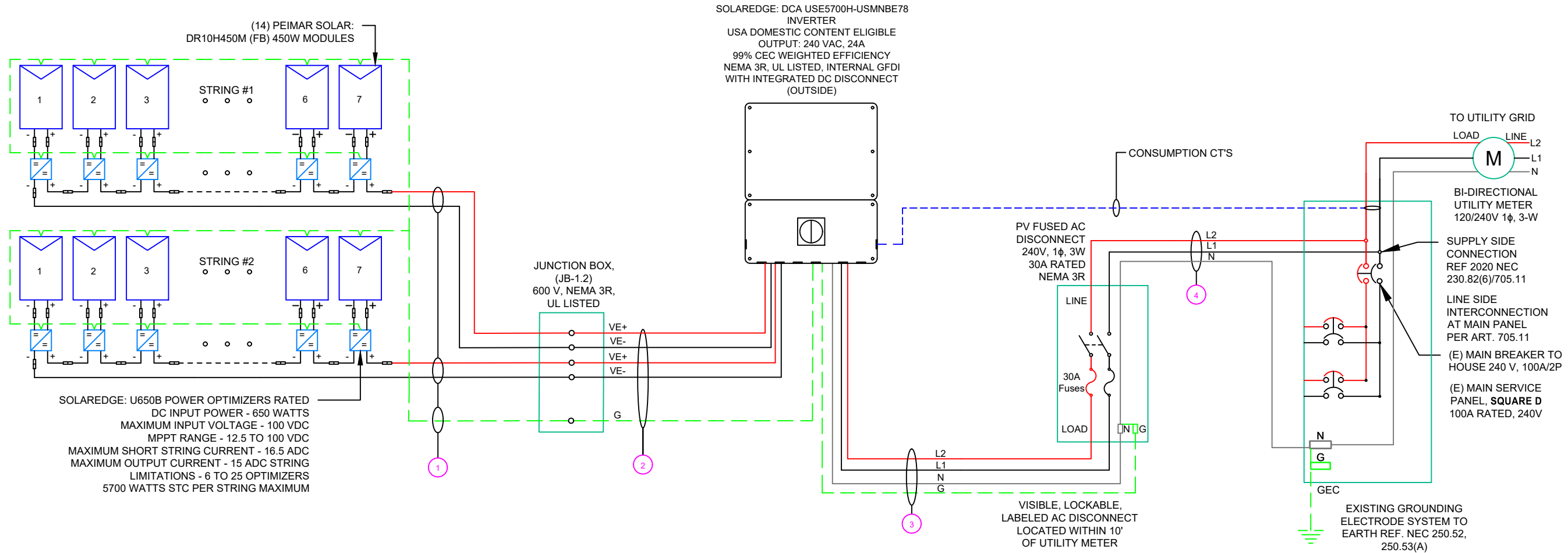
EC IS TO MEASURE VOLTAGE BEFORE STARTING WORK. IF RESULT IS ANY OTHER VOLTAGE MEASURED THAN 120/240V IS OBSERVED, DO NOT PROCEED. CONTACT ENGINEER.

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**GROUNDING & GENERAL NOTES:**

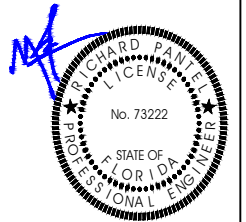
1. ADDITIONAL GROUNDING ELECTRODES AND GROUNDING ELECTRODE CONDUCTORS SHALL BE PERMITTED TO BE INSTALLED IN ACCORDANCE WITH 250.52 AND 250.54. GROUNDING ELECTRODES SHALL BE PERMITTED TO BE CONNECTED DIRECTLY TO THE PV MODULE FRAME(S) OR SUPPORT STRUCTURE PER [NEC 690.47(B)]
2. PV INVERTER IS UNGROUNDED, TRANSFORMER-LESS TYPE.
3. DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING ELECTRODE
4. ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
5. JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - JUNCTION BOX DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
6. AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT.
7. RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS SHOULD BE INSTALLED MORE THAN 7/8" ABOVE THE ROOF USING CONDUIT SUPPORTS.

QTY	CONDUCTOR INFORMATION	CONDUIT TYPE	CONDUIT SIZE
① (4)	CU#10AWG - PV WIRE/USE-2	N/A	N/A
(1)	CU#6AWG - BARE COPPER IN FREE AIR		
② (4)	CU#10AWG - THWN-2 (VE+,VE-)	EMT OR LFMC IN ATTIC	3/4"
(1)	CU#10AWG - THWN-2 GND		
③ (2)	CU#6AWG - THWN-2 (L1,L2)	EMT, PVC	3/4"
(1)	CU#6AWG - THWN-2 N		
(1)	CU#6AWG - THWN-2 GND		
④ (2)	CU#6AWG - THWN-2 (L1,L2)	EMT, PVC	3/4"
(1)	CU#6AWG - THWN-2 N		



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DRAWN BY  
 ESR

SHEET NAME  
 ELECTRICAL LINE DIAGRAM

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-6

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	SOLAREEDGE: DCA USE5700H-USMNB78 INVERTER
NOMINAL AC POWER	5.760 KW
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	24A

(N) SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	PEIMAR SOLAR:DR10H450M (FB) 450 W MODULE
VMP (V)	33.91
IMP (A)	13.27
VOC (V)	41.18
ISC (A)	13.85
TEMP. COEFF. VOC %/°C	-0.29
TEMP. COEFF. PMAX %/°C	-0.37
MODULE DIMENSION	75.03"L x 44.64"W x 1.37"D (In Inch)

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AMBIENT TEMPERATURES	
AMBIENT TEMP (HIGH TEMP 2% DERATED)	71°
RECORD LOW TEMP	-5°
TEMP ADJUSTMENT FOR INSTALLATION METHOD (°C)	35°

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
.80	4-6
.70	7-9
.50	10-20



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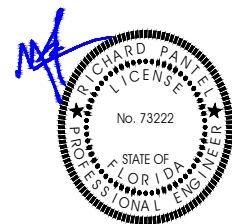
DC FEEDER CALCULATIONS																					
CIRCUIT ORIGIN	CIRCUIT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OC PD SIZE (A)	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(1)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(C)(1)	90°C AMPACITY DERATED (A)	AMPACITY CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
STRING 1	JUNCTION BOX	480	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	37	2	40	0.91	1	36.4	PASS	42	1.24	0.326	N/A	#N/A
STRING 2	JUNCTION BOX	480	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	37	2	40	0.91	1	36.4	PASS	34	1.24	0.264	N/A	#N/A
JUNCTION BOX	INVERTER	480	15.00	18.75	20	CU #10 AWG	CU #10 AWG	35	PASS	37	4	40	0.91	0.8	29.12	PASS	24	1.24	0.186	3/4" EMT	19.79%

String 1 Voltage Drop	0.512
String 2 Voltage Drop	0.450

AC FEEDER CALCULATIONS																						
CIRCUIT ORIGIN	CIRCUIT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OC PD SIZE (A)	NEUTRAL SIZE	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(1)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(C)(1)	90°C AMPACITY DERATED (A)	AMPACITY CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
INVERTER	AC DISCONNECT	240	24	30	30	CU #6 AWG	CU #6 AWG	CU #6 AWG	65	PASS	37	2	75	0.91	1	68.25	PASS	5	0.491	0.049	3/4" EMT	38.05%
AC DISCONNECT	POI	240	24	30	30	CU #6 AWG	N/A	CU #6 AWG	65	PASS	37	2	75	0.91	1	68.25	PASS	5	0.491	0.049	3/4" EMT	28.54%

CUMULATIVE VOLTAGE	0.540
--------------------	-------

REVISIONS		
DESCRIPTION	DATE	REV



Reviewed and approved  
Richard Pantel, P.E.  
FL Lic. No. 73222  
03/11/2026

DATE: 03/11/2026

PROJECT NAME & ADDRESS

MARGUERITE  
STEARMAN RESIDENCE  
  
450 SE MARGARET DR,  
LAKE CITY, FL 32025

DRAWN BY

ESR

SHEET NAME

WIRING CALCULATIONS

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-7

#### ELECTRICAL NOTES

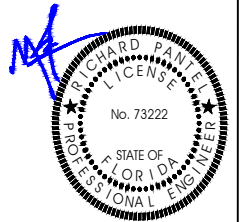
- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE RATED UPTO 600V FOR RESIDENTIAL AND 1000V FOR COMMERCIAL AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- WHERE SIZES OF JUNCTION BOX, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
- MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
- TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.

