WYSSLING CONSULTING
CORPORATE EXPERIENCE WITH SMALL BUSINESS VALUE

*Scott E. Wyssling, PE*
*Jon P. Ward, SE, PE*
*Gregory T. Elvestad, PE*

*76 North Meadowbrook Drive*
*Alpine, UT 84004*
*office (201) 874-3483*
*swyssling@wysslingconsulting.com*

May 26, 2022

Sigora Solar LLC
490 Westfield Road STE A
Charlottesville, VA 22901

Re: Engineering Services
Solano Residence
10 Rainmaker Street, Linden NC
10.000 kW System

To Whom It May Concern:

We have received information regarding solar panel installation on the roof of the above referenced structure. Our evaluation of the structure is to verify the existing capacity of the roof system and its ability to support the additional loads imposed by the proposed solar system.

***A. Site Assessment Information***

1. Site visit documentation identifying attic information including size and spacing of framing for the existing roof structure.
2. Design drawings of the proposed system including a site plan, roof plan and connection details for the solar panels. This information will be utilized for approval and construction of the proposed system.

***B. Description of Structure:***

| | |
|---|---|
| ***Roof Framing:*** | Prefabricated wood trusses at 24" on center. All truss members are constructed of 2x4 dimensional lumber. |
| ***Roof Material:*** | Composite Asphalt Shingles |
| ***Roof Slope:*** | 26 degrees |
| ***Attic Access:*** | Accessible |
| ***Foundation:*** | Permanent |

***C. Loading Criteria Used***

- **Dead Load**
  - Existing Roofing and framing = 7 psf
  - New Solar Panels and Racking = 3 psf
  - TOTAL = 10 PSF
- **Live Load** = 20 psf (reducible) – 0 psf at locations of solar panels
- **Ground Snow Load** = 15 psf
- **Wind Load** based on ASCE 7-10
  - Ultimate Wind Speed = 120 mph (based on Risk Category II)
  - Exposure Category C

*Analysis performed of the existing roof structure utilizing the above loading criteria is in accordance with the North Carolina Residential Code (2018), including provisions allowing existing structures to not require strengthening if the new loads do not exceed existing design loads by 105% for gravity elements and 110% for seismic elements. This analysis indicates that the existing framing will support the additional panel loading without damage, if installed correctly.*

***D. Solar Panel Anchorage***

1. The solar panels shall be mounted in accordance with the most recent SnapNRack installation manual. If during solar panel installation, the roof framing members appear unstable or deflect non-uniformly, our office should be notified before proceeding with the installation.
2. The maximum allowable withdrawal force for a $^{5}/_{16}$" lag screw is 235 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on a minimum penetration depth of 2½", the allowable capacity per connection is greater than the design withdrawal force (demand). Considering the variable factors for the existing roof framing and installation tolerances, the connection using one $^{5}/_{16}$" diameter lag screw with a minimum of 2½" embedment will be adequate and will include a sufficient factor of safety.
3. Considering the wind speed, roof slopes, size and spacing of framing members, and condition of the roof, the panel supports shall be placed no greater than 48" on centers.
4. Panel supports connections shall be staggered to distribute load to adjacent framing members.

Based on the above evaluation, this office certifies that with the racking and mounting specified, the existing roof system will adequately support the additional loading imposed by the solar system. This evaluation is in conformance with the North Carolina Residential Code, current industry standards, and is based on information supplied to us at the time of this report.

Should you have any questions regarding the above [illegible] do not hesitate to contact me.

Very truly yours,

Scott E. Wyssling, PE
North Carolina License No. 46546

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Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # P-2308
**Date Signed 5/26/2022**

# PROJECT DESCRIPTION:

25 x REC SOLAR: REC400AA PURE 400W MONO MODULES
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
DC SYSTEM SIZE: 10.000kW DC
AC SYSTEM SIZE: 7.250kW AC

EQUIPMENT SUMMARY:
25 REC SOLAR: REC400AA PURE 400W MONO MODULES
25 ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS
EQUIPPED WITH RAPID SHUTDOWN

ROOF ARRAY AREA #1:- 318.56 SQ FT.
ROOF ARRAY AREA #2:- 179.19 SQ FT.

AUTHORITIES HAVING JURISDICTION:
BUILDING: HARNETT, COUNTY OF (NC)
ZONING: HARNETT, COUNTY OF (NC)

SCOPE OF WORK:
DESIGNED FOR INSTALLATION OF GRID-TIED PHOTOVOLTAIC SOLAR SYSTEM

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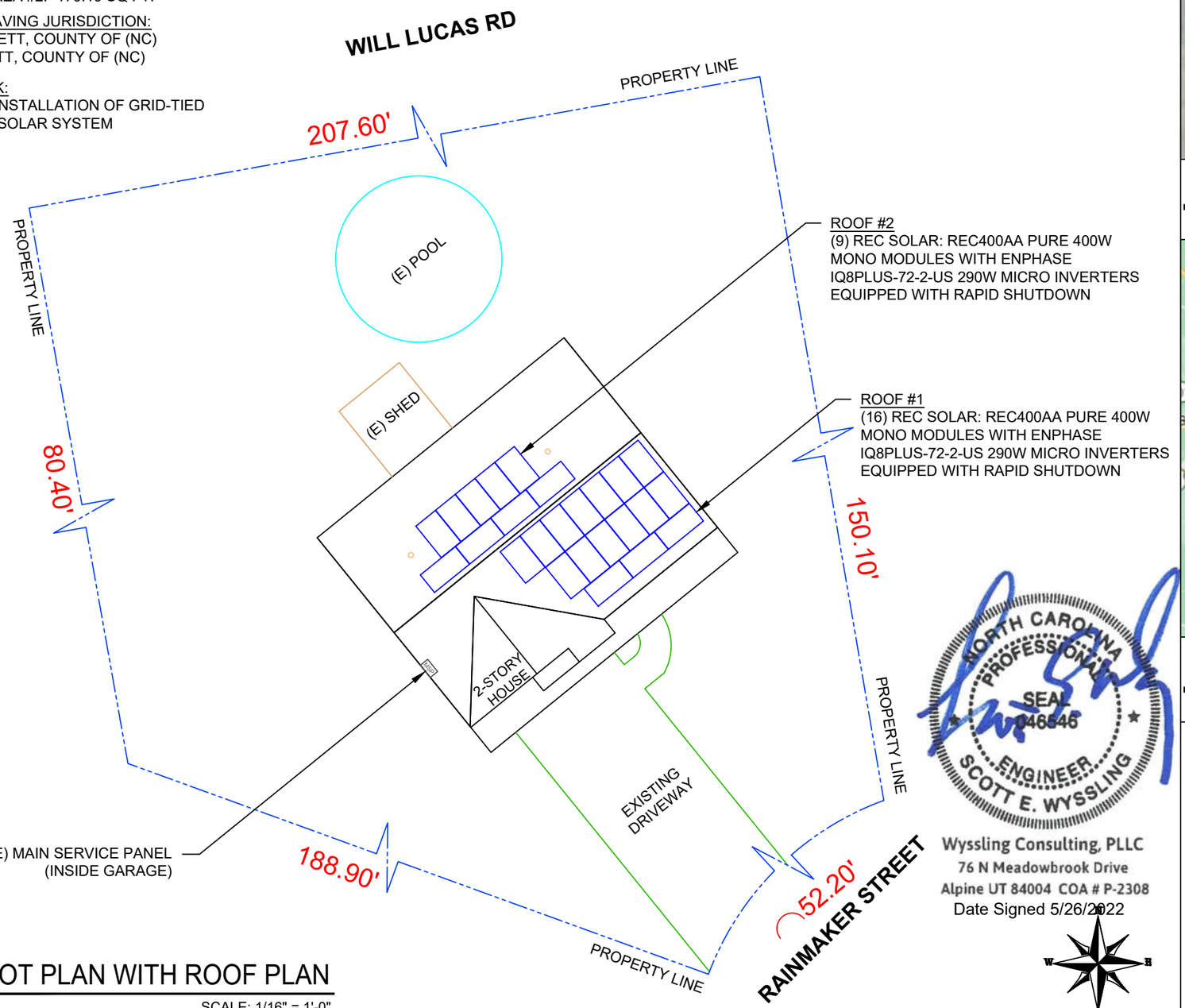
APPLICABLE CODES & STANDARDS
NCBC 2018
NEC 2017

DESIGN SPECIFICATION
OCCUPANCY: II
CONSTRUCTION: SINGLE-FAMILY
ZONING: RESIDENTIAL
GROUND SNOW LOAD: REFER STRUCTURAL LETTER
WIND EXPOSURE: REFER STRUCTURAL LETTER
WIND SPEED: REFER STRUCTURAL LETTER



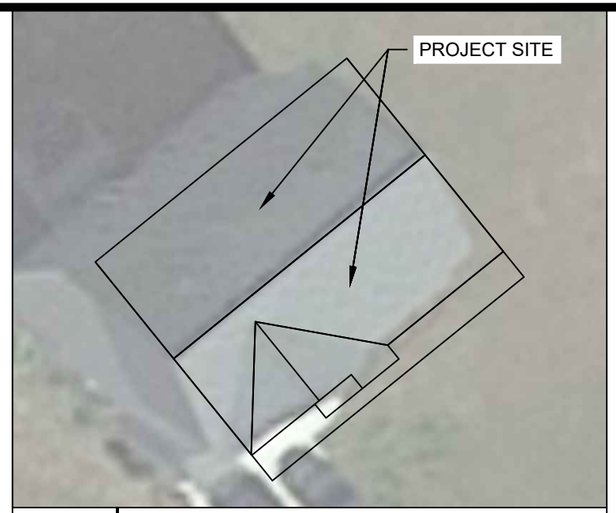

ROOF #2
(9) REC SOLAR: REC400AA PURE 400W MONO MODULES WITH ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

ROOF #1
(16) REC SOLAR: REC400AA PURE 400W MONO MODULES WITH ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

NORTH CAROLINA PROFESSIONAL SEAL 046545 ENGINEER SCOTT E. WYSSLING

Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # P-2308
Date Signed 5/26/2022

1 PLOT PLAN WITH ROOF PLAN
PV-1 SCALE: 1/16" = 1'-0"




2 HOUSE PHOTO
PV-1 SCALE: NTS


3 VICINITY MAP
PV-1 SCALE: NTS

SHEET INDEX




SIGORA SOLAR
SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901


REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |
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| | | |
| | | |
| | | |

DATE:05/25/2022

PROJECT NAME & ADDRESS
ALBERTO SOLANO RESIDENCE
10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
PLOT PLAN WITH ROOF PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

## MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 25 MODULES
MODULE TYPE = REC SOLAR: REC400AA PURE 400W MONO MODULES
MODULE WEIGHT = 45.19 LBS / 20.5KG
MODULE DIMENSIONS = 71.70"x 40.00" = 19.91 SF

