

# PHOTOVOLTAIC ROOF MOUNT SYSTEM

17 MODULES-ROOF MOUNTED - 7.650 kW DC, 7.600 kW AC

1452 NE WASHINGTON ST, LAKE CITY, FL 32055

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

## PROJECT DATA

PROJECT ADDRESS: 1452 NE WASHINGTON ST, LAKE CITY, FL 32055  
OWNER: EVA WILLIAMS  
CONTRACTOR: LUNEX POWER INC. 4721 N GRADY AVE TAMPA FL 33614 PHONE: 813-540-8807  
DESIGNER: ESR  
SCOPE: 7.650 KW DC ROOF MOUNT SOLAR PV SYSTEM WITH 17 PEIMAR SOLAR:DR10H450M (FB) 450W PV MODULES WITH 17 SOLAREEDGE: U650 POWER OPTIMIZERS 01 SOLAREEDGE: DCA USE7600H-USMNB78 INVERTER  
AUTHORITIES HAVING JURISDICTION: BUILDING: COLUMBIA COUNTY ZONING: COLUMBIA COUNTY UTILITY: FPL

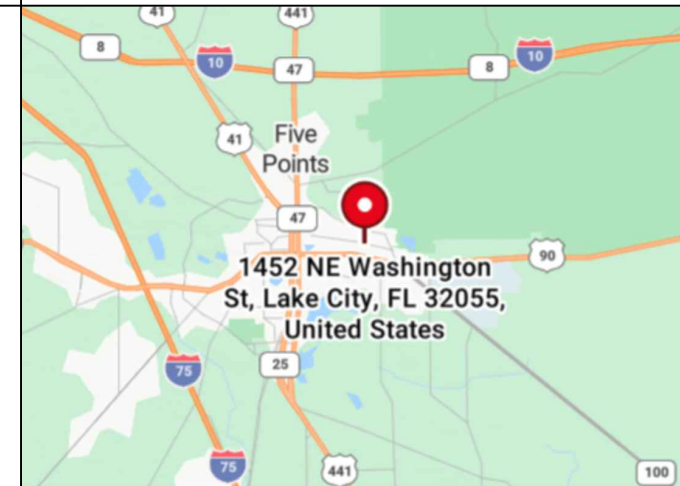
## SHEET INDEX

PV-1	COVER SHEET
PV-2	SITE PLAN
PV-3	ROOF PLAN & MODULES
PV-4	ELECTRICAL PLAN
PV-5	STRUCTURAL DETAIL
PV-6	ELECTRICAL LINE DIAGRAM
PV-7	WIRING CALCULATIONS
PV-7A	FAULT CURRENT CALCULATIONS
PV-8	LABELS
PV-9	PLACARD
PV-10	OPTIMIZER CHART
PV-11+	EQUIPMENT SPECIFICATIONS

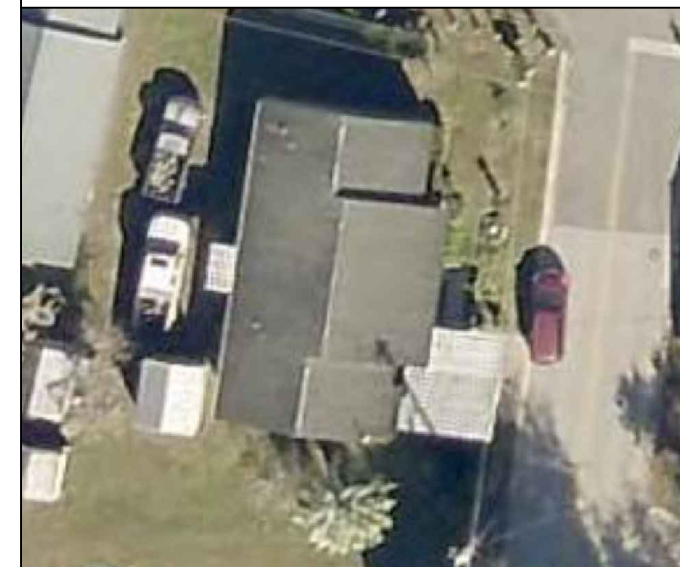
## GENERAL NOTES

- 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

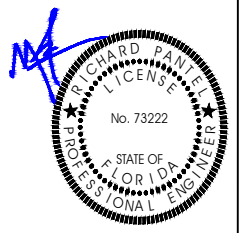


## CODE REFERENCES

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

EVA WILLIAMS  
RESIDENCE  
1452 NE WASHINGTON ST,  
LAKE CITY, FL 32055

## DRAWN BY

ESR

## SHEET NAME

COVER SHEET

## SHEET SIZE

ANSI B  
11" X 17"

## SHEET NUMBER

PV-1

# PROJECT DESCRIPTION:

17 X PEIMAR SOLAR: DR10H450M (FB) 450W PV MODULES  
 ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES  
 DC SYSTEM SIZE: 17 x 450 = 7.650 kW DC  
 AC SYSTEM SIZE: 01 x 7600 = 7.600 kW AC

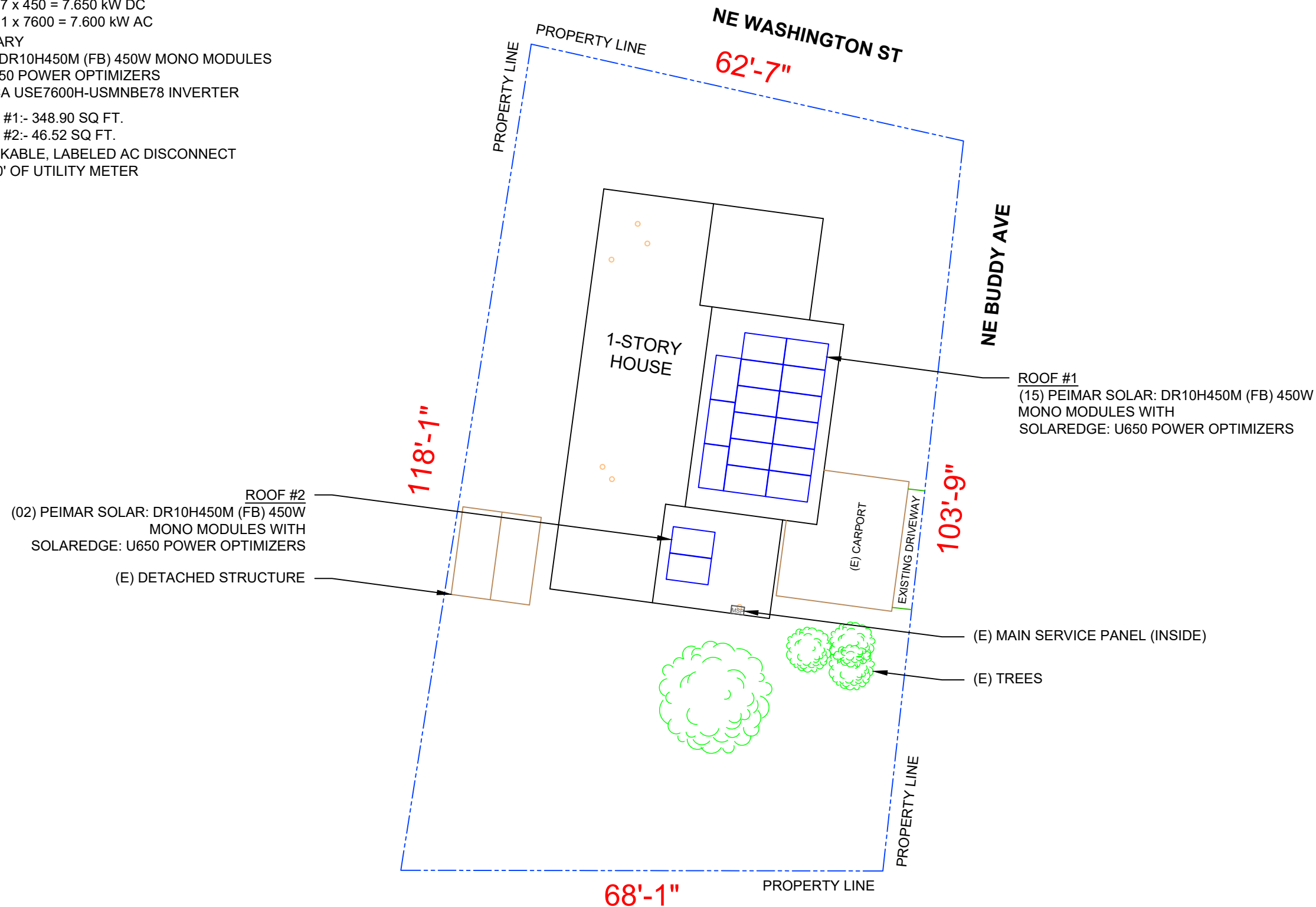
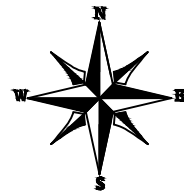
## EQUIPMENT SUMMARY

17 PEIMAR SOLAR: DR10H450M (FB) 450W MONO MODULES  
 17 SOLAREEDGE: U650 POWER OPTIMIZERS  
 01 SOLAREEDGE: DCA USE7600H-USMNB78 INVERTER

ROOF ARRAY AREA #1:- 348.90 SQ FT.