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LUNEX POWER INC.  
 4721 N GRADY AVE  
 TAMPA FL 33614  
 LIC #: CVC57085  
 PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV



Reviewed and approved  
 Richard Pantel, P.E.  
 FL Lic. No. 73222  
 03/11/2026

DATE: 03/11/2026

PROJECT NAME & ADDRESS

MARGUERITE  
 STEARMAN RESIDENCE  
 450 SE MARGARET DR,  
 LAKE CITY, FL 32025

DRAWN BY  
 ESR

SHEET NAME  
 FAULT CURRENT  
 CALCULATIONS

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-7A



**FAULT - MSP**

**I<sub>total s.c. (L-L)</sub>** 22,000 AMPS  
**I<sub>total s.c. (L-N)</sub>** 33,000 AMPS  
**Voltage (L-L)** 240 V

**CONDUCTOR RUN - C1**

**LENGTH** 17 FT  
**SIZE** 6  
**QTY** 1  
 (per phase)  
**TYPE** Three Single Conductors  
**CONDUIT** Steel  
**WIRE** Cu, 600 V

CONDUCTOR



**FAULT - AC DISCONNECT**

**I<sub>total s.c. (L-L)</sub>** 9,627 AMPS  
**I<sub>total s.c. (L-N)</sub>** 6,795 AMPS  
**Voltage (L-L)** 240 V

**CONDUCTOR RUN - C2**

**LENGTH** 5 FT  
**SIZE** 6  
**QTY** 1  
 (per phase)  
**TYPE** Three Single Conductors  
**CONDUIT** Steel  
**WIRE** Cu, 600 V

CONDUCTOR



**FAULT - INVERTER**

**I<sub>total s.c. (L-L)</sub>** 8,261 AMPS  
**I<sub>total s.c. (L-N)</sub>** 5,509 AMPS  
**Voltage (L-L)** 240 V

**CAUTION:  
AUTHORIZED SOLAR  
PERSONNEL ONLY!**

LABEL-1:  
LABEL LOCATION:  
AC DISCONNECT

**⚠ WARNING**  
**ELECTRICAL SHOCK HAZARD**  
TERMINALS ON THE LINE AND LOAD SIDES MAY  
BE ENERGIZED IN THE OPEN POSITION

LABEL- 2:  
LABEL LOCATION:  
INVERTER(S), AC/DC DISCONNECT(S),  
AC COMBINER PANEL (IF APPLICABLE).  
PER CODE(S): NEC 2020: 690.13(B)

**⚠ WARNING DUAL POWER SOURCE  
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM**

LABEL- 3:  
LABEL LOCATION:  
UTILITY SERVICE METER AND MAIN  
SERVICE PANEL.  
PER CODE(S): NEC 2020: 705.12(C)

**⚠ WARNING**  
**TURN OFF PHOTOVOLTAIC AC  
DISCONNECT PRIOR TO  
WORKING INSIDE PANEL**

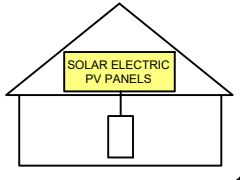
LABEL- 4:  
LABEL LOCATION:  
MAIN SERVICE PANEL  
SUBPANEL  
MAIN SERVICE DISCONNECT  
COMBINER  
CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)

**⚠ WARNING**  
**POWER SOURCE OUTPUT  
CONNECTION. DO NOT  
RELOCATE THIS  
OVERCURRENT DEVICE**

LABEL- 5:  
LABEL LOCATION:  
ADJACENT TO PV BREAKER AND ESS  
OCPD (IF APPLICABLE).  
PER CODE(S): NEC 2020: 705.12(B)(3)(2),

**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- 6:  
LABEL LOCATION:  
ON OR NO MORE THAN 1 M (3 FT) FROM THE SERVICE  
DISCONNECTING MEANS TO WHICH THE PV SYSTEMS  
ARE CONNECTED.  
PER CODE(S): NEC 2020: 690.56(C)

**PHOTOVOLTAIC  
AC DISCONNECT**

LABEL- 7:  
LABEL LOCATION:  
AC DISCONNECT  
CODE REF: NEC 690.13(B)

**PHOTOVOLTAIC  
AC DISCONNECT**

NOMINAL OPERATING AC VOLATGE	<b>240 V</b>
RATED AC OUTPUT CURRENT	<b>24.00 A</b>

LABEL- 8:  
LABEL LOCATION:  
AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF  
INTERCONNECTION.  
PER CODE(S): NEC 2020: 690.54

**MAIN PHOTOVOLTAIC  
SYSTEM DISCONNECT**

LABEL- 9:  
LABEL LOCATION:  
MAIN SERVICE DISCONNECT (ONLY IF MAIN SERVICE DISCONNECT IS PRESENT)  
CODE REF: NEC 690.13(B)

**MAXIMUM VOLTAGE:** **480 V**

**MAXIMUM CIRCUIT CURRENT:** **30 A**

**MAXIMUM RATED OUTPUT  
CURRENT OF THE CHARGE  
CONTROLLER OR DC-TO-DC  
CONVERTER (IF INSTALLED):** **15 A**

LABEL- 10:  
LABEL LOCATION:  
INVERTER  
CODE REF: NEC 690.53

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**CAUTION: PHOTOVOLTAIC SYSTEM  
FOR SERVICE : LUNEX POWER  
813-540-8807**

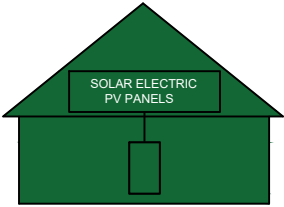
LABEL-11:

**WARNING: PHOTOVOLTAIC  
POWER SOURCE**

LABEL-12:  
LABEL LOCATION:  
INTERIOR AND EXTERIOR PV CONDUIT EVERY 10 FT,  
AT EACH TURN, ABOVE AND BELOW PENETRATIONS,  
ON EVERY JB/PULL BOX CONTAINING PV CIRCUITS.  
PER CODE(S): NEC 2020: 690.31(D)(2)

**EMERGENCY RESPONDER  
THIS SOLAR PV SYSTEM EQUIPPED  
WITH RAPID SHUTDOWN**

TURN RAPID SHUTDOWN  
SWITCH TO THE 'OFF'  
POSITION TO SHUTDOWN  
ENTIRE PV SYSTEM.