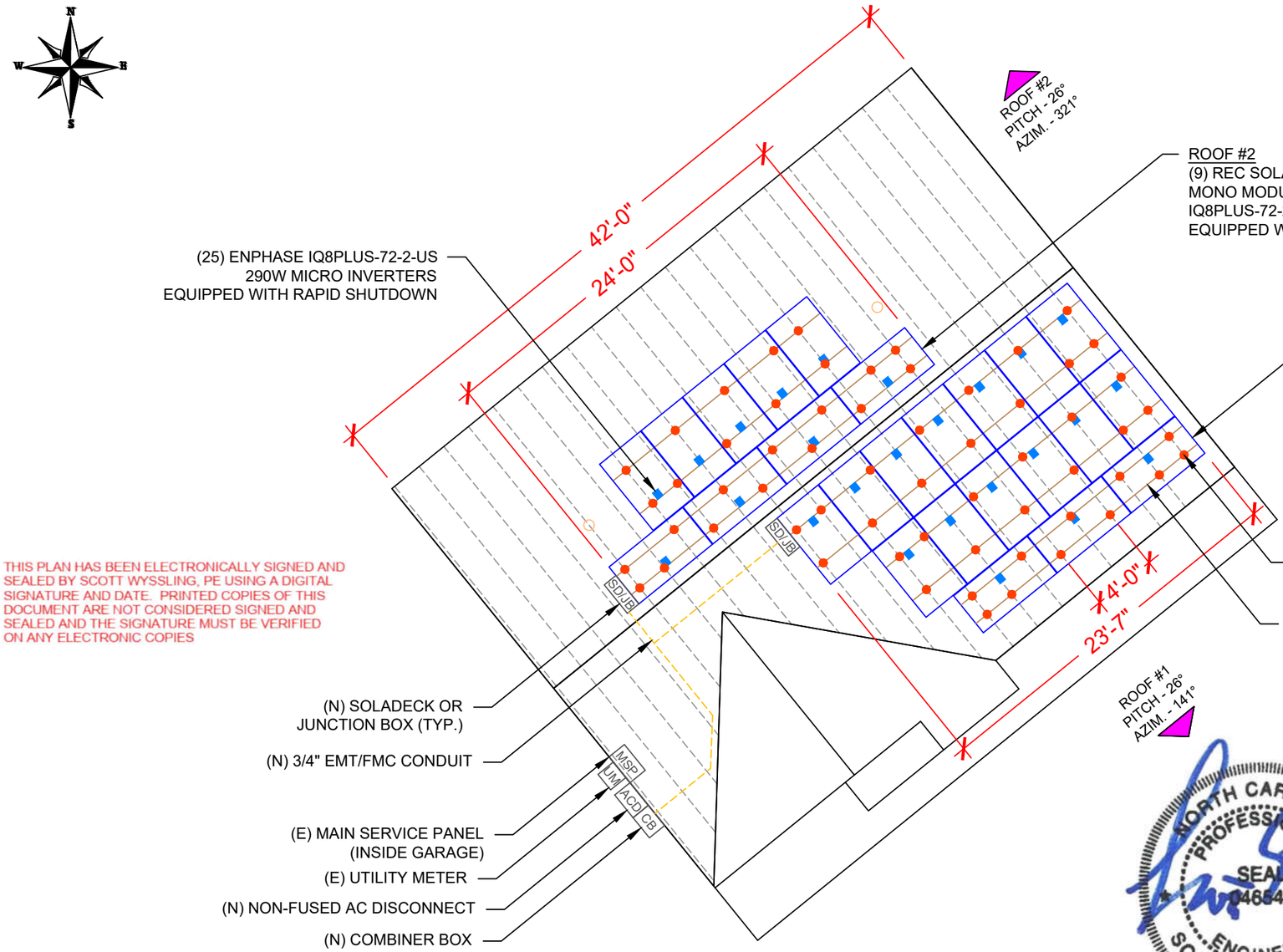
- TOTAL WEIGHT OF PV MODULES AND RAILS = 1493.3 LBS
- WEIGHT PER ATTACHMENT POINT = 24 LBS
- DISTRIBUTED WEIGHT OF PV MODULE = 2.27 LBS/SF

### ARRAY AREA & ROOF AREA CALC'S

| TOTAL PV ARRAY AREA (SQ. FT.) | TOTAL PLAN VIEW ROOF AREA (SQ. FT.) | ROOF AREA COVERED BY ARRAY (%) |
|---|---|---|
| 447.50 | 1550.15 | 29 |

### ROOF DESCRIPTION

| ROOF TYPE | | | | ASPHALT SHINGLE | |
|---|---|---|---|---|---|
| ROOF LAYER | | | | 1 LAYER | |
| ROOF | # OF MODULES | ROOF PITCH | AZIMUTH | TRUSS SIZE | TRUSS SPACING |
| #1 | 16 | 26° | 141° | 2X4 | 24" |
| #2 | 9 | 26° | 321° | 2X4 | 24" |




(25) ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

ROOF #2
(9) REC SOLAR: REC400AA PURE 400W MONO MODULES WITH ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

ROOF #1
(16) REC SOLAR: REC400AA PURE 400W MONO MODULES WITH ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN

(61) SNAP N RACK COMP ATTACHMENTS

(N) SNAP N RACK ULTRA RAIL 40

(N) SOLADECK OR JUNCTION BOX (TYP.)

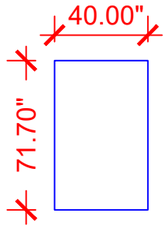
(N) 3/4" EMT/FMC CONDUIT

(E) MAIN SERVICE PANEL (INSIDE GARAGE)

(E) UTILITY METER

(N) NON-FUSED AC DISCONNECT

(N) COMBINER BOX




REC SOLAR:
REC400AA PURE
400W MODULES

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Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # P-2308
Date Signed 5/26/2022

### LEGEND

- SD/JB - SOLADECK OR JUNCTION BOX
- INV - INVERTER
- CB - COMBINER BOX
- ACD - AC DISCONNECT
- LC - LOAD CENTER
- UM - UTILITY METER
- MSP - MAIN SERVICE PANEL
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- TRUSS
- CONDUIT

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ROOF PLAN & MODULES

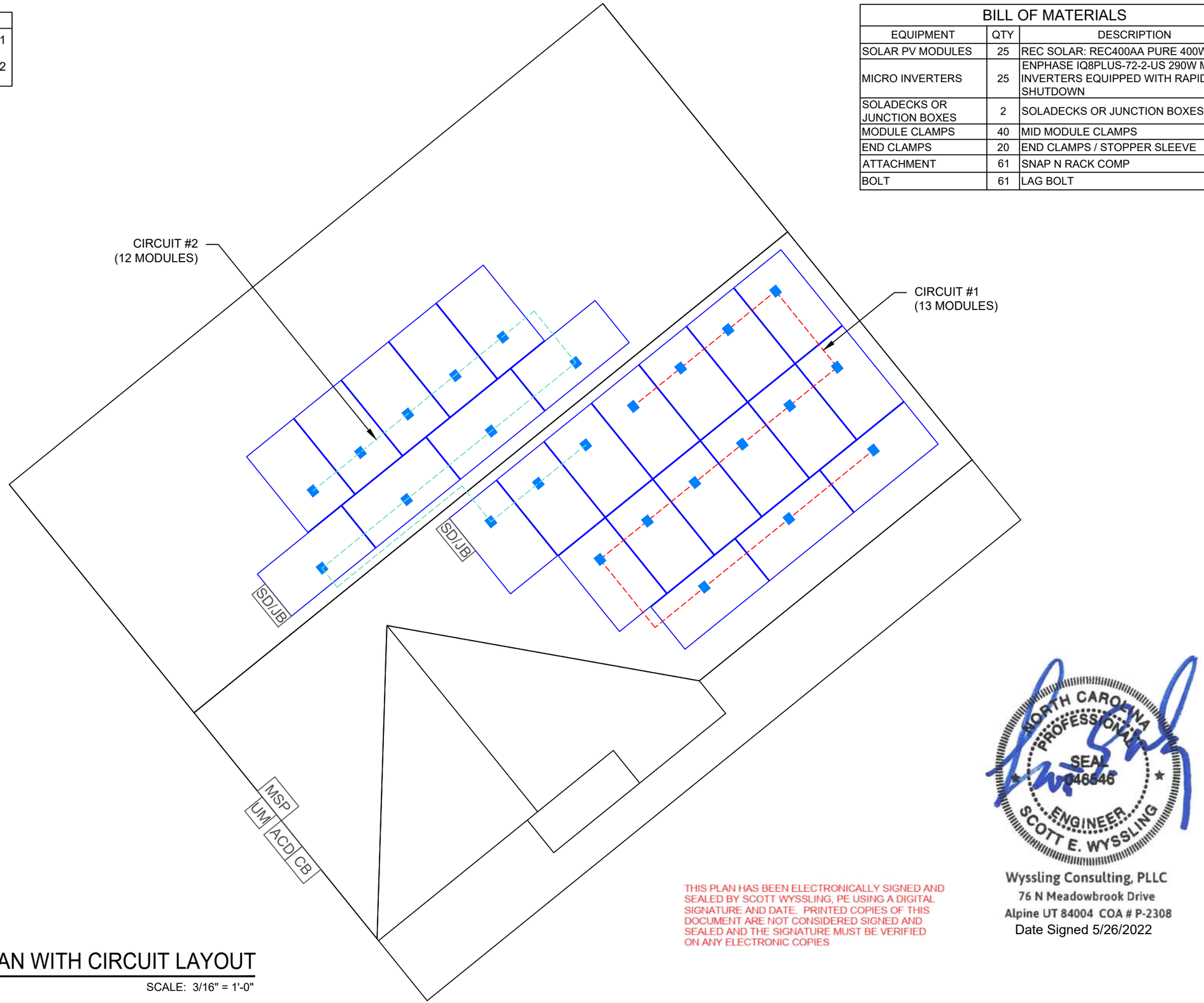
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2

1 ROOF PLAN & MODULES
PV-2 SCALE: 1/8" = 1'-0"

| CIRCUIT LEGENDS |
|---|
| CIRCUIT #1 |
| CIRCUIT #2 |


| BILL OF MATERIALS | | |
|---|---|---|
| EQUIPMENT | QTY | DESCRIPTION |
| SOLAR PV MODULES | 25 | REC SOLAR: REC400AA PURE 400W |
| MICRO INVERTERS | 25 | ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN |
| SOLADECKS OR JUNCTION BOXES | 2 | SOLADECKS OR JUNCTION BOXES |
| MODULE CLAMPS | 40 | MID MODULE CLAMPS |
| END CLAMPS | 20 | END CLAMPS / STOPPER SLEEVE |
| ATTACHMENT | 61 | SNAP N RACK COMP |
| BOLT | 61 | LAG BOLT |

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Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # P-2308
Date Signed 5/26/2022

1 ROOF PLAN WITH CIRCUIT LAYOUT
PV-2A SCALE: 3/16" = 1'-0"

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

| REVISIONS | | |
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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

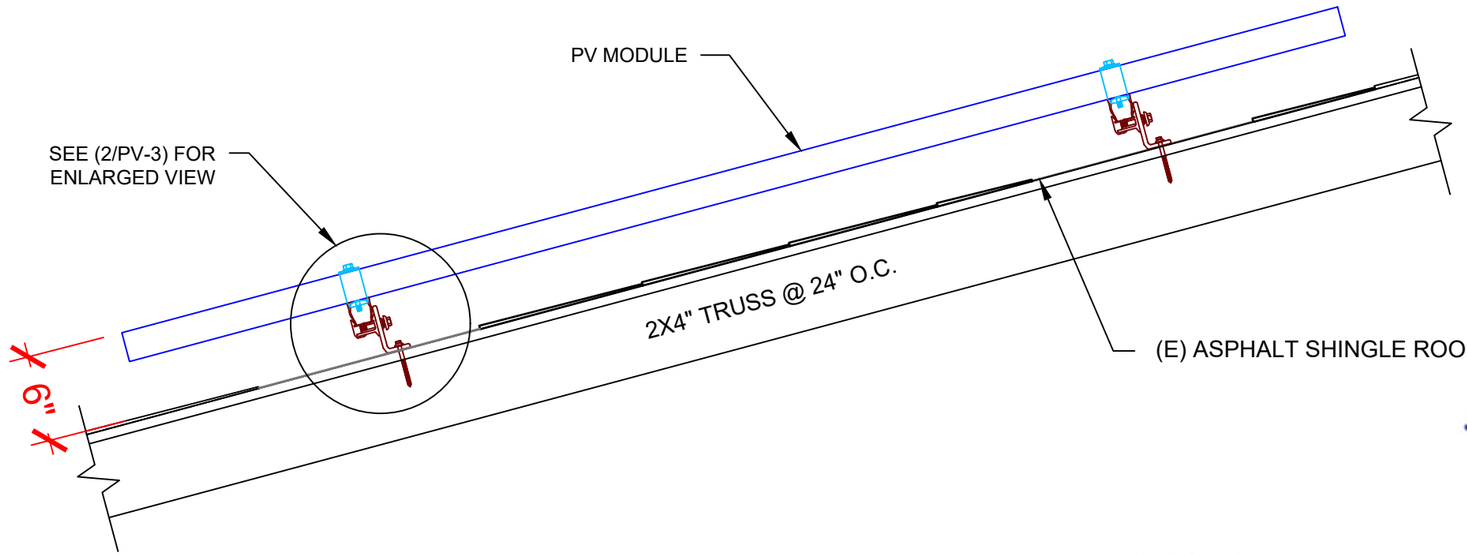
10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
CIRCUIT LAYOUT

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2A




1 | PV-3

## STRUCTURAL ATTACMENT (SIDE VIEW)

SCALE: N.T.S

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NORTH CAROLINA PROFESSIONAL SEAL 046846 ENGINEER SCOTT E. WYSSLING

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Alpine UT 84004 COA # P-2308

