

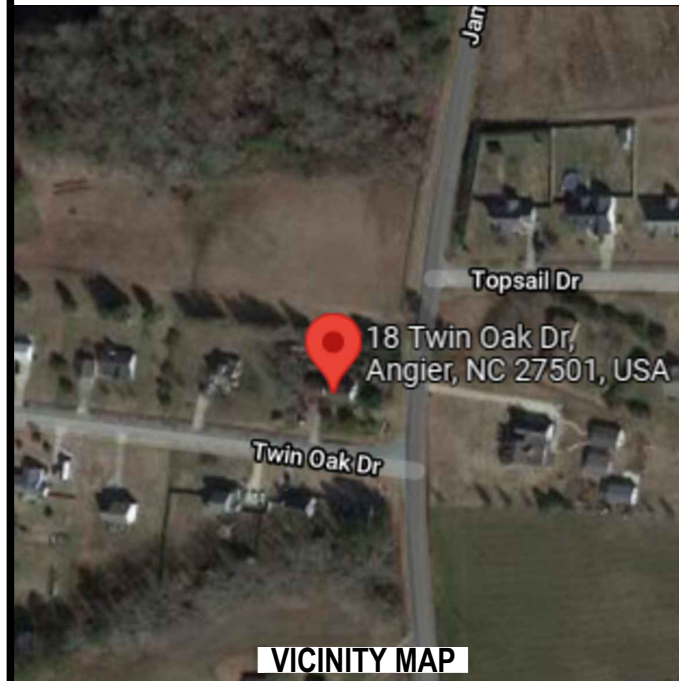
# REID RESIDENCE

**PHOTOVOLTAIC SYSTEM**  
18 TWIN OAK DR  
ANGIER NC 27501

**SYSTEM SIZE:** 13.69 kW-DC | 11.40 kW-AC  
**MODULE:** (37) SILFAB-SIL-370-NX-TITAN  
**INVERTER:** ( 1 ) SOLAREEDGE SE114000H-US

## GOVERNING CODES:

- ALL MATERIALS, EQUIPMENT, INSTALLATION AND WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:
- 2017 NATIONAL ELECTRIC CODE
  - 2018 INTERNATIONAL BUILDING CODE
  - 2018 INTERNATIONAL RESIDENTIAL CODE
  - 2018 INTERNATIONAL PLUMBING CODE
  - 2018 INTERNATIONAL FIRE CODE
  - 2018 INTERNATIONAL MECHANICAL CODE
  - IEEE STANDARD 929
  - OSHA 29 CFR 1910.269
  - WHERE APPLICABLE, RULES OF THE PUBLIC UTILITIES COMMISSION REGARDING SAFETY AND RELIABILITY
  - THE AUTHORITY HAVING JURISDICTION
  - MANUFACTURERS' LISTINGS AND INSTALLATION INSTRUCTIONS
  - ANY OTHER LOCAL AMENDMENTS



VICINITY MAP



AERIAL MAP

## GENERAL

- UTILITY SHALL BE NOTIFIED BEFORE ACTIVATION OF PHOTOVOLTAIC SYSTEM.
- 110.2 APPROVAL: ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO INITIATING CONSTRUCTION.
- CONTRACTOR SHALL REVIEW ALL MANUFACTURER INSTALLATION DOCUMENTS PRIOR TO INITIATING CONSTRUCTION.
- ALL EQUIPMENT AND ASSOCIATED CONNECTIONS, ETC, AND ALL ASSOCIATED WIRING AND INTERCONNECTIONS SHALL BE INSTALLED ONLY BY QUALIFIED PERSONNEL.
- THE CONTRACTOR OR OWNER MUST PROVIDE ROOF ACCESS (LADDER TO ROOF) FOR ALL THE REQUIRED INSPECTIONS. LADDERS MUST BE OSHA APPROVED, MINIMUM TYPE I WITH A 250LB. RATING, IN GOOD CONDITION AND DESIGNED FOR ITS INTENDED USE.
- CONTRACTOR SHALL VERIFY THAT THE ROOF STRUCTURE WILL WITHSTAND THE ADDITIONAL LOADS.
- LAG SCREWS SHALL PENETRATE A MINIMUM 2" INTO SOLID SAWN STRUCTURAL MEMBERS AND SHALL NOT EXCEED MANUFACTURER RECOMMENDATIONS FOR FASTENERS INTO ENGINEERED STRUCTURAL MEMBERS.
- AN ACCESS POINT SHALL BE PROVIDED THAT DOES NOT PLACE THE GROUND LADDER OVER OPENINGS SUCH AS WINDOWS OR DOORS ARE LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION AND IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES, OR SIGNS.
- WHERE DC CONDUCTORS ARE RUN INSIDE BUILDING, THEY SHALL BE CONTAINED IN A METAL RACEWAY; THEY SHALL NOT BE INSTALLED WITHIN 10" OF THE ROOF DECKING OR SHEATHING EXCEPT WHERE COVERED BY THE PV MODULES AND EQUIPMENT.

- PLUMBING AND MECHANICAL VENTS THROUGH THE ROOF SHALL NOT BE COVERED BY SOLAR MODULES - NO BUILDING, PLUMBING OR MECHANICAL VENTS TO BE COVERED, CONSTRUCTED OR ROUTED AROUND SOLAR MODULES.
- ALL FIELD -INSTALLED JUNCTION, PULL AND OUTLET BOXES LOCATED BEHIND MODULES SHALL BE ACCESSIBLE DIRECTLY OR BY DISPLACEMENT OF A MODULE SECURED BY REMOVABLE FASTENERS.

## ELECTRICAL

- WIRING MATERIALS SHALL COMPLY WITH MAXIMUM CONTINUOUS CURRENT OUTPUT AT 25°C AND MAXIMUM VOLTAGE AT 600V; WIRE SHALL BE WET RATED AT 90°C.
- EXPOSED PHOTOVOLTAIC SYSTEM CONDUCTORS ON THE ROOF WILL BE USE 2 OR PV-TYPE WIRE.
- PHOTOVOLTAIC SYSTEM CONDUCTORS SHALL BE IDENTIFIED AND GROUPED. THE MEANS OF IDENTIFICATION SHALL BE PERMITTED BY SEPARATE COLOR-CODING, MARKING TAPE, TAGGING OR OTHER APPROVED MEANS.
- ALL EXTERIOR CONDUIT, FITTINGS, AND BOXES SHALL BE RAIN-TIGHT AND APPROVED FOR USE IN WET LOCATIONS.
- ALL METALLIC RACEWAYS AND EQUIPMENT SHALL BE BONDED AND ELECTRICALLY CONTINUOUS.
- WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, CONTRACTOR SHALL SIZE THEM ACCORDING TO APPLICABLE CODES.
- REMOVAL OF A UTILITY-INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BUILDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PV SOURCE AND/OR OUTPUT CIRCUIT GROUNDED CONDUCTOR.
- FOR GROUNDED SYSTEMS, THE PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUITS SHALL BE PROVIDED WITH A GROUND-FAULT PROTECTION DEVICE OR SYSTEM THAT DETECTS A GROUND FAULT, INDICATES THAT FAULT HAS OCCURED AND AUTOMATICALLY DISCONNECTS ALL CONDUCTORS OR CAUSES THE INVERTER TO AUTOMATICALLY CEASE SUPPLYING POWER TO OUTPUT CIRCUITS.

- FOR UNGROUNDED SYSTEMS, THE INVERTER IS EQUIPPED WITH GROUND FAULT PROTECTION AND A GFI FUSE PORT FOR GROUND FAULT INDICATION.
- PV MODULE FRAMES SHALL BE BONDED TO RACKING RAIL OR BARE COPPER GEC/GEC PER THE MODULE MANUFACTURER'S LISTED INSTRUCTION SHEET.
- PV MODULE RACKING RAIL SHALL BE BONDED TO BARE COPPER GEC VIA WEEB LUG, ILSCO GBL-4DBT LAY-IN LUG, OR EQUIVALENT LISTED LUG.
- THE PHOTOVOLTAIC INVERTER WILL BE LISTED AS UL 1741 COMPLIANT.
- RACKING AND BONDING SYSTEM TO BE UL2703 RATED.
- ANY REQUIRED GROUNDING ELECTRODE CONDUCTOR WILL BE CONTINUOUS, EXCEPT FOR SPLICES OR JOINTS AS BUS BARS WITHIN LISTED EQUIPMENT.
- WHEN BACKFED BREAKER IS THE METHOD OF UTILITY INTERCONNECTION, THE BREAKERS SHALL NOT READ "LINE AND LOAD".
- WHEN APPLYING THE 120% RULE, THE SOLAR BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUS BAR FROM THE MAIN BREAKER.
- THE WORKING CLEARANCE AROUND THE EXISTING ELECTRICAL EQUIPMENT AS WELL AS THE NEW ELECTRICAL EQUIPMENT WILL BE MAINTAINED.

## SHEET INDEX:

- PV-1 - COVER PAGE
- PV-2 - PROPERTY PLAN
- PV-3 - SITE PLAN
- PV-4 - 1-LINE DIAGRAM
- PV-5 - ELECTRICAL CALCULATIONS
- PV-6 - ELECTRICAL PHOTOS
- PV-7 - OPTIMIZER MAP
- PV-8 - SITE SAFETY PLAN
- PV-9 - DATASHEETS PLACARD

