

# PHOTOVOLTAIC ROOF MOUNT SYSTEM

24 MODULES-ROOF MOUNTED - 9.960 kW DC, 7.600 kW AC

251 IRENE LN, LAKE CITY, FL 32055



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

## PROJECT DATA

PROJECT ADDRESS: 251 IRENE LN, LAKE CITY, FL 32055

OWNER: CHARLES DOWNING

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

DESIGNER: ESR

SCOPE: 9.960 KW DC ROOF MOUNT SOLAR PV SYSTEM WITH 24 TRINA SOLAR: TSM-NE09RC.05 415W PV MODULES WITH 24 SOLAREEDGE: S440 POWER OPTIMIZERS 01 SOLAREEDGE: SE7600H-USMNUBL15 (DOMESTIC) 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  
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## PROFESSIONAL ENGINEER SEAL

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## GENERAL NOTES

- ALL COMPONENTS ARE UL LISTED AND CEC 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 2020 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 SINAGE 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.



## VICINITY MAP



## HOUSE PHOTO



## CODE REFERENCES

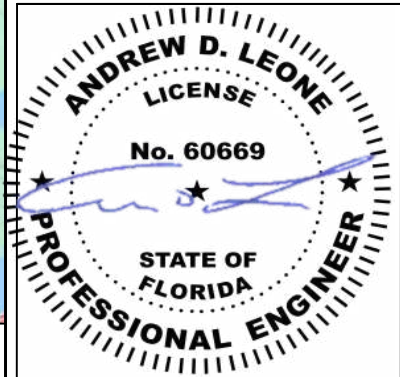
PROJECT TO COMPLY WITH THE FOLLOWING:

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

Andrew D. Leone  
Digitally signed by Andrew D. Leone  
Date: 2025.03.05 15:46:38 -05'00'

## REVISIONS

| DESCRIPTION | DATE | REV |
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DATE: 03/05/2025

## PROJECT NAME & ADDRESS

CHARLES DOWNING  
RESIDENCE  
251 IRENE LN,  
LAKE CITY, FL 32055

## DRAWN BY

ESR

## SHEET NAME

COVER SHEET

## SHEET SIZE

ANSI B  
11" X 17"

## SHEET NUMBER

PV-1

PROJECT DESCRIPTION:

24 X TRINA SOLAR: TSM-NE09RC.05 415W PV MODULES  
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES  
DC SYSTEM SIZE: 24 x 415 = 9.960KW DC  
AC SYSTEM SIZE: 01 x 7.600 = 7.600KW AC

EQUIPMENT SUMMARY  
24 TRINA SOLAR: TSM-NE09RC.05 415W MONO MODULES  
24 SOLAREEDGE: S440 POWER OPTIMIZERS  
01 SOLAREEDGE: SE7600H-USMNUBL15 (DOMESTIC) INVERTER

ROOF ARRAY AREA #1:- 344.00 SQ FT.  
ROOF ARRAY AREA #2:- 172.00 SQ FT.

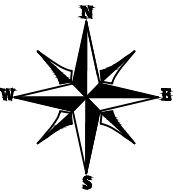
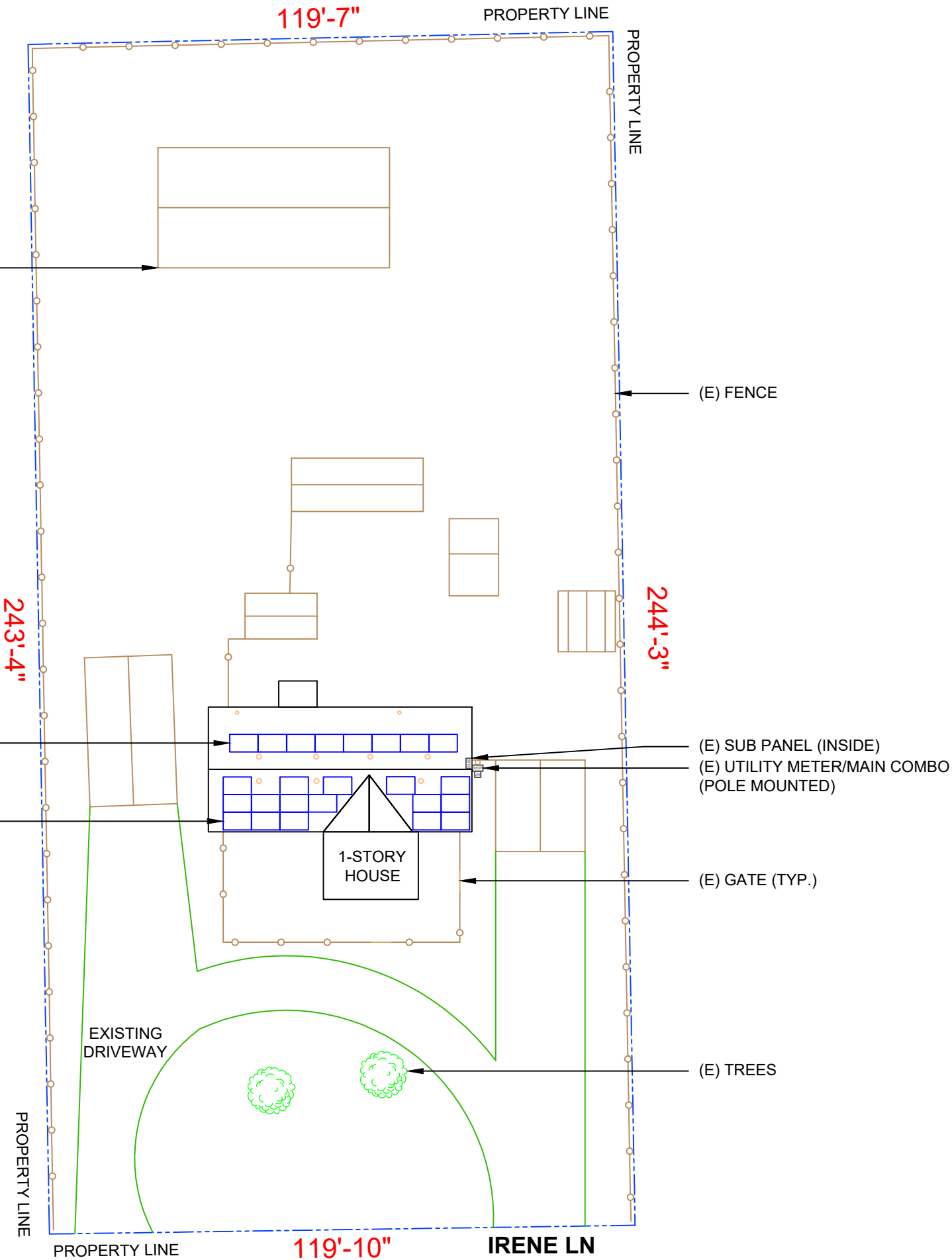
NOTE: VISIBLE, LOCKABLE, LABELED AC DISCONNECT  
LOCATED WITHIN 10' OF UTILITY METER

(E) DETACHED  
STRUCTURE (TYP.)

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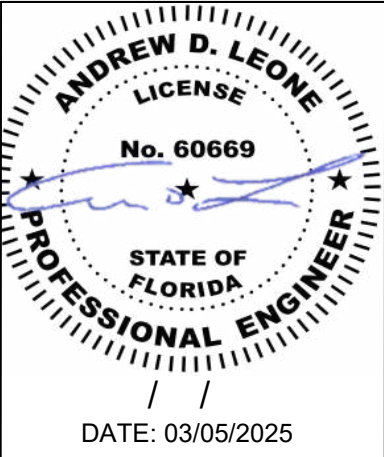
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ROOF #2  
(8) TRINA SOLAR:TSM-NE09RC.05  
415W MONO MODULES WITH SOLAREEDGE:  
S440 POWER OPTIMIZERS  
ROOF #1  
(16) TRINA SOLAR:TSM-NE09RC.05  
415W MONO MODULES WITH SOLAREEDGE:  
S440 POWER OPTIMIZERS



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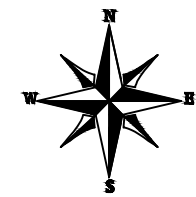
SHEET NAME  
SITE PLAN

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-2

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 24 MODULES  
MODULE TYPE = TRINA SOLAR: TSM-NE09RC.05 415W MONO MODULES  
MODULE WEIGHT = 47.0 LBS / 21.3KG.  
MODULE DIMENSIONS = 69.37" x 44.65" = 21.50 SF



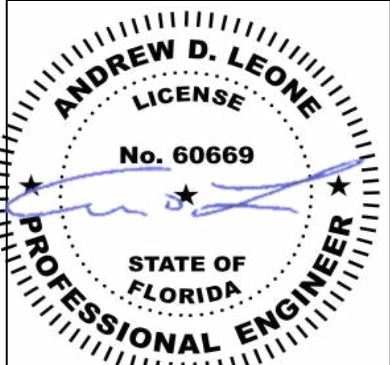
| ARRAY AREA & ROOF AREA CALC'S |              |                      |                     |                                |
|-------------------------------|--------------|----------------------|---------------------|--------------------------------|
| ROOF                          | # OF MODULES | ARRAY AREA (Sq. Ft.) | ROOF AREA (Sq. Ft.) | ROOF AREA COVERED BY ARRAY (%) |
| #1                            | 16           | 344.00               | 581.89              | 59                             |
| #2                            | 8            | 172.00               | 687.54              | 25                             |
| TOTAL                         | 24           | 516.00               | 1684.48             | 31                             |

| ROOF DESCRIPTION |            |                 |            |               |
|------------------|------------|-----------------|------------|---------------|
| ROOF TYPE        |            | ASPHALT SHINGLE |            |               |
| ROOF             | ROOF PITCH | AZIMUTH         | TRUSS SIZE | TRUSS SPACING |
| #1               | 15°        | 180°            | 2"X2"      | 24"           |
| #2               | 15°        | 0°              | 2"X2"      | 24"           |



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DATE: 03/05/2025

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RESIDENCE

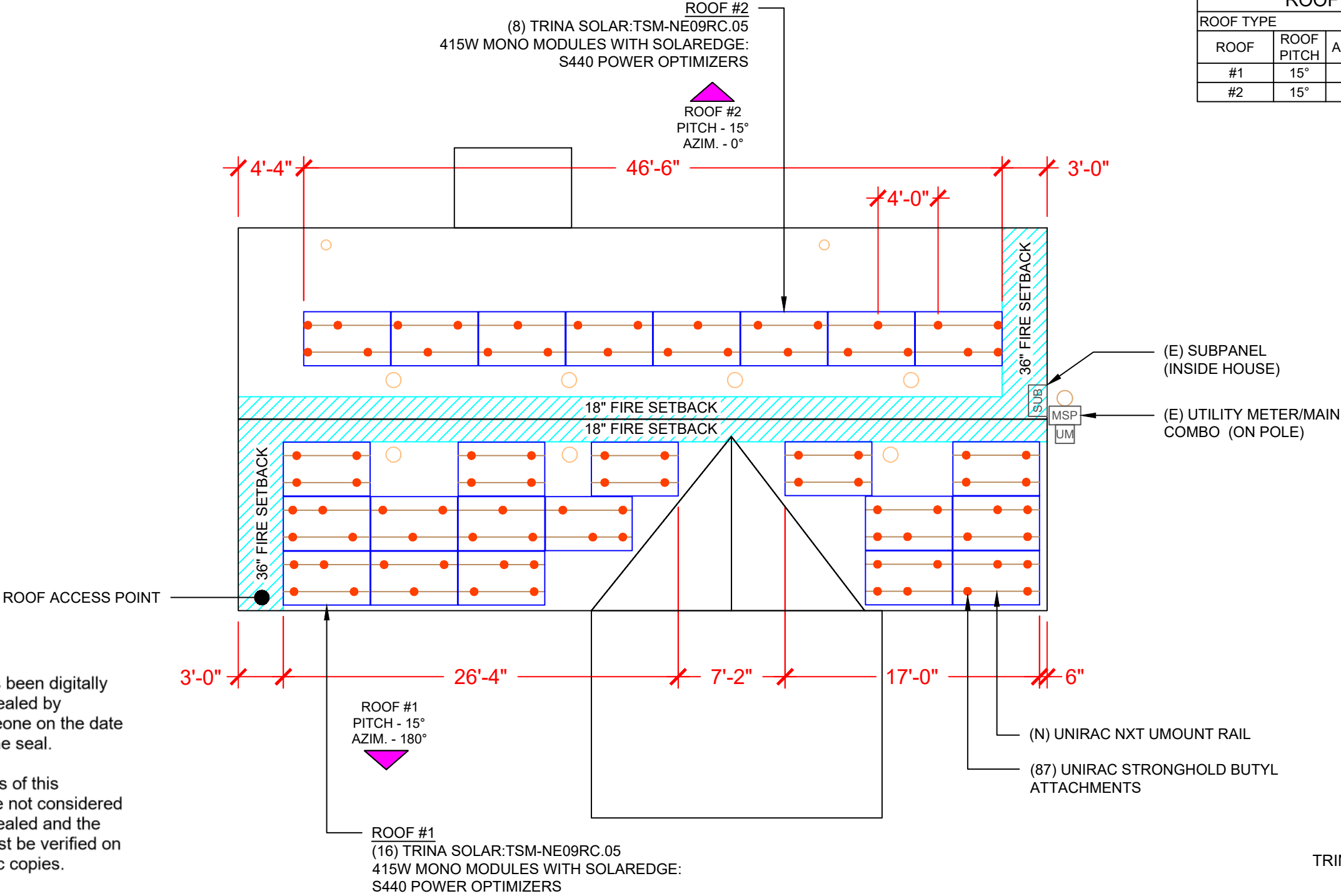
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ESR