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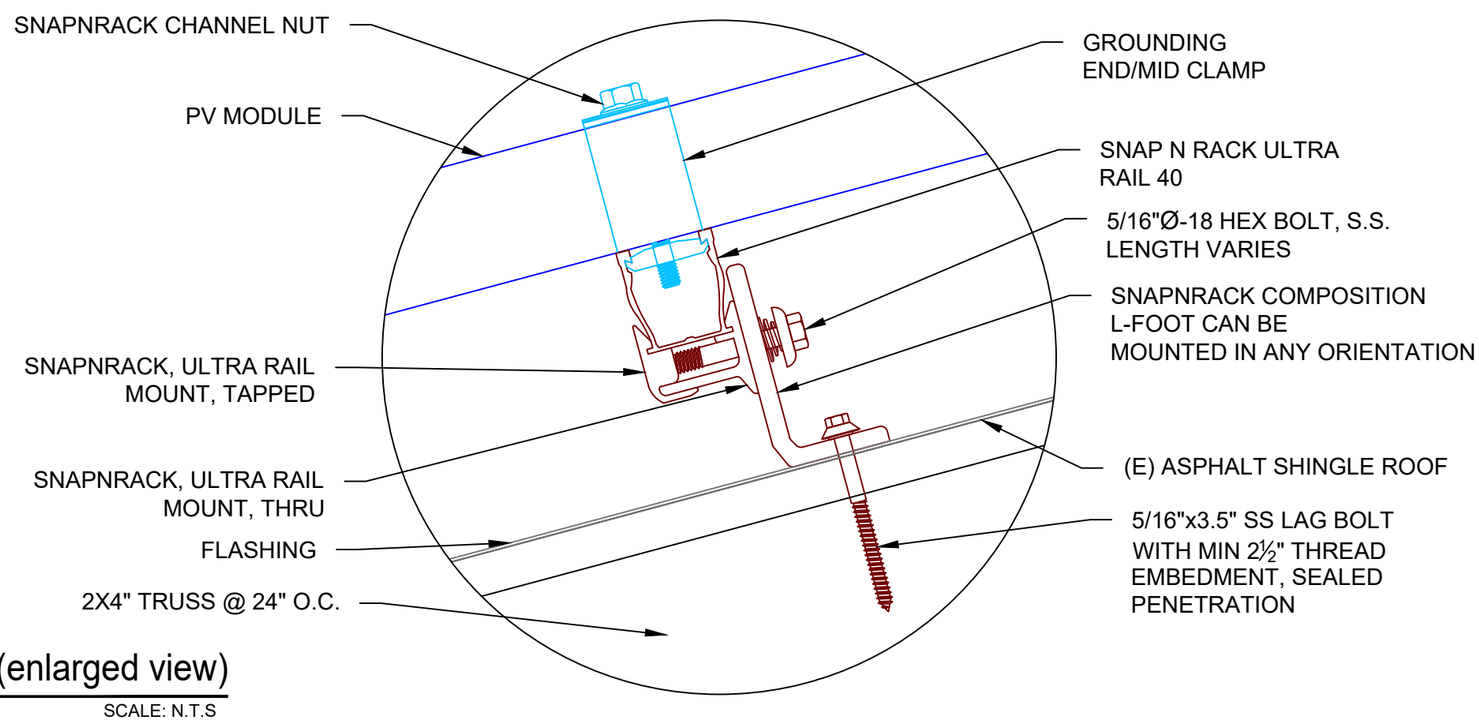


2 | PV-3

## ATTACHMENT DETAIL (enlarged view)

SCALE: N.T.S

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

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

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ATTACHMENT
DETAIL

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3

DC SYSTEM SIZE: 10.000 kW DC
AC SYSTEM SIZE: 7.250 kW AC

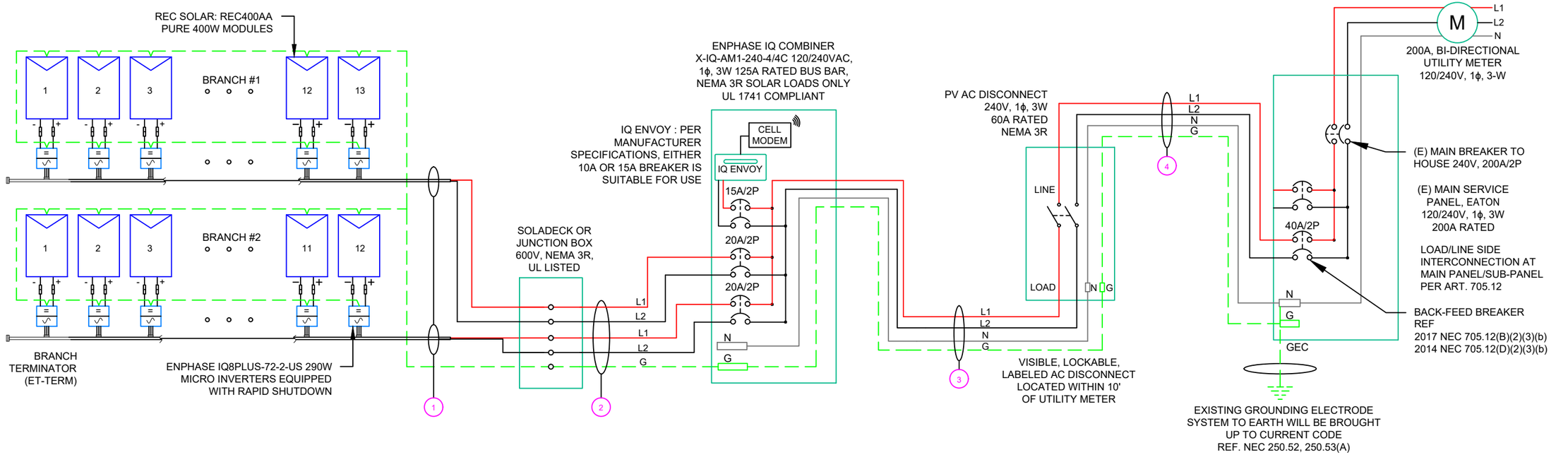
(25) REC SOLAR: REC400AA PURE 400W MONO MODULES
WITH (25) ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS
EQUIPPED WITH RAPID SHUTDOWN
(1) BRANCH CIRCUIT OF 13 MODULES AND
(1) BRANCH CIRCUIT OF 12 MODULES CONNECTED IN PARALLEL

**INTERCONNECTION NOTES:**
1. INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.64].
2. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9], [NEC 230.95] AND [NEC 690.5]
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

**RACKING NOTE:**
1. BOND EVERY RAIL WITH #6 BARE COPPER

**GROUNDING & GENERAL NOTES:**
1. A SECOND FACILITY GROUNDING ELECTRODE IS NOT REQUIRED PER [NEC 690.47(C)(3)]
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. SOLADECK OR JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - SOLADECK OR 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.
8. 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.




| | QTY | CONDUCTOR INFORMATION | | CONDUIT TYPE | CONDUIT SIZE |
|---|---|---|---|---|---|
| 1 | (4) | #12AWG - | ENPHASE ENGAGE CABLE (L1 & L2 NO NEUTRAL) | N/A | N/A |
| | (1) | #6AWG - | BARE COPPER IN FREE AIR | | |
| 2 | (4) | #10AWG - | CU,THWN-2 | EMT OR FMC IN ATTIC | 3/4" |
| | (1) | #10AWG - | CU,THWN-2 GND | | |
| 3 | (2) | #8AWG - | CU,THWN-2 | EMT,LFMC OR PVC | 3/4" |
| | (1) | #8AWG - | CU,THWN-2 N | | |
| | (1) | #10AWG - | CU,THWN-2 GND | | |
| 4 | (2) | #8AWG - | CU,THWN-2 | EMT, LFMC OR PVC | 3/4" |
| | (1) | #8AWG - | CU,THWN-2 N | | |
| | (1) | #10AWG - | CU,THWN-2 GND | | |

1 ELECTRICAL LINE DIAGRAM
PV-4 SCALE: NTS


SIGORA SOLAR
SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901


REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |
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| | | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE
10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

WARNING:PHOTOVOLTAIC POWER SOURCE

**LABEL 1**

AT DIRECT-CURRENT EXPOSED RACEWAYS, CABLE TRAYS, COVERS AND ENCLOSURES OF JUNCTION BOXES, AND OTHER WIRING METHODS; SPACED AT MAXIMUM 10FT SECTION OR WHERE SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.

NEC 690.31(G)(3&4)

(NOT USED FOR ENPHASE MICROINVERTERS)

PHOTOVOLTAIC

DC DISONNECT

**LABEL 2**

AT EACH PV DISCONNECTING MEANS

NEC 690.13(B)

(NOT USED FOR ENPHASE MICROINVERTERS)

MAXIMUM VOLTAGE

MAXIMUM CIRCUIT CURRENT

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

**LABEL 3**

AT DC PV SYSTEM DISCONNECT

NEC 690.53

(NOT USED FOR ENPHASE MICROINVERTERS)

PHOTOVOLTAIC

AC DISONNECT

**LABEL 4**

AT AC DISCONNECT

NEC 690.13(B)

PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT: 30.25A

NOMINAL OPERATING AC VOLTAGE: 240V

**LABEL 5**

AT AC DISCONNECT

NEC 690.54

25 MICROS X 1.21 AMP/MICRO = 30.25AMP

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 2017 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]

WARNING

INVERTER OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

**LABEL 6**

PLACED ADJACENT TO THE BACK-FED BREAKER FROM THE INVERTER IF TIE IN CONSISTS OF LOAD SIDE CONNECTION TO BUSBAR.
NEC 705.12(D)(2)(3)(B)

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

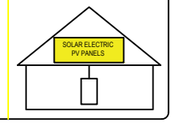
**LABEL 7**

SIGN LOCATED AT LOAD CENTER

NEC 705.12(B)(3-4) & NEC 690.59

**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 8**

FOR PV SYSTEMS THAT SHUT DOWN THE ARRAY AND CONDUCTORS LEAVING THE ARRAY:
SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT AWAY FROM SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION.
[NEC 690.56(C)(1)(A)]

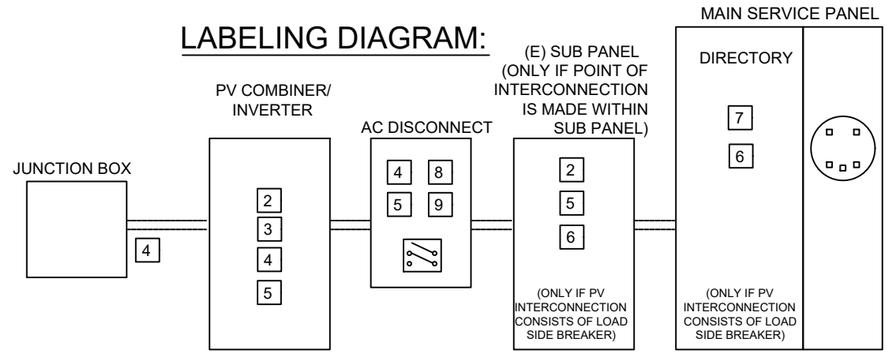
RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

**LABEL 9**

AT AC DISCONNECT

NEC 690.56(C)(3)

LABELING DIAGRAM:




** ELECTRICAL DIAGRAM SHOWN ABOVE IS FOR LABELING PURPOSES ONLY. NOT AN ACTUAL REPRESENATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VERY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ELECTRICAL DIAGRAM PAGE. **

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

LABELS

SHEET SIZE

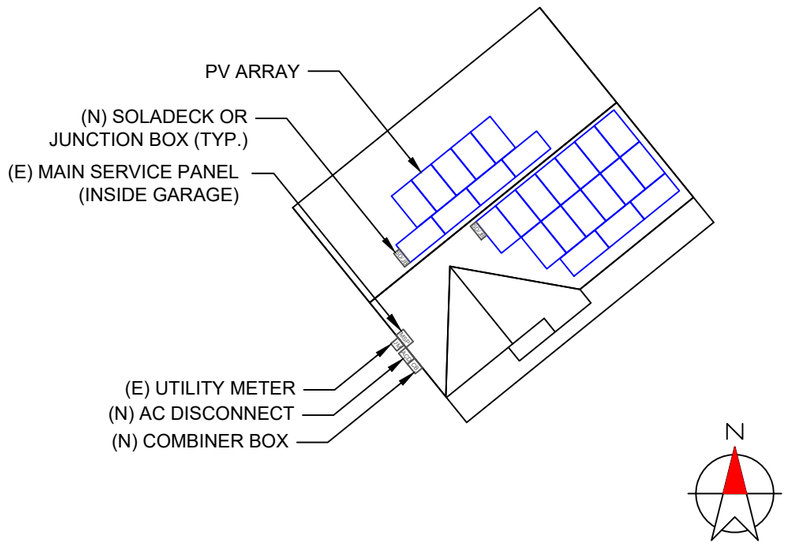
ANSI B
11" X 17"