**REID, ASHLEY**  
18 TWIN OAK DR  
ANGIER NC 27501  
(919) 812-4678

LICENSE # U.33714

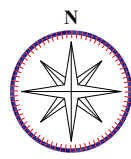
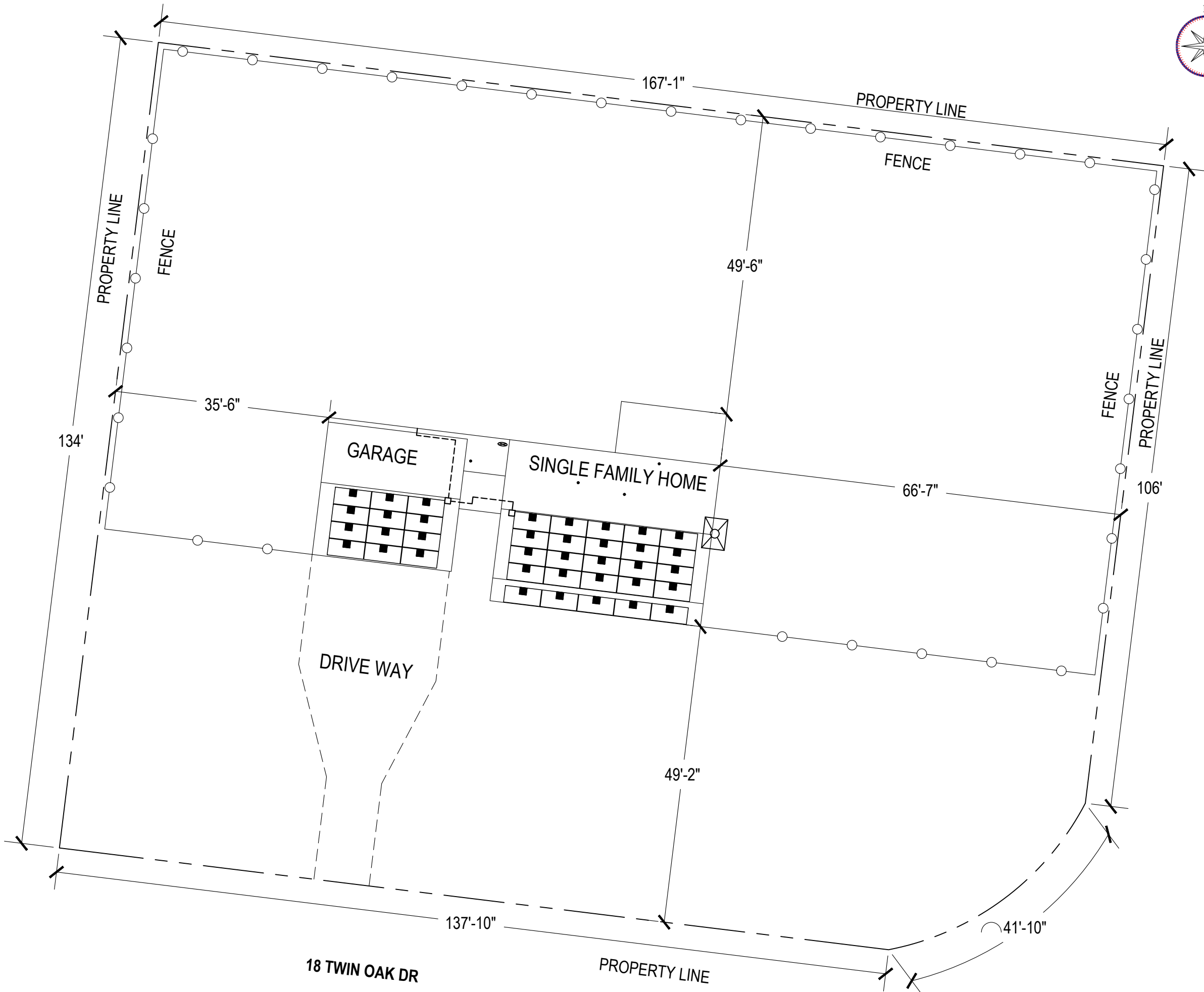


COVER PAGE

JOB #: TSP102888  
DATE: 10/27/2021  
DRAWN BY: MJ

REV #1:  
REV #2:  
REV #3:

**PV-1**



**LEGEND:**

PROPERTY LINE: — — — — —

DRIVEWAY: - - - - -

APN: 040663015404

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

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


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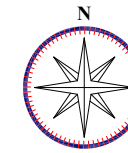
**TITAN**  
 SOLAR POWER  
 TITAN SOLAR POWER  
 10815 JOHN PRICE RD.  
 CHARLOTTE, NC 28273  
 WWW.TITANSOLARPOWER.COM

PROPERTY PLAN

JOB #: TSP102888  
 DATE: 10/27/2021  
 DRAWN BY: MJ

**PV-2**

| ROOF DETAIL   | STRING DETAIL  |
|---|--|
| ROOF TYPE: ASPHALT SHINGLE                                | <b>SOLAREEDGE STRINGS</b>  |
| ROOF SECTION 1: 20 MODULES<br>AZIMUTH: 188°<br>PITCH: 33° | ①  STRING # 1: 13 MODULES |
| ROOF SECTION 2: 5 MODULES<br>AZIMUTH: 188°<br>PITCH: 33°  | ②  STRING # 2: 12 MODULES |
| ROOF SECTION 3: 12 MODULES<br>AZIMUTH: 188°<br>PITCH: 33° | ③  STRING # 3: 12 MODULES |









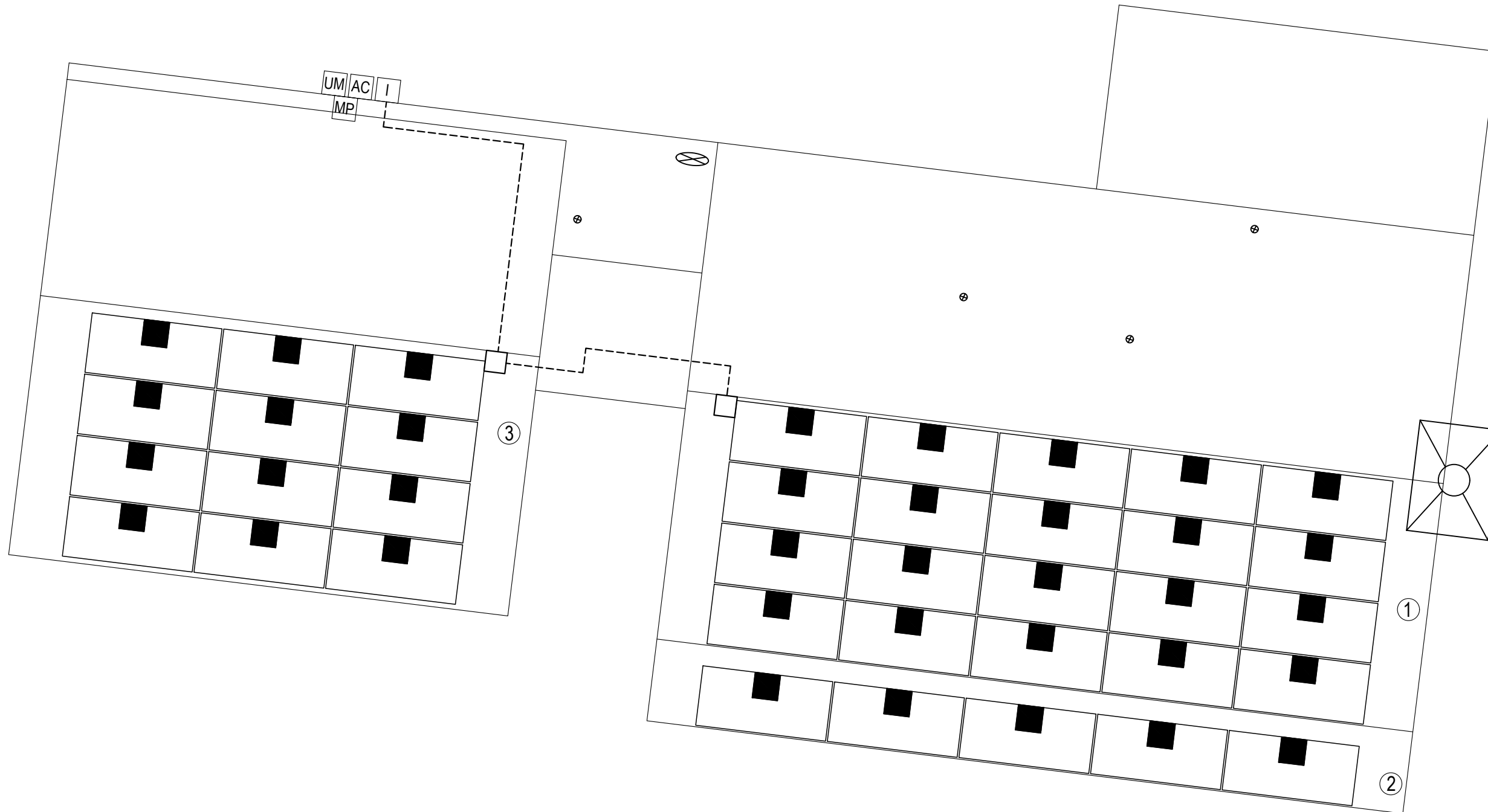
### SYSTEM LEGEND

#### PHOTOVOLTAIC SYSTEM:

DC SYSTEM SIZE: 13.69 kW

AC SYSTEM SIZE: 11.40 kW

|   |   |
|---|---|
|  | MAIN SERVICE METER AND SERVICE POINT  |
|  | MAIN SERVICE PANEL  |
|  | (1) SOLAREEDGE SE114000H-US<br>INVERTER WITH INTEGRATED DC DISCONNECT                         |
|  | FUSED AC DISCONNECT   |
|  | (37) SILFAB-SIL-370-NX-TITAN WITH<br>SOLAREEDGE P370 OPTIMIZERS MOUNTED<br>UNDER EACH MODULE. |
|  | JUNCTION BOX AND CONDUIT  |



-----  
**CONDUIT RUN**  
 CONDUIT TO BE RUN IN ATTIC IF POSSIBLE, OTHERWISE CONDUIT BLOCKS MIN. 1"/MAX 6" ABOVE ROOF SURFACE, CLOSE TO RIDGE LINES, AND UNDER EAVES; TO BE PAINTED TO MATCH EXTERIOR/EXISTING BACKGROUND COLOR OF ITS LOCATION; TO BE LABELED AT MAX 10' INTERVALS. CONDUIT RUNS ARE APPROXIMATE AND ARE TO BE DETERMINED IN THE BY THE INSTALLERS

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

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 WWW.TITANSOLARPOWER.COM

SITE PLAN

JOB #: TSP102888  
 DATE: 10/27/2021  
 DRAWN BY: MJ

**PV-3**

| ROOF DETAIL   | STRING DETAIL             |
|---|---------------------------|
| ROOF TYPE: ASPHALT SHINGLE                                | <b>SOLAREGE STRINGS</b>   |
| ROOF SECTION 1: 20 MODULES<br>AZIMUTH: 188°<br>PITCH: 33° | ①  STRING # 1: 13 MODULES |
| ROOF SECTION 2: 5 MODULES<br>AZIMUTH: 188°<br>PITCH: 33°  | ②  STRING # 2: 12 MODULES |
| ROOF SECTION 3: 12 MODULES<br>AZIMUTH: 188°<br>PITCH: 33° | ③  STRING # 3: 12 MODULES |

| ROOF AREA                   | 1698SQ FT ROOF  |                                    |                   |
|-----------------------------|-----------------|------------------------------------|-------------------|
| <b>SOLAR PANEL AREA</b>     | 19.8 SQ FT EACH | 37 PANELS                          | 732.6 SQ FT ARRAY |
| <b>SOLAR % OF ROOF AREA</b> | 43.14%          | 43.14% < 33%, 18" SETBACK IS VALID |                   |