SHEET NAME  
ROOF PLAN & MODULES

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-3



44.65"

69.37"

TRINA SOLAR: TSM-NE09RC.05  
415W MODULES

LEGEND

- VENT, ATTIC FAN  
(ROOF OBSTRUCTION)

- ROOF ATTACHMENT

- MAIN SERVICE PANEL

- UTILITY METER

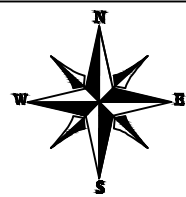
CIRCUIT LEGENDS

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STRING #1

---

STRING #2



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LEGEND

JB

- JUNCTION BOX

INV

- INVERTER

ACD

- AC DISCONNECT

UM

- UTILITY METER

MSP

- MAIN SERVICE PANEL

---

- CONDUIT

LUNEX POWER

THE PURE SOURCE

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ANDREW D. LEONE

LICENSE

No. 60669

STATE OF FLORIDA

PROFESSIONAL ENGINEER

/ /

DATE: 03/05/2025

PROJECT NAME & ADDRESS

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RESIDENCE

251 IRENE LN,  
LAKE CITY, FL 32055

DRAWN BY

ESR

SHEET NAME

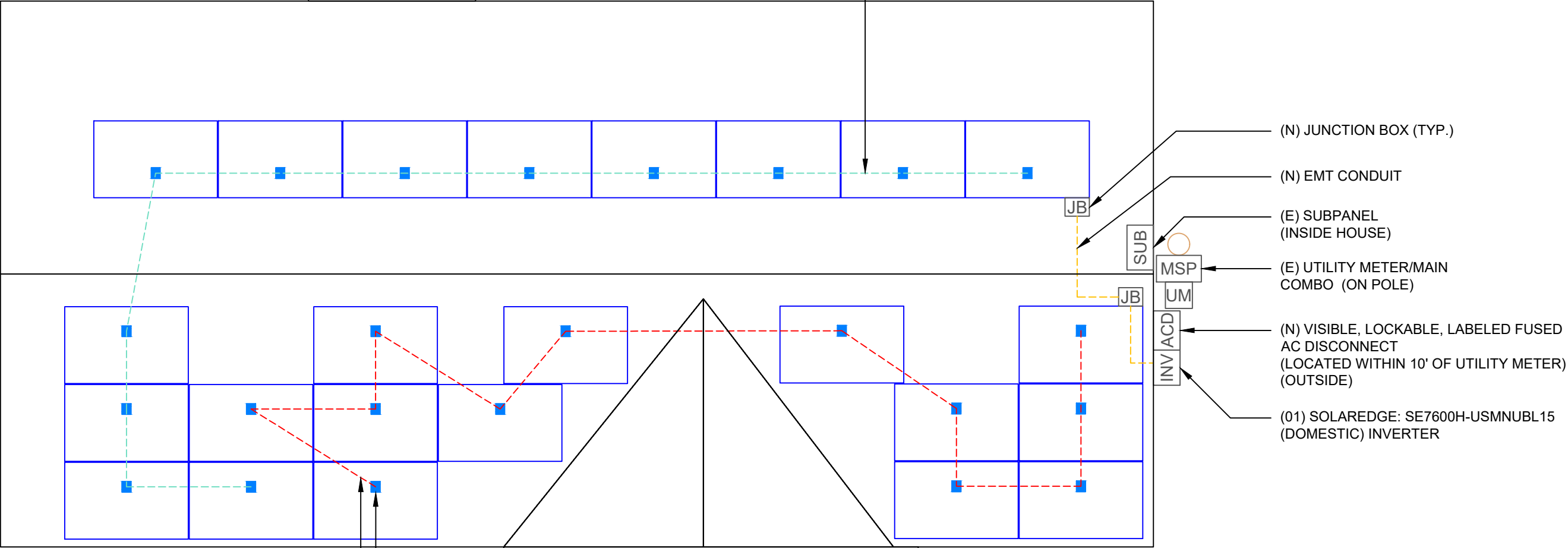
ELECTRICAL PLAN

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-4



| BILL OF MATERIALS |     |                                                 |
|-------------------|-----|-------------------------------------------------|
| EQUIPMENT         | QTY | DESCRIPTION                                     |
| SOLAR PV MODULES  | 24  | TRINA SOLAR: TSM-NE09RC.05 415W MODULE          |
| POWER OPTIMIZERS  | 24  | SOLAREGE: S440 POWER OPTIMIZERS                 |
| INVERTER          | 1   | SOLAREGE: SE7600H-USMNUBL15 (DOMESTIC) INVERTER |
| JUNCTION BOX      | 2   | JUNCTION BOXES                                  |
| RAILS             | 20  | UNIRAC NXT U MOUNT RAIL                         |
| SPLICES           | 10  | SPLICE KIT                                      |
| MID MODULE CLAMPS | 28  | MID MODULE CLAMPS                               |
| END CLAMPS        | 40  | END CLAMPS / STOPPER SLEEVE                     |
| ATTACHMENTS       | 87  | UNIRAC STRONGHOLD BUTYL ATTACHMENTS             |

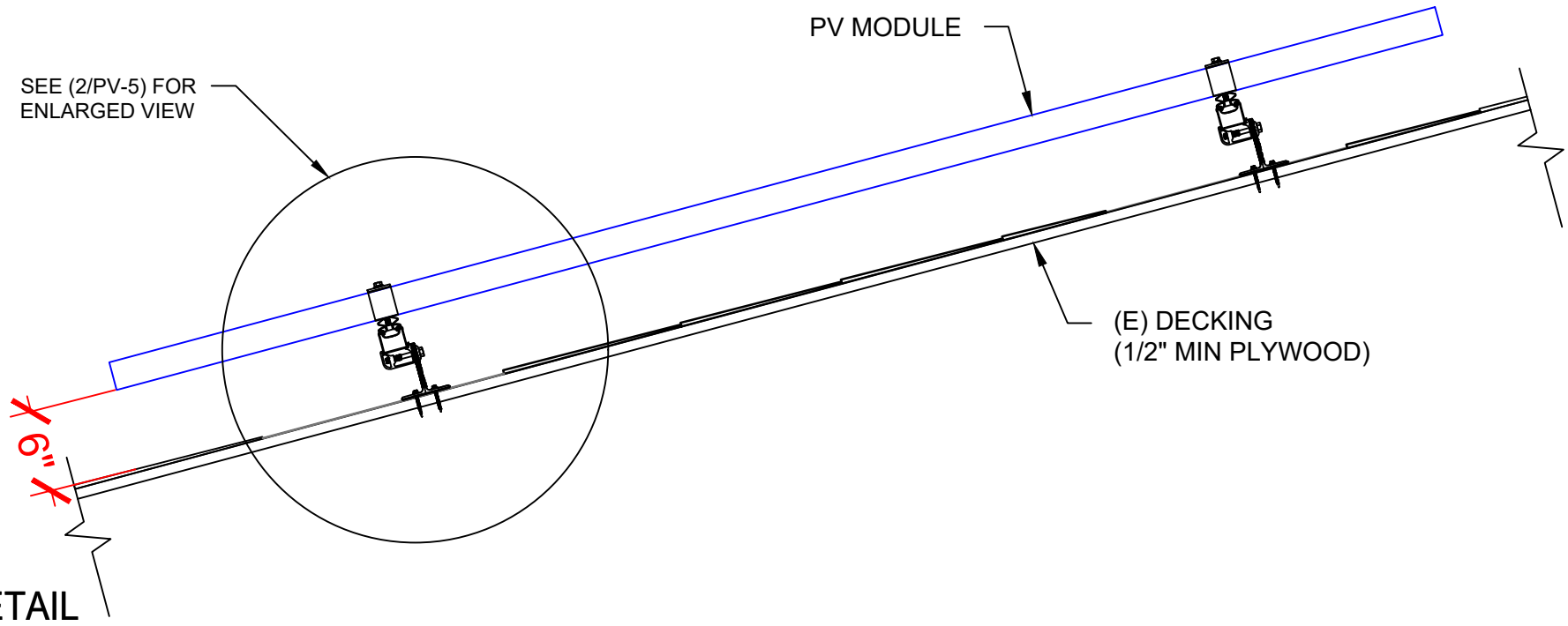
1

ELECTRICAL PLAN

PV-4

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

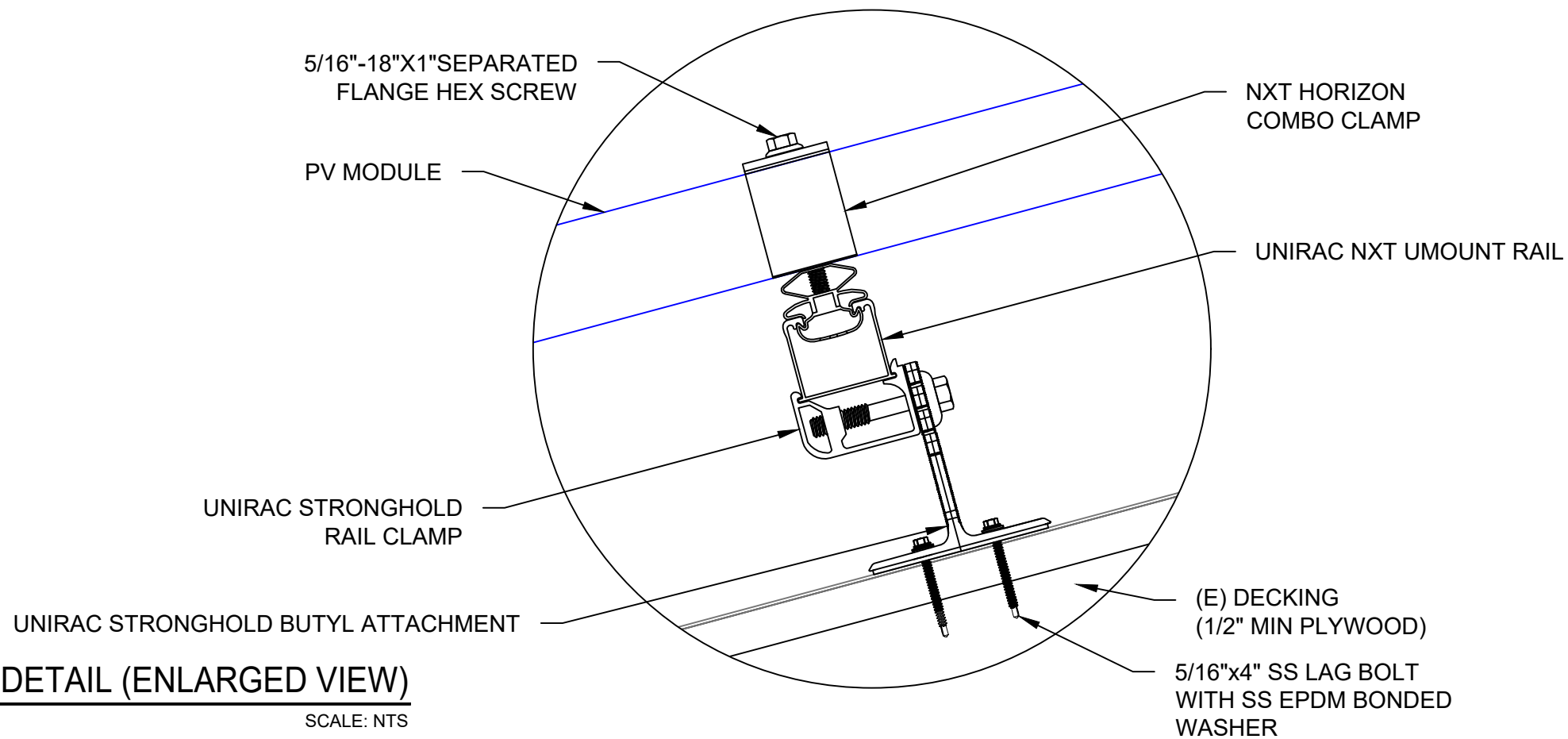
DESCRIPTION: CANTILEVER  
CANTILEVER CONSIDER 1/3<sup>RD</sup> OF ROOF ATTACHMENT SPACING.  
ATTACHMENT SPACING= 48" O/C  
CANTILEVER = 16"