SHEET NUMBER

PV-5

# CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM MULTIPLE SOURCES OF POWER WITH SAFETY DISCONNECTS AS SHOWN:



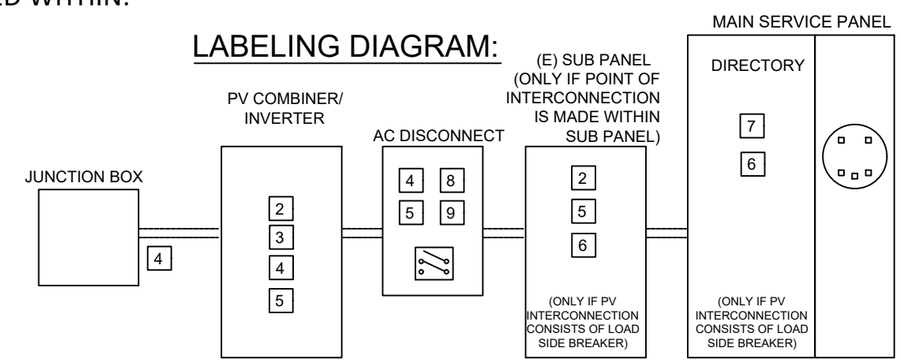

10 RAINMAKER STREET,LINDEN, NC 28356

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])

LABELING DIAGRAM:




** ELECTRICAL DIAGRAM SHOWN ABOVE IS FOR LABELING PURPOSES ONLY. NOT AN ACTUAL REPRESENATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VERY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ELECTRICAL DIAGRAM PAGE. **

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 2017 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]

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |
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| | | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

PLACARD

SHEET SIZE

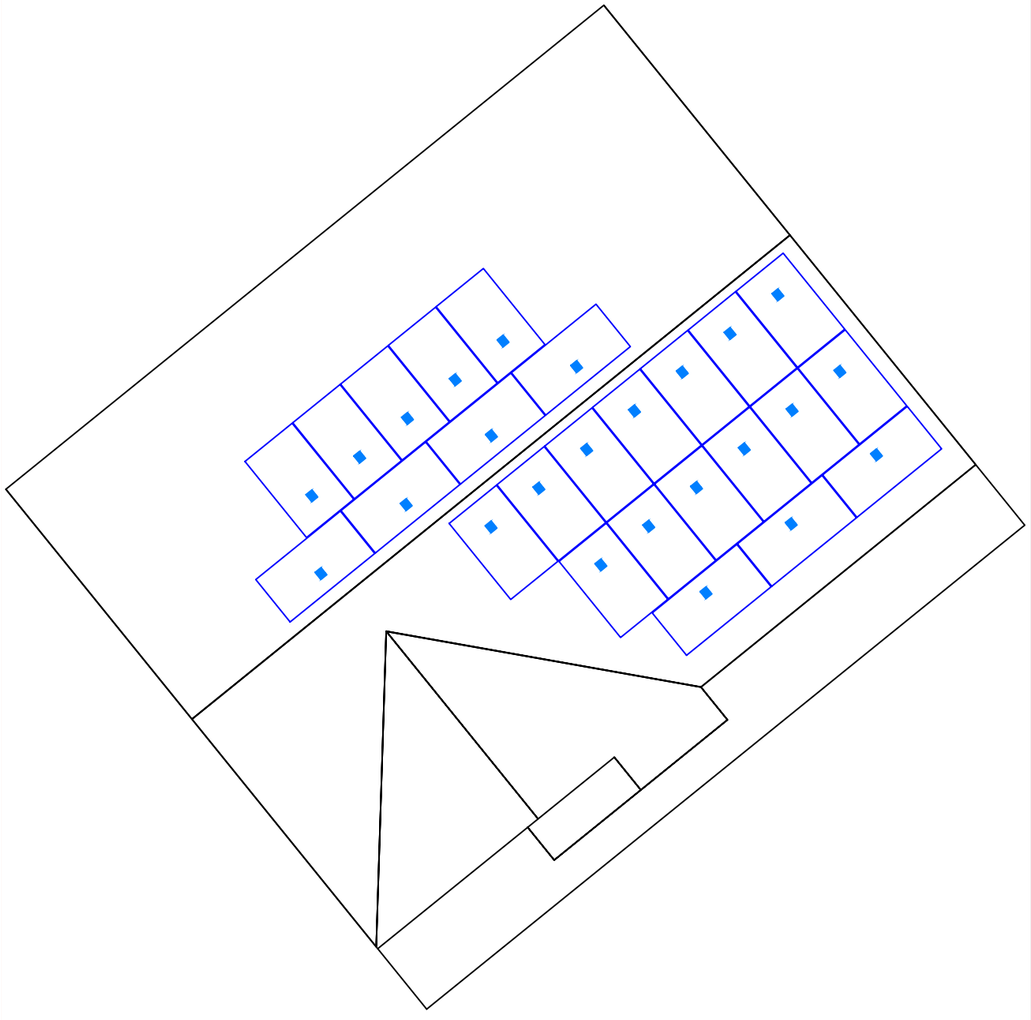
ANSI B
11" X 17"

SHEET NUMBER

PV-6

# MICRO INVERTER CHART

| | 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |



SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

MICRO INVERTER CHART

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-7

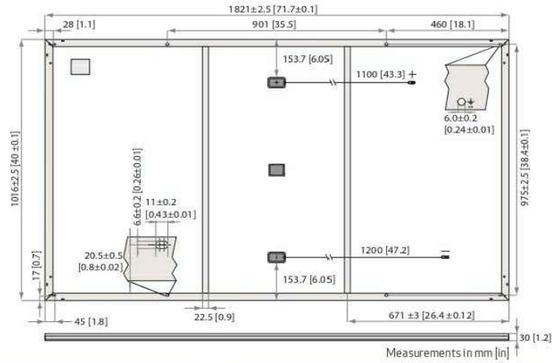

# REC ALPHA PURE SERIES

## PRODUCT SPECIFICATIONS

SOLAR'S MOST TRUSTED

### GENERAL DATA

| | |
|---|---|
| Cell type: | 132 half-cut REC heterojunction cells with lead-free, gapless technology, 6 strings of 22 cells in series |
| Glass: | 3.2 mm solar glass with anti-reflective surface treatment in accordance with EN 12150 |
| Backsheet: | Highly resistant polymer (black) |
| Frame: | Anodized aluminum (black) |
| Junction box: | 3-part, 3 bypass diodes, lead-free IP68 rated, in accordance with IEC 62790 |
| Connectors: | Stäubli MC4 PV-KBT4/KST4 (4 mm²) in accordance with IEC 62852, IP68 only when connected |
| Cable: | 4 mm² solar cable, 1.1 m + 1.2 m in accordance with EN 50618 |
| Dimensions: | 1821 x 1016 x 30 mm (1.85 m²) |
| Weight: | 20.5 kg |
| Origin: | Made in Singapore |




Measurements in mm [in]

### ELECTRICAL DATA

**Product Code*: RECxxxAA Pure**

| | | | | | | |
|---|---|---|---|---|---|---|
| STC | | | | | | |
| Power Output - $P_{MAX}$ (Wp) | 385 | 390 | 395 | 400 | 405 | 410 |
| Watt Class Sorting - (W) | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 |
| Nominal Power Voltage - $V_{MPP}$ (V) | 41.2 | 41.5 | 41.8 | 42.1 | 42.4 | 42.7 |
| Nominal Power Current - $I_{MPP}$ (A) | 9.35 | 9.40 | 9.45 | 9.51 | 9.56 | 9.61 |
| Open Circuit Voltage - $V_{OC}$ (V) | 48.5 | 48.6 | 48.7 | 48.8 | 48.9 | 49.0 |
| Short Circuit Current - $I_{SC}$ (A) | 10.18 | 10.19 | 10.20 | 10.25 | 10.30 | 10.35 |
| Power Density (W/m²) | 208 | 211 | 214 | 216 | 219 | 222 |
| Panel Efficiency (%) | 20.8 | 21.1 | 21.4 | 21.6 | 21.9 | 22.2 |
| NMOT | | | | | | |
| Power Output - $P_{MAX}$ (Wp) | 293 | 297 | 301 | 305 | 309 | 312 |
| Nominal Power Voltage - $V_{MPP}$ (V) | 38.8 | 39.1 | 39.4 | 39.7 | 40.0 | 40.2 |
| Nominal Power Current - $I_{MPP}$ (A) | 7.55 | 7.59 | 7.63 | 7.68 | 7.72 | 7.76 |
| Open Circuit Voltage - $V_{OC}$ (V) | 45.7 | 45.8 | 45.9 | 46.0 | 46.1 | 46.2 |
| Short Circuit Current - $I_{SC}$ (A) | 8.16 | 8.20 | 8.24 | 8.28 | 8.32 | 8.36 |

Values at standard test conditions (STC: air mass AM 1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of $P_{MAX}$, $V_{OC}$ & $I_{SC}$ ±3% within one watt class. Nominal module operating temperature (NMOT: air mass AM 1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s). * Where xxx indicates the nominal power class ($P_{MAX}$) at STC above.

### CERTIFICATIONS

| | |
|---|---|
| IEC 61215:2016, IEC 61730:2016, UL 61730 | |
| IEC 62804 | PID |
| IEC 61701 | Salt Mist |
| IEC 62716 | Ammonia Resistance |
| ISO 11925-2 | Ignitability (Class E) |
| IEC 62782 | Dynamic Mechanical Load |
| IEC 61215-2:2016 | Hailstone (35mm) |
| IEC 62321 | Lead-free acc. to RoHS EU 863/2015 |
| ISO 14001, ISO 9001, IEC 45001, IEC 62941 | |

Lead-Free

take-e-way WEEE-compliant recycling scheme

### TEMPERATURE RATINGS*

| | |
|---|---|
| Nominal Module Operating Temperature: | 44°C (±2°C) |
| Temperature coefficient of $P_{MAX}$: | -0.26 %/°C |
| Temperature coefficient of $V_{OC}$: | -0.24 %/°C |
| Temperature coefficient of $I_{SC}$: | 0.04 %/°C |

*The temperature coefficients stated are linear values

### MAXIMUM RATINGS

| | |
|---|---|
| Operational temperature: | -40 ... +85°C |
| Maximum system voltage: | 1000 V |
| Maximum test load (front): | +7000 Pa (713 kg/m²)* |
| Maximum test load (rear): | -4000 Pa (407 kg/m²)* |
| Max series fuse rating: | 25 A |
| Max reverse current: | 25 A |

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

### WARRANTY

| | Standard | REC ProTrust | |
|---|---|---|---|
| Installed by an REC Certified Solar Professional | No | Yes | Yes |
| System Size | All | ≤25 kW | 25-500 kW |
| Product Warranty (yrs) | 20 | 25 | 25 |
| Power Warranty (yrs) | 25 | 25 | 25 |
| Labor Warranty (yrs) | 0 | 25 | 10 |
| Power in Year 1 | 98% | 98% | 98% |
| Annual Degradation | 0.25% | 0.25% | 0.25% |
| Power in Year 25 | 92% | 92% | 92% |

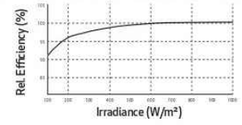
See warranty documents for details. Conditions apply

### DELIVERY INFORMATION

| | |
|---|---|
| Panels per pallet: | 33 |
| Panels per 40 ft GP/high cube container: | 792 (24 pallets) |
| Panels per 13.6 m truck: | 924 (28 pallets) |
| Panels per 53 ft truck: | 891 (27 pallets) |

### LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:




Specifications subject to change without notice.

Ref: PM-DS-12-06-Rev- E 11.21

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

www.recgroup.com

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

| REVISIONS | | |
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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

MODULE SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-8

ENPHASE

DATA SHEET


# IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.

Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

**Easy to install**

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

**High productivity and reliability**

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

**Microgrid-forming**

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements



IQ8SP-DS-0002-01-EN-US-2022-03-17

* Only when installed with IQ System Controller 2, meets UL 1741.
** IQ8 and IQ8Plus supports split phase, 240V installations only.