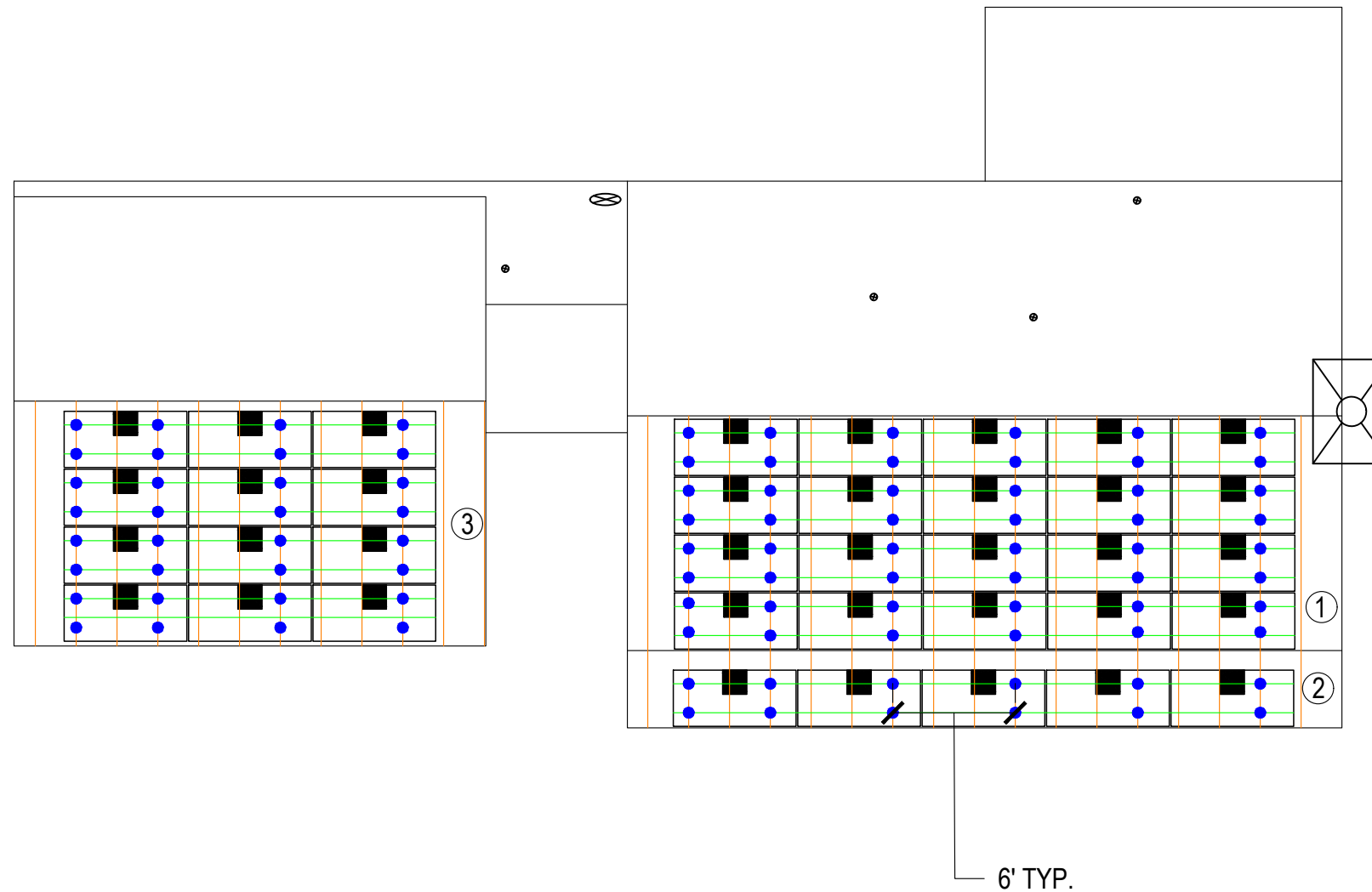


**SYSTEM LEGEND**

**PHOTOVOLTAIC SYSTEM:**  
 DC SYSTEM SIZE: 13.69 kW  
 AC SYSTEM SIZE: 11.40 kW

- ROOF ATTACHMENT POINT
- ROOF FRAMING (RAFTER/TRUSS)
- RACKING

NOTE:- 2" LAG EMBEDMENT



WIND UPLIFT AT ATTACHMENT POINTS IS PROVIDED WITH THE ENGINEERING LETTER.  
 SUPPORT LOCATIONS HAVE BEEN OPTIMIZED TO WITHSTAND UPLIFT

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

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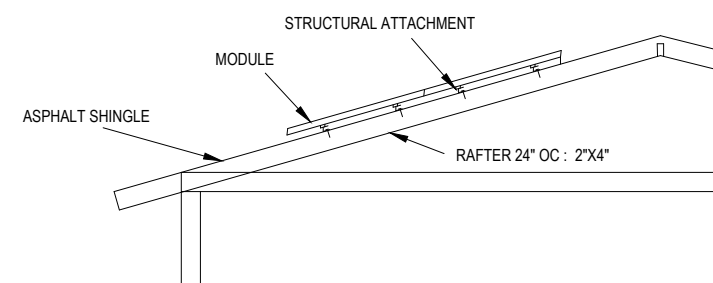
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ROOF PLAN

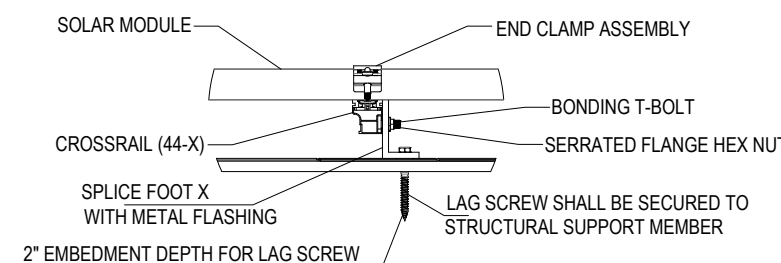
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**PV-3.1**



**ELEVATION DETAIL**

NTS



**ATTACHMENT DETAIL**

NTS

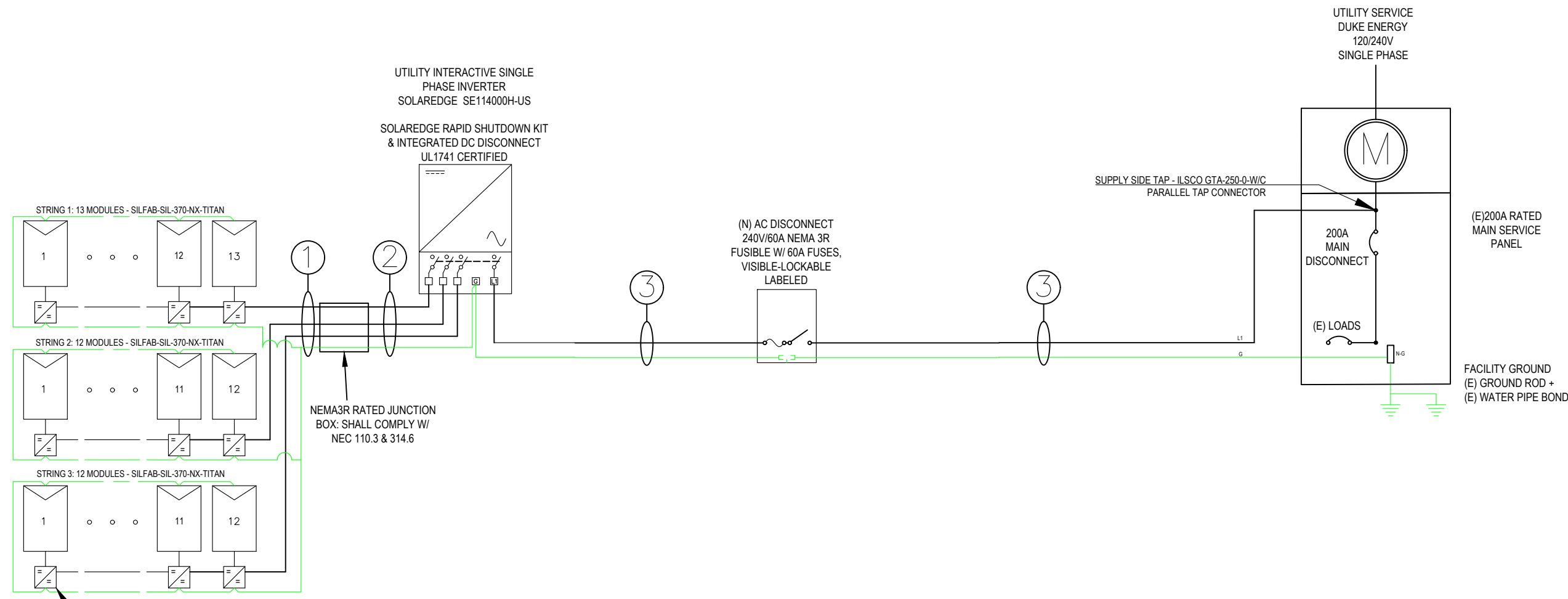
| MODULE MECHANICAL SPECIFICATIONS |         |
|----------------------------------|---------|
| DESIGN WIND SPEED                | 130 MPH |
| DESIGN SNOW LOAD                 | 15 PSF  |
| # OF STORIES                     | 2       |
| ROOF PITCH                       | 33°     |
| TOTAL ARRAY AREA (SQ. FT)        | 732.60  |
| TOTAL ROOF AREA (SQ. FT)         | 1698    |
| ARRAY SQ. FT / TOTAL ROOF SQ. FT | 43.14%  |



| CONDUCTOR AND CONDUIT SCHEDULE |             |           |                 |              |                   |
|--------------------------------|-------------|-----------|-----------------|--------------|-------------------|
| TAG                            | WIRE TYPE   | WIRE SIZE | # OF CONDUCTORS | CONDUIT TYPE | MIN. CONDUIT SIZE |
| 1                              | PV WIRE     | #10       | 6 - L1 L2       | FREE AIR     | N/A               |
| 1                              | BARE COPPER | #6        | 1 - BARE        | FREE AIR     | N/A               |
| 2                              | THWN-2      | #10       | 6 - L1 L2       | EMT          | 3/4"              |
| 2                              | THWN-2 EGC  | #8        | 1 - GND         | EMT          | 3/4"              |
| 3                              | THWN-2      | #6        | 3 - L1 L2 N     | EMT          | 3/4"              |
| 3                              | THWN-2 EGC  | #8        | 1 - GND         | EMT          | 3/4"              |

**PHOTOVOLTAIC SYSTEM:**  
 DC SYSTEM SIZE: 13.690 kW  
 AC SYSTEM SIZE: 11.400 kW  
 INVERTER: ( 1 ) SOLAREEDGE  
 SE114000H-US  
 MODULE: (37) SILFAB-SIL-370-NX-TITAN