ROOF ARRAY AREA #2:- 46.52 SQ FT.

NOTE: VISIBLE, LOCKABLE, LABELED AC DISCONNECT  
 LOCATED WITHIN 10' OF UTILITY METER

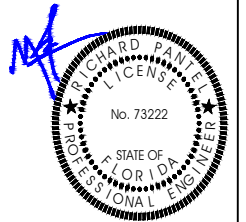


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DRAWN BY  
 ESR

SHEET NAME  
 SITE PLAN

SHEET SIZE  
 ANSI B  
 11" X 17"

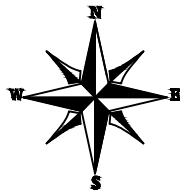
SHEET NUMBER  
 PV-2

1 | SITE PLAN

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

**MODULE TYPE, DIMENSIONS & WEIGHT**

NUMBER OF MODULES = 17 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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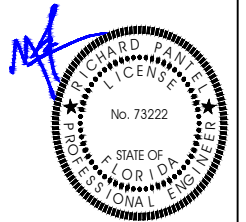
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	AREA COVERED BY ARRAY (%)
#1	15	348.90	534.43	65
#2	02	46.52	234.18	20
TOTAL	17	395.42	1920.71	21

ROOF DESCRIPTION				
ROOF TYPE		ASPHALT SHINGLE		
ROOF	ROOF PITCH	AZIMUTH	TRUSS SIZE	TRUSS SPACING
#1	18°	98°	2"X4"	24"
#2	18°	98°	2"X4"	24"



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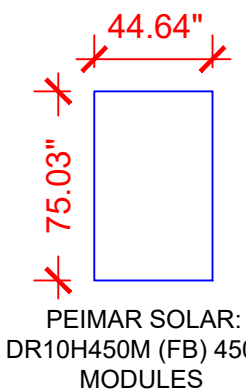
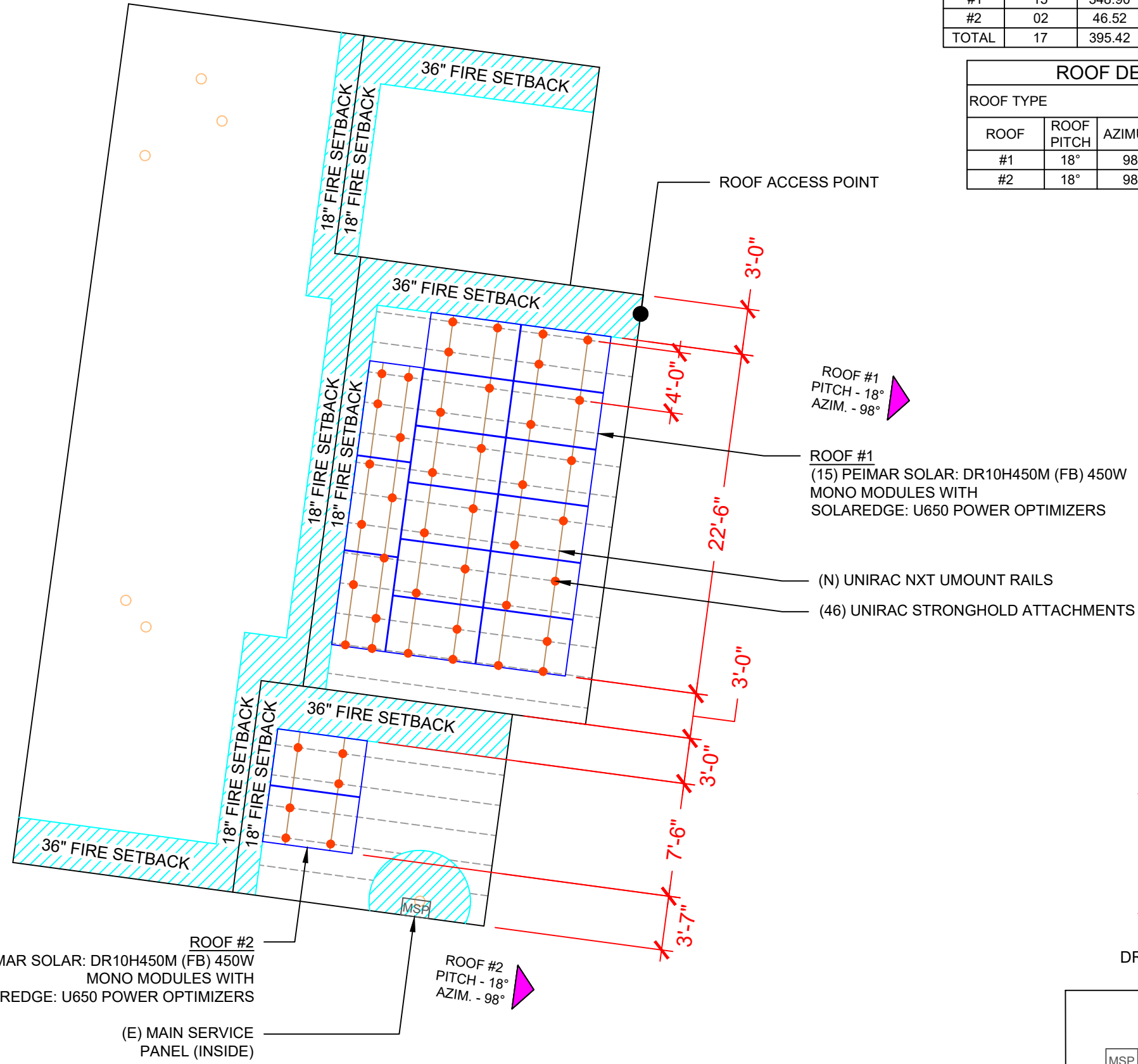
EVA WILLIAMS  
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 LAKE CITY, FL 32055

DRAWN BY  
 ESR

SHEET NAME  
 ROOF PLAN &  
 MODULES

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-3



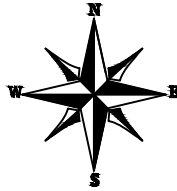
**LEGEND**

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

**1 ROOF PLAN & MODULES**

PV-3 SCALE: 1/8" = 1'-0"