1 ATTACHMENT DETAIL  
PV-5 SCALE: NTS

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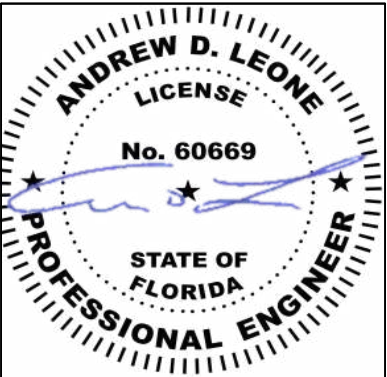


2 ATTACHMENT DETAIL (ENLARGED VIEW)  
PV-5 SCALE: NTS



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ESR

SHEET NAME  
STRUCTURAL DETAIL

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-5

DC SYSTEM SIZE: 24 x 415 = 9.960KW DC  
AC SYSTEM SIZE: 01 x 7.600 = 7.600KW AC

(24) TRINA SOLAR: TSM-NE09RC.05 415W MONO MODULES WITH  
(24) SOLAREEDGE: S440 POWER OPTIMIZERS  
01 SOLAREEDGE: SE7600H-USMNUBL15 (DOMESTIC) INVERTER

(2) BRANCH CIRCUITS OF 12 MODULES ARE CONNECTED IN PARALLEL

#### 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 NOTES:

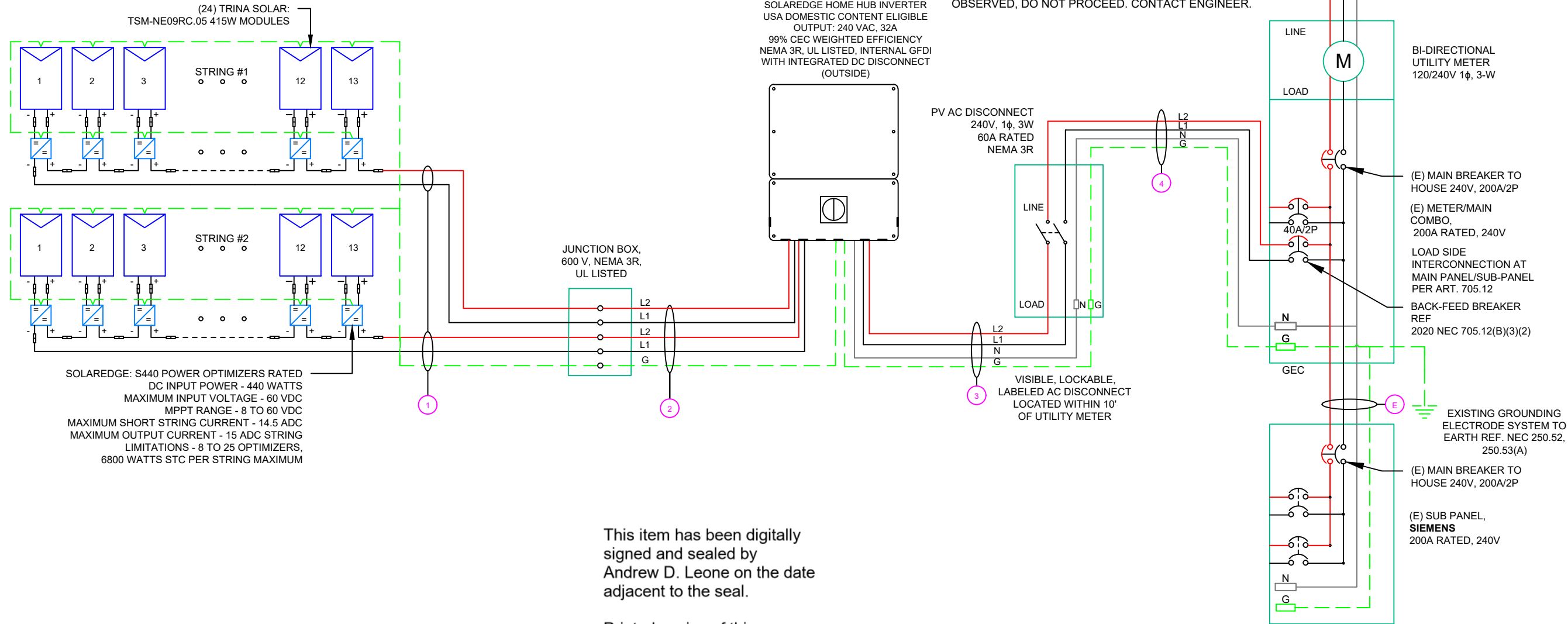
1. BOND EVERY OTHER RAIL WITH #6 BARE COPPER

#### GROUNDING & GENERAL NOTES:

1. **GROUNDING ELECTRODES AND GROUNDING ELECTRODE CONDUCTORS.** ADDITIONAL GROUNDING ELECTRODES 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.

#### 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.

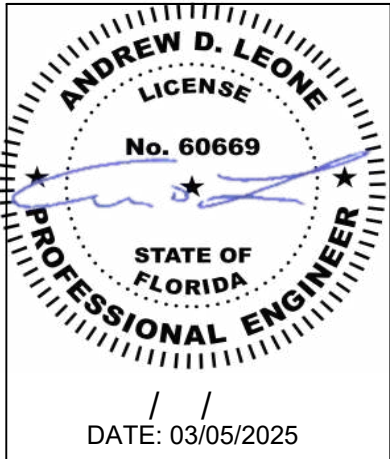


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| QTY | CONDUCTOR INFORMATION |                                   | CONDUIT TYPE         | CONDUIT SIZE |
|-----|-----------------------|-----------------------------------|----------------------|--------------|
| 1   | (4)                   | CU#10AWG - PV WIRE/USE-2          | N/A                  | N/A          |
|     | (1)                   | CU#6AWG - BARE COPPER IN FREE AIR |                      |              |
| 2   | (4)                   | CU#10AWG - THWN-2 (L1,L2)         | EMT OR LFMC IN ATTIC | 3/4"         |
|     | (1)                   | CU#10AWG - THWN-2 GND             |                      |              |
| 3   | (2)                   | CU#8AWG - THWN-2 (L1,L2)          | EMT OR LFMC IN ATTIC | 3/4"         |
|     | (1)                   | CU#8AWG - THWN-2 N                |                      |              |
| 4   | (1)                   | CU#10AWG - THWN-2 GND             | EMT, LFMC OR LFNC    | 3/4"         |
|     | (3)                   | CU#8AWG - THWN-2 (L1,L2,N)        |                      |              |
|     | (1)                   | CU#10AWG - THWN-2 GND             |                      |              |

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PROJECT NAME & ADDRESS

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RESIDENCE  
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LAKE CITY, FL 32055

DRAWN BY

ESR

SHEET NAME

ELECTRICAL LINE DIAGRAM

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-6

| INVERTER SPECIFICATIONS |                                                        |
|-------------------------|--------------------------------------------------------|
| MANUFACTURER / MODEL #  | SOLAREEDGE:<br>SE7600H-USMNUBL15(DOMESTIC)<br>INVERTER |
| NOMINAL AC POWER        | 7.600 KW                                               |
| NOMINAL OUTPUT VOLTAGE  | 240 VAC                                                |
| NOMINAL OUTPUT CURRENT  | 32A                                                    |

| SOLAR MODULE SPECIFICATIONS |                                           |
|-----------------------------|-------------------------------------------|
| MANUFACTURER / MODEL #      | TRINA SOLAR: TSM-NE09RC.05 415W<br>MODULE |
| VMP                         | 42.5V                                     |
| IMP                         | 9.77A                                     |
| VOC                         | 50.5V                                     |
| ISC                         | 10.40A                                    |
| TEMP. COEFF. VOC            | -0.24%/°C                                 |
| MODULE DIMENSION            | 69.37"L x 44.65"W x 1.18"D (In Inch)      |

| AMBIENT TEMPERATURE SPECS             |           |
|---------------------------------------|-----------|
| RECORD LOW TEMP                       | -5°       |
| AMBIENT TEMP (HIGH TEMP 2%)           | 37°       |
| MODULE TEMPERATURE COEFFICIENT OF Voc | -0.24%/°C |

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

| 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        | 400         | 15.00                    | 18.75        | 20            | BARE COPPER #6 AWG | CU #10 AWG     | 35                | PASS              | 37                 | 2                              | 40                | 0.91                                                     | 1                                                           | 36.4                      | PASS              | 65                   | 1.24                           | 0.605                   | N/A          | #N/A             |
| STRING 2               | JUNCTION BOX        | 400         | 15.00                    | 18.75        | 20            | BARE COPPER #6 AWG | CU #10 AWG     | 35                | PASS              | 37                 | 2                              | 40                | 0.91                                                     | 1                                                           | 36.4                      | PASS              | 62                   | 1.24                           | 0.577                   | N/A          | #N/A             |
| JUNCTION BOX           | INVERTER            | 400         | 15.00                    | 18.75        | 20            | CU #10 AWG         | CU #10 AWG     | 35                | PASS              | 37                 | 4                              | 40                | 0.91                                                     | 0.8                                                         | 29.12                     | PASS              | 16                   | 1.24                           | 0.149                   | 3/4" EMT     | 19.79362         |
|                        |                     |             |                          |              |               |                    |                |                   |                   |                    |                                |                   |                                                          |                                                             |                           |                   |                      |                                | String 1 Voltage Drop   | 0.753        |                  |
|                        |                     |             |                          |              |               |                    |                |                   |                   |                    |                                |                   |                                                          |                                                             |                           |                   |                      |                                | String 2 Voltage Drop   | 0.725        |                  |

| 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 #8 AWG    | CU #10 AWG  | CU #8 AWG      | 50                | PASS              | 37                 | 2                              | 55                | 0.91                                                     | 1                                                           | 50.05                     | PASS              | 5                    | 0.778                          | 0.104                   | 3/4" EMT     | 24.5591          |
| AC DISCONNECT          | POI                 | 240         | 32                       | 40           | 40            | CU #8 AWG    | CU #10 AWG  | CU #8 AWG      | 50                | PASS              | 37                 | 2                              | 55                | 0.91                                                     | 1                                                           | 50.05                     | PASS              | 5                    | 0.778                          | 0.104                   | 3/4" EMT     | 24.5591          |
|                        |                     |             |                          |              |               |              |             |                |                   |                   |                    |                                |                   |                                                          |                                                             |                           |                   |                      | CUMULATIVE VOLTAGE             |                         | 0.207        |                  |

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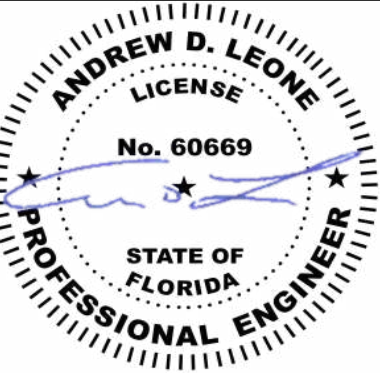
ELECTRICAL NOTES

1. ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
2. ALL CONDUCTORS SHALL BE RATED UPTO 600V FOR RESIDENTIAL AND 1000V FOR COMMERCIAL AND 90 DEGREE C WET ENVIRONMENT.
3. 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.
4. WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
5. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
6. WHERE SIZES OF JUNCTION BOX, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
7. ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
8. MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
9. MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
10. 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.