- NOTES:**
1. MODULES ARE BONDED TO RAIL USING UL 2703 RATED BONDING SYSTEM - INTEGRATED BONDING MID-CLAMPS + DIRECT-BURIAL LAY-IN-LUGS; SEE ATTACHED FOR SPECIFICATIONS IF APPLICABLE
  2. PV DC SYSTEM IS UNGROUNDED
  3. PV ARRAY WILL HAVE A GROUNDING ELECTRODE SYSTEM IN COMPLIANCE WITH CEC 250.58 AND 690.47(A)
  4. PV SOURCE, OUTPUT, AND INVERTER INPUT CIRCUIT WIRING METHODS SHALL COMPLY WITH CEC 690.1(G)
  5. BACKFED PV BREAKER WILL BE INSTALLED AT OPPOSITE END OF THE BUS BAR FROM THE MAIN BREAKER. A PERMANENT WARNING LABEL TO BE INSTALLED PER SYSTEM SIGNAGE, PAGE
  6. BARE COPPER IS TRANSITIONED TO THWN-2 VIA IRREVERSIBLE CRIMP; WHEN PRESENT, THE GEC TO BE CONTINUOUS
  7. INVERTER(S) TO BE COMPLIANT WITH UL 1741 SUPPLEMENT A
  8. CONDUIT AND CONDUCTOR SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS
  9. CONDUIT AND CONDUCTOR SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UPSIZING AS REQUIRED BY FIELD CONDITIONS.



| PV MODULE ELECTRICAL SPECIFICATIONS        |                         | INVERTER ELECTRICAL SPECIFICATIONS |                         | POWER OPTIMIZER ELECTRICAL SPECIFICATIONS        |                                    | OVER-CURRENT PROTECTION DEVICE (OCPD) CALCULATIONS                  |  |
|--|-------------------------|------------------------------------|-------------------------|--|------------------------------------|---|--|
| MODULE TYPE                                | SILFAB SIL-370-NX-TITAN | INVERTER TYPE                      | SOLAREEDGE SE114000H-US | OPTIMIZER TYPE                                   | SOLAREEDGE P370                    | INVERTER TYPE   | SOLAREEDGE 11400H-US                   |
| POWER MAX (P <sub>MAX</sub> )              | 370W                    | MAX INPUT DC VOLTAGE               | 480V                    | RATED INPUT DC POWER                             | 370W                               | # OF INVERTERS  | 1                                      |
| OPEN CIRCUIT VOLTAGE (V <sub>OC</sub> )    | 44.8V                   | MAX INPUT CURRENT                  | 30.5A                   | MAXIMUM INPUT VOLTAGE (V <sub>OC</sub> )         | 60V                                | MAX CONTINUOUS OUTPUT CURRENT                                       | 47.5A                                  |
| SHORT CIRCUIT CURRENT (I <sub>SC</sub> )   | 10.6A                   | NOMINAL DC INPUT VOLTAGE           | 400V                    | MAXIMUM SHORT CIRCUIT CURRENT (I <sub>SC</sub> ) | 11A                                | (# OF INVERTERS) X (MAX CONT. OUTPUT CURRENT) X 125% <= OCPD RATING | ( 1 x 47.5A x 1.25)= 59.38A <= 60A, OK |
| MAX POWER-POINT VOLTAGE (V <sub>MP</sub> ) | 37.2V                   | MAXIMUM OUTPUT POWER               | 11400W                  | MAXIMUM DC INPUT CURRENT                         | 13.75A                             |   |  |
| MAX POWER-POINT CURRENT (I <sub>MP</sub> ) | 10.0A                   | NOMINAL AC OUTPUT VOLTAGE          | 240V                    | MAXIMUM OUTPUT CURRENT                           | 15A                                |   |  |
| SERIES FUSE RATING                         | 20A                     | MAXIMUM CONT. OUTPUT CURRENT       | 47.5A                   | MAXIMUM OUTPUT VOLTAGE                           | 60V                                |   |  |
|  |                         | CEC EFFICIENCY                     | 99%                     | MINIMUM STRING LENGTH                            | 8                                  |   |  |
|  |                         |                                    |                         | MAXIMUM POWER PER STRING                         | 5700W (6000W WITH SE7600- SE11400) |   |  |

**REID, ASHLEY**  
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1-LINE DIAGRAM & CALCULATIONS

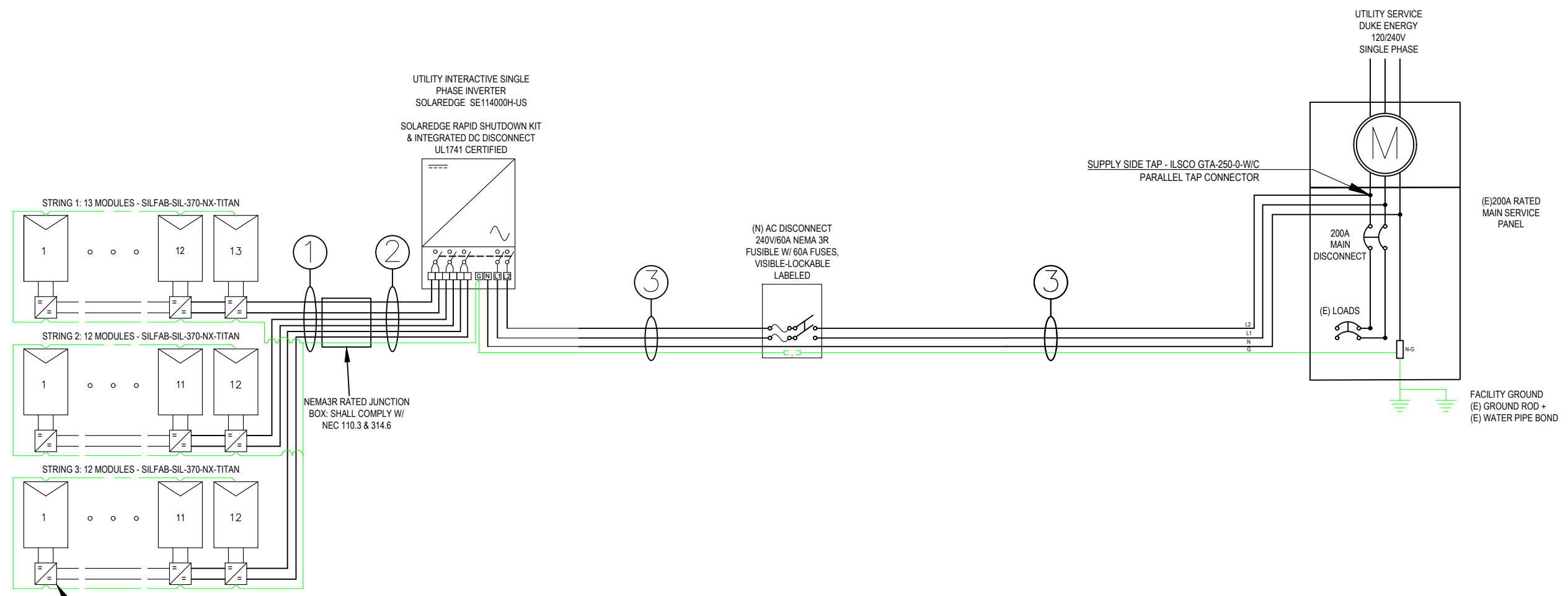
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 DRAWN BY: MJ

**PV-4**

| CONDUCTOR AND CONDUIT SCHEDULE |             |           |                 |              |                   |
|--------------------------------|-------------|-----------|-----------------|--------------|-------------------|
| TAG                            | WIRE TYPE   | WIRE SIZE | # OF CONDUCTORS | CONDUIT TYPE | MIN. CONDUIT SIZE |
| 1                              | PV WIRE     | #10       | 6- L1 L2        | FREE AIR     | N/A               |
| 1                              | BARE COPPER | #6        | 1- BARE         | FREE AIR     | N/A               |
| 2                              | THWN-2      | #10       | 6- L1 L2        | EMT          | 3/4"              |
| 2                              | THWN-2 EGC  | #8        | 1- GND          | EMT          | 3/4"              |
| 3                              | THWN-2      | #6        | 3- L1 L2 N      | EMT          | 3/4"              |
| 3                              | THWN-2 EGC  | #8        | 1- GND          | EMT          | 3/4"              |

**PHOTOVOLTAIC SYSTEM:**  
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 INVERTER: ( 1 ) SOLAREEDGE SE114000H-US  
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- NOTES:**
1. MODULES ARE BONDED TO RAIL USING UL 2703 RATED BONDING SYSTEM - INTEGRATED BONDING MID-CLAMPS + DIRECT-BURIAL LAY-IN-LUGS; SEE ATTACHED FOR SPECIFICATIONS IF APPLICABLE
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  5. BACKFED PV BREAKER WILL BE INSTALLED AT OPPOSITE END OF THE BUS BAR FROM THE MAIN BREAKER. A PERMANENT WARNING LABEL TO BE INSTALLED PER SYSTEM SIGNAGE, PAGE
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  7. INVERTER(S) TO BE COMPLIANT WITH UL 1741 SUPPLEMENT A
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| PV MODULE ELECTRICAL SPECIFICATIONS        |                         | INVERTER ELECTRICAL SPECIFICATIONS |                        | POWER OPTIMIZER ELECTRICAL SPECIFICATIONS        |                                    | OVER-CURRENT PROTECTION DEVICE (OCPD) CALCULATIONS                  |  |
|--|-------------------------|------------------------------------|------------------------|--|------------------------------------|---|--|
| MODULE TYPE                                | SILFAB SIL-370-NX-TITAN | INVERTER TYPE                      | SOLAREEDGE SE11400H-US | OPTIMIZER TYPE                                   | SOLAREEDGE P370                    | INVERTER TYPE   | SOLAREEDGE 11400H-US                   |
| POWER MAX (P <sub>MAX</sub> )              | 370W                    | MAX INPUT DC VOLTAGE               | 480V                   | RATED INPUT DC POWER                             | 370W                               | # OF INVERTERS  | 1                                      |
| OPEN CIRCUIT VOLTAGE (V <sub>OC</sub> )    | 44.8V                   | MAX INPUT CURRENT                  | 30.5A                  | MAXIMUM INPUT VOLTAGE (V <sub>OC</sub> )         | 60V                                | MAX CONTINUOUS OUTPUT CURRENT                                       | 47.5A                                  |
| SHORT CIRCUIT CURRENT (I <sub>SC</sub> )   | 10.6A                   | NOMINAL DC INPUT VOLTAGE           | 400V                   | MAXIMUM SHORT CIRCUIT CURRENT (I <sub>SC</sub> ) | 11A                                | (# OF INVERTERS) X (MAX CONT. OUTPUT CURRENT) X 125% <= OCPD RATING | (1 x 47.5A x 1.25) = 59.38A <= 60A, OK |
| MAX POWER-POINT VOLTAGE (V <sub>MP</sub> ) | 37.2V                   | MAXIMUM OUTPUT POWER               | 11400W                 | MAXIMUM DC INPUT CURRENT                         | 13.75A                             |   |  |
| MAX POWER-POINT CURRENT (I <sub>MP</sub> ) | 10.0A                   | NOMINAL AC OUTPUT VOLTAGE          | 240V                   | MAXIMUM OUTPUT CURRENT                           | 15A                                |   |  |
| SERIES FUSE RATING                         | 20A                     | MAXIMUM CONT. OUTPUT CURRENT       | 47.5A                  | MAXIMUM OUTPUT VOLTAGE                           | 60V                                |   |  |
|  |                         | CEC EFFICIENCY                     | 99%                    | MINIMUM STRING LENGTH                            | 8                                  |   |  |
|  |                         |                                    |                        | MAXIMUM POWER PER STRING                         | 5700W (6000W WITH SE7600- SE11400) |   |  |