## IQ8 and IQ8+ Microinverters

| INPUT DATA (DC) | | IQ8-60-2-US | IQ8PLUS-72-2-US |
|---|---|---|---|
| Commonly used module pairings[1] | W | 235 – 350 | 235 – 440 |
| Module compatibility | | 60-cell/120 half-cell | 60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell |
| MPPT voltage range | V | 27 – 37 | 29 – 45 |
| Operating range | V | 25 – 48 | 25 – 58 |
| Min/max start voltage | V | 30 / 48 | 30 / 58 |
| Max input DC voltage | V | 50 | 60 |
| Max DC current[2] [module Isc] | A | 15 | |
| Overvoltage class DC port | | II | |
| DC port backfeed current | mA | 0 | |
| PV array configuration | | 1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit | |
| **OUTPUT DATA (AC)** | | **IQ8-60-2-US** | **IQ8PLUS-72-2-US** |
| Peak output power | VA | 245 | 300 |
| Max continuous output power | VA | 240 | 290 |
| Nominal (L-L) voltage/range[3] | V | 240 / 211 – 264 | |
| Max continuous output current | A | 1.0 | 1.21 |
| Nominal frequency | Hz | 60 | |
| Extended frequency range | Hz | 50 – 68 | |
| AC short circuit fault current over 3 cycles | Arms | 2 | |
| Max units per 20 A (L-L) branch circuit[4] | | 16 | 13 |
| Total harmonic distortion | | <5% | |
| Overvoltage class AC port | | III | |
| AC port backfeed current | mA | 30 | |
| Power factor setting | | 1.0 | |
| Grid-tied power factor (adjustable) | | 0.85 leading – 0.85 lagging | |
| Peak efficiency | % | 97.5 | 97.6 |
| CEC weighted efficiency | % | 97 | 97 |
| Night-time power consumption | mW | 60 | |
| **MECHANICAL DATA** | | | |
| Ambient temperature range | | -40°C to +60°C (-40°F to +140°F) | |
| Relative humidity range | | 4% to 100% (condensing) | |
| DC Connector type | | MC4 | |
| Dimensions (HxWxD) | | 212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2") | |
| Weight | | 1.08 kg (2.38 lbs) | |
| Cooling | | Natural convection – no fans | |
| Approved for wet locations | | Yes | |
| Pollution degree | | PD3 | |
| Enclosure | | Class II double-insulated, corrosion resistant polymeric enclosure | |
| Environ. category / UV exposure rating | | NEMA Type 6 / outdoor | |
| **COMPLIANCE** | | | |
| Certifications | | CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01<br><br>This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions. | |

(1) No enforced DC/AC ratio. See the compatibility calculator at https://link.enphase.com/module-compatibility
(2) Maximum continuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SP-DS-0002-01-EN-US-2022-03-17

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

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10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

INVERTER SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-9

Data Sheet
Enphase Networking

# Enphase IQ Combiner 4/4C

## X-IQ-AM1-240-4
## X-IQ-AM1-240-4C


X-IQ-AM1-240-4C

X-IQ-AM1-240-4

The **Enphase IQ Combiner 4/4C** with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.

### Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

### Simple

- Centered mounting brackets support single stud mounting
- Supports bottom, back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

### Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed

UL LISTED

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE

## Enphase IQ Combiner 4/4C

| | |
|---|---|
| **MODEL NUMBER** | |
| IQ Combiner 4 (X-IQ-AM1-240-4) | IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat. |
| IQ Combiner 4C (X-IQ-AM1-240-4C) | IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat. |
| **ACCESSORIES AND REPLACEMENT PARTS** | (not included, order separately) |
| Ensemble Communications Kit<br>COMMS-CELLMODEM-M1-06<br>CELLMODEM-M1-06-SP-05<br>CELLMODEM-M1-06-AT-05 | - Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites<br>- 4G based LTE-M1 cellular modem with 5-year Sprint data plan<br>- 4G based LTE-M1 cellular modem with 5-year AT&T data plan |
| Circuit Breakers<br>BRK-10A-2-240V<br>BRK-15A-2-240V<br>BRK-20A-2P-240V<br>BRK-15A-2P-240V-B<br>BRK-20A-2P-240V-B | Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers.<br>Circuit breaker, 2 pole, 10A, Eaton BR210<br>Circuit breaker, 2 pole, 15A, Eaton BR215<br>Circuit breaker, 2 pole, 20A, Eaton BR220<br>Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support<br>Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support |
| EPLC-01 | Power line carrier (communication bridge pair), quantity - one pair |
| XA-SOLARSHIELD-ES | Replacement solar shield for IQ Combiner 4/4C |
| XA-PLUG-120-3 | Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01) |
| XA-ENV-PCBA-3 | Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C |
| X-IQ-NA-HD-125A | Hold down kit for Eaton circuit breaker with screws. |
| **ELECTRICAL SPECIFICATIONS** | |
| Rating | Continuous duty |
| System voltage | 120/240 VAC, 60 Hz |
| Eaton BR series busbar rating | 125 A |
| Max. continuous current rating | 65 A |
| Max. continuous current rating (input from PV/storage) | 64 A |
| Max. fuse/circuit rating (output) | 90 A |
| Branch circuits (solar and/or storage) | Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included) |
| Max. total branch circuit breaker rating (input) | 80A of distributed generation / 95A with IQ Gateway breaker included |
| Envoy breaker | 10A or 15A rating GE/Siemens/Eaton included |
| Production metering CT | 200 A solid core pre-installed and wired to IQ Gateway |
| Consumption monitoring CT (CT-200-SPLIT) | A pair of 200 A split core current transformers |
| **MECHANICAL DATA** | |
| Dimensions (WxHxD) | 37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.06" (53.5 cm) with mounting brackets. |
| Weight | 7.5 kg (16.5 lbs) |
| Ambient temperature range | -40° C to +46° C (-40° to 115° F) |
| Cooling | Natural convection, plus heat shield |
| Enclosure environmental rating | Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction |
| Wire sizes | • 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors<br>• 60 A breaker branch input: 4 to 1/0 AWG copper conductors<br>• Main lug combined output: 10 to 2/0 AWG copper conductors<br>• Neutral and ground: 14 to 1/0 copper conductors<br>Always follow local code requirements for conductor sizing. |
| Altitude | To 2000 meters (6,560 feet) |
| **INTERNET CONNECTION OPTIONS** | |
| Integrated Wi-Fi | 802.11b/g/n |
| Cellular | CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations. |
| Ethernet | Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included) |
| **COMPLIANCE** | |
| Compliance, IQ Combiner | UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003<br>Production metering: ANSI C12.20 accuracy class 0.5 (PV production)<br>Consumption metering: accuracy class 2.5 |
| Compliance, IQ Gateway | UL 60601-1/CANCSA 22.2 No. 61010-1 |

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE



SIGORA SOLAR

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10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

COMBINER SPECIFICATION

SHEET SIZE

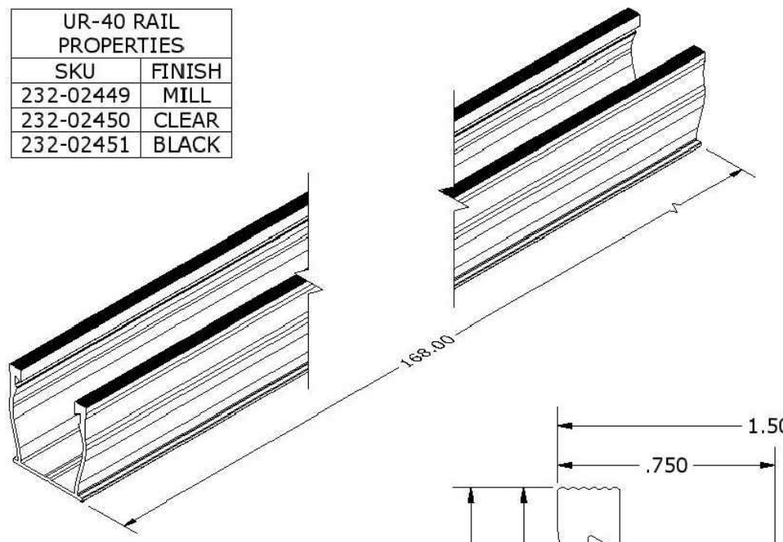
ANSI B
11" X 17"

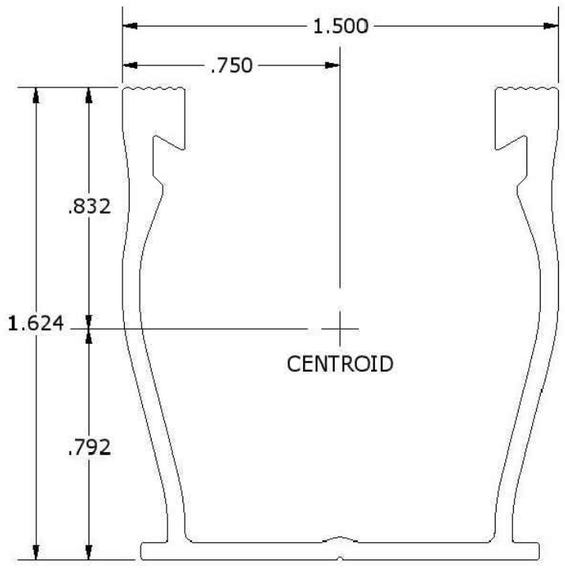
SHEET NUMBER

PV-10

| DESCRIPTION: | DRAWN BY: | SnapNrack™ Solar Mounting Solutions |
|---|---|---|
| SNAPNRACK, UR-40 RAIL | mwatkins | |
| PART NUMBER(S): | REVISION: | 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA. PHONE (415) 580-6900 • FAX (415) 580-6902 |
| 232-02449, 232-02450, 232-02451 | B | THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC. |

| UR-40 RAIL PROPERTIES | |
|---|---|
| SKU | FINISH |
| 232-02449 | MILL |
| 232-02450 | CLEAR |
| 232-02451 | BLACK |




| SECTION PROPERTIES | |
|---|---|
| A | 0.357 in² |
| Ixx | 0.125 in⁴ |
| Iyy | 0.132 in⁴ |
| Sx (TOP) | 0.150 in³ |
| Sx (BOT) | 0.158 in³ |
| Sy (LEFT) | 0.175 in³ |
| Sy (RIGHT) | 0.175 in³ |

ALL DIMENSIONS IN INCHES

| | | |
|---|---|---|
| MATERIALS: | 6000 SERIES ALUMINUM | OPTIONS: |
| DESIGN LOAD (LBS): | N/A | CLEAR / BLACK ANODIZED |
| ULTIMATE LOAD (LBS): | N/A | MILL FINISH |
| TORQUE SPECIFICATION: | N/A LB-FT | BUNDLES OF 144 |
| CERTIFICATION: | UL 2703, FILE E359313 | BOXES OF 8 |
| WEIGHT (LBS): | 5.85 | |

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |
| | | |
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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