**THE LABEL SHALL BE REFLECTIVE, WITH ALL LETTERS CAPITALIZED AND HAVING  
A MINIMUM HEIGHT OF 3/8 IN. (9.5 MM), IN WHITE ON A RED BACKGROUND.**

LABEL- 13:  
LABEL LOCATION:  
AC DISCONNECT  
CODE REF: NFPA 1 (11.12.2.1.1.1.1)  
1. THE RAPID SHUTDOWN LABEL SHALL BE LOCATED ON OR NO MORE  
THAN 3 FT (1 M) FROM THE SERVICE DISCONNECTING MEANS  
2. (HEIGHT OF LABEL IS 3/8 IN. (9.5 MM), IN WHITE ON A RED BACKGROUND)

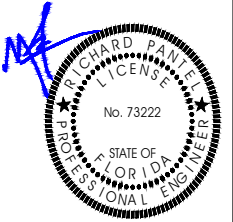
**RAPID SHUTDOWN SWITCH  
FOR SOLAR PV SYSTEM**

LABEL- 14:  
LABEL LOCATION:  
INSTALLED WITHIN 3' OF RAPID SHUT DOWN  
SWITCH PER CODE(S): NEC 2020: 690.56(C)(2)  
IFC 2018: 1204.5.3



LUNEX POWER INC.  
4721 N GRADY AVE  
TAMPA FL 33614  
LIC #: CVC57085  
PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV



Reviewed and approved  
Richard Pantel, P.E.  
FL Lic. No. 73222  
03/11/2026

DATE: 03/11/2026

PROJECT NAME & ADDRESS

**MARGUERITE  
STEARMAN RESIDENCE**  
  
450 SE MARGARET DR,  
LAKE CITY, FL 32025

DRAWN BY  
**ESR**

SHEET NAME  
**LABELS**

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

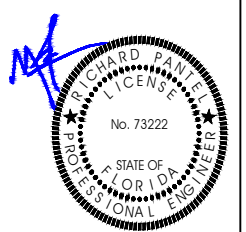
SHEET NUMBER  
**PV-8**

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DATE: 03/11/2026

PROJECT NAME & ADDRESS

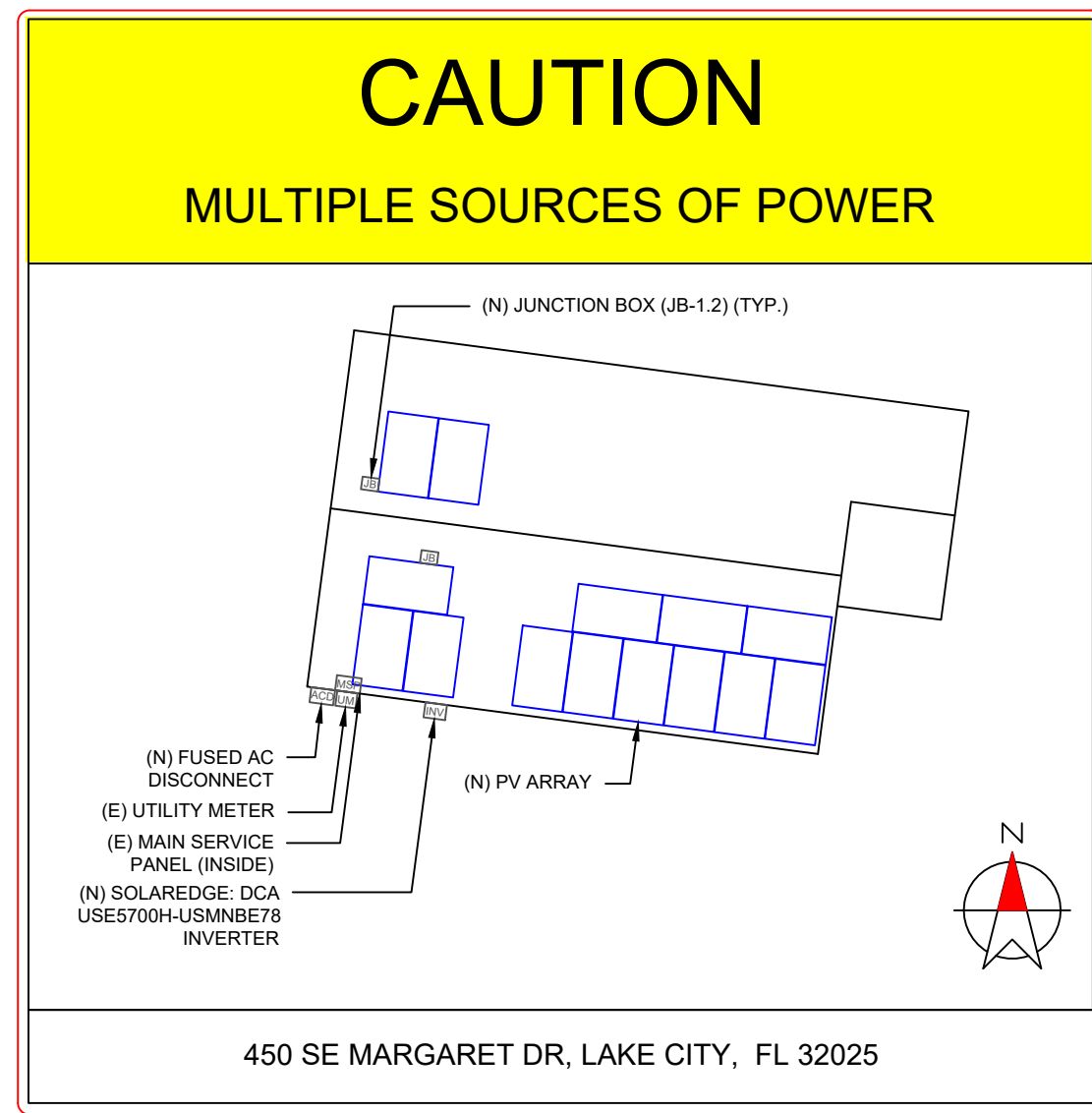
MARGUERITE  
 STEARMAN RESIDENCE  
 450 SE MARGARET DR,  
 LAKE CITY, FL 32025

DRAWN BY  
 ESR

SHEET NAME  
 PLACARD

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-9



**DIRECTORY**  
 PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN: NEC 690.56(A)(B), [NEC 705.10])

**LABELING NOTES:**

1. LABELS CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
2. LABELING REQUIREMENTS BASED ON THE 2020 NEC, OSHA STANDARD 1910.145, ANSI Z535.
3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21]
5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND; REFLECTIVE, AND PERMANENTLY AFFIXED [NEC 690.56(C)(1)(A)].

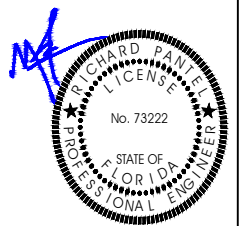
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# OPTIMIZER CHART



LUNEX POWER INC.  
 4721 N GRADY AVE  
 TAMPA FL 33614  
 LIC #: CVC57085  
 PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV