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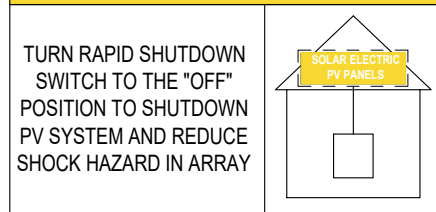


3-LINE DIAGRAM & CALCULATIONS

JOB #: TSP102888  
 DATE: 10/27/2021  
 DRAWN BY: MJ

**PV-4.1**

**SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN**



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

**LABEL 1**  
AT RAPID SHUTDOWN SYSTEM [NEC 690.56(C)(1)(A)].

**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

**LABEL 6**  
AT RAPID SHUTDOWN DISCONNECT SWITCH [NEC 690.56(C)(3)].

**PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN**

**LABEL 11**  
AT RAPID SHUTDOWN SWITCH [NEC 690.56(C)].  
LETTERS AT LEAST 3/8 INCH; WHITE ON RED BACKGROUND; REFLECTIVE [IFC 605.11.1.1]

**LABEL 15**  
PER XCEL ON MAIN SERVICE PANEL

THIS SERVICE PANEL IS ENERGIZED FROM MORE THAN ONE SOURCE. ONLY AUTHORIZED PERSON WHO ARE FAMILIAR WITH THIS SYSTEM SHOULD ATTEMPT TO DO SERVICE WORK ON IT

**! WARNING !**  
**ELECTRIC SHOCK HAZARD**  
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.  
DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

**LABEL 2**  
AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT [NEC 690.15]

**! WARNING !**  
**ELECTRIC SHOCK HAZARD**  
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

**LABEL 3**  
AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT [NEC 690.13 AND 690.15]

MAXIMUM VOLTAGE: 480 V DC  
MAXIMUM CIRCUIT CURRENT: 30.5 A DC  
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED): 30.5 A DC

**LABEL 4**  
AT EACH DC DISCONNECTING MEANS [NEC 690.53]

**PHOTOVOLTAIC AC DISCONNECT**  
OPERATING CURRENT: 47.5 A AC  
OPERATING VOLTAGE: 240 V AC

**LABEL 5**  
AT POINT OF INTERCONNECTION, MARKED AT DISCONNECTING MEANS [NEC 690.54]

**! WARNING !**  
DUAL POWER SOURCES. SECOND SOURCE IS PV SYSTEM

**LABEL 7**  
AT POINT OF INTERCONNECTION; LABEL, SUCH AS LABEL 7 OR LABEL 8 MUST IDENTIFY PHOTOVOLTAIC SYSTEM [NEC 705.12(B)(4)]

**! CAUTION !**  
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

**LABEL 8**  
AT POINT OF INTERCONNECTION; LABEL, SUCH AS LABEL 7 OR LABEL 8 MUST IDENTIFY PHOTOVOLTAIC SYSTEM [NEC 705.12(B)(4)]

**BI-DIRECTIONAL METER**

**LABEL 9**  
AT UTILITY METER [NEC 690.56(B)]

**PHOTOVOLTAIC DC DISCONNECT**

**LABEL 10**  
AT EACH DC DISCONNECTING MEANS [NEC 690.13(B)]

**WARNING: PHOTOVOLTAIC POWER SOURCE**

**LABEL 12**  
AT EXPOSED RACEWAYS, CABLE TRAYS, AND OTHER WIRING METHODS; SPACED AT MAXIMUM 10 FT SECTION OR WHERE SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS. [NEC 690.31(G)]  
LETTERS AT LEAST 3/8 INCH; WHITE ON RED BACKGROUND; REFLECTIVE [IFC 605.11.1.1]

**UTILITY AC DISCONNECT**

**LABEL 13**  
AT EACH AC DISCONNECTING MEANS [NEC 690.13(B)]

**! WARNING !**  
POWER SOURCE OUTPUT CONNECTION - DO NOT RELOCATE THIS OVERCURRENT DEVICE

**LABEL 14**  
AT POINT OF INTERCONNECTION OVERCURRENT DEVICE [NEC 705.12(B)(2)(3)(B)]

#03-359 LOCAL CODES  
**WARNING**  
THIS SERVICE METER IS ALSO SERVED BY A PHOTOVOLTAIC SYSTEM

TO BE PLACED ON PRODUCTION METER  
**SOLAR PRODUCTION METER**

TO BE PLACED ON AC DISCONNECT  
**AC DISCONNECT**

**WARNING:**  
DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

PER NEC 705.12 (2)(c)

**PHOTOVOLTAIC SYSTEM CONNECTED**

TO BE PLACED ON UTILITY METER

ALL SIGNAGE MUST BE PERMANENTLY ATTACHED AND BE WEATHER RESISTANT/SUNLIGHT RESISTANT AND CANNOT BE HAND-WRITTEN PER NEC 110.21(B)

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS IF NOT IN THE SAME LOCATION [NEC 690.56(B)]

WHERE THE PV SYSTEMS ARE REMOTELY LOCATED FROM EACH OTHER, A DIRECTORY IN ACCORDANCE WITH 705.10 SHALL BE PROVIDED AT EACH PV SYSTEM DISCONNECTING MEANS. PV SYSTEM EQUIPMENT AND DISCONNECTING MEANS SHALL NOT BE INSTALLED IN BATHROOMS [NEC 690.4(D),(E)]

**LABELING NOTES**  
1.1 LABELING REQUIREMENTS BASED ON THE 2017 NATIONAL ELECTRICAL CODE, INTERNATIONAL FIRE CODE 605.11, OSHA STANDARD 1910.145, ANSI Z535  
1.2 MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.  
1.3 LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.  
1.4 LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8" AND PERMANENTLY AFFIXED.  
1.5 ALERTING WORDS TO BE COLOR CODED. "DANGER" WILL HAVE RED BACKGROUND; "WARNING" WILL HAVE ORANGE BACKGROUND; "CAUTION" WILL HAVE YELLOW BACKGROUND. [ANSI Z535]

LABELS ARE NOT DRAWN TO SCALE

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(919) 812-4678

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**ELECTRICAL LABELS**

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**PV-5**



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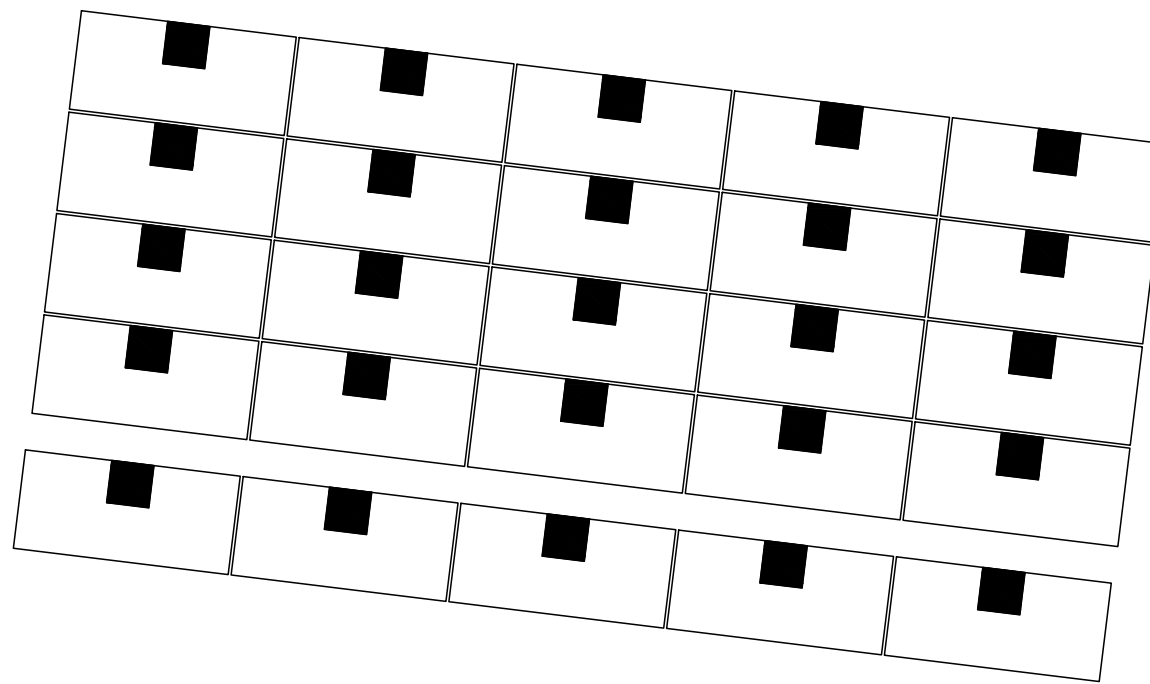
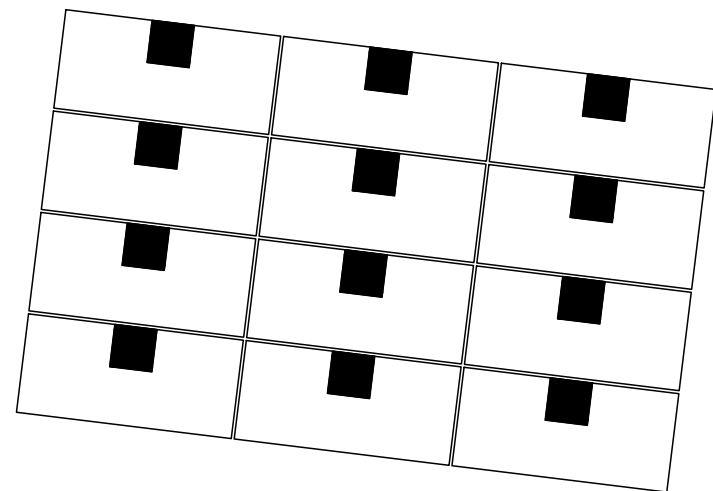
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ELECTRICAL PHOTOS

JOB #: TSP102888  
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**PV-6**





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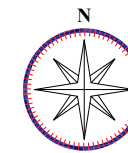
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OPTIMIZER MAP

FOR INSTALLER USE ONLY

JOB #: TSP102888  
DATE: 10/27/2021  
DRAWN BY: MJ

**PV-7**



**SITE SAFETY CHECKLIST:**

- |                              |  |
|------------------------------|--|
| 1. LADDER LOCATION           |  |
| 2. RAZ ZONE                  |  |
| 3. TRUCK                     |  |
| 4. ANCHORS                   |  |
| 5. EGRESS ANCHOR (FPU)       |  |
| 6. WATER LOCATION            |  |
| 7. ENTRY POINTS TO HOME      |  |
| 8. ROOF FALL HAZARDS         |  |
| 9. EMERGENCY GATHERING POINT |  |