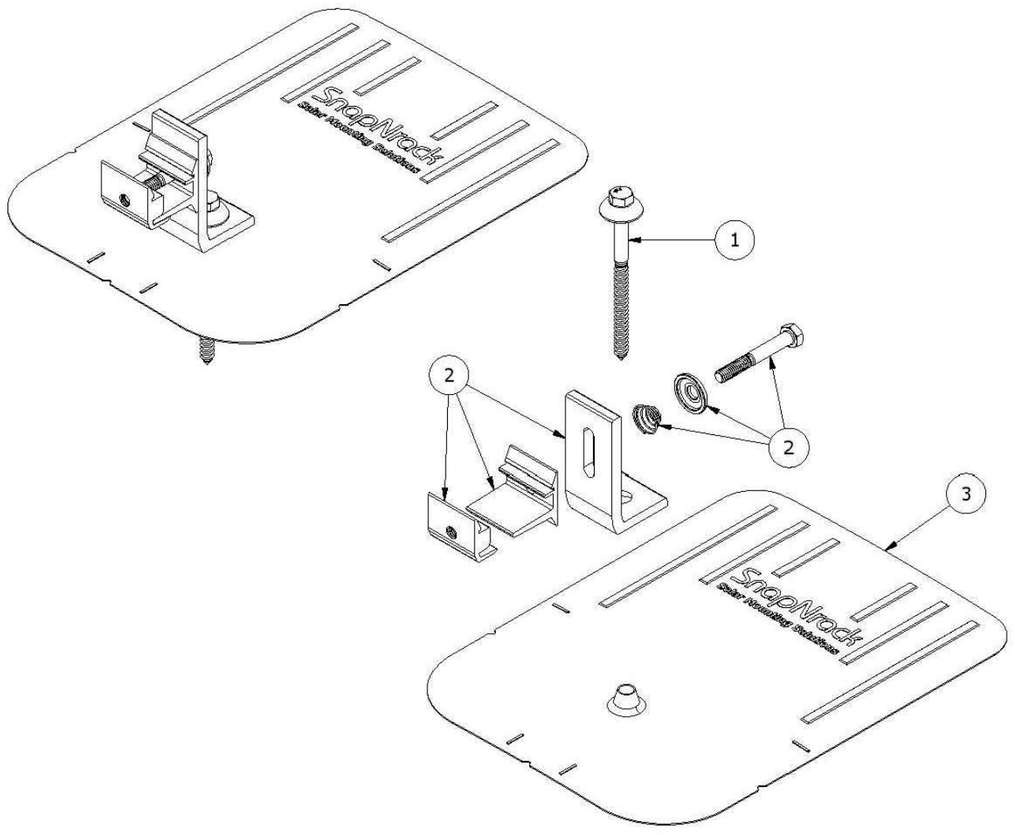
DRAWN BY
ESR

SHEET NAME
RAIL SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-11

| DESCRIPTION: | DRAWN BY: | SnapNrack™ Solar Mounting Solutions |
|---|---|---|
| SNAPNRACK, ULTRA RAIL COMP KIT | mwatkins | |
| PART NUMBER(S): | REVISION: | 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA<br>PHONE (415) 580-6900 • FAX (415) 580-6902 |
| SEE BELOW | B | THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC. |




| PARTS LIST | | | |
|---|---|---|---|
| ITEM | QTY | PART NUMBER | DESCRIPTION |
| 1 | 1 | 242-92266 | SNAPNRACK, UMBRELLA LAG, TYPE 3, 4IN, SS |
| 2 | 1 | 242-01219, 242-01220 | SNAPNRACK, ULTRA FOOT FOR U FLASHING, SILVER / BLACK |
| 3 | 1 | 232-01375, 232-01376 | SNAPNRACK, COMP FLASHING, 9IN X 12IN, SILVER / BLACK ALUM |

| | |
|---|---|
| MATERIALS: | 6000 SERIES ALUMINUM, STAINLESS STEEL, RUBBER |
| DESIGN LOAD (LBS): | 802 UP, 1333 DOWN, 356 SIDE |
| ULTIMATE LOAD (LBS): | 2005 UP, 4000 DOWN, 1070 SIDE |
| TORQUE SPECIFICATION: | 12 LB-FT |
| CERTIFICATION: | UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM UL SUBJECT 2582 |
| WEIGHT (LBS): | 0.80 |


| DESCRIPTION: | DRAWN BY: | SnapNrack™ Solar Mounting Solutions |
|---|---|---|
| SNAPNRACK, ULTRA RAIL COMP KIT | mwatkins | |
| PART NUMBER(S): | REVISION: | 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA<br>PHONE (415) 580-6900 • FAX (415) 580-6902 |
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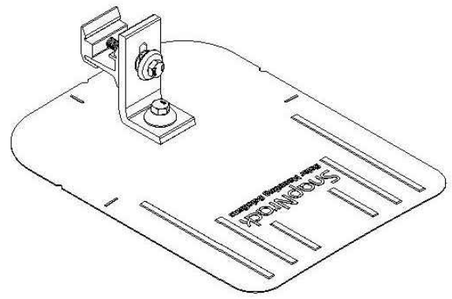
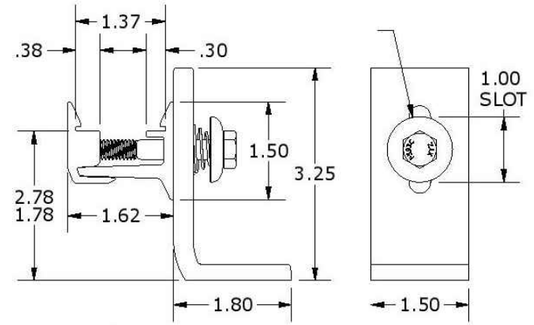
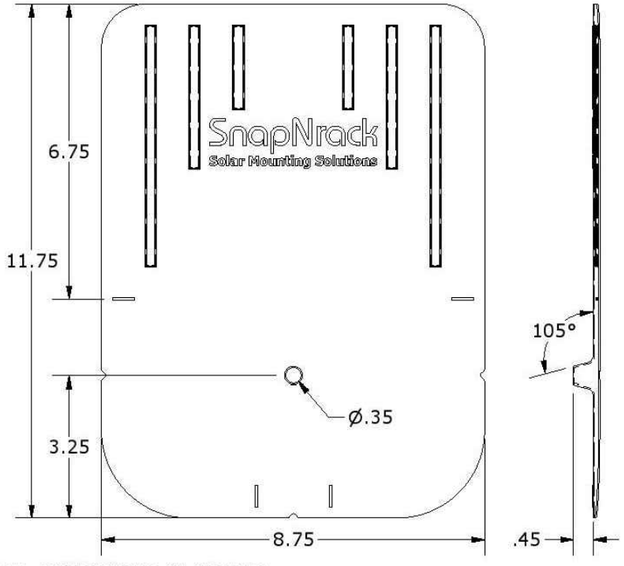
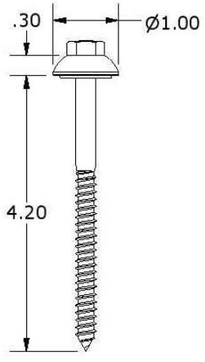



| UMBRELLA L FOOT PROPERTIES | |
|---|---|
| SKU | DESCRIPTION |
| 242-01219 | ULTRA RAIL UMBRELLA L FOOT, SILVER |
| 242-01220 | ULTRA RAIL UMBRELLA L FOOT, BLACK |




| COMP FLASHING PROPERTIES | |
|---|---|
| SKU | DESCRIPTION |
| 232-01375 | COMP FLASHING, 9" X 12", BLACK ALUM |
| 232-01376 | COMP FLASHING, 9" X 12", SILVER ALUM |




ALL DIMENSIONS IN INCHES

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

| REVISIONS | | |
|---|---|---|
| DESCRIPTION | DATE | REV |
| INITIAL | 05/25/2022 | |
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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ATTACHMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-12

# SolaDeck

FLASHED PV ROOF-MOUNT COMBINER/ENCLOSURE

**Basic Features**

- Stamped Seamless Construction
- 18 Gauge Galvanized Steel
- Powder Coated Surfaces
- Flashes into the roof deck
- 3 Roof deck knockouts .5", .75", 1"
- 5 Centering dimples for entry/exit fittings or conduit
- 2 Position Ground lug installed
- Mounting Hardware Included

SolaDeck Model SD 0783

## SolaDeck UL50 Type 3R Enclosures

Available Models:
Model SD 0783 - (3" fixed Din Rail)
Model SD 0786 - (6" slotted Din Rail)

## SolaDeck UL 1741 Combiner/Enclosures

Models SD 0783-41 and SD 0786-41 are labeled and ETL listed UL STD 1741 according to the UL STD 1741 for photovoltaic combiner enclosures.

Max Rated - 600VDC, 120AMPS

**Model SD 0783-41** 3" Fixed Din Rail fastened using Norlock System

****Typical System Configuration**

4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
1- Power Distribution Block 600VDC 175AMP
1- Bus Bar with UL lug

**Model SD 0786-41** 6" Slotted Din Rail fastened using steel studs

****Typical System Configuration**

4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
4- Din Rail Mounted Terminal Blocks
Bus Bars with UL lug

**Fuse holders and terminal blocks added in the field must be UL listed or recognized and meet 600 VDC 30 AMP 110C for fuse holders, 600V 50 AMP 90C for rail mounted terminal blocks and 600 V 175 AMP 90C for Power Distribution Blocks. Use Copper Wire Conductors.

Cover is trimmed to allow conduit or fittings, base is center dimpled for fitting locations.

Model SD 0783-41, wired with Din Rail mounted fuse holders, bus bar and power distribution block.

Model SD 0786-41, wired with Din Rail mounted fuse holders, terminal blocks and bus bars.



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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
SOLADECK
SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-13

# PROJECT DESCRIPTION:

25 x REC SOLAR: REC400AA PURE 400W MONO MODULES
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
DC SYSTEM SIZE: 10.000kW DC
AC SYSTEM SIZE: 7.250kW AC

EQUIPMENT SUMMARY:
25 REC SOLAR: REC400AA PURE 400W MONO MODULES
25 ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS
EQUIPPED WITH RAPID SHUTDOWN

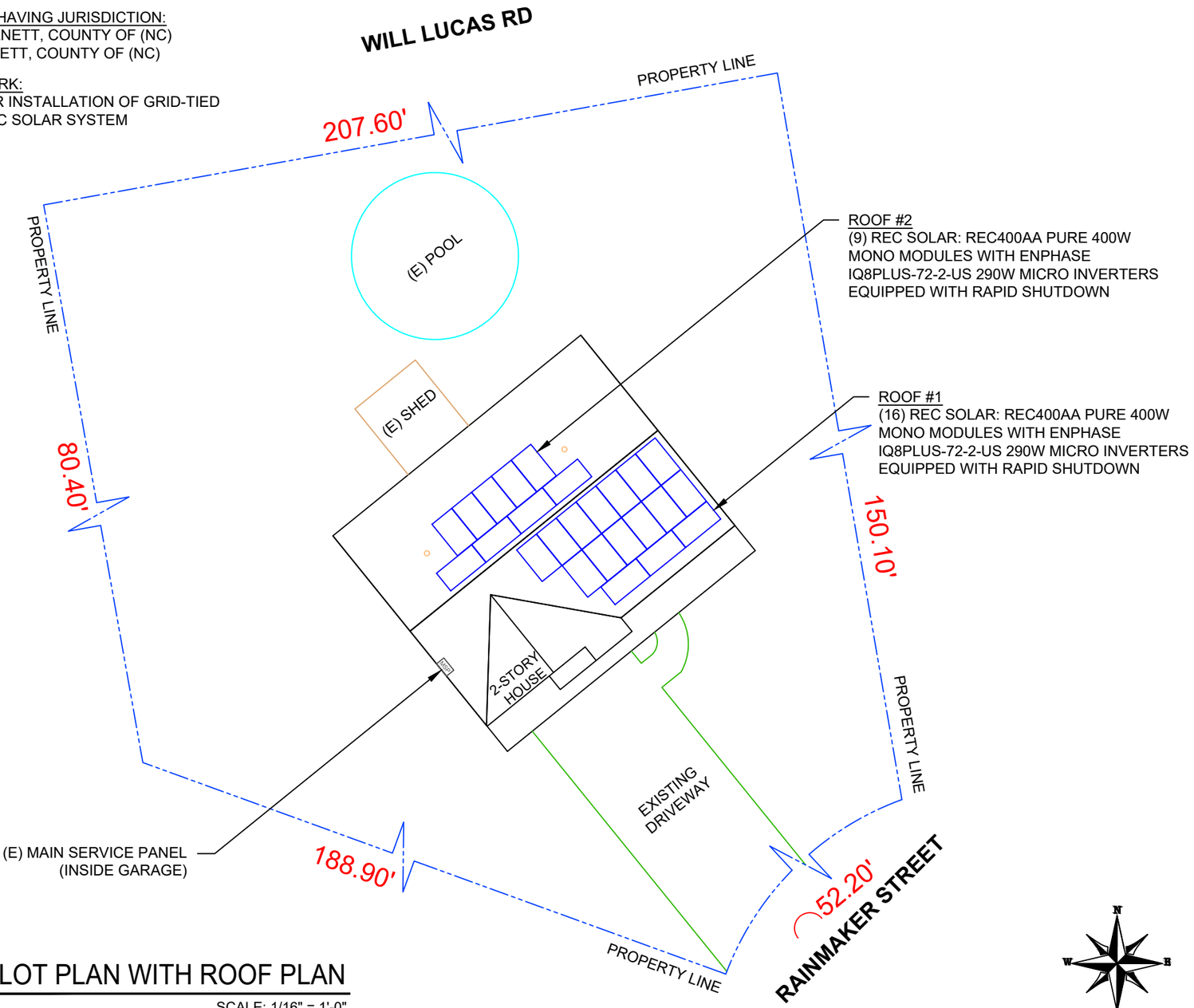
ROOF ARRAY AREA #1:- 318.56 SQ FT.
ROOF ARRAY AREA #2:- 179.19 SQ FT.