Reviewed and approved  
 Richard Pantel, P.E.  
 FL Lic. No. 73222  
 03/11/2026

DATE: 03/11/2026

PROJECT NAME & ADDRESS

**MARGUERITE  
 STEARMAN RESIDENCE**  
 450 SE MARGARET DR,  
 LAKE CITY, FL 32025

DRAWN BY  
**ESR**

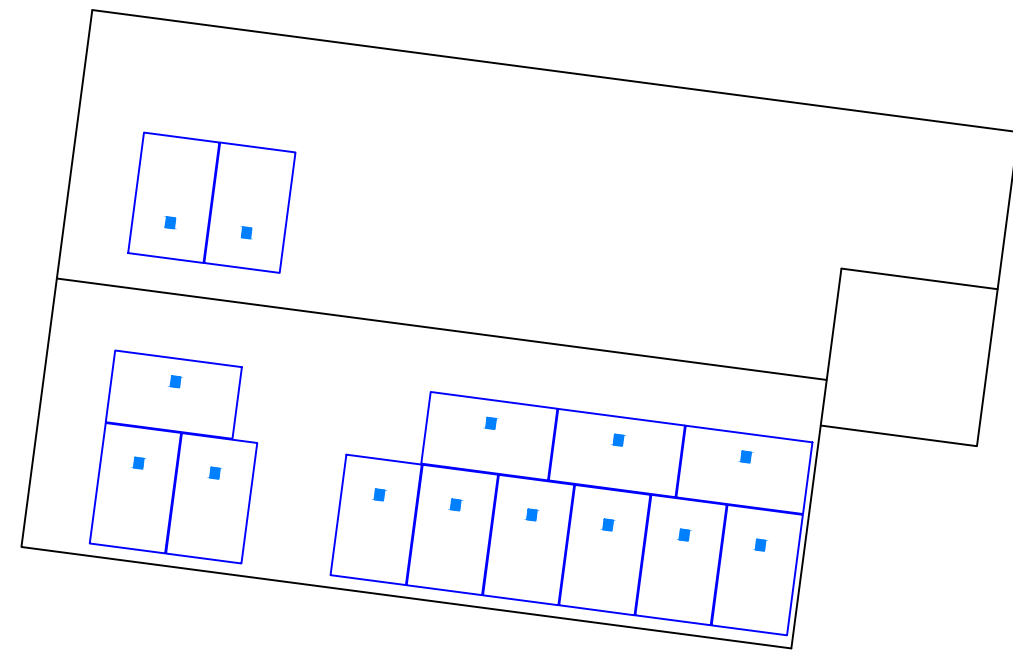
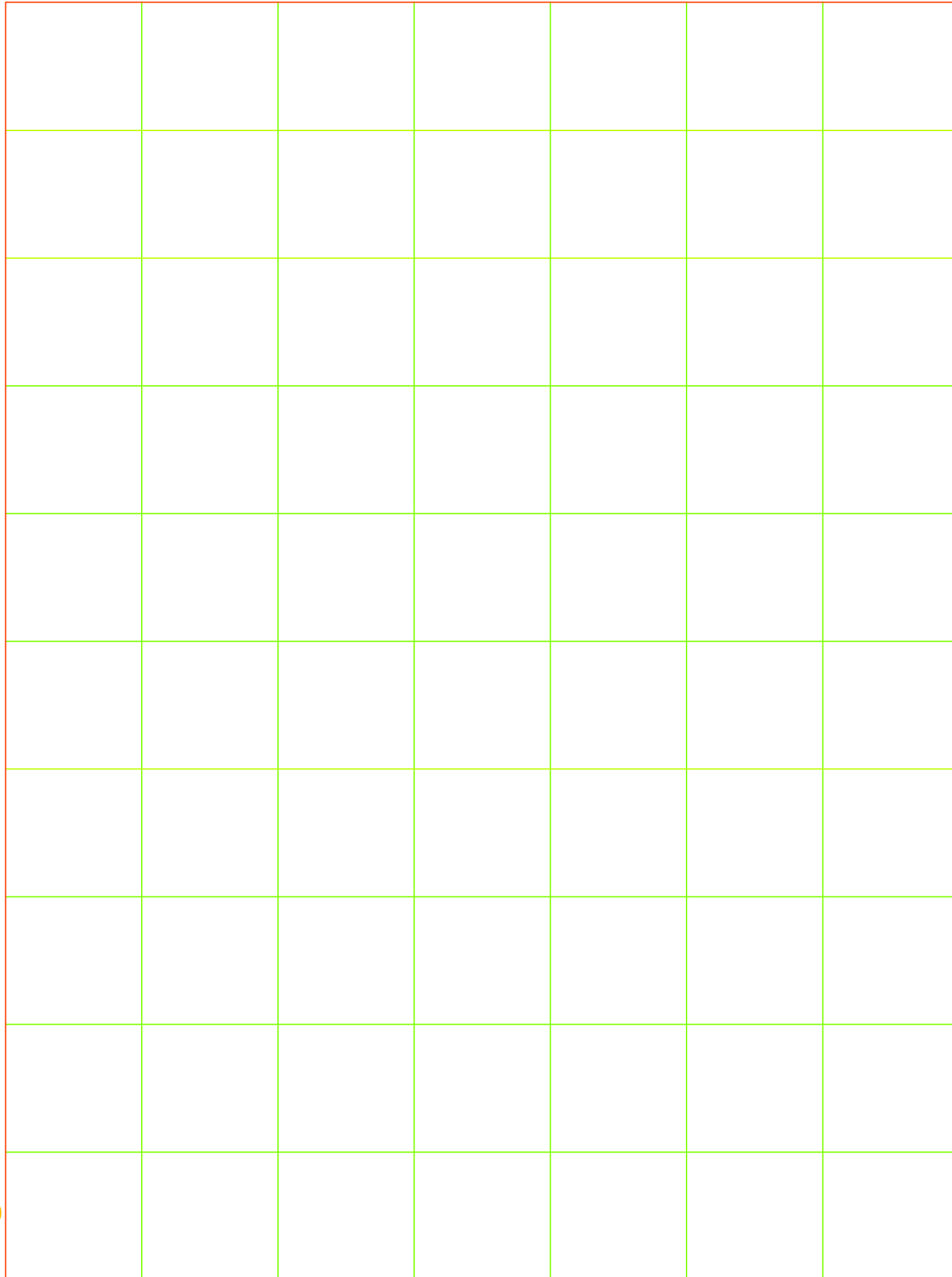
SHEET NAME  
**OPTIMIZER CHART**

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

SHEET NUMBER  
**PV-10**

1-10    11-20    21-30    31-40    41-50    51-60    61-70

1  
2  
3  
4  
5  
6  
7  
8  
9  
10





## DR10H450M (FB)

### HALF CELL LINE

● HALF-CELL MODULE

The 120 Half Cut module of the Half Cell Line combines the high production efficiency of the half cell technology with an excellent quality / price ratio.

The half-cell configuration improves the electrical distribution inside the panel to increase the yield of the product. For these reasons, the Half Cell Line is suitable not only for industrial installations but also for residential and commercial installations.


**30** YEAR LINEAR POWER WARRANTY  
**25** YEAR PRODUCT WARRANTY

 **PERC TECHNOLOGY**


 **ANTI-REFLECTIVE GLASS**

 **QBE INSURANCE**  
Product Liability Insurance QBE

#### Cells

 120 CELLS  
MONO gBB / 10BB M10 HALF | PERC  
182 x 91 mm / 7.16 x 3.58"

#### Frame

 COMPACT AND STURDY | 35 mm  
ANCHORABLE ALSO ON THE SHORT SIDE <sup>5)</sup>

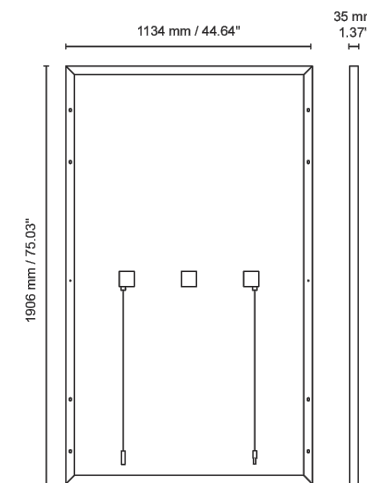
#### Electrical Characteristics (STC) <sup>1)</sup>

	DR10H450M (FB)
Nominal Output (P <sub>max</sub> ) <sup>2)</sup>	450 W
Sorting Tolerance	0/+5 W
Voltage at P <sub>max</sub> (V <sub>mp</sub> )	33.91 V
Current at P <sub>max</sub> (I <sub>mp</sub> )	13.27 A
Open Circuit Voltage (V <sub>oc</sub> ) <sup>2)</sup>	41.18 V
Short Circuit Current (I <sub>sc</sub> ) <sup>2)</sup>	13.85 A
Maximum System Voltage	1500 V
Maximum Series Fuse Rating	25 A
Module Efficiency	20.82 %
Protection class against electric shock	Class II