STRING LEGENDS	
	STRING #1
	STRING #2



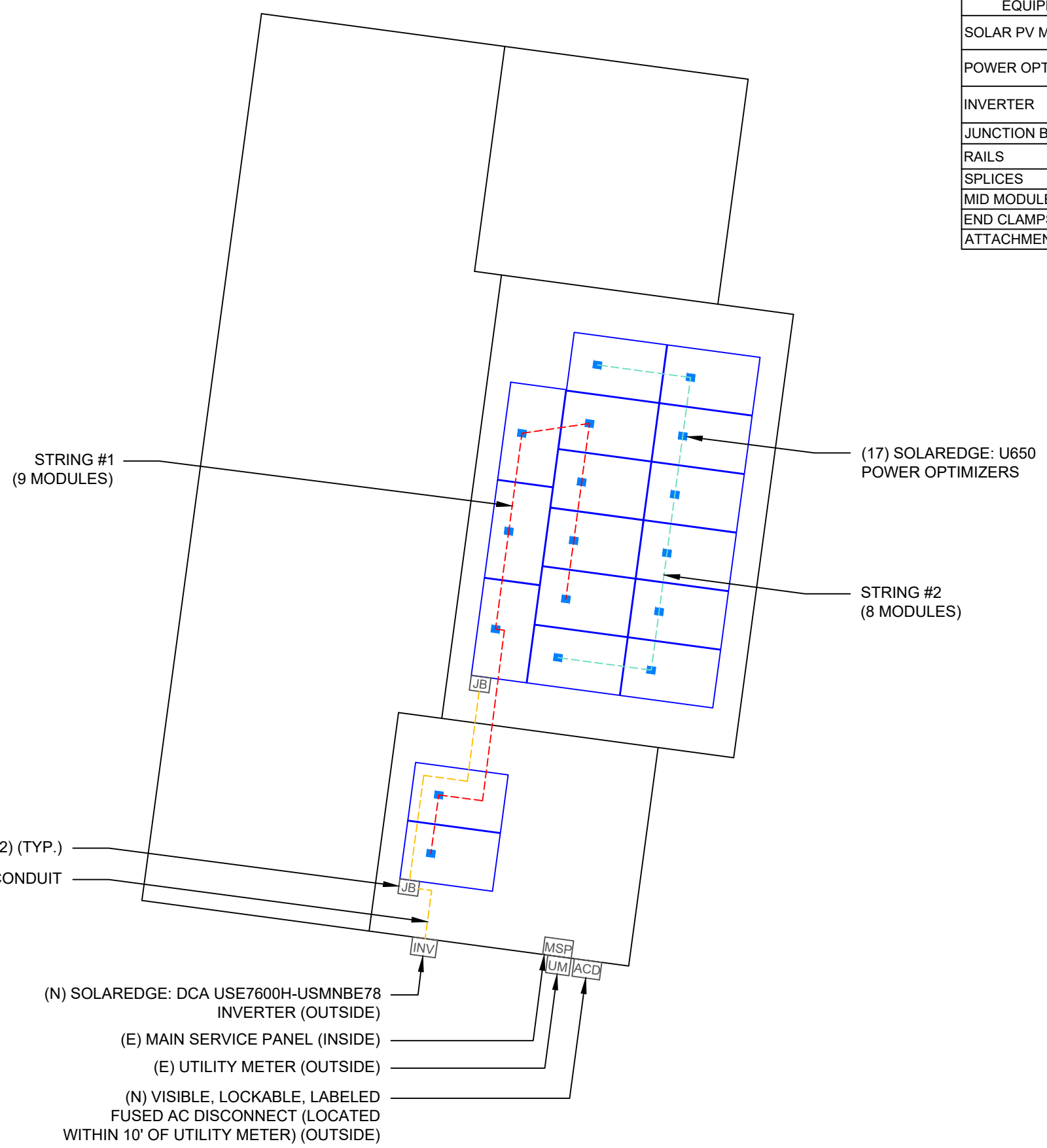
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EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULES	17	PEIMAR SOLAR: DR10H450M (FB) 450W MODULE
POWER OPTIMIZERS	17	SOLAREEDGE: U650 POWER OPTIMIZERS
INVERTER	01	SOLAREEDGE: DCA USE7600H-USMNB78 INVERTER
JUNCTION BOXES	2	JUNCTION BOXES - (JB-1.2)
RAILS	11	UNIRAC NXT UMount RAILS
SPLICES	6	SPLICE KIT
MID MODULE CLAMPS	26	MID MODULE CLAMPS
END CLAMPS	16	END CLAMPS / STOPPER SLEEVE
ATTACHMENTS	46	UNIRAC STRONGHOLD ATTACHMENTS

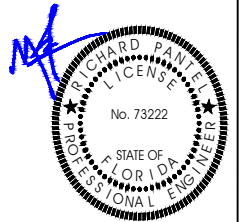


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**BILL OF MATERIALS**



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DRAWN BY  
**ESR**

SHEET NAME  
**ELECTRICAL PLAN**

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

SHEET NUMBER  
**PV-4**

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

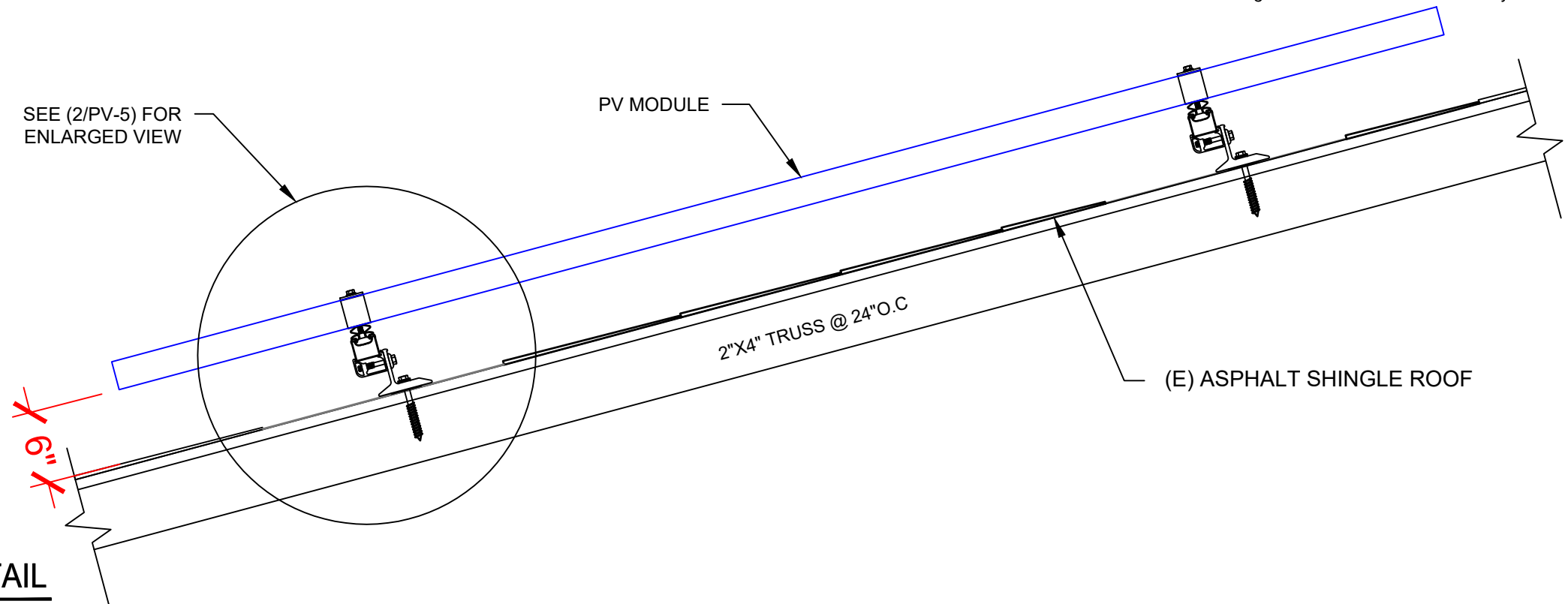
**DESCRIPTION:** CANTILEVER  
 CANTILEVER CONSIDER 1/3<sup>RD</sup> OF ROOF ATTACHMENT SPACING.  
 ATTACHMENT SPACING= 48" O/C  
 CANTILEVER = 16"

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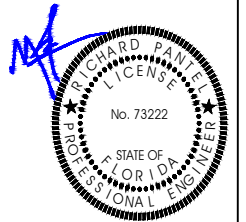


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**1** | **ATTACHMENT DETAIL**  
 PV-5 | SCALE: NTS