AUTHORITIES HAVING JURISDICTION:
BUILDING: HARNETT, COUNTY OF (NC)
ZONING: HARNETT, COUNTY OF (NC)

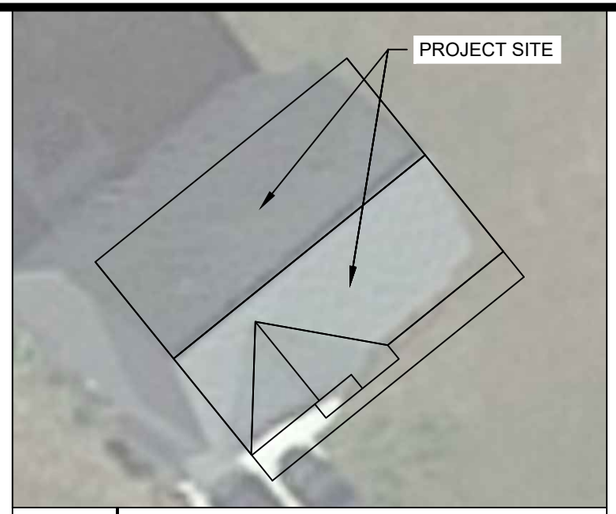
SCOPE OF WORK:
DESIGNED FOR INSTALLATION OF GRID-TIED PHOTOVOLTAIC SOLAR SYSTEM

APPLICABLE CODES & STANDARDS
NCBC 2018
NEC 2017

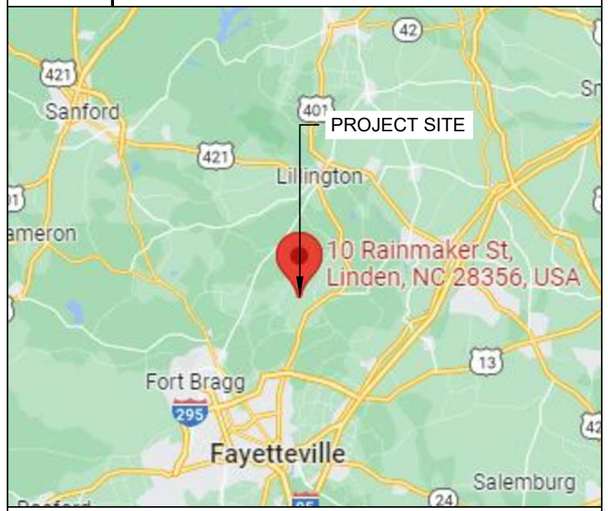
DESIGN SPECIFICATION
OCCUPANCY: II
CONSTRUCTION: SINGLE-FAMILY
ZONING: RESIDENTIAL
GROUND SNOW LOAD: REFER STRUCTURAL LETTER
WIND EXPOSURE: REFER STRUCTURAL LETTER
WIND SPEED: REFER STRUCTURAL LETTER




1 PLOT PLAN WITH ROOF PLAN
PV-1 SCALE: 1/16" = 1'-0"




2 HOUSE PHOTO
PV-1 SCALE: NTS




3 VICINITY MAP
PV-1 SCALE: NTS

SHEET INDEX




SIGORA SOLAR
SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901


REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |
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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
PLOT PLAN WITH ROOF PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

## MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 25 MODULES
MODULE TYPE = REC SOLAR: REC400AA PURE 400W MONO MODULES
MODULE WEIGHT = 45.19 LBS / 20.5KG
MODULE DIMENSIONS = 71.70"x 40.00" = 19.91 SF

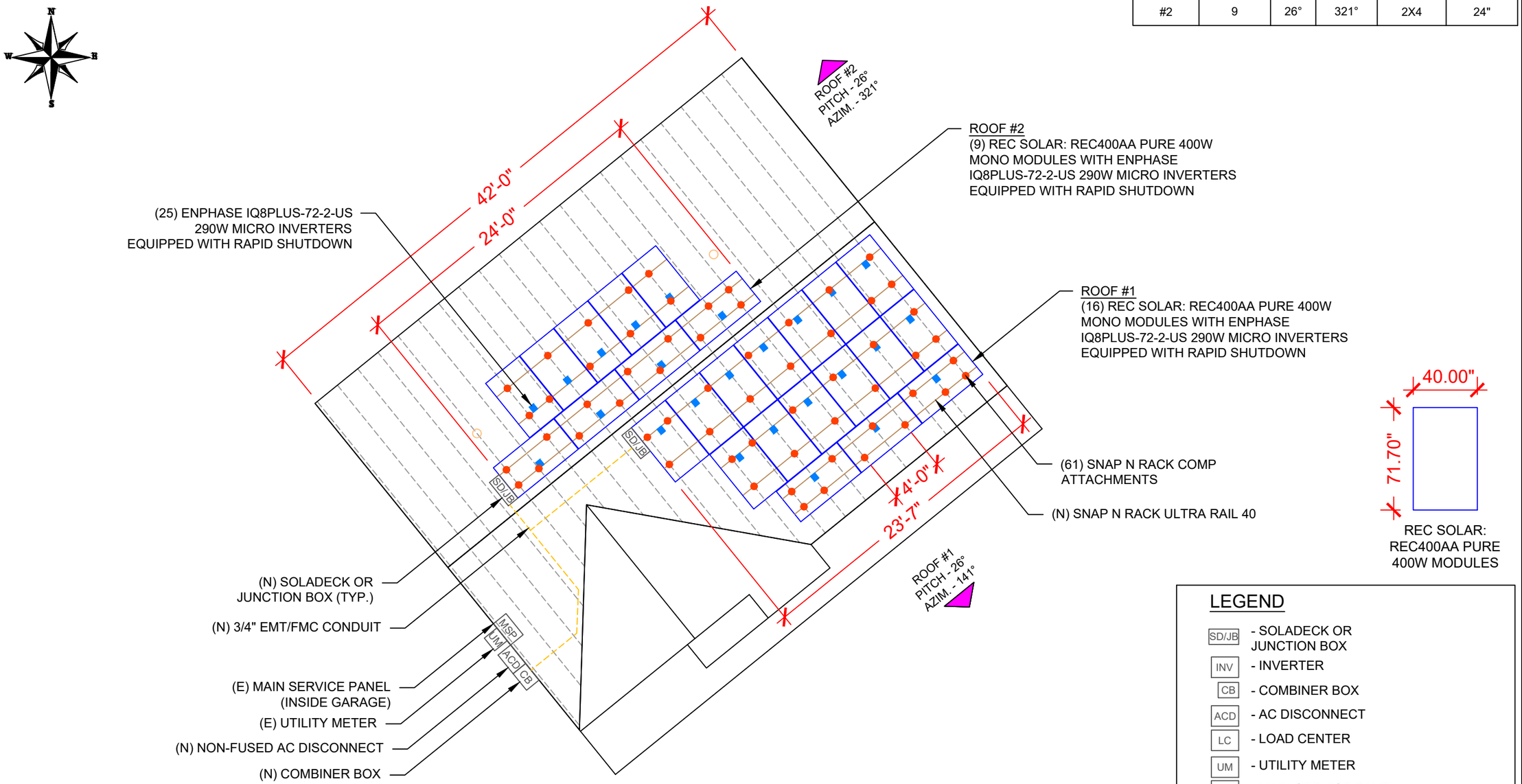
- TOTAL WEIGHT OF PV MODULES AND RAILS = 1493.3 LBS
- WEIGHT PER ATTACHMENT POINT = 24 LBS
- DISTRIBUTED WEIGHT OF PV MODULE = 2.27 LBS/SF

### ARRAY AREA & ROOF AREA CALC'S

| TOTAL PV ARRAY AREA (SQ. FT.) | TOTAL PLAN VIEW ROOF AREA (SQ. FT.) | ROOF AREA COVERED BY ARRAY (%) |
|---|---|---|
| 447.50 | 1550.15 | 29 |

### ROOF DESCRIPTION

| ROOF TYPE | | | | ASPHALT SHINGLE | |
|---|---|---|---|---|---|
| ROOF LAYER | | | | 1 LAYER | |
| ROOF | # OF MODULES | ROOF PITCH | AZIMUTH | TRUSS SIZE | TRUSS SPACING |
| #1 | 16 | 26° | 141° | 2X4 | 24" |
| #2 | 9 | 26° | 321° | 2X4 | 24" |







REC SOLAR:
REC400AA PURE
400W MODULES

### LEGEND

- SD/JB - SOLADECK OR JUNCTION BOX
- INV - INVERTER
- CB - COMBINER BOX
- ACD - AC DISCONNECT
- LC - LOAD CENTER
- UM - UTILITY METER
- MSP - MAIN SERVICE PANEL
- - VENT, ATTIC FAN (ROOF OBSTRUCTION)
- - ROOF ATTACHMENT
- - - - - - TRUSS
- - - - - - CONDUIT

1 ROOF PLAN & MODULES
PV-2 SCALE: 1/8" = 1'-0"


SIGORA SOLAR
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490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901


REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE
10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ROOF PLAN & MODULES

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2

| CIRCUIT LEGENDS |
|---|
| CIRCUIT #1 |
| CIRCUIT #2 |



1 ROOF PLAN WITH CIRCUIT LAYOUT

PV-2A

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

| BILL OF MATERIALS | | |
|---|---|---|
| EQUIPMENT | QTY | DESCRIPTION |
| SOLAR PV MODULES | 25 | REC SOLAR: REC400AA PURE 400W |
| MICRO INVERTERS | 25 | ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS EQUIPPED WITH RAPID SHUTDOWN |
| SOLADECKS OR JUNCTION BOXES | 2 | SOLADECKS OR JUNCTION BOXES |
| MODULE CLAMPS | 40 | MID MODULE CLAMPS |
| END CLAMPS | 20 | END CLAMPS / STOPPER SLEEVE |
| ATTACHMENT | 61 | SNAP N RACK COMP |
| BOLT | 61 | LAG BOLT |

SIGORA SOLAR

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490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

| REVISIONS | | |
|---|---|---|
| DESCRIPTION | DATE | REV |
| INITIAL | 05/25/2022 | |
| | | |
| | | |
| | | |
| | | |
| | | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