#### Mechanical Characteristics

Solar Cells	120 M10 HALF monocrystalline PERC
Solar Cells Size	182 x 91 mm / 7.16 x 3.58"
Front Cover	3.2 mm / 0.13" thick, low iron tempered glass
Back Cover	TPT (Tedlar-PET-Tedlar)
Encapsulant	EVA (Ethylene vinyl acetate)
Frame	Anodized aluminium alloy, double wall
Frame finishing	Black
Backsheet finishing	Black
Diodes	3 Bypass diodes serviceable
Junction Box	IP68 rated
Connector	MC4 or compatible connector
Cables Length	1200 mm / 47.24"
Cables Section	4.0 mm <sup>2</sup> / 0.006 in <sup>2</sup>
Dimensions	1906 x 1134 x 35 mm / 75.03 x 44.64 x 1.37"
Weight	24 Kg / 52.9 lbs
Max Load (Test Load) - SF	5400 Pa - 1.5 <sup>3)</sup>

#### Dimensions



1. STC: (Standard Test Condition) Irradiance: 1000W/m<sup>2</sup>, Module Temperature 25°C, Air Mass 1.5

2. P<sub>max</sub>, V<sub>oc</sub>, I<sub>sc</sub> measurement tolerance: ±3%

3. NMOT: Nominal Module Operating Temperature: Irradiance 800W/m<sup>2</sup>, Air 20°C, Wind speed 3m/s

## HALF CELL LINE

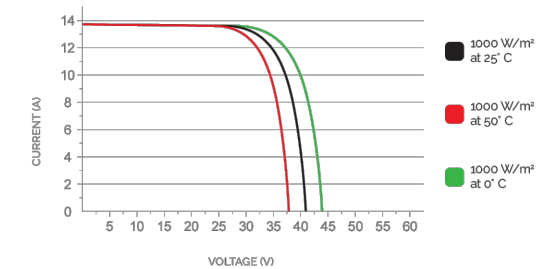
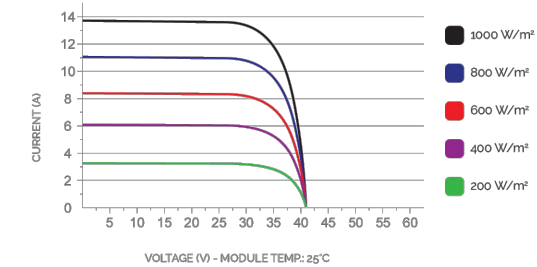
#### Temperature Characteristics

NMOT <sup>3)</sup>	45±2 °C
Temperature Coefficient of P <sub>max</sub>	-0.37 %/°C
Temperature Coefficient of V <sub>oc</sub>	-0.29 %/°C
Temperature Coefficient of I <sub>sc</sub>	0.05 %/°C
Operating Temperature	-40 °C ~ +85°C

#### Packaging <sup>4)</sup>

Pallet dimensions	1940 x 1130 x 1270 mm / 76.38 x 44.49 x 50.00"
Pieces per pallet	31
Weight	775 kg / 1708.58 lbs

#### Current/Voltage Characteristics



4. Pallets can be stacked up to two

5. Consult the installation manual for the relative mounting configurations

LUNEX POWER INC.  
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TAMPA FL 33614  
LIC #: CVC57085  
PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

#### PROJECT NAME & ADDRESS

**MARGUERITE  
STEARMAN RESIDENCE**  
450 SE MARGARET DR,  
LAKE CITY, FL 32025

DRAWN BY  
**ESR**

SHEET NAME  
**EQUIPMENT  
SPECIFICATION**

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

SHEET NUMBER  
**PV-11**



# Power Optimizer

## USA Domestic Content Eligible\*

For North America

U650 / U650B



POWER OPTIMIZER



### SolarEdge's USA-manufactured offering for PV power optimization at the module level

- Eligible for domestic content: SolarEdge USA-manufactured Power Optimizers\*, when paired with certain SolarEdge inverters, are intended to be eligible for the enhanced federal income tax credit for domestic content
- Specifically designed to work with SolarEdge inverters
- Supports high open circuit voltage (Voc) modules with U650B
- U650B provides improved design flexibility of multifaceted, complex roofs, with extended output voltage that reduces yield factor losses
- Superior efficiency (99.5%)
- Mitigates diverse types of module mismatch loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Faster installations with simplified wire management and easy assembly using a single bolt
- Compatible with a wide range of modules, including high-powered and bifacial PV modules
- Advanced safety:
  - Patented Sense Connect technology, designed to automatically detect and prevent potential electric arcs at the connector level before an arc is created
  - Patented SafeDC™ – module-level voltage shutdown, for installer and firefighter safety
  - Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)

\* Manufactured by SolarEdge with the intent to be eligible for inclusion under the elective safe harbor in calculating the Domestic Cost Percentage under the "Rooftop (MLPE)" category (under IRS Notice 2024-41). The PCBA, Electrical Parts, and Enclosure are domestically manufactured to meet the requirements of eligibility to be considered for the ITC domestic content bonus adder. SolarEdge does not provide tax and/or legal advice. You should consult with your own legal and/or tax advisor(s) regarding the eligibility of your project for the ITC or PTC, including the 10% domestic content bonus, to determine how the applicable rules apply to your particular project. The forward-looking statements in this datasheet are accurate as of the date herein and are subject to change. For more information, please contact your local SolarEdge sales representative.

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



## / Power Optimizer

### USA Domestic Content Eligible, for North America

U650 / U650B

	U650	U650B	Units
<b>INPUT</b>			
Rated Input DC Power <sup>(1)</sup>	650		W
Absolute Maximum Input Voltage (Voc)	60	100	Vdc
MPPT Operating Range	8 – 60	12.5 – 100	Vdc
Maximum Continuous Input Current	15		Adc
Maximum Short-Circuit Current (Isc) of Connected PV Module for SolarEdge Home Hub Single Phase Inverters	16.5		Adc
Maximum Short-Circuit Current (Isc) of Connected PV Module for SolarEdge Home Wave Single Phase Inverters	15		Adc
Maximum Short-Circuit Current (Isc) with Safety Factor <sup>(2)</sup>	25		Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.6		%
Overtolerance Category	II		
<b>OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)</b>			
Maximum Output Current	15		Adc
Maximum Output Voltage	60	80	Vdc
<b>OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR INVERTER OFF)</b>			
Safety Output Voltage per Power Optimizer	1 ± 0.1		Vdc
<b>STANDARD COMPLIANCE</b>			
Photovoltaic Rapid Shutdown System	CSA C22.2#330, NEC 2014 – 2023		
EMC	FCC Part 15 Class B, IEC 61000-6-2, IEC 61000-6-3		
Safety	CSA C22.2#107.1, IEC 62109-1 (Class II safety), UL 1741		
Material	UL 94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
<b>INSTALLATION SPECIFICATIONS</b>			
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 155 x 30 / 5.07 x 6.10 x 1.18	129 x 165 x 45 / 5.07 x 6.49 x 1.77	mm / in
Weight	720 / 16	790 / 1.74	gr / lb
Input Connector	MC4		
Input Wire Length	0.1 / 0.32		m / ft
Output Connector	MC4		
Output Wire Length	(+/-) 2.3, (-) 0.10 / (+) 7.54, (-) 0.32		m / ft
Operating Temperature Range <sup>(3)</sup>	-40 to +85		°C
Protection Rating	IP68 / NEMA6P		
Relative Humidity	0 – 100		%

(1) The Rated Power of the module at STC will not exceed the power optimizer's Rated Input DC Power. Modules with up to +5% power tolerance are allowed.  
 (2) The Maximum Isc with Safety Factor is ≥ 1.25 x the Maximum Isc of Connected PV Module. Adjusted for worst case conditions of ambient temperature, irradiance, bifacial gain, and so on, in accordance with NEC and CSA.  
 (3) Power derating is applied for ambient temperatures above +85°C / +185°F for U650 and for ambient temperatures above +75°C / 167°F for U650B. Refer to the Power Optimizers Temperature Derating technical note for details.