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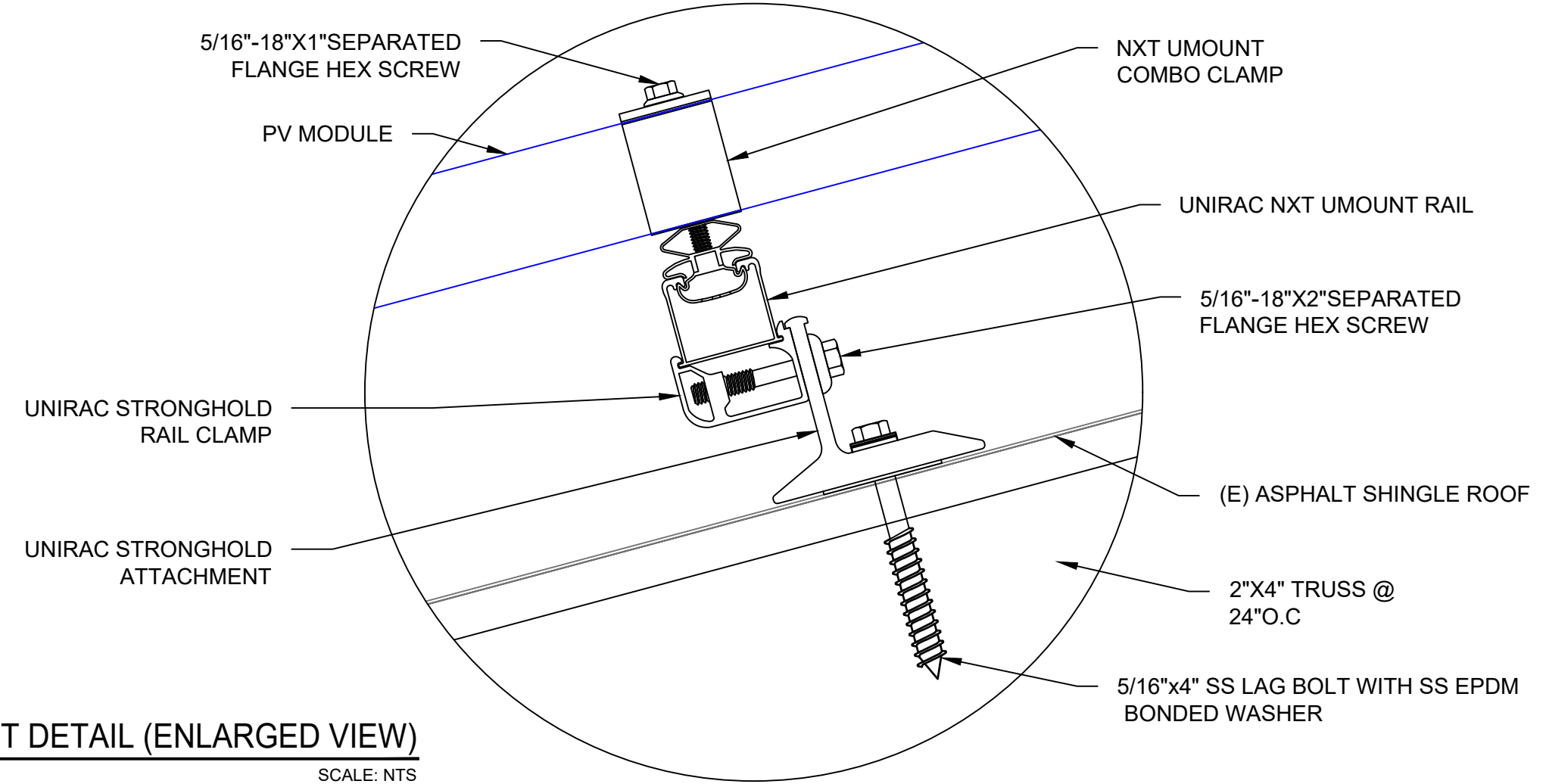
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DRAWN BY  
**ESR**

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: 17 x 450 = 7.650KW DC  
 AC SYSTEM SIZE: 01 x 7600 = 7.600KW AC

- (17) PEIMAR SOLAR: DR10H450M (FB) 450W MONO MODULES WITH
- (17) SOLAREEDGE: U650 POWER OPTIMIZERS
- (01) SOLAREEDGE: DCA USE7600H-USMNBE78 INVERTER
- (01) STRING OF 09 MODULES AND
- (01) STRING OF 08 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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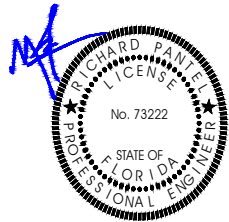
**GROUNDING & GENERAL NOTES:**

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.



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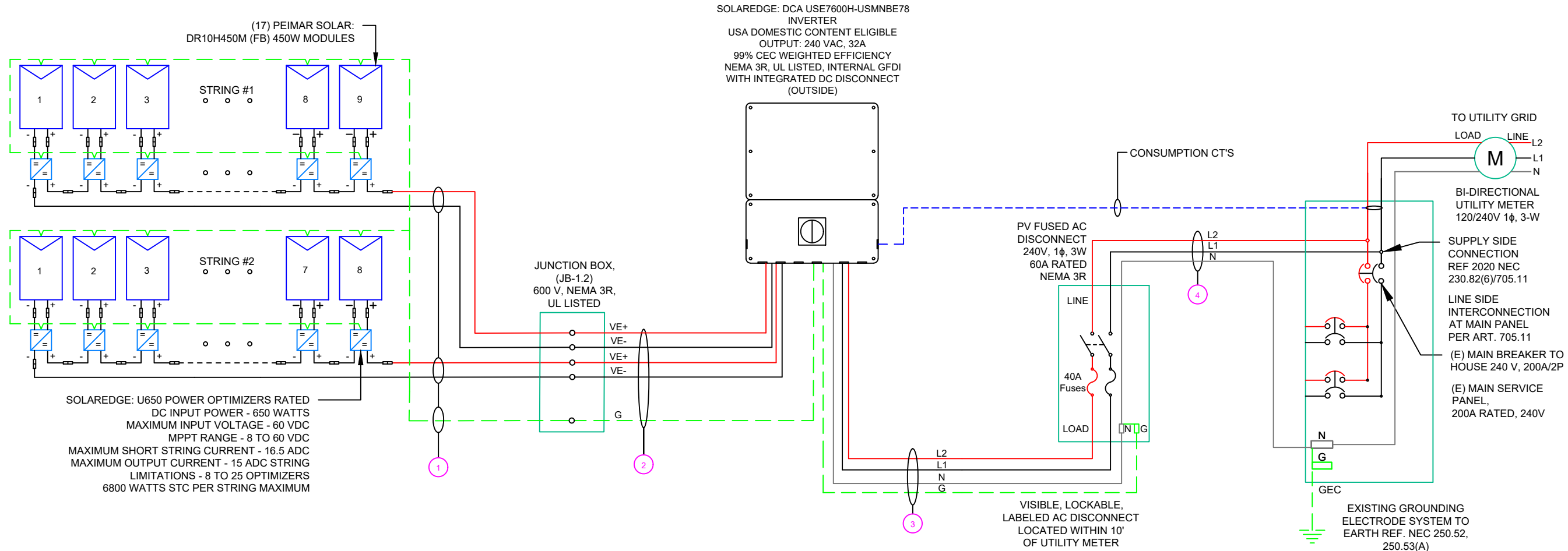
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SHEET NAME  
 ELECTRICAL LINE DIAGRAM

SHEET SIZE  
 ANSI B  
 11" X 17"

SHEET NUMBER  
 PV-6

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



1 | ELECTRICAL LINE DIAGRAM

PV-6 | SCALE: NTS

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	SOLAREEDGE: DCA USE7600H-USMNB78 INVERTER
NOMINAL AC POWER	7.600 KW
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	32A

(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)	66°
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

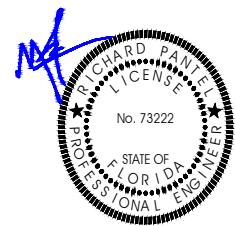


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DC FEEDER CALCULATIONS																					
CIRCUIT ORIGIN	CIRCUIT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OCPD SIZE (A)	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN 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	36	2	40	0.91	1	36.4	PASS	46	1.24	0.357	N/A	#N/A
STRING 2	JUNCTION BOX	480	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	36	2	40	0.91	1	36.4	PASS	31	1.24	0.240	N/A	#N/A
JUNCTION BOX	INVERTER	480	15.00	18.75	20	CU #10 AWG	CU #10 AWG	35	PASS	36	4	40	0.91	0.8	29.12	PASS	20	1.24	0.155	3/4" EMT	19.79%
																			String 1 Voltage Drop	0.512	
																			String 2 Voltage Drop	0.395	

AC FEEDER CALCULATIONS																						
CIRCUIT ORIGIN	CIRCUIT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OCPD 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	32	40	40	CU #6 AWG	CU #6 AWG	CU #6 AWG	65	PASS	36	2	75	0.91	1	68.25	PASS	10	0.491	0.131	3/4" EMT	38.05%
AC DISCONNECT	POI	240	32	40	40	CU #6 AWG	N/A	CU #6 AWG	65	PASS	36	2	75	0.91	1	68.25	PASS	5	0.491	0.065	3/4" EMT	28.54%
																			CUMULATIVE VOLTAGE	0.638		



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

DATE: 03/11/2026

PROJECT NAME & ADDRESS

EVA WILLIAMS  
RESIDENCE  
1452 NE WASHINGTON ST,  
LAKE CITY, FL 32055

DRAWN BY

ESR

SHEET NAME

WIRING CALCULATIONS

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-7

**ELECTRICAL NOTES**

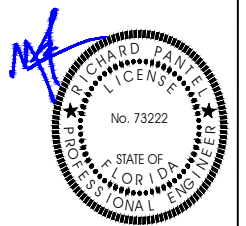
- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE RATED UPTO 600V FOR RESIDENTIAL AND 1000V FOR COMMERCIAL AND 90 DEGREE C WET ENVIRONMENT.
- WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE 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