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

| REVISIONS   |      |     |
|-------------|------|-----|
| DESCRIPTION | DATE | REV |
|             |      |     |
|             |      |     |
|             |      |     |



/ /  
DATE: 03/05/2025

PROJECT NAME & ADDRESS

CHARLES DOWNING  
RESIDENCE

251 IRENE LN,  
LAKE CITY, FL 32055

DRAWN BY

ESR

SHEET NAME

WIRING CALCULATIONS

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-7

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:  
AC DISCONNECT  
COMBINER  
MAIN SERVICE PANEL  
SUBPANEL  
MAIN SERVICE DISCONNECT  
CODE REF: NEC 690.13(B)

 **WARNING DUAL POWER SOURCE**

**SECOND SOURCE IS PHOTOVOLTAIC SYSTEM**

LABEL- 3:  
LABEL LOCATION:  
PRODUCTION METER  
UTILITY METER  
MAIN SERVICE PANEL  
SUBPANEL  
CODE REF: NEC 705.12(C) & NEC 690.59

 **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)

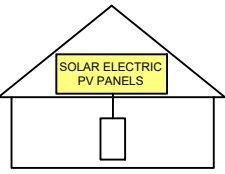
 **WARNING**

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

LABEL- 5:  
LABEL LOCATION:  
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)  
SUBPANEL (ONLY IF SOLAR IS BACK-FED)  
CODE REF: NEC 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:  
AC DISCONNECT  
CODE REF: IFC 605.11.3.1(1) & NEC 690.56(C)

RAPID SHUTDOWN SWITCH  
FOR SOLAR PV SYSTEM

LABEL- 7:  
LABEL LOCATION:  
AC DISCONNECT  
CODE REF: NEC 690.56(C)(2)

PHOTOVOLTAIC

AC DISCONNECT

LABEL- 8:  
LABEL LOCATION:  
AC DISCONNECT  
CODE REF: NEC 690.13(B)

PHOTOVOLTAIC  
AC DISCONNECT

NOMINAL OPERATING AC VOLATGE240 V

RATED AC OUTPUT CURRENT32 A

LABEL- 9:  
LABEL LOCATION:  
MAIN SERVICE PANEL  
SUBPANEL  
AC DISCONNECT  
CODE REF: NEC 690.54

MAIN PHOTOVOLTAIC  
SYSTEM DISCONNECT

LABEL- 10:  
LABEL LOCATION:  
MAIN SERVICE DISCONNECT (ONLY IF MAIN SERVICE DISCONNECT IS PRESENT)  
CODE REF: NEC 690.13(B)

PRODUCTION  
METER

LABEL- 11:  
LABEL LOCATION:  
PRODUCTION METER (ONLY IF PRODUCTION METER IS USED)

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

LABEL-12:

WARNING: PHOTOVOLTAIC  
POWER SOURCE

LABEL-13:  
LABEL LOCATION:  
EMT/CONDUIT RACEWAY  
SOLADECK/JUNCTION BOX  
CODE REF : NEC 690.31 (D) (14)

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- 14:  
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)

MAXIMUM VOLTAGE:480 V

MAXIMUM CIRCUIT CURRENT:40 A

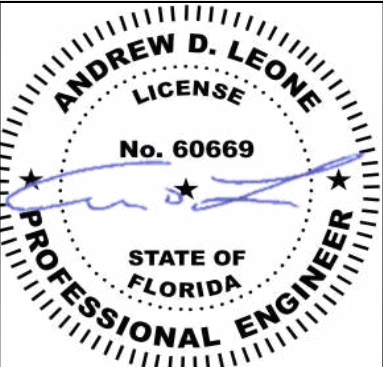
MAXIMUM RATED OUTPUT  
CURRENT OF THE CHARGE  
CONTROLLER OR DC-TO-DC  
CONVERTER (IF INSTALLED):

LABEL- 15:  
LABEL LOCATION:  
INVERTER  
CODE REF: NEC 690.53



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TAMPA FL 33614  
LIC #: CVC57085  
PHONE: 813-540-8807

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/ /  
DATE: 03/05/2025

PROJECT NAME & ADDRESS

CHARLES DOWNING  
RESIDENCE  
251 IRENE LN,  
LAKE CITY, FL 32055

DRAWN BY

ESR

SHEET NAME

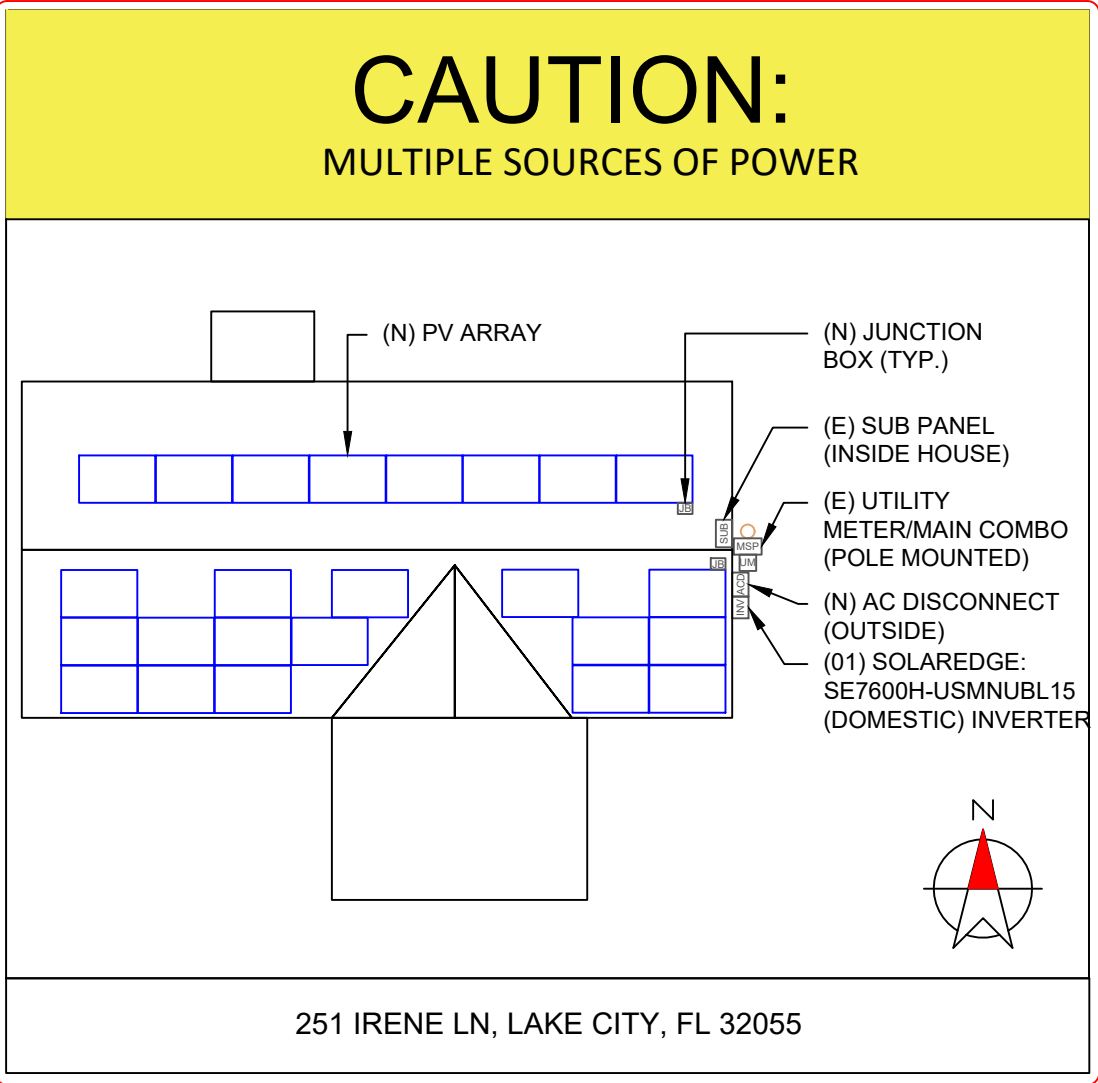
LABELS

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-8



**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(B)&(C), [NEC 705.10])

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- 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 NATIONAL ELECTRIC CODE, OSHA STANDARD 19010.145, 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 [IFC 605.11.1.1]

LUNEX POWER  
THE PURE SOURCE

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

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DATE: 03/05/2025

PROJECT NAME & ADDRESS

CHARLES DOWNING  
RESIDENCE  
251 IRENE LN,  
LAKE CITY, FL 32055

DRAWN BY

ESR

SHEET NAME

PLACARD

SHEET SIZE

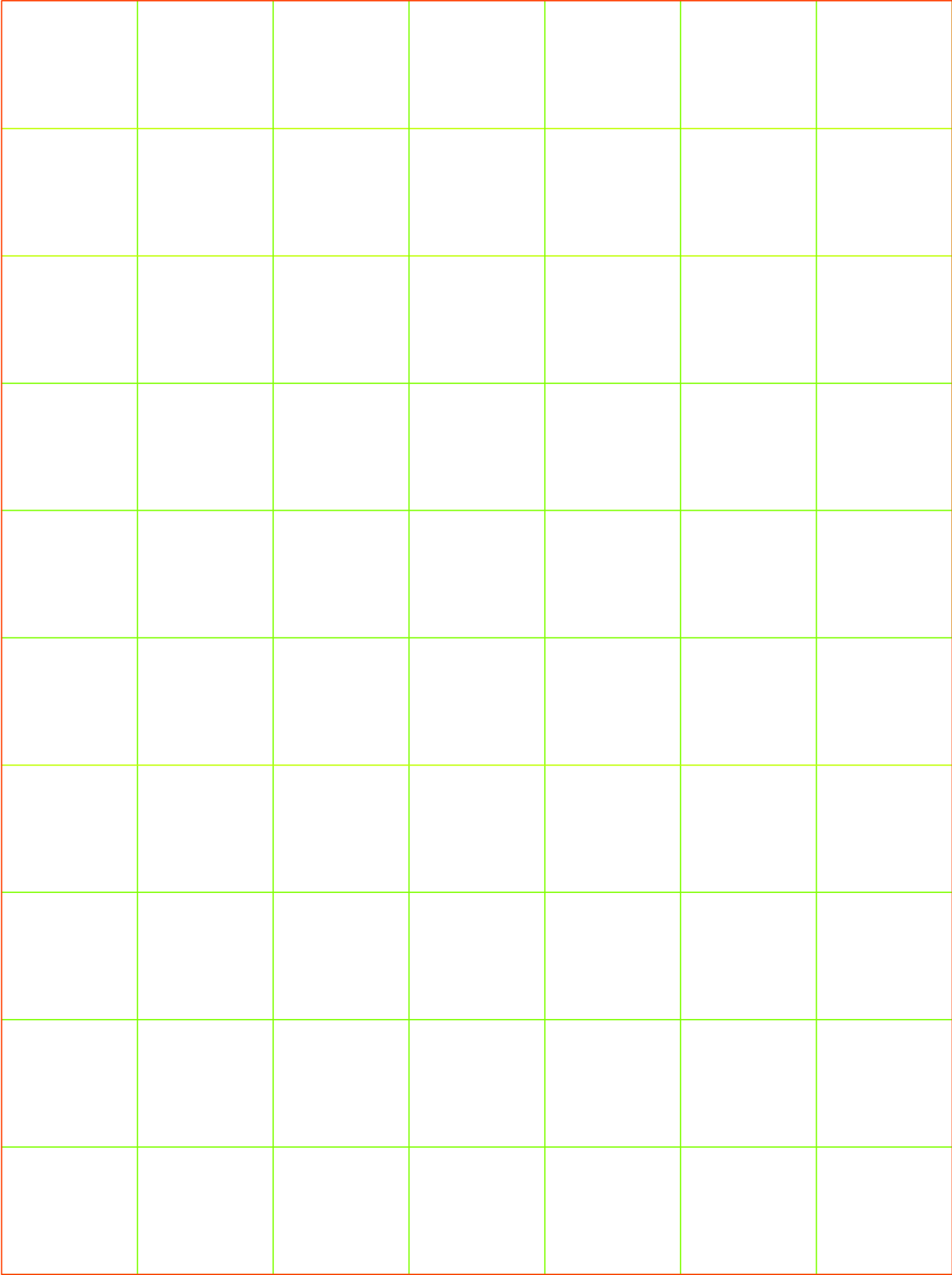
ANSI B  
11" X 17"