NOTE: INSTALL CREW TO MARK LOCATIONS ON DAY OF CONSTRUCTION

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

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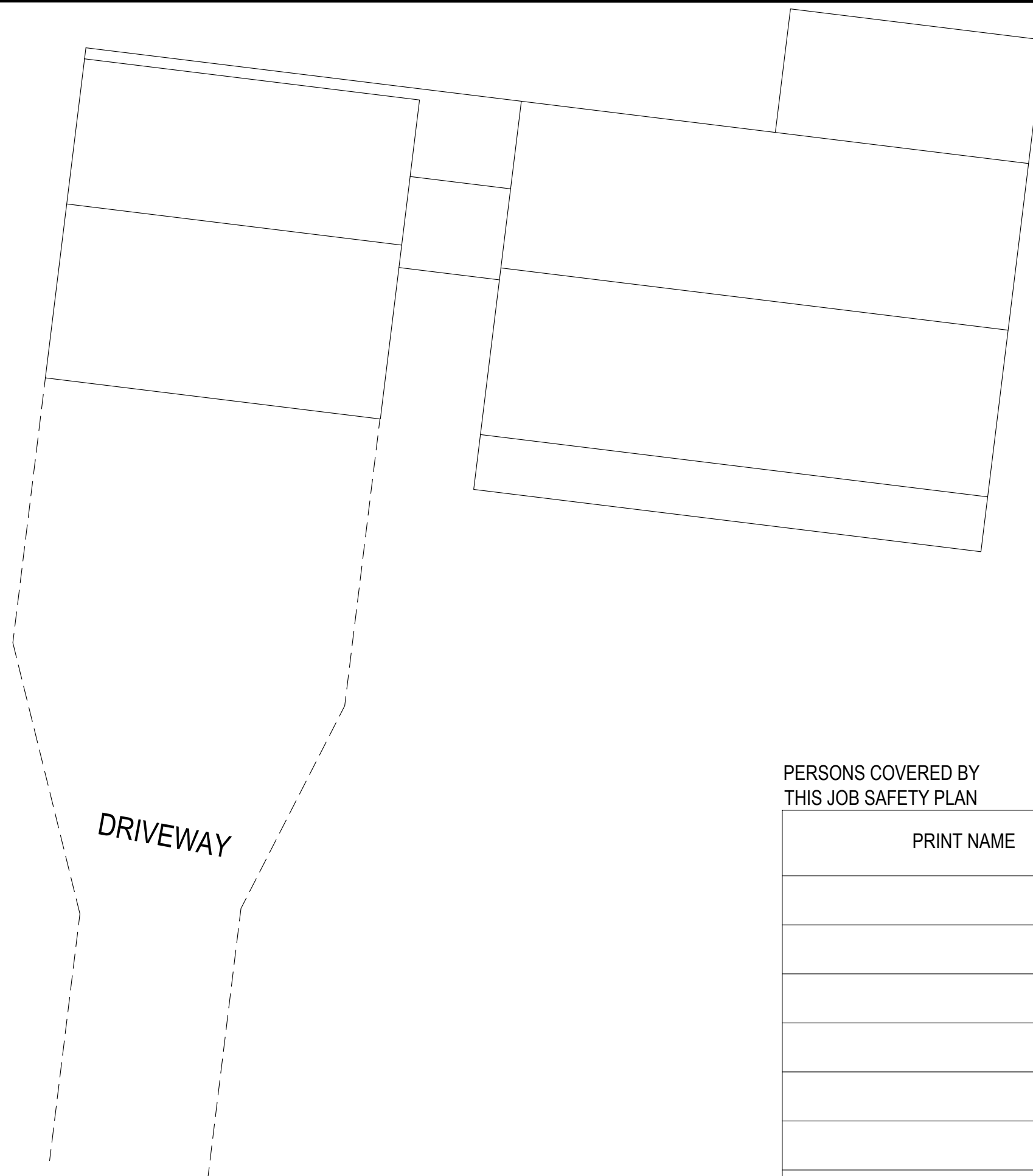
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SITE SAFETY PLAN

JOB #: TSP102888  
 DATE: 10/27/2021  
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**PV-8**



**PERSONS COVERED BY THIS JOB SAFETY PLAN**

**INJURED AT WORK TODAY? INITIAL YES OR NO**

| PRINT NAME | INITIAL | YES | NO |
|------------|---------|-----|----|
|            |         |     |    |
|            |         |     |    |
|            |         |     |    |
|            |         |     |    |
|            |         |     |    |
|            |         |     |    |
|            |         |     |    |
|            |         |     |    |

18 TWIN OAK DR

FOR INSTALLER USE ONLY



# TITAN

## SOLAR PANEL

**HIGH EFFICIENCY  
PREMIUM  
MONO-PERC  
PV MODULE**



**CHUBB**  
\* Chubb provides error and omission insurance to Silfab Solar Inc.

**SIL-370 NX  
POWERED BY  
SILFAB SOLAR**



### INDUSTRY LEADING WARRANTY

The Titan Solar Panel is manufactured by Silfab Solar and includes an industry leading 25-year product workmanship and 30-year performance warranty.

### MAXIMUM ENERGY OUTPUT

Leveraging over 35+ years of worldwide experience in the solar industry, Silfab is dedicated to superior manufacturing processes and innovations such as Bifacial and Back Contact technologies, to ensure our partners, such as Titan Solar have the latest in solar innovation.

### NORTH AMERICAN QUALITY

Silfab is the leading automated solar module manufacturer in North America. Utilizing premium quality materials and strict quality control management to deliver the highest efficiency, premium quality PV modules.



### BAA / ARRA COMPLIANT

These panels are designed and manufactured to meet Buy American Act Compliance. The US State Department, US Military and FAA have all utilized Silfab panels in their solar installations.

### LIGHT AND DURABLE

Engineered to accommodate high wind load conditions for test loads validated up to 4000Pa uplift. The light-weight frame is exclusively designed for wide-ranging racking compatibility and durability.

### QUALITY MATTERS

Total automation ensures strict quality controls during the entire manufacturing process at ISO certified facilities.

### DOMESTIC SUPPORT / SERVICES

Our 500+ North American team is ready to help Titan Solar win the hearts and minds of customers, providing customer service and product delivery that is direct, efficient and local.

### AESTHETICALLY PLEASING

All black sleek design, ideal for high-profile residential or commercial applications.

### PID RESISTANT

PID Resistant due to advanced cell technology and material selection. In accordance to IEC 62804-1.

| Electrical Specifications     | SIL-370 NX mono PERC |      |
|-------------------------------|----------------------|------|
| Test Conditions               | STC                  | NOCT |
| Module Power (Pmax)           | Wp 370               | 266  |
| Maximum power voltage (Vpmax) | V 37.2               | 33.7 |
| Maximum power current (Ipmax) | A 10.0               | 7.9  |
| Open circuit voltage (Voc)    | V 44.8               | 40.7 |
| Short circuit current (Isc)   | A 10.6               | 8.3  |
| Module efficiency             | % 20.2               | 18.2 |
| Maximum system voltage (VDC)  | V 1000               |      |
| Series fuse rating            | A 20                 |      |
| Power Tolerance               | Wp +/-3%             |      |

Measurement conditions: STC 1000 W/m<sup>2</sup> • AM 1.5 • Temperature 25 °C • NOCT 800 W/m<sup>2</sup> • AM 1.5 • Measurement uncertainty ≤ 3%  
\* Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by +/-3%.

| Temperature Ratings          | SIL-370 NX mono PERC |
|------------------------------|----------------------|
| Temperature Coefficient Isc  | 0.064 %/°C           |
| Temperature Coefficient Voc  | -0.28 %/°C           |
| Temperature Coefficient Pmax | -0.36 %/°C           |
| NOCT (± 2°C)                 | 46 °C                |
| Operating temperature        | -40/+85 °C           |

| Mechanical Properties and Components                 | SIL-370 NX mono PERC  |
|--|---|
| Module weight  | 44±0.4 lbs  |
| Dimensions (H x L x D)                               | 72.13 in x 39.4 in x 1.5 in   |
| Maximum surface load (wind/snow)*                    | 83.5/112.8 lb/ft <sup>2</sup>   |
| Hail impact resistance                               | ø 1 in at 51.6 mph  |
| Cells  | 66 - Si mono-PERC - 5 busbar, 62.25 x 62.25 in  |
| Glass  | 0.126 in high transmittance, tempered, DSM anti-reflective coating  |
| Cables and connectors (refer to installation manual) | 47.2 in, ø 0.22 in, MC4 from Staubli  |
| Backsheet  | High durability, superior hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet |
| Frame  | Anodized Aluminum (Black)   |
| Bypass diodes  | 3 diodes-30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)                              |
| Junction Box   | UL 3730 Certified, IEC 62790 Certified, IP67 rated  |

| Warranties                          | SIL-370 NX mono PERC  |
|-------------------------------------|---|
| Module product workmanship warranty | 25 years**  |
| Linear power performance guarantee  | 30 years  |
|                                     | ≥ 97.1% end 1 <sup>st</sup> year    ≥ 91.6% end 12 <sup>th</sup> year    ≥ 85.1% end 25 <sup>th</sup> year    ≥ 82.6% end 30 <sup>th</sup> year |

| Certifications | SIL-370 NX mono PERC  |
|----------------|---|
| Product        | ULC ORD C1703, UL1703, CEC listed***, UL 61215-1/-1/-2, UL 61730-1/-2, IEC 61215-1/-1/-2***, IEC 61730-1/-2***, CSA C22.2#61730-1/-2, IEC 62716 Ammonia Corrosion; IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 2 ISO9001:2015 |

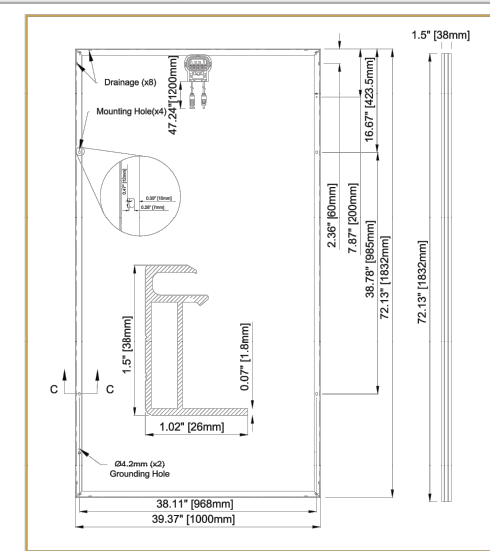
| Factory                      | SIL-370 NX mono PERC   |
|------------------------------|------------------------|
| All states except California | California             |
| Modules Per Pallet: 26       | Modules Per Pallet: 26 |
| Pallets Per Truck: 34        | Pallets Per Truck: 32  |
| Modules Per Truck: 884       | Modules Per Truck: 832 |

\*▲ Warning: Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.  
\*\*12 year extendable to 25 years subject to registration and conditions outlined under "Warranty" at www.silfabsolar.com.  
\*\*\*Certification and CEC listing in progress.  
PAN files generated from 3rd party performance data are available for download at: www.silfabsolar.com/downloads.