PV System Design Using a SolarEdge Inverter	SolarEdge Home Hub Single Phase	Three Phase for 208V Grid	Three Phase for 277/480V Grid	Units
Minimum String Length (Power Optimizers)	U650: 8 U650B: 6	10 <sup>(4)</sup> 8	18 14	
Maximum String Length (Power Optimizers)	25		50 <sup>(5)</sup>	
Maximum Usable Power Delivered per String	5700	6000	12,750	W
Maximum Allowed Connected Power per String <sup>(6)(7)</sup>	Inverters with Rated AC Power ≤ 5760W Inverters with Rated AC Power ≥ 7600W	Per the inverter's maximum input DC power <sup>(8)</sup> One string: 5700 Two strings or more: 6800	One string: 7200 Two strings or more: 7800	15,000 W
Parallel Strings of Different Lengths or Orientations	Yes			

(4) For the SE17.3KUS Three Phase Inverter and the SE50KUS Three Phase Inverter with Synergy Technology, the minimum string length is 11 Power Optimizers.  
 (5) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement.  
 (6) For the 208V grid, the maximum is permitted only when the difference in connected power between strings is 1000W or less.  
 (7) For the 240V or 277/480V grids, the maximum is permitted only when the difference in connected power between strings is 2000W or less.  
 (8) Refer to the Single String Design Guidelines application note for more details.

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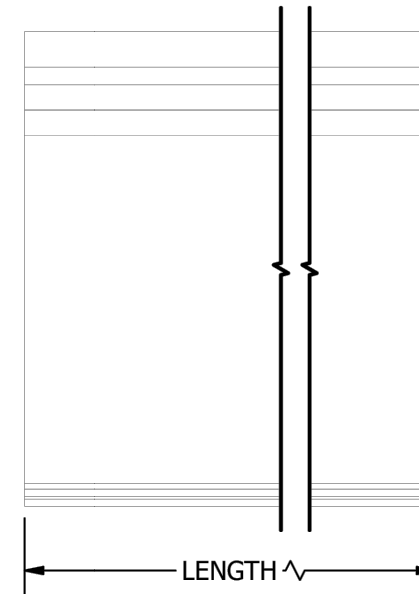
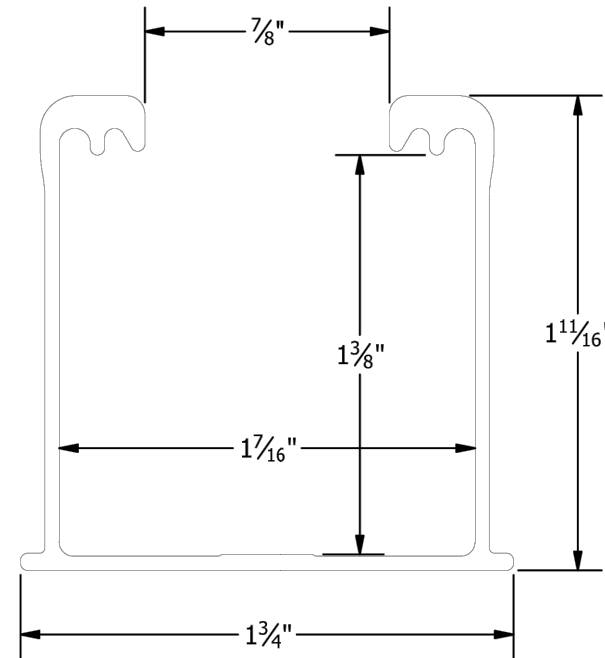
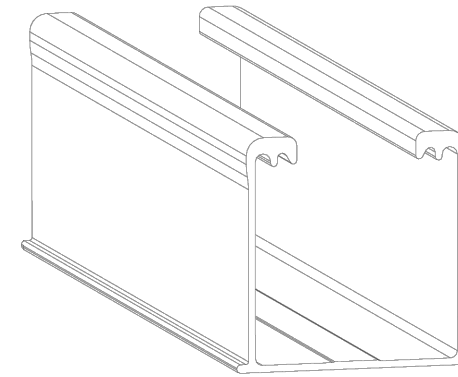
LUNEX POWER INC.  
 4721 N GRADY AVE  
 TAMPA FL 33614  
 LIC #: CVC57085  
 PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026		
PROJECT NAME & ADDRESS		
MARGUERITE STEARMAN RESIDENCE 450 SE MARGARET DR, LAKE CITY, FL 32025		

DRAWN BY		
ESR		
SHEET NAME		
EQUIPMENT SPECIFICATION		
SHEET SIZE		
ANSI B 11" X 17"		
SHEET NUMBER		
PV-13		

PART # TABLE		
P/N	DESCRIPTION	LENGTH
084RLM1	NXT UMount RAIL 84" MILL	84"
084RLD1	NXT UMount RAIL 84" DARK	84"
168RLM1	NXT UMount RAIL 168" MILL	168"
168RLD1	NXT UMount RAIL 168" DARK	168"
208RLM1	NXT UMount RAIL 208" MILL	208"
208RLD1	NXT UMount RAIL 208" DARK	208"
246RLM1	NXT UMount RAIL 246" MILL	246"
246RLD1	NXT UMount RAIL 246" DARK	246"
171RLM1	NXT UMount RAIL 171" MILL	171.50"
171RLD1	NXT UMount RAIL 171" DARK	171.50"
096RLM1	NXT UMount RAIL 96" MILL	96"
096RLD1	NXT UMount RAIL 96" DARK	96"
185RLM1	NXT UMount RAIL 185" MILL	185"
185RLD1	NXT UMount RAIL 185" DARK	185"



**UNIRAC**  
 1411 BROADWAY BLVD. NE  
 ALBUQUERQUE, NM 87102 USA  
 PHONE: 505.242.6411  
 WWW.UNIRAC.COM

PRODUCT LINE:	NXT UMount
DRAWING TYPE:	PART DETAIL
DESCRIPTION:	RAIL
REVISION DATE:	2/29/2024

DRAWING NOT TO SCALE  
 ALL DIMENSIONS ARE  
 NOMINAL

PRODUCT PROTECTED BY  
 ONE OR MORE US PATENTS  
 LEGAL NOTICE

NU-P01  
 SHEET



LUNEX POWER INC.  
 4721 N GRADY AVE  
 TAMPA FL 33614  
 LIC #: CVC57085  
 PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