SHEET NUMBER

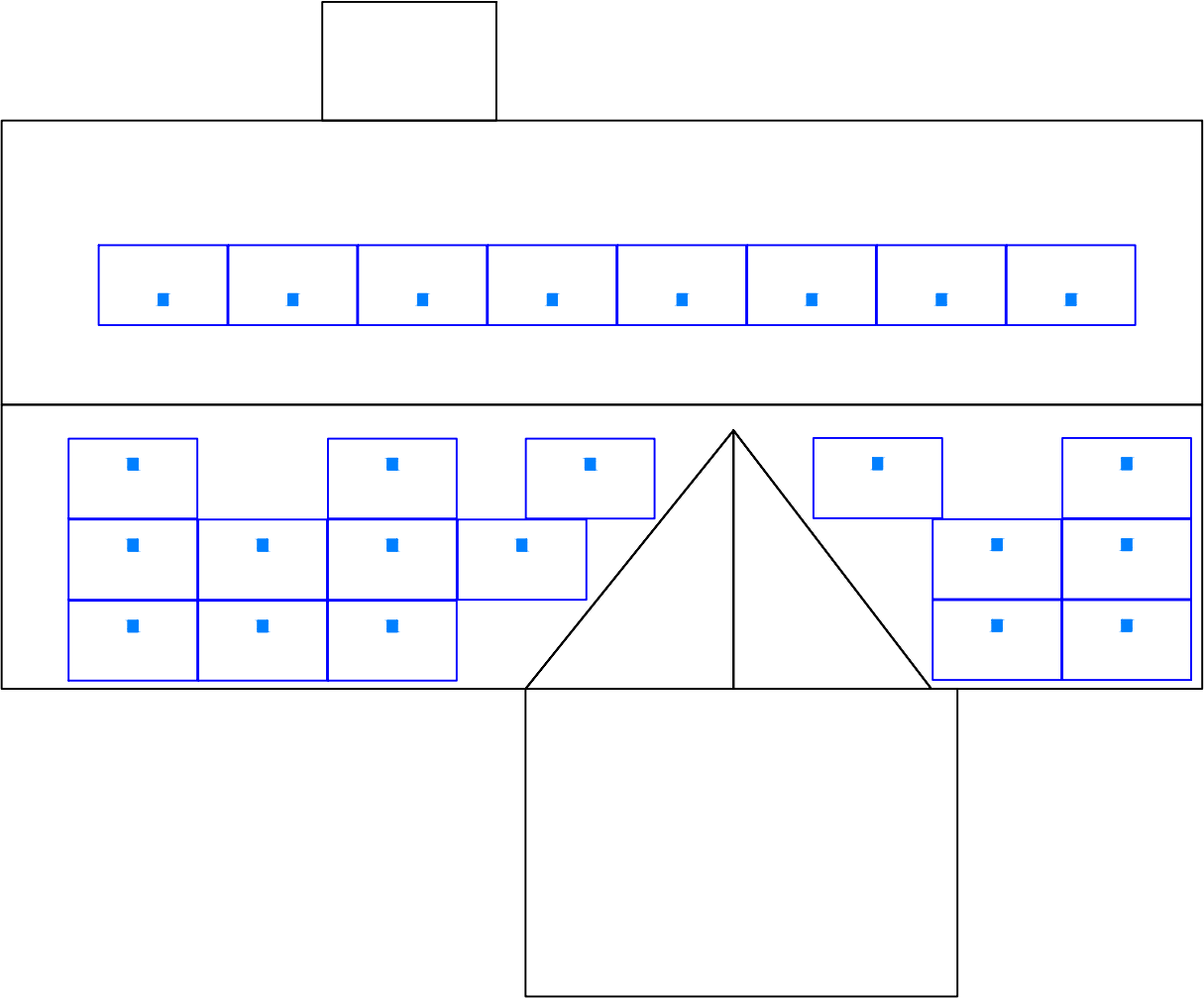
PV-9

1-1011-2021-3031-4041-5051-6061-70

12345678910



OPTIMIZER CHART





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

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DATE: 03/05/2025

CHARLES DOWNING  
RESIDENCE

251 IRENE LN,  
LAKE CITY, FL 32055

DRAWN BY  
ESR

SHEET NAME  
OPTIMIZER CHART

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-10



## BACKSHEET MONOCRYSTALLINE MODULE

PRODUCT: TSM-NE09RC.05  
PRODUCT RANGE: 400-430W

430W

MAXIMUM POWER OUTPUT

0~+5W

POSITIVE POWER TOLERANCE

21.5%

MAXIMUM EFFICIENCY



## Small in size, bigger on power

- Up to 430W, 21.5% module efficiency with high density interconnect technology
- Reduce installation cost with higher power bin and efficiency
- Boost performance in warm weather with low temperature coefficient and operating temperature



## High Reliability

- Innovative non-destructive cutting for improved mechanical resistance and strength
- Excellent fire rating, weather resistance, salt spray, sand dust, ammonia performance which is fully applicable in coastal, high temperature, humidity area and harsh environment



## Ultra-low Degradation, longer warranty, higher output

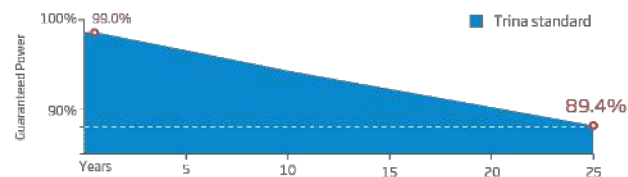
- First-year degradation 1% and annual degradation at 0.4%
- Up to 25 years product warranty and 25 years power warranty



## Universal solution for residential and C&amp;I rooftops

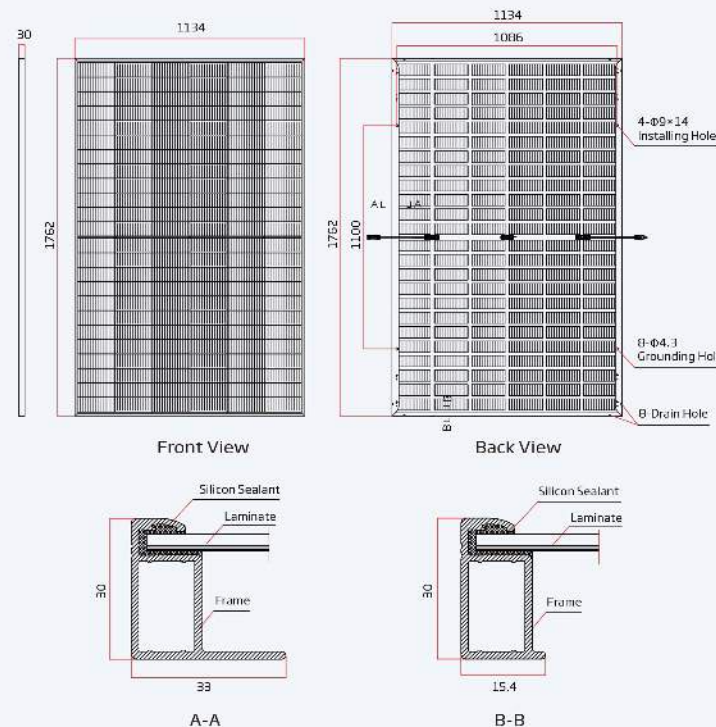
- Easy for integration, designed for compatibility with existing mainstream inverters and diverse mounting systems
- Perfect size and low weight for handling and installation
- Most valuable solution on low load capacity rooftops (weight similar to backsheet version)
- Mechanical performance up to 6000 Pa positive load and 4000 Pa negative load

## Trina Solar's Vertex Bifacial Backsheet Performance Warranty

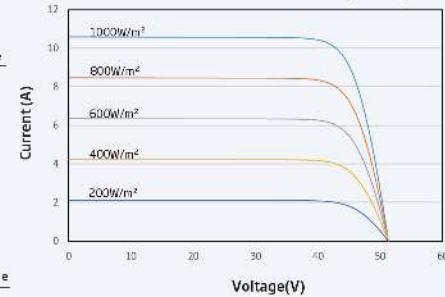


BACKSHEET MONOCRYSTALLINE MODULE

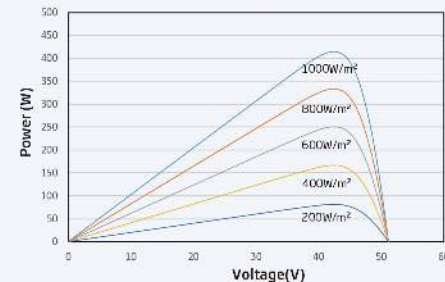
## DIMENSIONS OF PV MODULE(mm)



## I-V CURVES OF PV MODULE(415W)



## P-V CURVES OF PV MODULE(415W)



## ELECTRICAL DATA (STC)

|                                           |       |       |       |       |       |       |       |
|-------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Peak Power Watts-P <sub>max</sub> (Wp)*   | 400   | 405   | 410   | 415   | 420   | 425   | 430   |
| Power Tolerance-PMAX (W)                  |       |       |       | 0~+5  |       |       |       |
| Maximum Power Voltage-V <sub>mp</sub> (V) | 41.3  | 41.7  | 42.1  | 42.5  | 42.8  | 43.2  | 43.6  |
| Maximum Power Current-I <sub>mp</sub> (A) | 9.68  | 9.71  | 9.73  | 9.77  | 9.80  | 9.84  | 9.87  |
| Open Circuit Voltage-V <sub>oc</sub> (V)  | 49.2  | 49.6  | 50.1  | 50.5  | 50.9  | 51.4  | 51.8  |
| Short Circuit Current-I <sub>sc</sub> (A) | 10.30 | 10.33 | 10.37 | 10.40 | 10.43 | 10.47 | 10.50 |
| Module Efficiency, η <sub>m</sub> (%)     | 20.0  | 20.3  | 20.5  | 20.8  | 21.0  | 21.3  | 21.5  |

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. \*Measuring tolerance: ±3%

## Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

|                                              |       |       |       |       |       |       |       |
|----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Total Equivalent power-P <sub>max</sub> (Wp) | 425   | 431   | 437   | 442   | 447   | 453   | 458   |
| Maximum Power Voltage-V <sub>mp</sub> (V)    | 41.3  | 41.7  | 42.1  | 42.5  | 42.8  | 43.2  | 43.6  |
| Maximum Power Current-I <sub>mp</sub> (A)    | 10.31 | 10.34 | 10.36 | 10.41 | 10.44 | 10.48 | 10.51 |
| Open Circuit Voltage-V <sub>oc</sub> (V)     | 49.2  | 49.6  | 50.1  | 50.5  | 50.9  | 51.4  | 51.8  |
| Short Circuit Current-I <sub>sc</sub> (A)    | 10.97 | 11.00 | 11.04 | 11.08 | 11.11 | 11.15 | 11.18 |
| Irradiance ratio (rear/front)                |       |       |       | 10%   |       |       |       |

Power Tolerance: ±5%±10%

## ELECTRICAL DATA (NOCT)

|                                           |      |      |      |      |      |      |      |
|-------------------------------------------|------|------|------|------|------|------|------|
| Maximum Power-P <sub>max</sub> (Wp)       | 312  | 308  | 312  | 316  | 319  | 324  | 328  |
| Maximum Power Voltage-V <sub>mp</sub> (V) | 38.6 | 39.0 | 39.3 | 39.7 | 40.0 | 40.4 | 40.7 |
| Maximum Power Current-I <sub>mp</sub> (A) | 7.08 | 7.91 | 7.93 | 7.96 | 7.98 | 8.01 | 8.04 |
| Open Circuit Voltage-V <sub>oc</sub> (V)  | 46.6 | 47.0 | 47.5 | 47.8 | 48.2 | 48.7 | 49.1 |
| Short Circuit Current-I <sub>sc</sub> (A) | 8.30 | 8.32 | 8.36 | 8.38 | 8.41 | 8.44 | 8.46 |