EVA WILLIAMS  
RESIDENCE  
1452 NE WASHINGTON ST,  
LAKE CITY, FL 32055

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



**CONDUCTOR RUN - C1**

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

**FAULT - AC DISCONNECT**

**I<sub>total s.c. (L-L)</sub>** 15,134 AMPS  
**I<sub>total s.c. (L-N)</sub>** 13,979 AMPS  
**Voltage (L-L)** 240 V

CONDUCTOR



**CONDUCTOR RUN - C2**

**LENGTH** 15 FT  
**SIZE** 6  
**QTY** 1  
(per phase)  
**TYPE** Three Single Conductors  
**CONDUIT** Steel  
**WIRE** Cu, 600 V

**FAULT - INVERTER**

**I<sub>total s.c. (L-L)</sub>** 8,502 AMPS  
**I<sub>total s.c. (L-N)</sub>** 5,727 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**

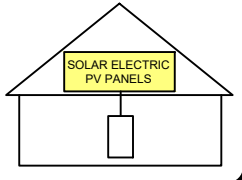
LABEL-4:  
LABEL LOCATION:  
MAIN SERVICE PANEL  
SUBPANEL  
MAIN SERVICE DISCONNECT  
COMBINER  
CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)

**⚠ 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>32.00 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: 40 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**

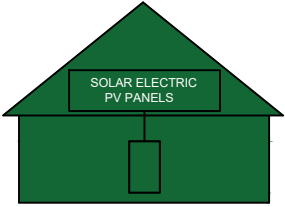
LABEL-11:

**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)

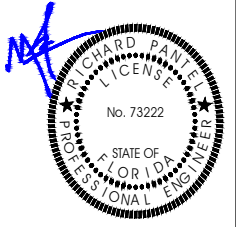
**RAPID SHUTDOWN SWITCH  
FOR SOLAR PV SYSTEM**

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

**EVA WILLIAMS  
RESIDENCE**  
**1452 NE WASHINGTON ST,  
LAKE CITY, FL 32055**

DRAWN BY  
**ESR**

SHEET NAME  
**LABELS**

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

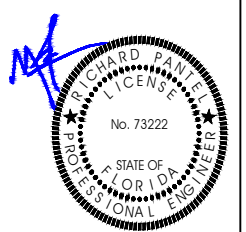
SHEET NUMBER  
**PV-8**

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 FL Lic. No. 73222  
 03/11/2026

DATE: 03/11/2026

PROJECT NAME & ADDRESS

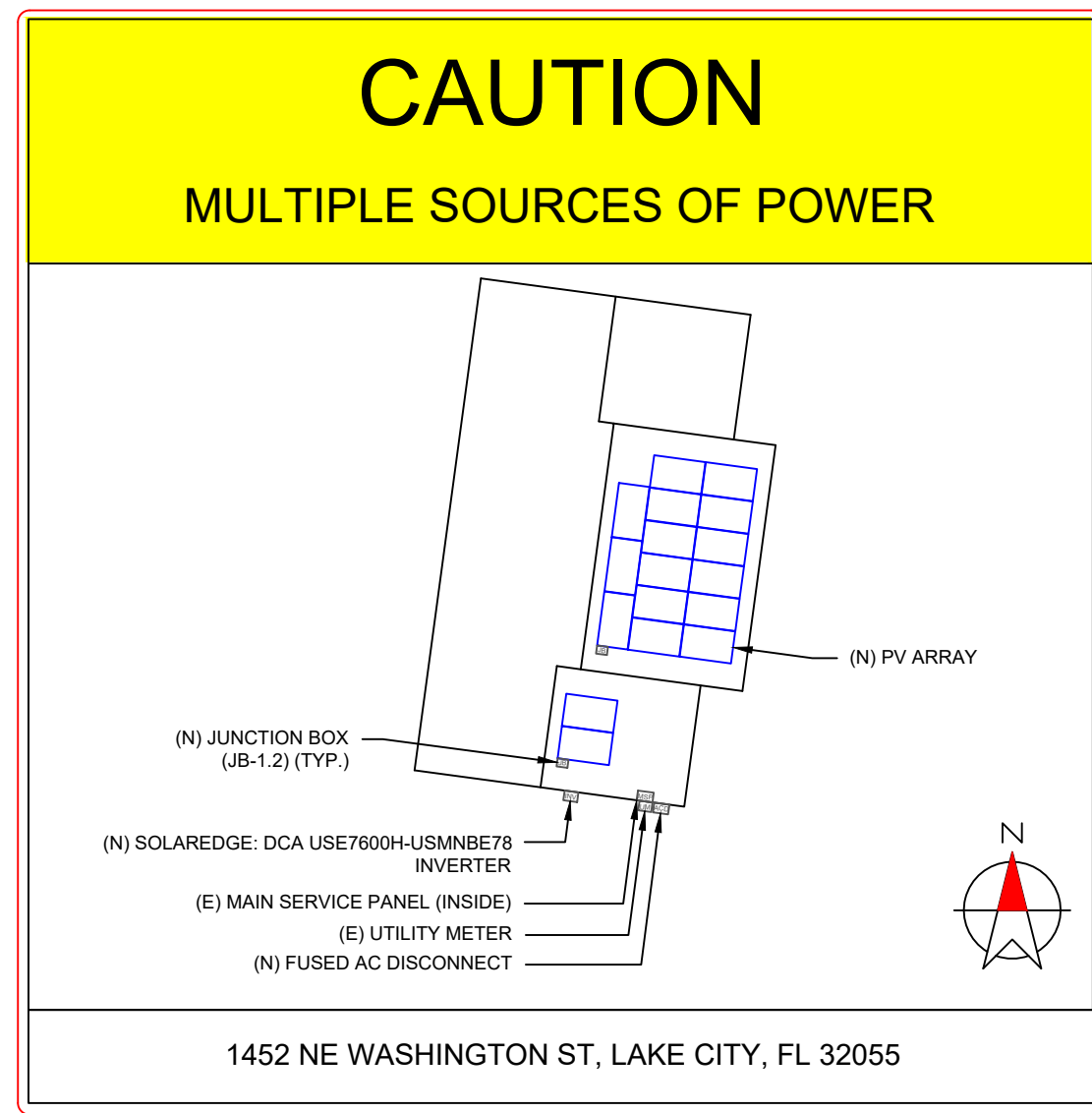
EVA WILLIAMS  
 RESIDENCE  
 1452 NE WASHINGTON ST,  
 LAKE CITY, FL 32055

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)].

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

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

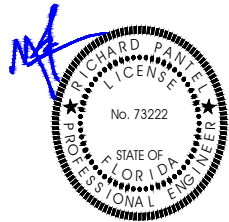

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# OPTIMIZER CHART



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

REVISIONS		
DESCRIPTION	DATE	REV



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

DATE: 03/11/2026

PROJECT NAME & ADDRESS

**EVA WILLIAMS  
RESIDENCE**  
1452 NE WASHINGTON ST,  
LAKE CITY, FL 32055

DRAWN BY  
**ESR**

SHEET NAME  
**OPTIMIZER CHART**

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

SHEET NUMBER  
**PV-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.

#### Cells



120 CELLS  
MONO 9BB / 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>

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



PERC TECHNOLOGY



ANTI-REFLECTIVE GLASS



QBE INSURANCE  
Product Liability Insurance QBE



## HALF CELL LINE

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

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>3)</sup>	41.18 V
Short Circuit Current (I <sub>sc</sub> ) <sup>4)</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

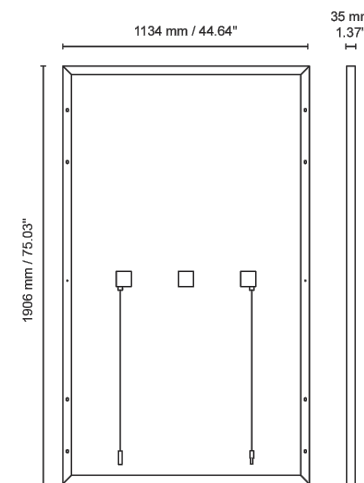
#### DR10H450M (FB)

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>3)</sup>	41.18 V
Short Circuit Current (I <sub>sc</sub> ) <sup>4)</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>5)</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