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MODULES DATASHEET

JOB #: TSP102888  
DATE: 10/27/2021  
DRAWN BY: MJ

**PV-9.1**

# Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US



INVERTERS

## Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

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



## Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

| MODEL NUMBER  | SE3000H-US                      | SE3800H-US                 | SE5000H-US | SE6000H-US                 | SE7600H-US | SE10000H-US | SE11400H-US                  |     |
|---|---------------------------------|----------------------------|------------|----------------------------|------------|-------------|------------------------------|-----|
| APPLICABLE TO INVERTERS WITH PART NUMBER                                  | SEXXXXH-XXXXXXBXX4              |                            |            |                            |            |             |                              |     |
| <b>OUTPUT</b>   |                                 |                            |            |                            |            |             |                              |     |
| Rated AC Power Output   | 3000                            | 3800 @ 240V<br>3300 @ 208V | 5000       | 6000 @ 240V<br>5000 @ 208V | 7600       | 10000       | 11400 @ 240V<br>10000 @ 208V | VA  |
| Maximum AC Power Output   | 3000                            | 3800 @ 240V<br>3300 @ 208V | 5000       | 6000 @ 240V<br>5000 @ 208V | 7600       | 10000       | 11400 @ 240V<br>10000 @ 208V | VA  |
| AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)                        | ✓                               | ✓                          | ✓          | ✓                          | ✓          | ✓           | ✓                            | Vac |
| AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)                        | -                               | ✓                          | -          | ✓                          | -          | -           | ✓                            | Vac |
| AC Frequency (Nominal)  | 59.3 - 60 - 60.5 <sup>(1)</sup> |                            |            |                            |            |             |                              | Hz  |
| Maximum Continuous Output Current @240V                                   | 12.5                            | 16                         | 21         | 25                         | 32         | 42          | 47.5                         | A   |
| Maximum Continuous Output Current @208V                                   | -                               | 16                         | -          | 24                         | -          | -           | 48.5                         | A   |
| Power Factor  | 1, Adjustable - 0.85 to 0.85    |                            |            |                            |            |             |                              |     |
| GFDI Threshold  | 1                               |                            |            |                            |            |             |                              | A   |
| Utility Monitoring, Islanding Protection, Country Configurable Thresholds | Yes                             |                            |            |                            |            |             |                              |     |
| <b>INPUT</b>  |                                 |                            |            |                            |            |             |                              |     |
| Maximum DC Power @240V  | 4650                            | 5900                       | 7750       | 9300                       | 11800      | 15500       | 17650                        | W   |
| Maximum DC Power @208V  | -                               | 5100                       | -          | 7750                       | -          | -           | 15500                        | W   |
| Transformer-less, Ungrounded  | Yes                             |                            |            |                            |            |             |                              |     |
| Maximum Input Voltage   | 480                             |                            |            |                            |            |             |                              | Vdc |
| Nominal DC Input Voltage  | 380                             |                            |            | 400                        |            |             |                              | Vdc |
| Maximum Input Current @240V <sup>(2)</sup>                                | 8.5                             | 10.5                       | 13.5       | 16.5                       | 20         | 27          | 30.5                         | Adc |
| Maximum Input Current @208V <sup>(2)</sup>                                | -                               | 9                          | -          | 13.5                       | -          | -           | 27                           | Adc |
| Max. Input Short Circuit Current  | 45                              |                            |            |                            |            |             |                              | Adc |
| Reverse-Polarity Protection   | Yes                             |                            |            |                            |            |             |                              |     |
| Ground-Fault Isolation Detection  | 600ka Sensitivity               |                            |            |                            |            |             |                              |     |
| Maximum Inverter Efficiency   | 99                              | 99.2                       |            |                            |            |             |                              | %   |
| CEC Weighted Efficiency   | 99                              |                            |            |                            |            |             | 99 @ 240V<br>98.5 @ 208V     | %   |
| Nighttime Power Consumption   | < 2.5                           |                            |            |                            |            |             |                              | W   |

(1) For other regional settings please contact SolarEdge support  
 (2) A higher current source may be used; the inverter will limit its input current to the values stated

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INVERTER DATASHEET

JOB #: TSP102888  
 DATE: 10/27/2021  
 DRAWN BY: MJ

**PV-9.2**



# Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P485 / P505



POWEROPTIMIZER

## PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

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



## Power Optimizer For North America

P320 / P340 / P370 / P400 / P405 / P485 / P505

| Optimizer model (typical module compatibility)  | P320 (for 60-cell modules)       | P340 (for high-power 60-cell modules) | P370 (for higher-power 60 and 72-cell modules) | P400 (for 72 & 96-cell modules)                      | P405 (for high-voltage modules)      | P485 (for high-voltage modules) | P505 (for higher current modules) |         |
|---|----------------------------------|---------------------------------------|--|--|--------------------------------------|---------------------------------|-----------------------------------|---------|
| <b>INPUT</b>  |                                  |                                       |  |  |                                      |                                 |                                   |         |
| Rated Input DC Power <sup>(1)</sup>   | 320                              | 340                                   | 370  | 400  | 405                                  | 485                             | 505                               | W       |
| Absolute Maximum Input Voltage (Voc at lowest temperature)  | 48                               |                                       | 60   | 80   | 125 <sup>(2)</sup>                   |                                 | 83 <sup>(2)</sup>                 | Vdc     |
| MPPT Operating Range  | 8 - 48                           |                                       | 8 - 60   | 8 - 80   | 12.5 - 105                           |                                 | 12.5 - 83                         | Vdc     |
| Maximum Short Circuit Current (Isc)   |                                  | 11                                    |  |  | 10.1                                 |                                 | 14                                | Adc     |
| Maximum DC Input Current  |                                  | 13.75                                 |  |  | 12.5                                 |                                 | 17.5                              | Adc     |
| Maximum Efficiency  |                                  |                                       |  | 99.5   |                                      |                                 |                                   | %       |
| Weighted Efficiency   |                                  |                                       |  | 98.8   |                                      |                                 | 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                                    |  |  |                                      | 85                              |                                   | Vdc     |
| <b>OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)</b> |                                  |                                       |  |  |                                      |                                 |                                   |         |
| Safety Output Voltage per Power Optimizer   |                                  |                                       |  | 1 ± 0.1  |                                      |                                 |                                   | Vdc     |
| <b>STANDARD COMPLIANCE</b>  |                                  |                                       |  |  |                                      |                                 |                                   |         |
| EMC   |                                  |                                       |  | FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3       |                                      |                                 |                                   |         |
| Safety  |                                  |                                       |  | IEC62109-1 (class II safety), UL1741                 |                                      |                                 |                                   |         |
| Material  |                                  |                                       |  | UL94 V-0, UV Resistant                               |                                      |                                 |                                   |         |
| RoHS  |                                  |                                       |  | Yes  |                                      |                                 |                                   |         |
| <b>INSTALLATION SPECIFICATIONS</b>  |                                  |                                       |  |  |                                      |                                 |                                   |         |
| Maximum Allowed System Voltage  |                                  |                                       |  | 1000   |                                      |                                 |                                   | Vdc     |
| Compatible inverters  |                                  |                                       |  | All SolarEdge Single Phase and Three Phase inverters |                                      |                                 |                                   |         |
| Dimensions (W x L x H)  | 129 x 153 x 27.5 / 5.1 x 6 x 1.1 |                                       | 129 x 153 x 33.5 / 5.1 x 6 x 1.3               |  | 129 x 159 x 49.5 / 5.1 x 6.3 x 1.9   |                                 | 129 x 162 x 59 / 5.1 x 6.4 x 2.3  | mm / in |
| Weight (including cables)   | 630 / 1.4                        |                                       | 750 / 1.7                                      |  | 845 / 1.9                            |                                 | 1064 / 2.3                        | gr / lb |
| Input Connector   | MC4 <sup>(5)</sup>               |                                       |  |  | Single or dual MC4 <sup>(5)(6)</sup> | MC4 <sup>(5)</sup>              |                                   |         |
| Input Wire Length   | 0.16 / 0.52                      |                                       |  |  |                                      |                                 |                                   | m / ft  |
| Output Wire Type / Connector  | Double Insulated / MC4           |                                       |  |  |                                      |                                 |                                   |         |
| Output Wire Length  | 0.9 / 2.95                       | 1.2 / 3.9                             |  | 1.2 / 3.9  |                                      | 1.2 / 3.9                       |                                   | m / ft  |
| Operating Temperature Range <sup>(3)</sup>  | -40 - +85 / -40 - +185           |                                       |  |  |                                      |                                 |                                   | °C / °F |
| Protection Rating   | IP68 / NEMA6P                    |                                       |  |  |                                      |                                 |                                   |         |
| Relative Humidity   | 0 - 100                          |                                       |  |  |                                      |                                 |                                   | %       |

<sup>(1)</sup> Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed.  
<sup>(2)</sup> NEC 2017 requires max input voltage be not more than 80V.  
<sup>(3)</sup> For other connector types please contact SolarEdge.  
<sup>(4)</sup> For dual version for parallel connection of two modules use the P485. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer.  
<sup>(5)</sup> For ambient temperature above +85°C / +185°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

| PV System Design Using a SolarEdge Inverter <sup>(6)(7)</sup> | Single Phase HD-Wave                    | Single phase | Three Phase for 208V grid | Three Phase for 277/480V grid |   |
|---|---|--------------|---------------------------|-------------------------------|---|
| Minimum String Length (Power Optimizers)                      | P320, P340, P370, P400                  | 8            | 10                        | 18                            |   |
|   | P405, P485, P505                        | 6            | 8                         | 14                            |   |
| Maximum String Length (Power Optimizers)                      |   | 25           | 25                        | 50 <sup>(8)</sup>             |   |
| Maximum Power per String                                      | 5700 (6000 with SE7600-US - SE11400-US) | 5250         | 6000 <sup>(9)</sup>       | 12750 <sup>(10)</sup>         | W |
| Parallel Strings of Different Lengths or Orientations         | Yes                                     |              |                           |                               |   |

<sup>(6)</sup> For detailed string sizing information refer to: [http://www.solaredge.com/sites/default/files/string\\_sizing\\_na.pdf](http://www.solaredge.com/sites/default/files/string_sizing_na.pdf)  
<sup>(7)</sup> It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400 in one string.  
<sup>(8)</sup> A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement.  
<sup>(9)</sup> For 208V grid: it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W.  
<sup>(10)</sup> For 277/480V grid: it is allowed to install up to 17,550W per string when the maximum power difference between each string is 2,000W.