PROJECT NAME & ADDRESS

MARGUERITE  
 STEARMAN RESIDENCE  
 450 SE MARGARET DR,  
 LAKE CITY, FL 32025

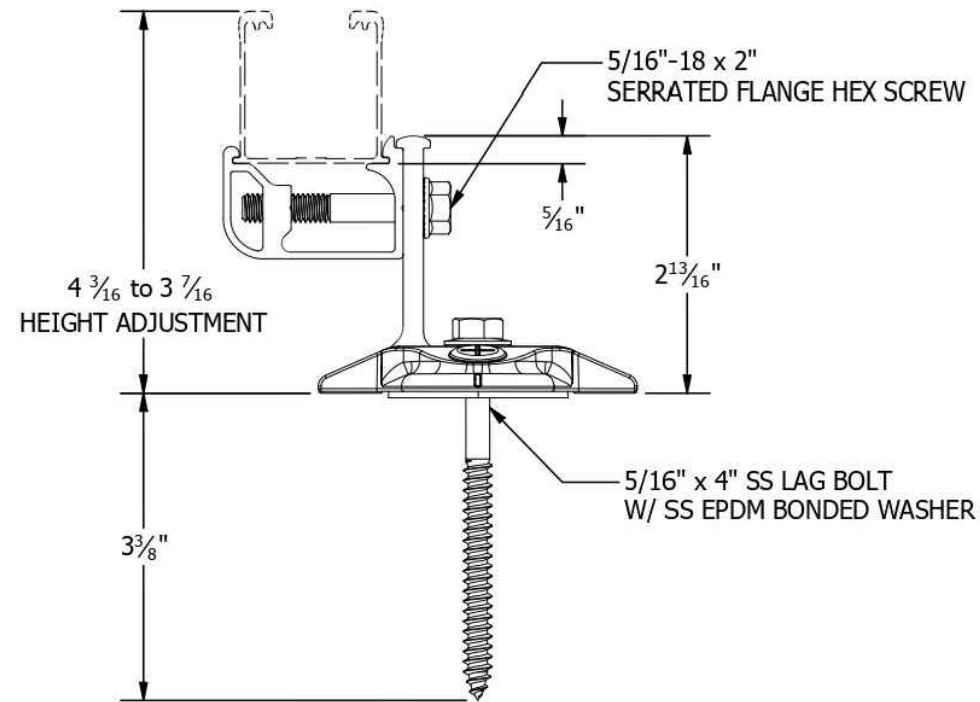
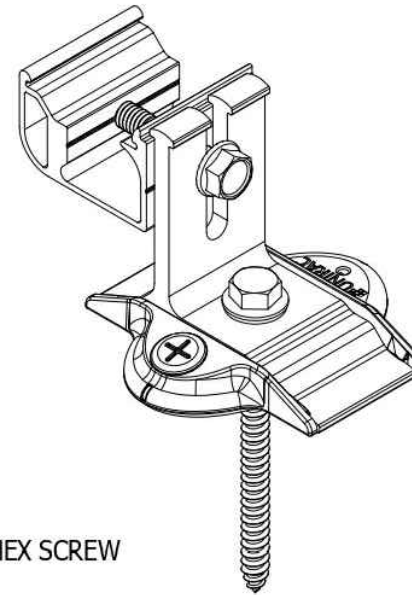
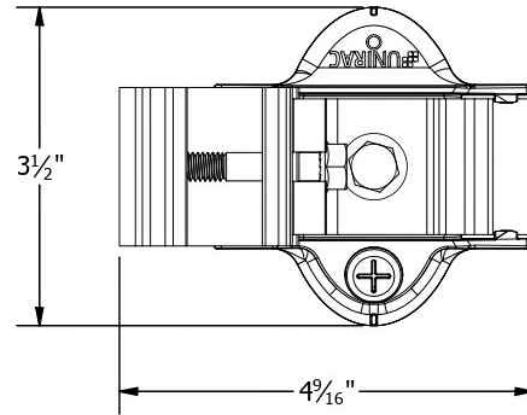
DRAWN BY  
 ESR

SHEET NAME  
 EQUIPMENT  
 SPECIFICATION

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-14

PART # TABLE	
P/N	DESCRIPTION
SHCPKTM1	STRONGHOLD ATT KIT COMP MILL
SHCPKTD1	STRONGHOLD ATT KIT COMP DRK
SHCPKTM1-NS	STRONGHOLD ATT COMP MILL (NS)
SHCPKTD1-NS	STRONGHOLD ATT COMP DRK (NS)



**UNIRAC**  
 1411 BROADWAY BLVD. NE  
 ALBUQUERQUE, NM 87102 USA  
 PHONE: 505.242.6411  
 WWW.UNIRAC.COM

PRODUCT LINE: NXT UMount  
 DRAWING TYPE: PARTS ASSEMBLY  
 DESCRIPTION: STRONGHOLD ATTACHMENT  
 REVISION DATE: 11/17/2022

DRAWING NOT TO SCALE  
 ALL DIMENSIONS ARE NOMINAL

PRODUCT PROTECTED BY ONE OR MORE US PATENTS  
 LEGAL NOTICE

NU-A04  
 SHEET



LUNEX POWER INC.  
 4721 N GRADY AVE  
 TAMPA FL 33614  
 LIC #: CVC57085  
 PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

PROJECT NAME & ADDRESS

MARGUERITE STEARMAN RESIDENCE  
 450 SE MARGARET DR,  
 LAKE CITY, FL 32025

DRAWN BY  
 ESR

SHEET NAME  
 EQUIPMENT SPECIFICATION

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-15



REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

PROJECT NAME & ADDRESS

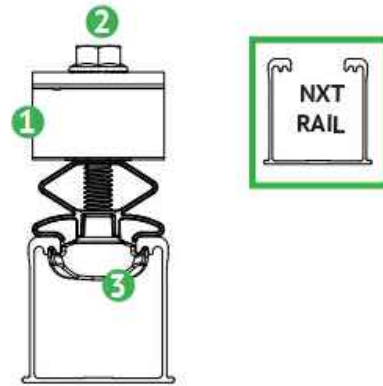
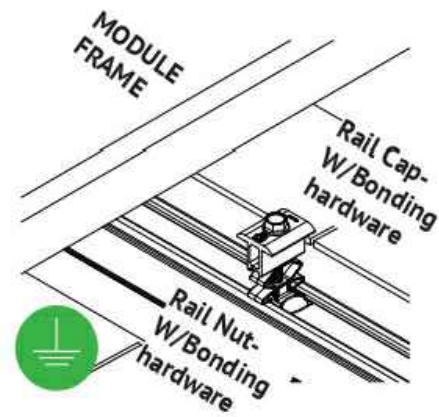
MARGUERITE  
STEARMAN RESIDENCE  
450 SE MARGARET DR,  
LAKE CITY, FL 32025

DRAWN BY  
ESR

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"

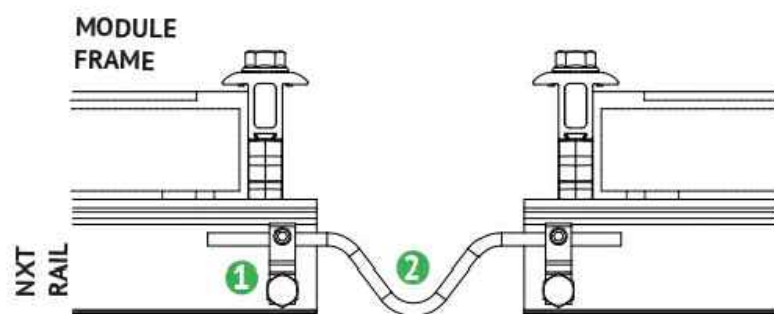
SHEET NUMBER  
PV-16



### BONDING COMBO MID-END CLAMP ASSEMBLY

- 1 Aluminum combo mid-end clamp cap with stainless steel bonding pins that pierce module frame anodization to bond module to module through clamp
- 2 Stainless steel bolt bonds aluminum clamp to stainless steel Hex bolt
- 3 Aluminum combo mid-end clamp rail nut with stainless steel bonding pins that pierce rail anodization to bond module to module through clamp

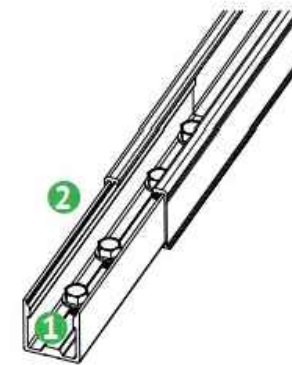
**NOTE:** See Page 19 for installation details.