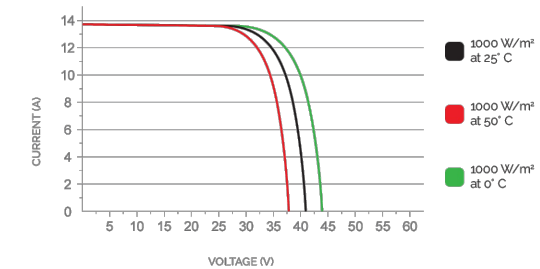
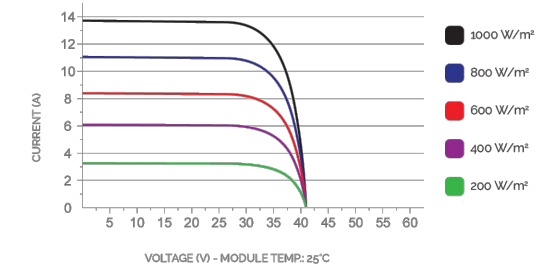
#### Temperature Characteristics

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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#### REVISIONS

DESCRIPTION	DATE	REV

DATE: 03/11/2026

#### PROJECT NAME & ADDRESS

**EVA WILLIAMS  
RESIDENCE**  
1452 NE WASHINGTON ST.,  
LAKE CITY, FL 32055

DRAWN BY

**ESR**

SHEET NAME  
**EQUIPMENT  
SPECIFICATION**

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

SHEET NUMBER  
**PV-11**

# SolarEdge Home Hub Inverter

## USA Domestic Content Eligible\*

### Single Phase, for North America

SE3800H-US / SE5700H-US / **SE7600H-US** / SE10000H-US / SE11400H-US



12-25  
YEAR  
WARRANTY

HOME BACKUP



### SolarEdge's USA-manufactured residential single phase inverter offering for storage and backup applications

- Eligible for domestic content percentage under the enhanced federal income tax credit\*
- The ultimate home energy manager in charge of PV production, battery storage, backup operation during a power outage\*\*, EV Charging, and smart energy devices
- Record-breaking 99% weighted efficiency with up to 200% DC oversizing
- Ability to start high LRA HVAC systems during backup operation
- Integrates seamlessly with the complete SolarEdge Home Smart Energy Ecosystem, through SolarEdge Home Network
- Module-level monitoring and visibility of battery status, PV production, and self-consumption data
- Fast and easy installation – small and lightweight, with reduced commissioning time
- NEMA 4X-rated, for indoor and outdoor installations
- A scalable solution that supports future homeowner needs through easy connection to a growing ecosystem of products
- Advanced safety features with integrated arc fault protection and rapid shutdown for 690.11 and 690.12
- Advanced reliability with automotive-grade components
- Embedded revenue grade production data, ANSI C12.20 Class 0.5
- Install larger systems while avoiding main panel upgrades with the embedded Power Control System (PCS)

\* As it relates to the domestic content rules, the U.S. Department of Treasury and the IRS have not yet issued proposed or final regulations. Rather, the IRS has issued three notices – Notice 2023-38, Notice 2024-41 and Notice 2025-08. These notices provide guidance regarding the domestic content rules. SolarEdge products referenced herein are manufactured with the intent to be eligible for inclusion under the elective safe harbor table in calculating the Domestic Content Percentage under the "Rooftop (MLPE)" category (under IRS Notice 2025-08). Eligibility is subject to the installation of qualified USA-manufactured inverters and Power Optimizers (US20A/US20B) in the same project. 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 project. The forward-looking statements in this document are accurate as of the date herein and are subject to change. For more information, please contact your local SolarEdge sales representative. PN US5000H-US/US/US/US contains the following domestically produced MPCs per notice 2025-08\*: Printed Circuit Board Assemblies (DC-DC) and (AC-AC) Enclosure, Production (D4.8); per notice 2024-41\*: Printed Circuit Board Assemblies, Enclosure (T 8%).

solaredge.com



# / SolarEdge Home Hub Inverter

## USA Domestic Content Eligible

### Single Phase, for North America

SE3800H-US / SE5700H-US / **SE7600H-US** / SE10000H-US / SE11400H-US

Applicable to inverters with part number	USExxxxH-USMNB78					
Model Number <sup>(1)</sup>	SE3800H-US	SE5700H-US	<b>SE7600H-US</b>	SE10000H-US	SE11400H-US	
<b>OUTPUT – AC ON GRID</b>						
Maximum AC Power Output	3800 @ 240V 3300 @ 208V	5760 @ 240V 5000 @ 208V	7600 @ 240V 6600 @ 208V	10,000 @ 240V 8700 @ 208V	11,400 @ 240V 10,000 @ 208V	W
AC Output Voltage (Nominal)	208 / 240					Vac
AC Output Voltage (Range)	183 – 264					Vac
AC Frequency Range (min - nom - max)	59.3 – 60 – 60.5 <sup>(2)</sup>					Hz
Maximum Continuous Output Current	16	24	32	42	47.8	A
Maximum Fault Current / Duration	90 / 50					Aac / $\mu$ s
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
<b>OUTPUT – AC STANDALONE (BACKUP)<sup>(3)</sup></b>						
Rated AC Power in Standalone Operation <sup>(4)</sup>	12,500 <sup>(5)</sup>					W
Maximum Continuous Output Current in Standalone Operation	52					A
Locked Rotor Amperage (LRA) <sup>(6)</sup>	Up to 106					A
AC L-L Output Voltage Range in Standalone Operation	211 – 264					Vac
AC L-N Output Voltage Range in Standalone Operation	105 – 132					Vac
AC Frequency Range in Standalone Operation (min - nom - max)	55 – 60 – 65					Hz
GFDI	1					A
THD	< 5					%
<b>INPUT – DC (PV AND BATTERY)</b>						
Transformer-less, Ungrounded	Yes					
Maximum Input Voltage	480					Vdc
Nominal DC Input Voltage	380					Vdc
Reverse-Polarity Protection	Yes					
Ground-Fault Isolation Detection	600k $\Omega$ Sensitivity					
Maximum Input Short-Circuit Current	45					Adc
Maximum Inverter Efficiency	99.2					%
CEC Weighted Efficiency	98.5		99		99 @ 240V 98.5 @ 208V	%
2-Pole Disconnection	Yes					
<b>DC CONNECTION – PV</b>						
Maximum Input Power	7600 @ 240V 6600 @ 208V	11,520 @ 240V 10,000 @ 208V	15,200 @ 240V 13,200 @ 208V	20,000 @ 240V 17,400 @ 208V	22,800 @ 240V 20,000 @ 208V	W
Maximum Input Current	20 @ 240V 17 @ 208V	30 @ 240V 26 @ 208V	40 @ 240V 35 @ 208V	53 @ 240V 46 @ 208V	60 @ 240V 53 @ 208V	Adc
Number of Ports	3					
Maximum Current per Port	40					Adc

(1) These specifications apply to inverters with part number SExxxxH-USMNB78 and connection unit model number DCD-1PH-US-PH-F-x.  
 (2) For other regional settings please refer to the SolarEdge Inverters Power Control Options application note.  
 (3) Not designed for non-grid connected applications and requires AC for commissioning. Standalone (backup) functionality is only supported for the 240V grid.  
 (4) For models SE7600H-US and below, the Rated AC Power in Standalone Operation is configurable between 7,600W with a Maximum Continuous Output Current of 32A or 12,500W with a Maximum Continuous Output Current of 52A, from firmware version 4.23.x.  
 (5) Operational only at ambient temperatures up to 86°F / 30°C. Above 86°F / 30°C, the Maximum Rated AC Power in Standalone Operation is 11,400W.  
 (6) Available only for single inverter installations. In multi-inverter installations, the Maximum Rated AC Power in Standalone Operation is 11,400W.  
 (7) For more information about USA (Locked Rotor Amperage) values, see the SolarEdge Home Hub Inverter LRA application note.