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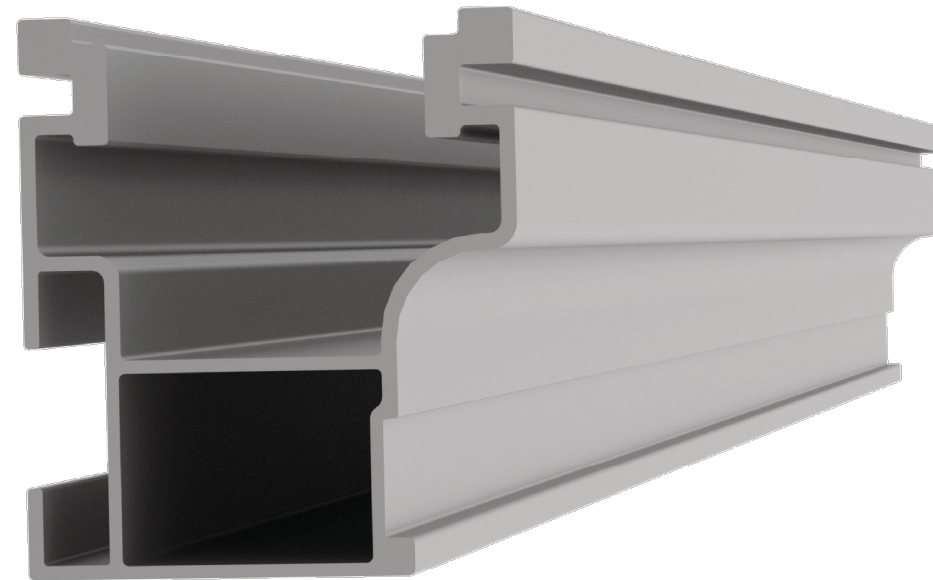
OPTIMIZER DATASHEET

JOB #: TSP102888  
 DATE: 10/27/2021  
 DRAWN BY: MJ

**PV-9.3**



**NEW!**



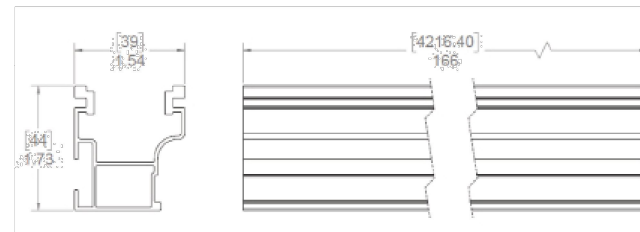
**NEW PRODUCT**

**CrossRail 44-X**

- ▶ Optimized rail profile
- ▶ One rail for all markets
- ▶ Built-in wire management
- ▶ Maintains same structural integrity as 48-X
- ▶ Tested up to 200 mph winds
- ▶ Tested up to 100 PSF snow loads



| Part Number | Description                 |
|-------------|-----------------------------|
| 4000019     | CrossRail 44-X 166", Mill   |
| 4000020     | CrossRail 44-X 166", Dark   |
| 4000021     | CrossRail 44-X 180", Mill   |
| 4000022     | CrossRail 44-X 180", Dark   |
| 4000051     | RailConn Set, CR 44-X, Mill |
| 4000052     | RailConn Set, CR 44-X, Dark |
| 4000067     | End Cap, Black, CR 44-X     |



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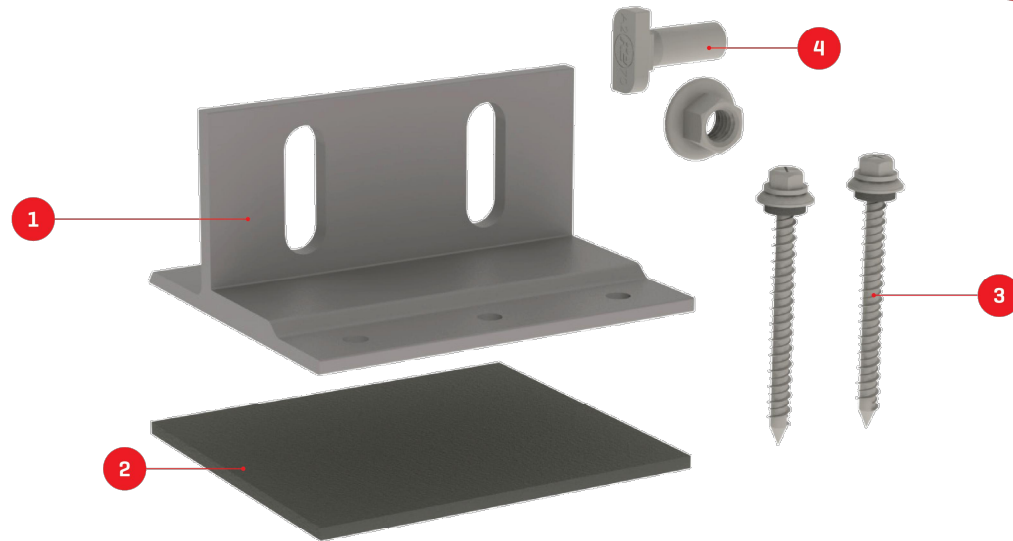
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**PV-9.4**

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# Splice Foot X

Patent Pending

## TECHNICAL SHEET

| Item Number | Description          | Part Number                       |
|-------------|----------------------|-----------------------------------|
| 1           | Splice Foot X        | 4000113   Splice Foot X Kit, Mill |
| 2           | K2 FlexFlash Butyl   |                                   |
| 3           | M5 x 60 lag screws   |                                   |
| 4           | T-Bolt & Hex Nut Set |                                   |

### Technical Data

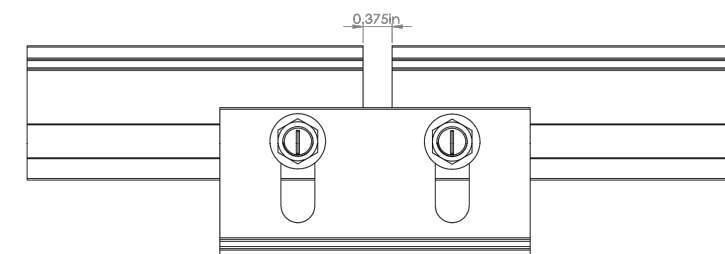
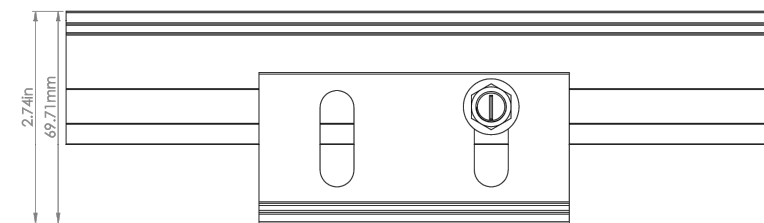
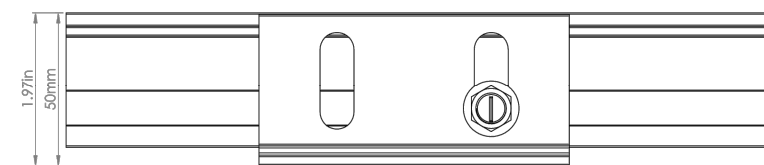
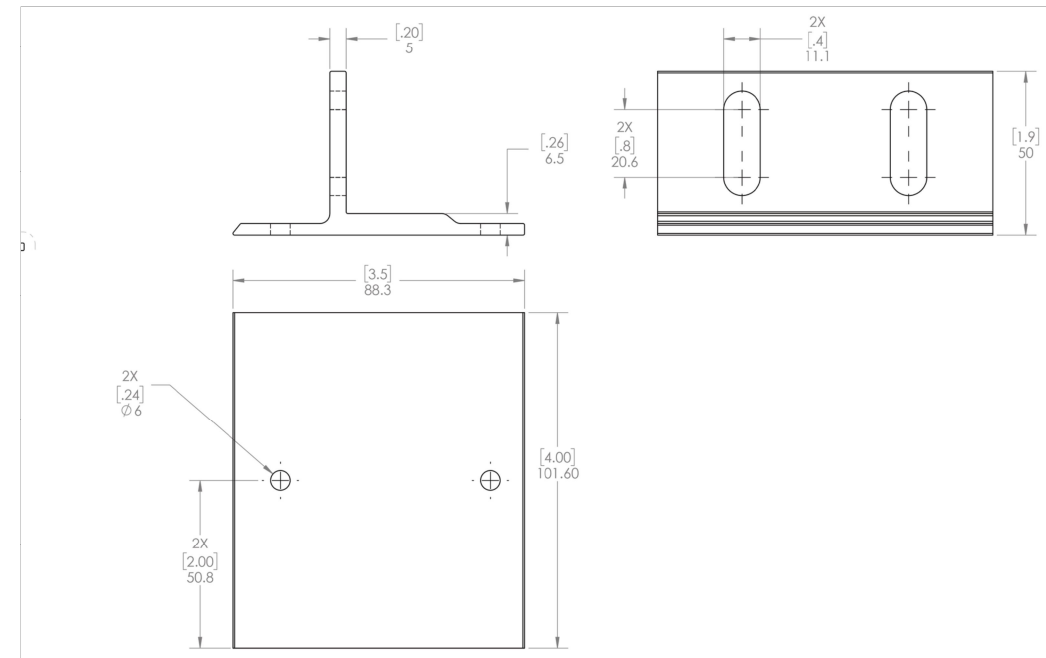
|                 |  |
|-----------------|--|
|                 | Splice Foot X                          |
| Roof Type       | Composition shingle                    |
| Material        | Aluminum with stainless steel hardware |
| Finish          | Mill                                   |
| Roof Connection | M5 x 60 lag screws                     |
| Code Compliance | UL 2703                                |
| Compatibility   | CrossRail 44-X, 48-X, 48-XL, 80        |

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MOUNTING DATASHEET

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**PV-9.5**

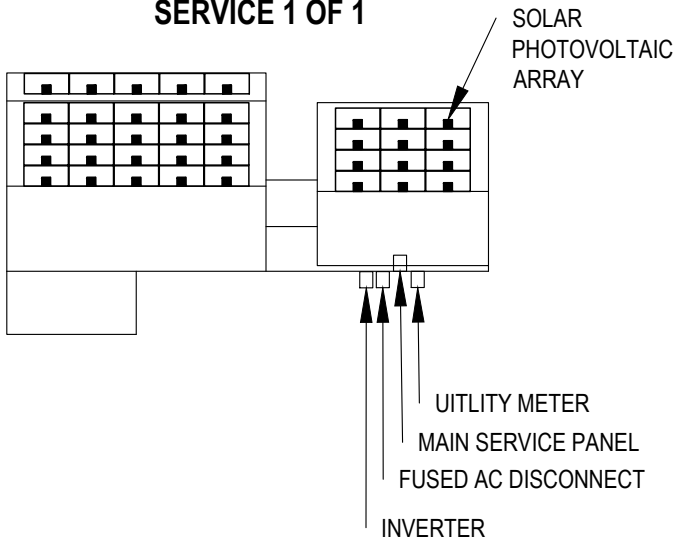


# CAUTION



POWER TO THIS BUILDING IS SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN

## SERVICE 1 OF 1



18 TWIN OAK DR, ANGIER NC 27501