### BONDING BETWEEN THERMAL BREAKS

- 1 Lug is connected at the end of each thermal break to the rail.
- 2 Solid copper wire is connected across the gap to bond the two ends.

**NOTE:** See Page 5 for installation details.

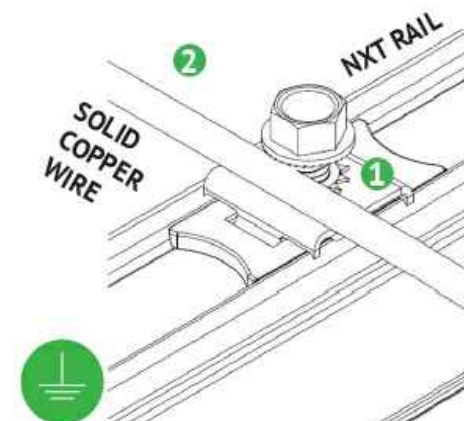


### BONDING RAIL SPLICE

- 1 Bonding Hardware creates bond between Splice bar and each rail section.
- 2 Aluminum splice bar spans across rail gap to create rail to rail bond. Rail on at least one side of splice will be grounded.

**NOTE:**

- See Page 15 for installation details
- Splice certified for single-use only



### RACK SYSTEM GROUNDING

- 1 Tabs on the stainless-steel washer pierce anodization on the rail to bond rail to ground wire.
- 2 Solid copper wire connected to lug is routed to provide final system ground connection.

**NOTE:** See Page 16 for installation details and alternate racking system grounding methods.



REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

PROJECT NAME & ADDRESS

MARGUERITE  
STEARMAN RESIDENCE

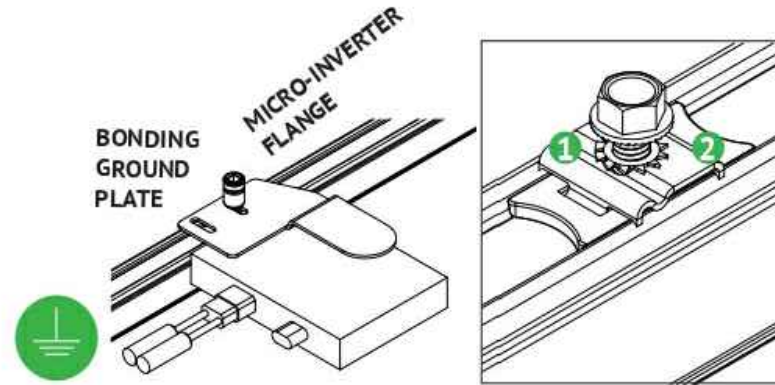
450 SE MARGARET DR,  
LAKE CITY, FL 32025

DRAWN BY  
ESR

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"

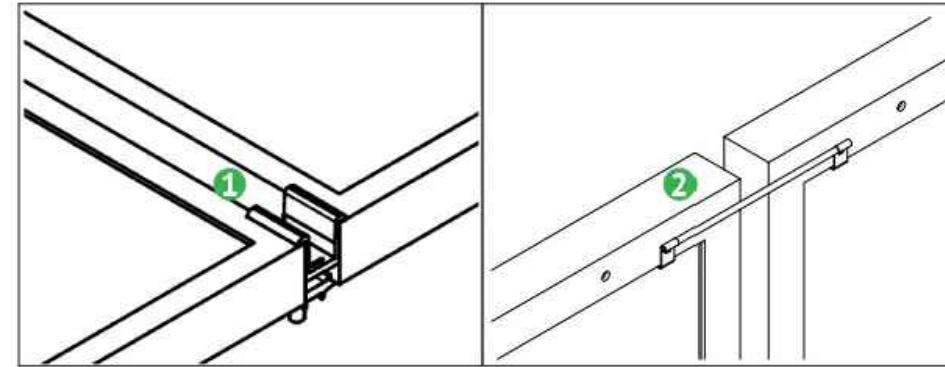
SHEET NUMBER  
PV-17



### BONDING MICROINVERTER MOUNT

- 1 Stainless steel Tooth lock washer beneath the MLPE flange remove anodization on the MLPE and bonds.
- 2 Tabs on the stainless steel washer remove anodization on the rail and bonds.

**NOTE:** See Page 17 for installation details



### ALTERNATE ROW-TO-ROW BONDING PATHS

- 1 Row-to-row module bonding is accomplished with bonding clamp with 2 integral bonding pins.
- 2 Alternate method by connecting clips on either module to complete the bonding path.

**NOTE:**

- See Page 16 for installation details
- Row-to-row module bonding certified for single-use only

### A. System Specifications and Ratings

- Maximum Voltage: 1,000 Volts
- Maximum Current: **JB-1.2:** 80 Amps; **JB-1.XL:** 120 Amps
- Allowable Wire: 14 AWG – 6 AWG
- Spacing: Please maintain a spacing of at least ½” between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.
- Enclosure Rating: Type 3R
- Roof Slope Range: 2.5 – 12:12
- Max Side Wall Fitting Size: 1”
- Max Floor Pass-Through Fitting Size: 1”
- Ambient Operating Conditions: (-35°C) - (+75°C)
- Compliance:
  - **JB-1.2:** UL1741, CSA C22.2 No. 290; **JB-1.XL:** UL1741, CSA C22.2 No. 290
  - Approved wire connectors: must conform to UL1741, CSA C22.2 No. 290
- System Marking: **Intertek Symbol and File #5019942**
- Periodic Re-inspections: If re-inspections yield loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replaced immediately.



**Table 1: Typical Wire Size, Torque Loads and Ratings**

	1 Conductor	2 Conductor	Torque				
			Type	NM	Inch Lbs	Voltage	Current
ABB ZS6 terminal block	10-24 awg	16-24 awg	Sol/Str	0.5-0.7	6.2-8.85	600V	30 amp
ABB ZS10 terminal block	6-24 awg	12-20 awg	Sol/Str	1.0-1.6	8.85-14.16	600V	40 amp
ABB ZS16 terminal block	4-24 awg	10-20 awg	Sol/Str	1.6-2.4	14.6-21.24	600V	60 amp
ABB M6/8 terminal block	8-22 awg		Sol/Str	.08-1	8.85	600V	50 amp
Ideal 452 Red <small>WING-NUT Wire Connector</small>	8-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal 451 Yellow <small>WING-NUT Wire Connector</small>	10-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal, In-Sure <small>Push-In Connector Part #39</small>	10-14 awg		Sol/Str	Self-Torque	Self-Torque	600V	
WAGO, 2204-1201	10-20 awg	16-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
WAGO, 221-612	10-20 awg	10-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
Dottie DRC75	6-12 awg		Sol/Str	Snap-In	Snap-In		
ESP NG-53	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
ESP NG-717	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
Brumall 4-5,3	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		

**Table 2: Minimum wire-bending space for conductors through a wall opposite terminals in mm (inches)**

Wire size, AWG or kcmil (mm2)	Wires per terminal (pole)			
	1 mm (inch)	2 mm (inch)	3 mm (inch)	4 or More mm (inch)
14-10 (2.1-5.3)	Not Specified	-	-	-
8 (8.4)	38.1 (1-1/2)	-	-	-
6 (13.3)	50.8 (2)	-	-	-

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

PROJECT NAME & ADDRESS

MARGUERITE  
STEARMAN RESIDENCE  
450 SE MARGARET DR,  
LAKE CITY, FL 32025

DRAWN BY

ESR

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER

PV-18