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# / SolarEdge Home Hub Inverter

## USA Domestic Content Eligible

### Single Phase, for North America

SE3800H-US / SE5700H-US / **SE7600H-US** / SE10000H-US / SE11400H-US

Applicable to inverters with part number	USExxxxH-USMNB78					
Model Number <sup>(1)</sup>	SE3800H-US	SE5700H-US	<b>SE7600H-US</b>	SE10000H-US	SE11400H-US	
<b>DC CONNECTION – BATTERY</b>						
Supported Battery Types	SolarEdge Home Battery 400V					
Number of Batteries per Inverter	Up to 3					
Maximum Continuous Power (Charge and Discharge) <sup>(2)</sup>	12,500					W
Number of Ports	2					
Maximum Current per Port	40					Adc
2-pole Disconnection	Up to the inverter's rated standalone power					
<b>SMART ENERGY CAPABILITIES</b>						
Consumption Metering	Built-in <sup>(3)</sup>					
Standalone & Battery Storage	With Backup Interface (purchased separately) for service up to 200A; up to 3 inverters					
EV Charging	Direct connection to the SolarEdge Home EV Charger <sup>(4)</sup>					
<b>ADDITIONAL FEATURES</b>						
Supported Communication Interfaces	RS485, Ethernet, Cellular <sup>(5)</sup> , Wi-Fi (optional), SolarEdge Home Network <sup>(6)</sup> (optional)					
Revenue Grade Metering, ANSI C12.20	Built-in <sup>(7)</sup>					
Integrated AC, DC, and Communication Connection Unit	Yes					
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi Access Point for local connection					
DC Voltage Rapid Shutdown (PV and Battery)	Yes, NEC 690.12					
<b>STANDARD COMPLIANCE</b>						
Safety	UL 1741, UL 1741SA, UL 1741SB, UL 16998, CSA 22.2#107.1, C22.2#330, C22.3#9, ANSIV/CAN/UL 9540					
Grid Connection Standards	IEEE1547-2018 and IEEE1547.1 Rule 21, Rule 14H					
Emissions	FCC Part 15 Class B					
Power Control System (PCS)	UL 1741 PCS <sup>(8)</sup>					
<b>INSTALLATION SPECIFICATIONS</b>						
AC Terminals	L1, L2, N terminal blocks, PE busbar for inverter connection					
DC Terminals	L1, L2 terminal blocks, PE busbar for EV Charger AC connection					
AC Output and EV AC Output Conduit Size / AWG Range	3 x terminal block pairs for PV input, 2 x terminal block pair for battery input					
DC Input (PV and Battery) Conduit Size / AWG Range	1" maximum / 1/4 – 4 AWG					
Dimensions with Connection Unit (H x W x D)	21.06 x 14.6 x 8.2 / 535 x 370 x 208					in / mm
Weight with Connection Unit	44.9 / 20.3					lb / kg
Noise	< 50					dBA
Cooling	Natural Convection					
Operating Temperature Range	-40 to +140 / -40 to +60 <sup>(9)</sup>					°F / °C
Protection Rating	NEMA 4X					

(8) Discharge power is limited up to the inverter's rated AC power for on-grid and standalone applications, as well as up to the installed batteries' rating.  
 (9) For consumption metering current transformers should be ordered separately: SECT-SPL-225A-1-20 or SEACT1250-400NA-20. Revenue grade metering is only for production metering.  
 (10) For more information about the SolarEdge Home EV Charger, refer to the SolarEdge Home EV Charger datasheet.  
 (11) Purchased separately. Information concerning the data plan terms & conditions is available in SolarEdge Communication Plan Terms and Conditions.  
 (12) SolarEdge Home Network Plug-in ENET-HBNP-01 purchased separately. For more information, refer to the SolarEdge Home Network Plug-in datasheet.  
 (13) Only part numbers USxxxxH-USMNB78 support the PCS meter.  
 (14) Full power up to at least 122°F / 50°C. For power derating information refer to the Temperature Derating for North America technical note.

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

REVISIONS		
DESCRIPTION	DATE	REV

PROJECT NAME & ADDRESS	
EVA WILLIAMS RESIDENCE	1452 NE WASHINGTON ST, LAKE CITY, FL 32055

DRAWN BY	
ESR	
SHEET NAME	
EQUIPMENT SPECIFICATION	
SHEET SIZE	
ANSI B 11" X 17"	
SHEET NUMBER	
PV-12	

DATE: 03/11/2026	
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# 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 Content 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



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

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

PROJECT NAME & ADDRESS

EVA WILLIAMS  
 RESIDENCE  
 1452 NE WASHINGTON ST,  
 LAKE CITY, FL 32055

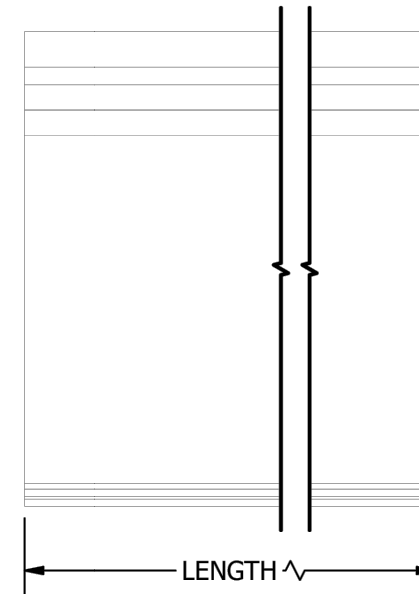
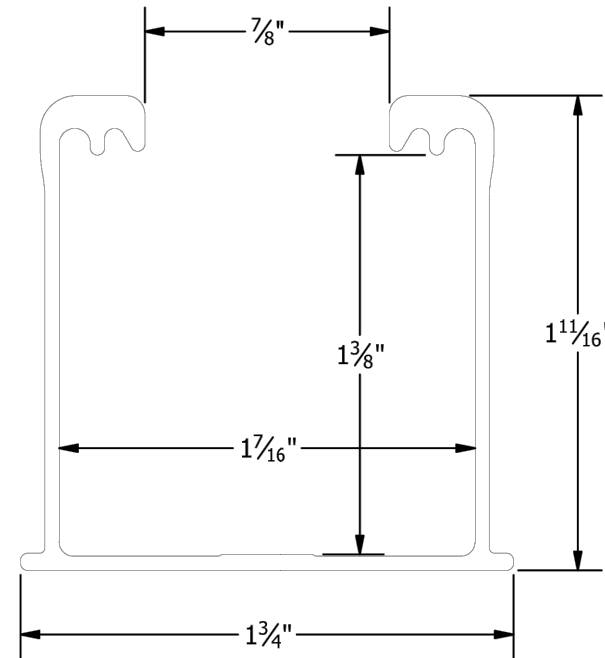
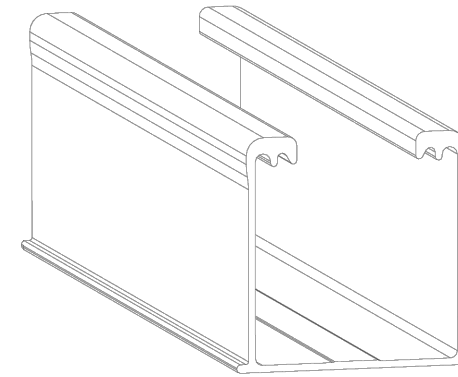
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 ESR

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



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 LIC #: CVC57085  
 PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

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 1452 NE WASHINGTON ST,  
 LAKE CITY, FL 32055