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

## MECHANICAL DATA

|                      |                                                                                                           |
|----------------------|-----------------------------------------------------------------------------------------------------------|
| Solar Cells          | Topcon Bifacial                                                                                           |
| No. of cells         | 144cells                                                                                                  |
| Module Dimensions    | 1762×1134×30 mm (69.37×44.65×1.18 inches)                                                                 |
| Weight               | 21.3kg (47.0 lb)                                                                                          |
| Front Glass          | 3.2 mm (0.12 inches), High Transmission, Tempered Glass                                                   |
| Encapsulant material | POE/EVA                                                                                                   |
| Backsheet            | Black Grid Transparent Backsheet                                                                          |
| Frame                | 30mm (1.18 inches) Anodized Aluminium Alloy, Black                                                        |
| J-Box                | IP68 rated                                                                                                |
| Cables               | Photovoltaic Technology Cable 4.0mm² (0.006 inches²)<br>Landscape: V1100 mm/P1100 mm (43.31/43.31 inches) |
| Connector            | MC4 EVO2                                                                                                  |
| Fire Type            | Type 1 or Type 2                                                                                          |

## TEMPERATURE RATINGS

|                                             |             |
|---------------------------------------------|-------------|
| NOCT (Nominal Operating Cell Temperature)   | 43°C (±2°C) |
| Temperature Coefficient of P <sub>max</sub> | -0.30%/°C   |
| Temperature Coefficient of V <sub>oc</sub>  | -0.24%/°C   |
| Temperature Coefficient of I <sub>sc</sub>  | 0.04%/°C    |

## MAXIMUM RATINGS

|                         |                |
|-------------------------|----------------|
| Operational Temperature | -40~+85°C      |
| Maximum System Voltage  | 1500V DC (IEC) |
| Max Series Fuse Rating  | 25 A           |

## WARRANTY

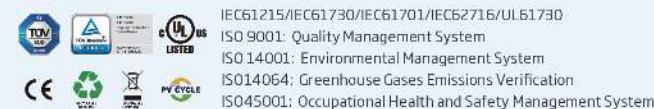
|                                      |
|--------------------------------------|
| 25 year Product Workmanship Warranty |
| 25 year Power Warranty               |
| 1% first-year degradation            |
| 0.4% Annual Power Attenuation        |

(Please refer to product warranty for details)

## PACKAGING CONFIGURATION

|                                                      |
|------------------------------------------------------|
| Modules per box: 35 pieces                           |
| Modules per 40' container: 792 pieces                |
| Pallet dimensions (L x W x H): 1800 x 1135 x 1259 mm |
| Pallet weight: 829 kg (1827 lb)                      |

## Comprehensive Products and System Certificates



CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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Version number: TSM\_NA\_EN\_2023\_A

www.trinasolar.com

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

## REVISIONS

| DESCRIPTION | DATE | REV |
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|             |      |     |
|             |      |     |

DATE: 03/05/2025

## PROJECT NAME &amp; ADDRESS

CHARLES DOWNING  
RESIDENCE  
251 IRENE LN,  
LAKE CITY, FL 32055

## DRAWN BY

ESR

SHEET NAME  
EQUIPMENT  
SPECIFICATION

## SHEET SIZE

ANSI B  
11" X 17"

## SHEET NUMBER

PV-11

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



12-25  
YEAR  
WARRANTY

# HOME BACKUP



|                                                                                                                                                                                                                                                                           |                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Eligible for domestic content: SolarEdge USA-manufactured inverters*, when paired with certain SolarEdge power optimizers, are intended to be eligible for the enhanced federal income tax credit for domestic content.</li> </ul> | <ul style="list-style-type: none"> <li>Fast and easy installation – small and lightweight, with reduced commissioning time</li> </ul>                                 |
| <ul style="list-style-type: none"> <li>The ultimate home energy manager in charge of PV production, battery storage, backup operation during a power outage**, EV Charging, and smart energy devices</li> </ul>                                                           | <ul style="list-style-type: none"> <li>A scalable solution that supports future homeowner needs through easy connection to a growing ecosystem of products</li> </ul> |
| <ul style="list-style-type: none"> <li>Record breaking 99% weighted efficiency with up to 200% DC oversizing</li> </ul>                                                                                                                                                   | <ul style="list-style-type: none"> <li>Advanced safety features with integrated arc fault protection and rapid shutdown for 690.11 and 690.12</li> </ul>              |
| <ul style="list-style-type: none"> <li>Able to start high LRA HVAC systems during backup operation</li> </ul>                                                                                                                                                             | <ul style="list-style-type: none"> <li>Advanced reliability with automotive-grade components</li> </ul>                                                               |
| <ul style="list-style-type: none"> <li>Integrates seamlessly with the complete SolarEdge Home Smart Energy Ecosystem, through SolarEdge Home Network</li> </ul>                                                                                                           | <ul style="list-style-type: none"> <li>Embedded revenue grade production data, ANSI C12.20, Class 0.5</li> </ul>                                                      |
| <ul style="list-style-type: none"> <li>Module-level monitoring and visibility of battery status, PV production, and self-consumption data</li> </ul>                                                                                                                      | <ul style="list-style-type: none"> <li>NEMA 4X-rated, for indoor and outdoor installations</li> </ul>                                                                 |
|                                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>Embedded Power Control System (PCS) – install larger systems while avoiding main panel upgrade</li> </ul>                      |

[illegible]

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USA Domestic Content Eligible  
Single Phase, for North America

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

| Model Number <sup>1)</sup>                                              | SE3800H-US                     | SE5700H-US                     | SE7600H-US                     | SE10000H-US                    | SE11400H-US                    |
|-------------------------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| <b>OUTPUT – AC ON GRID</b>                                              |                                |                                |                                |                                |                                |
| Maximum AC Power Output                                                 | 3800 @ 240V<br>3100 @ 208V     | 5760 @ 240V<br>5200 @ 208V     | 7680 @ 240V<br>7000 @ 208V     | 10,000 @ 240V<br>9000 @ 208V   | 11,400 @ 240V<br>10,000 @ 208V |
| AC Output Voltage (Nominal)                                             | 208 / 240                      |                                |                                |                                |                                |
| AC Output Voltage Range                                                 | 181 – 274                      |                                |                                |                                |                                |
| AC Frequency Range (Hz) – nominal                                       | 50.3 – 60.5 <sup>2)</sup>      |                                |                                |                                |                                |
| Maximum Continuous Output Current                                       | 16 @ 240V<br>16 @ 208V         | 24 @ 240V<br>24 @ 208V         | 32 @ 240V<br>32 @ 208V         | 42 @ 240V<br>42 @ 208V         | 47.5 @ 240V<br>46 @ 208V       |
| GFN Threshold                                                           | 1                              |                                |                                |                                |                                |
| Total Harmonic Distortion (THD)                                         | < 5                            |                                |                                |                                |                                |
| Power Factor                                                            | 1, adjustable > 0.95 (to 0.85) |                                |                                |                                |                                |
| Utility Mains Voltage, Maximum Protection                               | Yes                            |                                |                                |                                |                                |
| Current Compensation Features                                           | Yes                            |                                |                                |                                |                                |
| Charge Battery from AC (if allowed)                                     | Yes                            |                                |                                |                                |                                |
| Typical Nighttime Power Consumption                                     | < 2.5                          |                                |                                |                                |                                |
| <b>OUTPUT – AC STANDALONE (BACKUP)<sup>3)</sup></b>                     |                                |                                |                                |                                |                                |
| Rated AC Power in Standalone Operation <sup>4)</sup>                    | 7,400                          |                                |                                |                                |                                |
| Maximum Continuous Output Current in Standalone Operation <sup>5)</sup> | 48                             |                                |                                |                                |                                |
| Maximum AC Voltage @ 80%                                                | Up to 100                      |                                |                                |                                |                                |
| AC L-L Output Voltage Range in Standalone Operation                     | 211 – 261                      |                                |                                |                                |                                |
| AC L-N Output Voltage Range in Standalone Operation                     | 105 – 132                      |                                |                                |                                |                                |
| AC Frequency Range in Standalone Operation (Hz) – nominal               | 55 – 60 – 65                   |                                |                                |                                |                                |
| GFN                                                                     | 1                              |                                |                                |                                |                                |
| THD                                                                     | < 5                            |                                |                                |                                |                                |
| <b>INPUT – DC (PV AND BATTERY)</b>                                      |                                |                                |                                |                                |                                |
| Transformer-less, Ungrounded                                            | Yes                            |                                |                                |                                |                                |
| Maximum Input Voltage                                                   | 630                            |                                |                                |                                |                                |
| Nominal DC Input Voltage                                                | 550                            |                                |                                |                                |                                |
| Reverse Polarity Protection                                             | Yes                            |                                |                                |                                |                                |
| Cross-Line Fault Isolation Detection                                    | 600VDC Sensitivity             |                                |                                |                                |                                |
| Maximum Input Short-Circuit Current                                     | N/A                            |                                |                                |                                |                                |
| Maximum Inverter Efficiency                                             | 99.4                           |                                |                                |                                |                                |
| CEC Weighted DC Energy                                                  | 98.5                           |                                |                                |                                |                                |
| 2-Pole Disconnection                                                    | Yes                            |                                |                                |                                |                                |
| <b>DC CONNECTION – PV</b>                                               |                                |                                |                                |                                |                                |
| Maximum Input Power                                                     | 3900 @ 240V<br>6000 @ 208V     | 11,500 @ 240V<br>15,000 @ 208V | 15,000 @ 240V<br>19,000 @ 208V | 20,000 @ 240V<br>20,000 @ 208V | 32,000 @ 240V<br>20,000 @ 208V |
| Maximum Input Current                                                   | 20 @ 240V<br>17.5 @ 208V       | 30 @ 240V<br>26 @ 208V         | 40 @ 240V<br>38 @ 208V         | 58 @ 240V<br>53 @ 208V         | 65 @ 240V<br>53 @ 208V         |
| Number of Ports                                                         | 2                              |                                |                                |                                |                                |
| Maximum Current per Port                                                | 40                             |                                |                                |                                |                                |

[illegible]