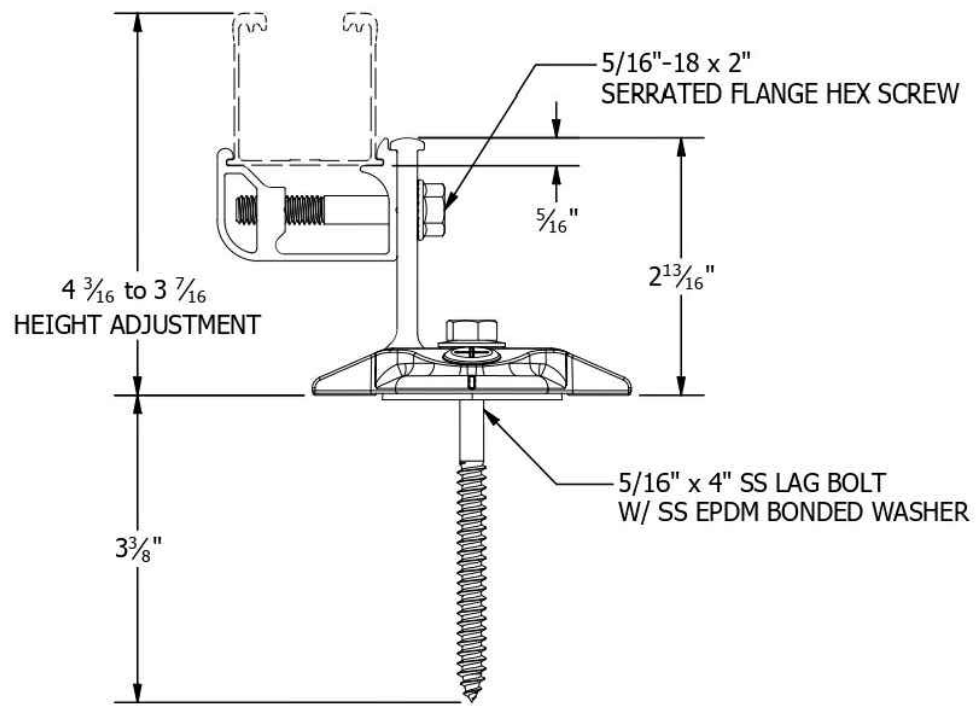
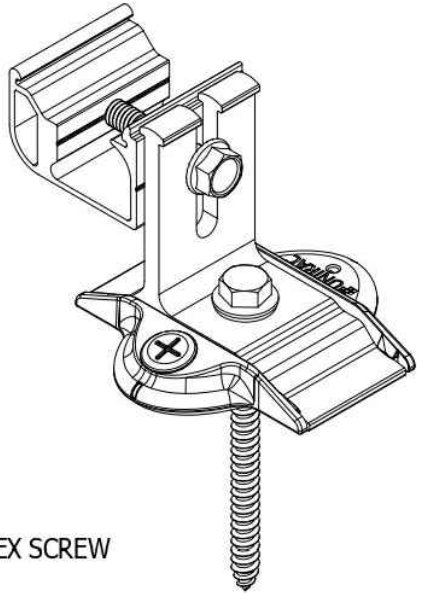
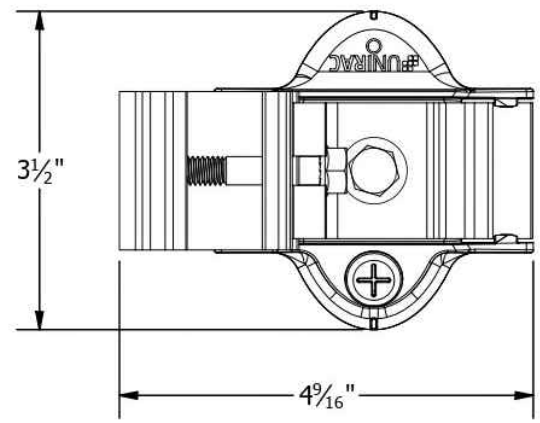
DRAWN BY  
 ESR

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  
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NU-A04  
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 LIC #: CVC57085  
 PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 03/11/2026

PROJECT NAME & ADDRESS

EVA WILLIAMS  
 RESIDENCE  
 1452 NE WASHINGTON ST,  
 LAKE CITY, FL 32055

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

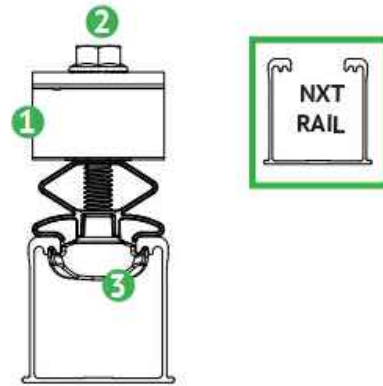
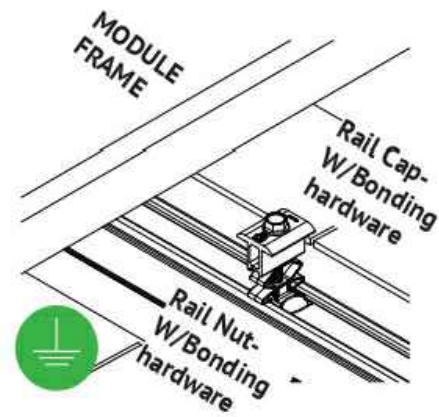
EVA WILLIAMS  
RESIDENCE  
1452 NE WASHINGTON ST,  
LAKE CITY, FL 32055

DRAWN BY  
ESR

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"

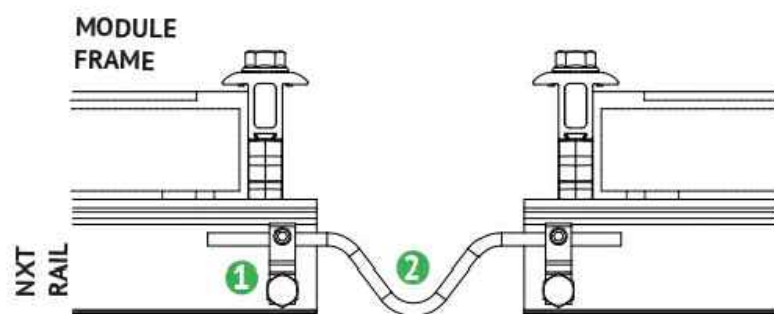
SHEET NUMBER  
PV-16



### 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

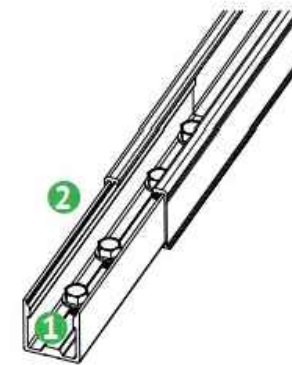
**NOTE:** See Page 19 for installation details.



### 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.

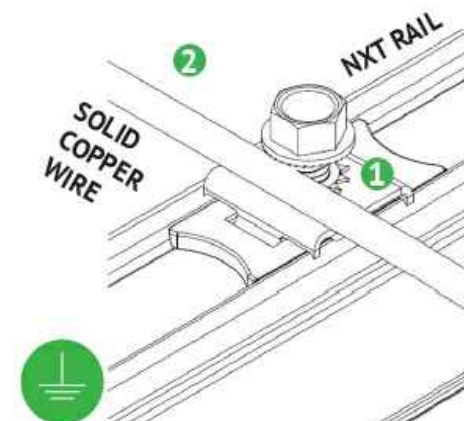


### BONDING RAIL SPLICE

- 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



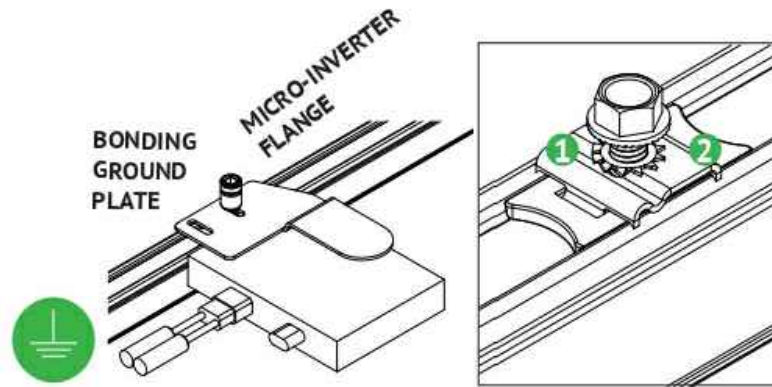
### RACK SYSTEM GROUNDING

- 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.



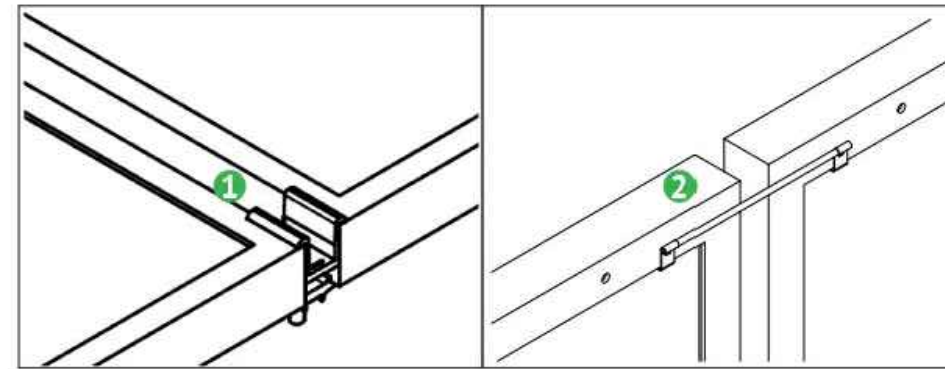
REVISIONS		
DESCRIPTION	DATE	REV



### 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

DATE: 03/11/2026

PROJECT NAME & ADDRESS

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RESIDENCE  
1452 NE WASHINGTON ST,  
LAKE CITY, FL 32055

DRAWN BY  
ESR

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-17

### 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

**EVA WILLIAMS  
RESIDENCE**  
1452 NE WASHINGTON ST.,  
LAKE CITY, FL 32055

DRAWN BY  
**ESR**

SHEET NAME  
**EQUIPMENT  
SPECIFICATION**

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

SHEET NUMBER  
**PV-18**