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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                       | SExxxx0H-USMNXBLx5 / USExxx0H-USMNBTLx5                                                                                       |            |            |             |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------|------------|-------------|
| Model Number <sup>(1)</sup>                                    | SE3800H-US                                                                                                                    | SE5700H-US | SE7600H-US | SE10000H-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> | 13,600                                                                                                                        |            |            |             |
| Number of Ports                                                | 2                                                                                                                             |            |            |             |
| Maximum Current per Port                                       | 40                                                                                                                            |            |            |             |
| 2-wire Disconnection                                           | Up to the inverter rated transience power                                                                                     |            |            |             |
| <b>SMART ENERGY CAPABILITIES</b>                               |                                                                                                                               |            |            |             |
| Consumption Matching                                           | Built-in <sup>(3)</sup>                                                                                                       |            |            |             |
| Standalone & Battery Storage                                   | With Back-up Interface (part sold separately) for service up to 20kVA, up to 3 inverters                                      |            |            |             |
| EV Charging                                                    | Direct connection to the SolarEdge home EV Charger <sup>(4)</sup>                                                             |            |            |             |
| <b>ADDITIONAL FEATURES</b>                                     |                                                                                                                               |            |            |             |
| Supported Communication Interfaces                             | RS-485, Ethernet, Cellular <sup>(5)</sup> , Wi-Fi <sup>(6)</sup> (optional), SolarEdge home Network <sup>(7)</sup> (optional) |            |            |             |
| Revenue Grade Metering, A-9, C10-20                            | Built-in <sup>(8)</sup>                                                                                                       |            |            |             |
| Integrated AC, DC, and Communication Connection Unit           | Yes                                                                                                                           |            |            |             |
| Power Monitoring                                               | With the SEApp mobile application using built-in Wi-Fi Access Point for local connection                                      |            |            |             |
| AC Voltage, Total Shutdown (TS) and Warranty                   | Yes, VFC 60/50                                                                                                                |            |            |             |
| <b>STANDARD COMPLIANCE</b>                                     |                                                                                                                               |            |            |             |
| Safety                                                         | UL 1741, UL 1741A, UL 1719B, UL 7938, CSA 22.2 107.1, IEC 62439-2, IEC 62439-3, IEC 62439-4, IEC 62439-5, IEC 62439-6         |            |            |             |
| Grid Connection Standards                                      | IEEE 1547-2018 and IEEE 1547-2018, Rule 14                                                                                    |            |            |             |
| Emissions                                                      | FCC Part 15 Class B                                                                                                           |            |            |             |
| Power Control System (PCS)                                     | UL 741 PCS <sup>(9)</sup>                                                                                                     |            |            |             |
| <b>INSTALLATION SPECIFICATIONS</b>                             |                                                                                                                               |            |            |             |
| AC Terminals                                                   | 1, 2 x terminal blocks, PF (input for inverter connection)                                                                    |            |            |             |
| DC Terminals                                                   | 1, 2 x terminal blocks, PF (output for EV Charger AC connection)                                                              |            |            |             |
| AC Output and LV AC Output Conduit Size / AWG Range            | 3 x terminal block (4 for PF input), 2 x terminal block (4 for EV Charger AC connection)                                      |            |            |             |
| DC Input (PV and Storage) Conduit Size / AWG Range             | 1" maximum / 14 – 6 AWG                                                                                                       |            |            |             |
| Dimensions with Connection Unit (H x W x D)                    | 21.65 x 15.5 x 12.7 / 5.5 x 5.0 x 2.0                                                                                         |            |            |             |
| Weight with Connection Unit                                    | 44.9 / 20.3                                                                                                                   |            |            |             |
| Noise                                                          | < 50                                                                                                                          |            |            |             |
| Cooling                                                        | Natural Convection                                                                                                            |            |            |             |
| Operating Temperature Range                                    | 40 °C to 140 °F / 40 °C to 125 °F                                                                                             |            |            |             |
| Protection Rating                                              | NEMA 3X                                                                                                                       |            |            |             |

[illegible]

**LUNEX POWER**  
THE PURE SOURCE

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

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DATE: 03/05/2025

## PROJECT NAME &amp; ADDRESS

CHARLES DOWNING  
RESIDENCE

DRAWN BY  
ESR

## SHEET NAME

# EQUIPMENT SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER

PV-12

# Residential Power Optimizer For North America

S440 / S500B / S650B



POWER OPTIMIZER

## PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Detected abnormal PV connector behavior, preventing potential safety issues
- Module-level voltage shutdown for installer and firefighter safety
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)

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



## Residential Power Optimizer

For North America

S440 / S500B / S650B

|                                                                                             | S440                                | S500B                                             | S650B     |         |
|---------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------|-----------|---------|
| INPUT                                                                                       |                                     |                                                   |           |         |
| Rated Input DC Power <sup>(1)</sup>                                                         | 440                                 | 500                                               | 650       | W       |
| Absolute Maximum Input Voltage (Voc)                                                        | 60                                  | 125                                               | 85        | Vdc     |
| MPPT Operating Range                                                                        | 8 – 60                              | 12.5 – 105                                        | 12.5 – 85 | Vdc     |
| Maximum Input Current (Maximum Isc of Connected PV Module)                                  | 14.5                                | 15                                                |           | Adc     |
| Maximum Input Short Circuit Current <sup>(2)</sup>                                          |                                     | 18.75                                             |           | Adc     |
| Maximum Efficiency                                                                          |                                     | 99.5                                              |           | %       |
| Weighted Efficiency                                                                         |                                     | 98.6                                              |           | %       |
| Overvoltage Category                                                                        |                                     | II                                                |           |         |
| OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREGE INVERTER)          |                                     |                                                   |           |         |
| Maximum Output Current                                                                      |                                     | 15                                                |           | Adc     |
| Maximum Output Voltage                                                                      | 60                                  | 80                                                |           | Vdc     |
| OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR INVERTER OFF) |                                     |                                                   |           |         |
| Safety Output Voltage per Power Optimizer                                                   |                                     | 1 ± 0.1                                           |           | Vdc     |
| STANDARD COMPLIANCE                                                                         |                                     |                                                   |           |         |
| Photovoltaic Rapid Shutdown System                                                          |                                     | NEC 2014 – 2023                                   |           |         |
| EMC                                                                                         |                                     | FCC Part 15 Class B, IEC 61000-6-2, IEC 61000-6-3 |           |         |
| Safety                                                                                      |                                     | 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                         |           |         |
| INSTALLATION SPECIFICATIONS                                                                 |                                     |                                                   |           |         |
| 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 / 1.6                           | 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) Rated power of the module at STC will not exceed the power optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed.  
(2) The Maximum Input Short Circuit Current is 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 S440, and for ambient temperatures above +75°C / 167°F for S500B. Refer to the [Power Optimizers Temperature Derating](#) technical note for more details.

| PV System Design Using a SolarEdge Inverter <sup>(4)</sup>   |                                        | SolarEdge Home Wave/Hub Single Phase                     | Three Phase for 208V Grid                     | Three Phase for 277/480V Grid |   |
|--------------------------------------------------------------|----------------------------------------|----------------------------------------------------------|-----------------------------------------------|-------------------------------|---|
| Minimum String Length (Power Optimizers)                     | S440                                   | 8                                                        | 10                                            | 18                            |   |
|                                                              | S500B, S650B                           | 6                                                        | 8                                             | 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>(7)(8)</sup> | Inverters with Rated AC Power ≤ 5700W  | Per the inverter's maximum input DC power <sup>(6)</sup> | One string: 7200<br>Two strings or more: 7800 | 15,000                        | W |
|                                                              | Inverters with Rated AC Power of 6000W | 5700                                                     |                                               |                               |   |
|                                                              | Inverters with Rated AC Power ≥ 7600W  | 6800, only when connected to at least two strings        |                                               |                               |   |
| Parallel Strings of Different Lengths or Orientations        |                                        | Yes                                                      |                                               |                               |   |

(4) It is not allowed to mix S-series and P-series Power Optimizers in new installations in the same string.  
(5) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30 V requirement.  
(6) Refer to the [Single String Design Guidelines](#) application note for more details.  
(7) For the 208 V grid, the maximum is permitted only when the difference in connected power between strings is 1,000 W or less.  
(8) For the 240 V or 277/480 V grids, the maximum is permitted only when the difference in connected power between strings 2,000 W or less.

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RoHS

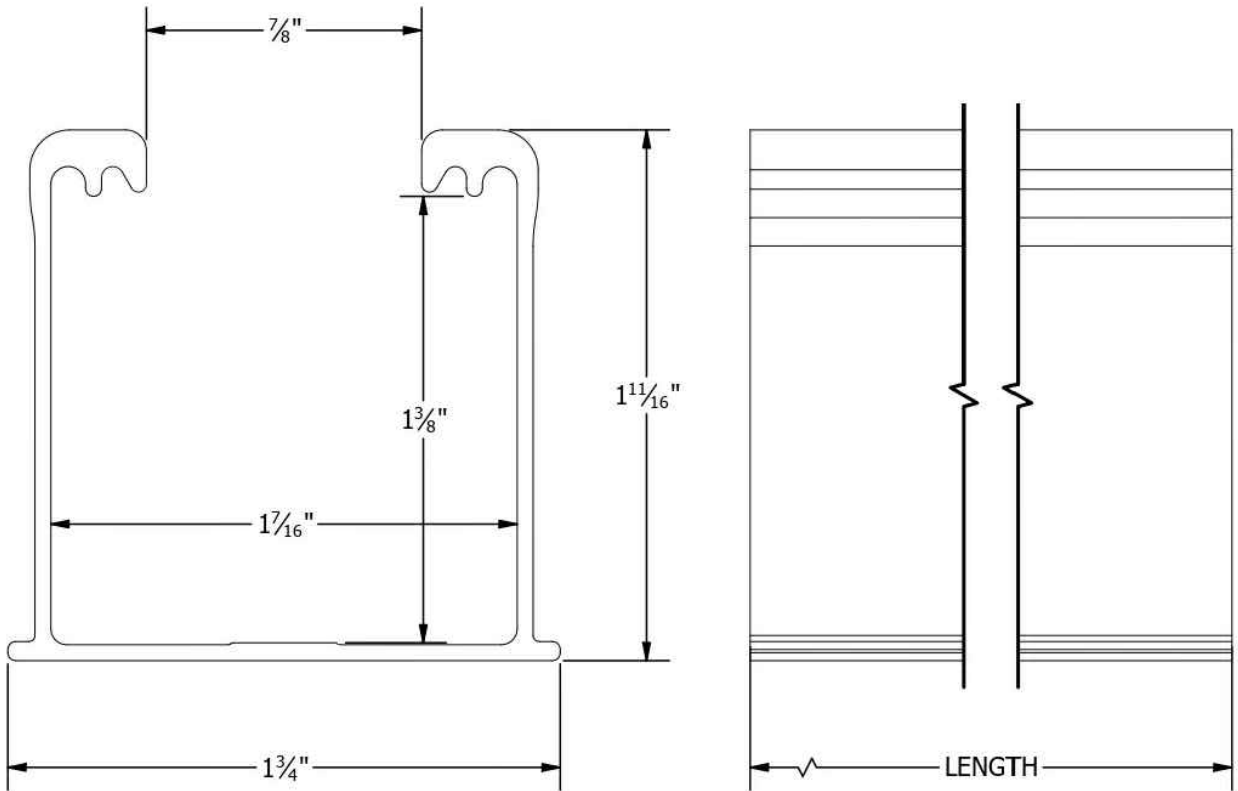
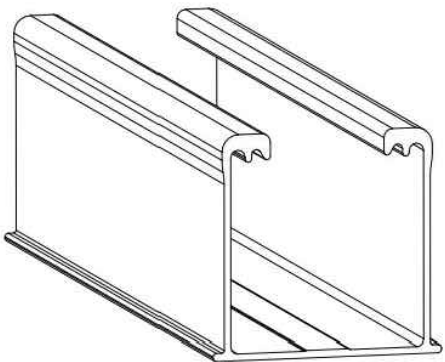


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|----------------------------------------------------------------------|--|--|
| DATE: 03/05/2025                                                     |  |  |
| PROJECT NAME & ADDRESS                                               |  |  |
| CHARLES DOWNING<br>RESIDENCE<br>251 IRENE LN,<br>LAKE CITY, FL 32055 |  |  |
| DRAWN BY<br>ESR                                                      |  |  |
| SHEET NAME<br>EQUIPMENT<br>SPECIFICATION                             |  |  |
| SHEET SIZE<br>ANSI B<br>11" X 17"                                    |  |  |
| SHEET NUMBER<br>PV-13                                                |  |  |

| PART # TABLE |                            |        |
|--------------|----------------------------|--------|
| P/N          | DESCRIPTION                | LENGTH |
| 084RLM1      | NXT HORIZON RAIL 84" MILL  | 84"    |
| 084RLD1      | NXT HORIZON RAIL 84" DARK  | 84"    |
| 168RLM1      | NXT HORIZON RAIL 168" MILL | 168"   |
| 168RLD1      | NXT HORIZON RAIL 168" DARK | 168"   |
| 208RLM1      | NXT HORIZON RAIL 208" MILL | 208"   |
| 208RLD1      | NXT HORIZON RAIL 208" DARK | 208"   |
| 246RLM1      | NXT HORIZON RAIL 246" MILL | 246"   |
| 246RLD1      | NXT HORIZON RAIL 246" DARK | 246"   |



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

|                |             |
|----------------|-------------|
| PRODUCT LINE:  | NXT HORIZON |
| DRAWING TYPE:  | PART DETAIL |
| DESCRIPTION:   | RAIL        |
| REVISION DATE: | 9/13/2021   |

DRAWING NOT TO SCALE  
ALL DIMENSIONS ARE  
NOMINAL

PRODUCT PROTECTED BY  
ONE OR MORE US PATENTS  
LEGAL NOTICE

NH-P01

SHEET



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PHONE: 813-540-8807

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DATE: 03/05/2025

PROJECT NAME & ADDRESS

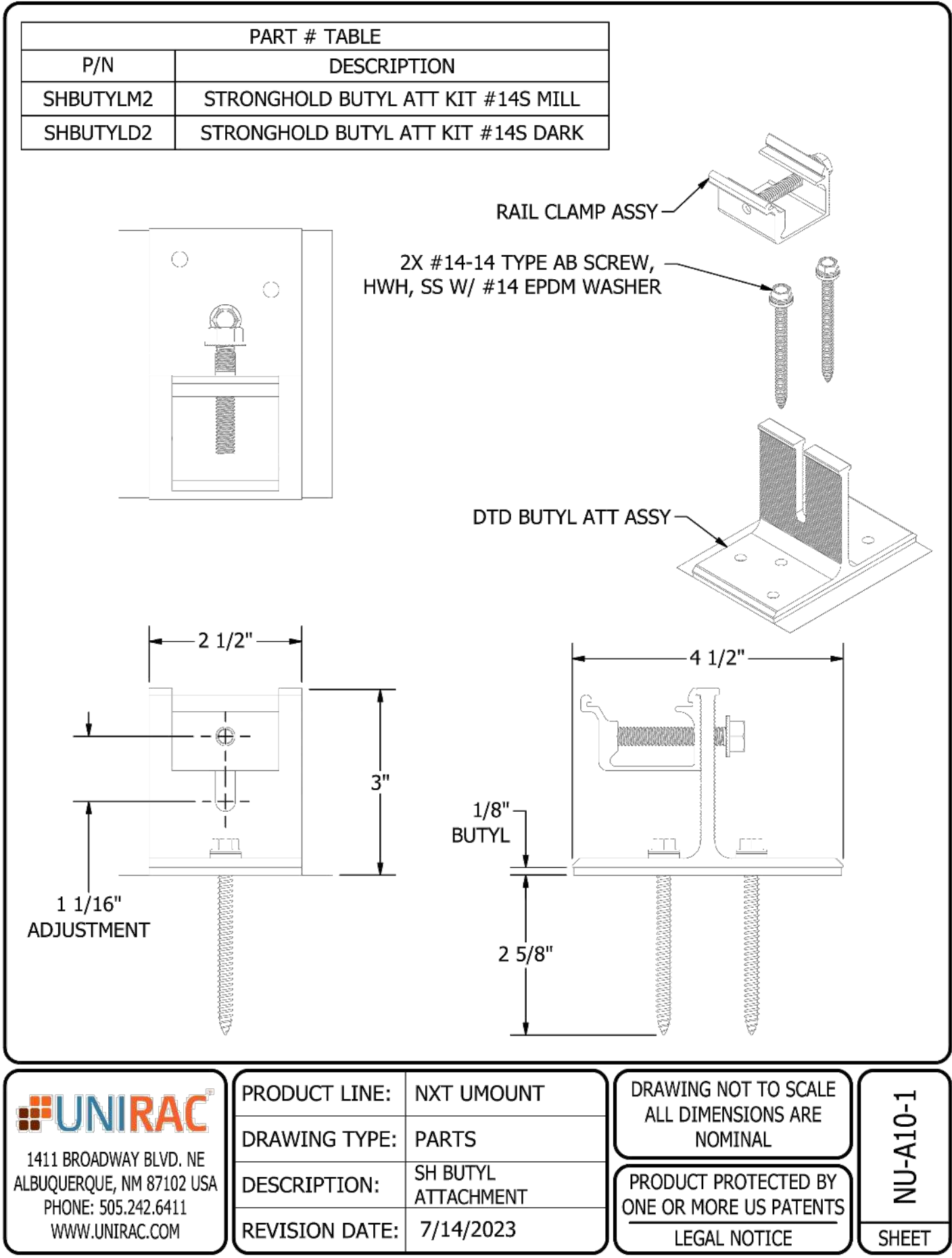
CHARLES DOWNING  
RESIDENCE  
251 IRENE LN,  
LAKE CITY, FL 32055

DRAWN BY  
ESR

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-14



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

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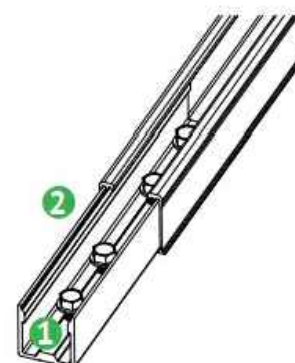
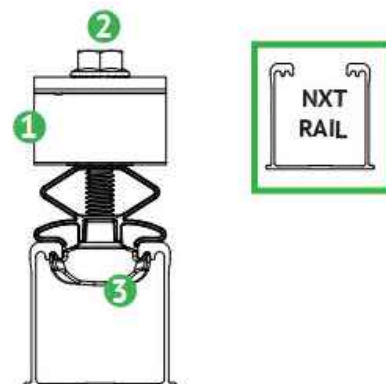
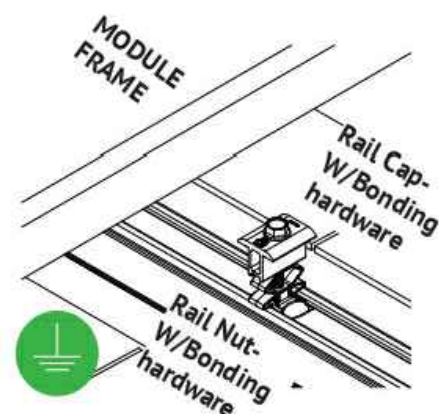
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| PROJECT NAME & ADDRESS       |                                      |  |
| CHARLES DOWNING<br>RESIDENCE | 251 IRENE LN,<br>LAKE CITY, FL 32055 |  |

|          |
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| DRAWN BY |
| ESR      |

|                         |
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| SHEET NAME              |
| EQUIPMENT SPECIFICATION |

|                     |
|---------------------|
| SHEET SIZE          |
| ANSI B<br>11" X 17" |

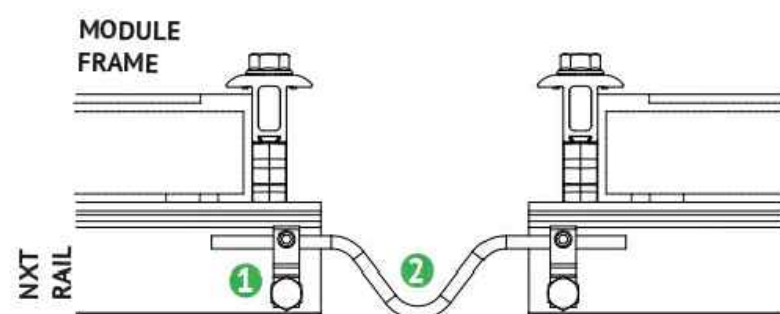
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| SHEET NUMBER |
| PV-15        |



### 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.

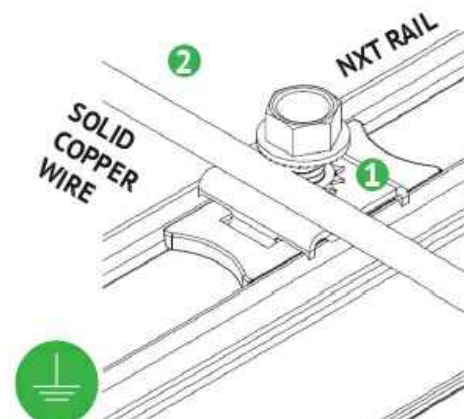
**NOTE:** See Page 5 for installation details.

### 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.

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|             |      |     |

DATE: 03/05/2025

#### PROJECT NAME & ADDRESS

CHARLES DOWNING  
RESIDENCE  
251 IRENE LN,  
LAKE CITY, FL 32055

#### DRAWN BY

ESR

#### SHEET NAME

EQUIPMENT  
SPECIFICATION

#### SHEET SIZE

ANSI B  
11" X 17"

#### SHEET NUMBER

PV-16

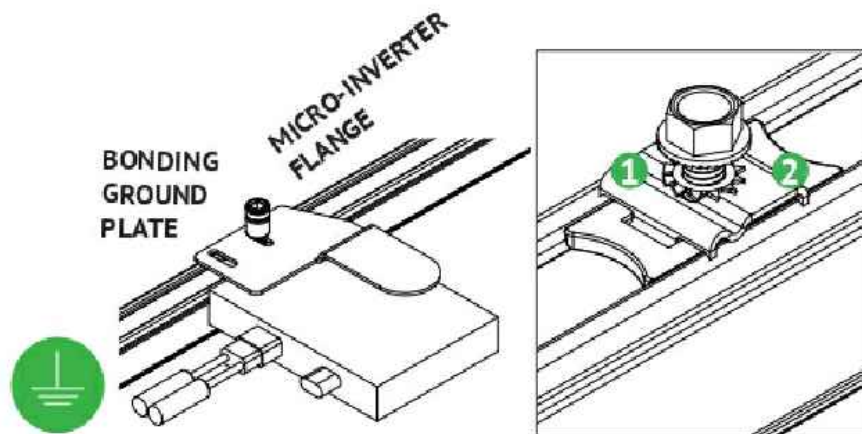
# NXTUMOUNT<sup>TM</sup>

## BONDING CONNECTIONS & GROUNDING PATHS

### INSTALLATION GUIDE

22

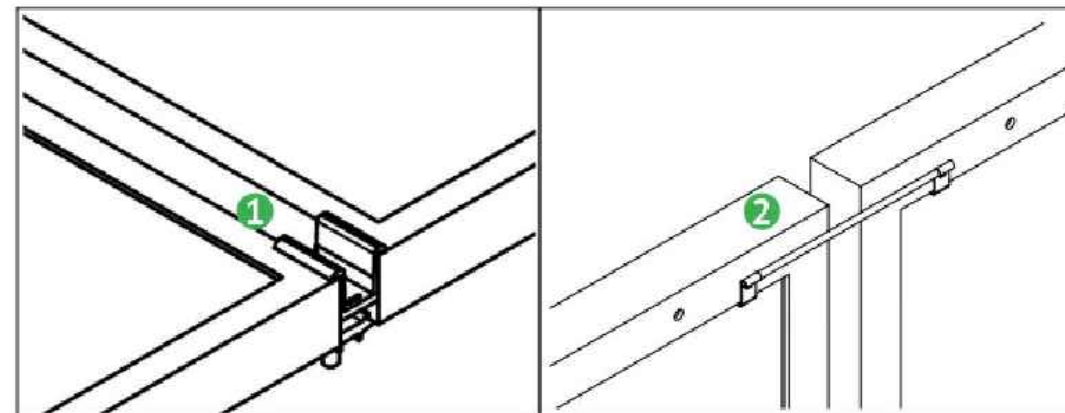
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#### BONDING MICROINVERTER MOUNT

- 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

| REVISIONS   |      |     |
|-------------|------|-----|
| DESCRIPTION | DATE | REV |
|             |      |     |
|             |      |     |
|             |      |     |

DATE: 03/05/2025

PROJECT NAME & ADDRESS

CHARLES DOWNING  
RESIDENCE  
251 IRENE LN,  
LAKE CITY, FL 32055

DRAWN BY  
ESR

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE  
ANSI B  
11" X 17"

SHEET NUMBER  
PV-17



# JB-1.2, JB-1.XL

## Specification Sheet

## PV Junction Box for Composition/Asphalt Shingle Roofs

### 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-OUT Wire Connector</small>     | 8-18 awg    |             | Sol/Str | Self-Torque | Self-Torque | 600V    |         |
| Ideal 451 Yellow <small>WING-OUT Wire Connector</small>  | 10-18 awg   |             | Sol/Str | Self-Torque | Self-Torque | 600V    |         |
| Ideal, In-Sure <small>Push-In Connector Port #93</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<br>kcmil (mm2) | Wires per terminal (pole) |                |                |                        |
|----------------------------------|---------------------------|----------------|----------------|------------------------|
|                                  | 1<br>mm (inch)            | 2<br>mm (inch) | 3<br>mm (inch) | 4 or More<br>mm (inch) |
| 14-10 (2.1-5.3)                  | Not Specified             | -              | -              | -                      |
| 8 (8.4)                          | 38.1 (1-1/2)              | -              | -              | -                      |
| 6 (13.3)                         | 50.8 (2)                  | -              | -              | -                      |



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