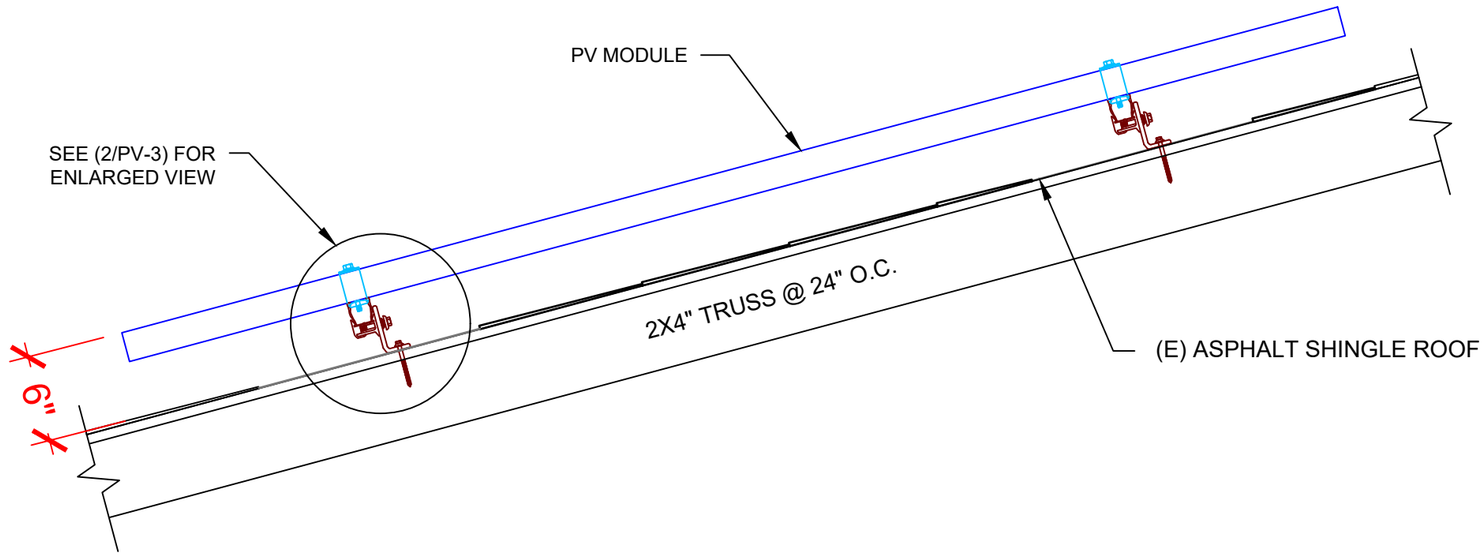
CIRCUIT
LAYOUT

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

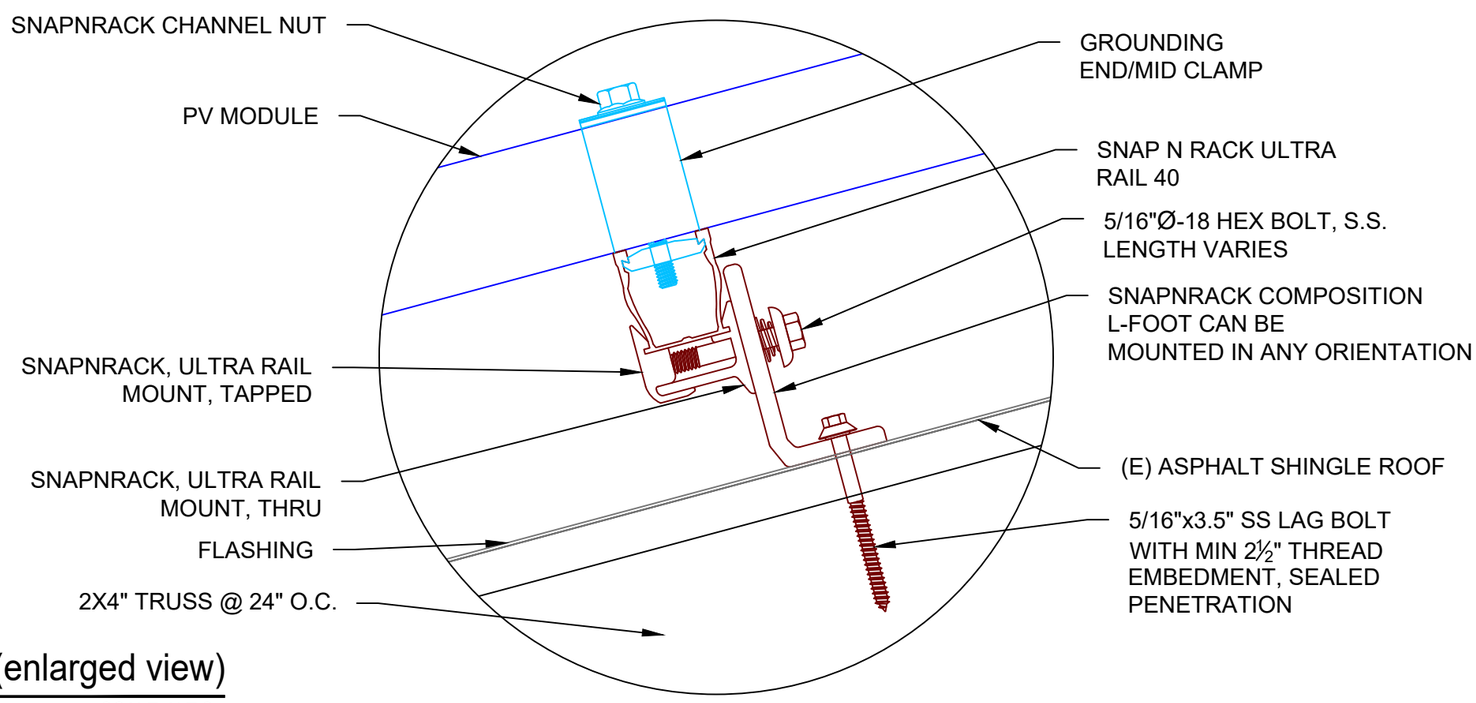
PV-2A




1 | PV-3

## STRUCTURAL ATTACMENT (SIDE VIEW)

SCALE: N.T.S




2 | PV-3

## ATTACHMENT DETAIL (enlarged view)

SCALE: N.T.S

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |
| | | |
| | | |
| | | |
| | | |
| | | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ATTACHMENT
DETAIL

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3

DC SYSTEM SIZE: 10.000 kW DC
AC SYSTEM SIZE: 7.250 kW AC

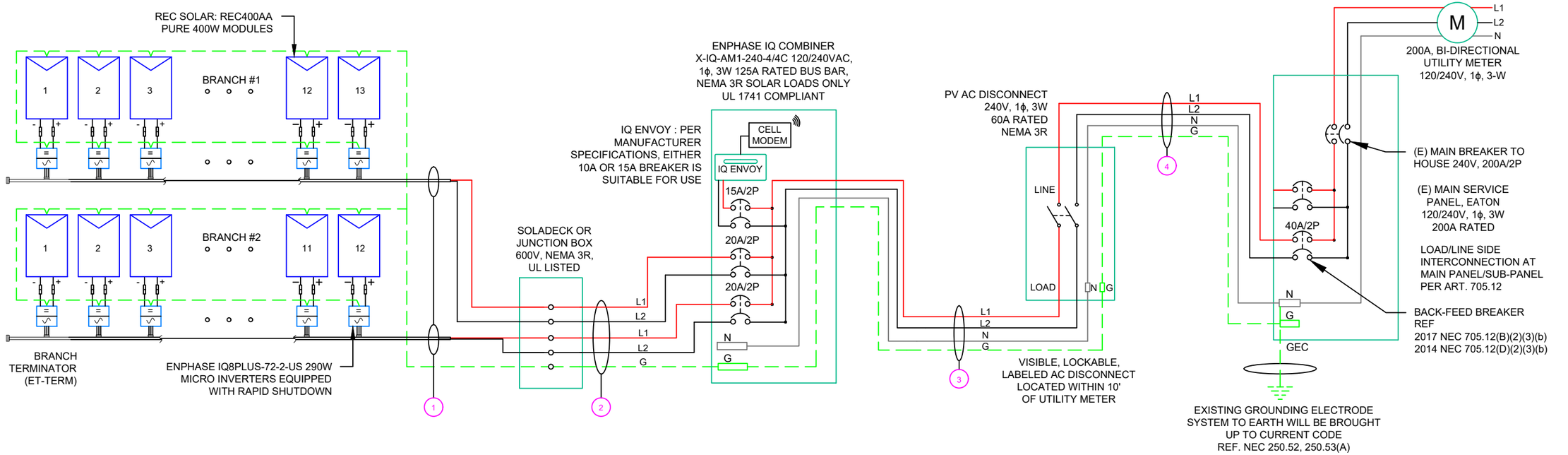
(25) REC SOLAR: REC400AA PURE 400W MONO MODULES
WITH (25) ENPHASE IQ8PLUS-72-2-US 290W MICRO INVERTERS
EQUIPPED WITH RAPID SHUTDOWN
(1) BRANCH CIRCUIT OF 13 MODULES AND
(1) BRANCH CIRCUIT OF 12 MODULES CONNECTED IN PARALLEL

**INTERCONNECTION NOTES:**
1. INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.64].
2. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9], [NEC 230.95] AND [NEC 690.5]
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

**RACKING NOTE:**
1. BOND EVERY RAIL WITH #6 BARE COPPER

**GROUNDING & GENERAL NOTES:**
1. A SECOND FACILITY GROUNDING ELECTRODE IS NOT REQUIRED PER [NEC 690.47(C)(3)]
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. SOLADECK OR JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - SOLADECK OR 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.
8. 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.




| | QTY | CONDUCTOR INFORMATION | | CONDUIT TYPE | CONDUIT SIZE |
|---|---|---|---|---|---|
| 1 | (4) | #12AWG - | ENPHASE ENGAGE CABLE (L1 & L2 NO NEUTRAL) | N/A | N/A |
| | (1) | #6AWG - | BARE COPPER IN FREE AIR | | |
| 2 | (4) | #10AWG - | CU,THWN-2 | EMT OR FMC IN ATTIC | 3/4" |
| | (1) | #10AWG - | CU,THWN-2 GND | | |
| 3 | (2) | #8AWG - | CU,THWN-2 | EMT,LFMC OR PVC | 3/4" |
| | (1) | #8AWG - | CU,THWN-2 N | | |
| | (1) | #10AWG - | CU,THWN-2 GND | | |
| 4 | (2) | #8AWG - | CU,THWN-2 | EMT, LFMC OR PVC | 3/4" |
| | (1) | #8AWG - | CU,THWN-2 N | | |
| | (1) | #10AWG - | CU,THWN-2 GND | | |

1 ELECTRICAL LINE DIAGRAM
PV-4 SCALE: NTS


SIGORA SOLAR
SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901


REVISIONS

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|---|---|---|
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| | | |
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| | | |
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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE
10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

WARNING:PHOTOVOLTAIC POWER SOURCE

**LABEL 1**

AT DIRECT-CURRENT EXPOSED RACEWAYS, CABLE TRAYS, COVERS AND ENCLOSURES OF JUNCTION BOXES, AND OTHER WIRING METHODS; SPACED AT MAXIMUM 10FT SECTION OR WHERE SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.

NEC 690.31(G)(3&4)

(NOT USED FOR ENPHASE MICROINVERTERS)

PHOTOVOLTAIC

DC DISONNECT

**LABEL 2**

AT EACH PV DISCONNECTING MEANS

NEC 690.13(B)

(NOT USED FOR ENPHASE MICROINVERTERS)

MAXIMUM VOLTAGE

MAXIMUM CIRCUIT CURRENT

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

**LABEL 3**

AT DC PV SYSTEM DISCONNECT

NEC 690.53

(NOT USED FOR ENPHASE MICROINVERTERS)

PHOTOVOLTAIC

AC DISONNECT

**LABEL 4**

AT AC DISCONNECT

NEC 690.13(B)

PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT: 30.25A

NOMINAL OPERATING AC VOLTAGE: 240V

**LABEL 5**

AT AC DISCONNECT

NEC 690.54

25 MICROS X 1.21 AMP/MICRO = 30.25AMP

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 2017 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]

WARNING

INVERTER OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

**LABEL 6**

PLACED ADJACENT TO THE BACK-FED BREAKER FROM THE INVERTER IF TIE IN CONSISTS OF LOAD SIDE CONNECTION TO BUSBAR.
NEC 705.12(D)(2)(3)(B)

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

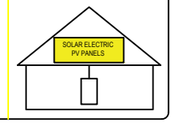
**LABEL 7**

SIGN LOCATED AT LOAD CENTER

NEC 705.12(B)(3-4) & NEC 690.59

**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 8**

FOR PV SYSTEMS THAT SHUT DOWN THE ARRAY AND CONDUCTORS LEAVING THE ARRAY:
SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT AWAY FROM SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION.
[NEC 690.56(C)(1)(A)]

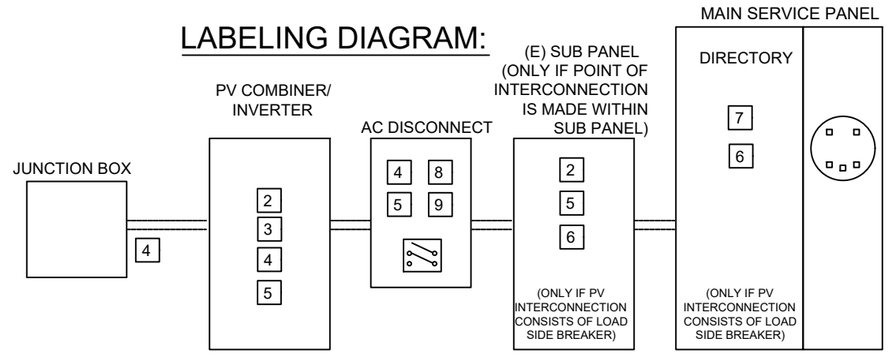
RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

**LABEL 9**

AT AC DISCONNECT

NEC 690.56(C)(3)

LABELING DIAGRAM:




** ELECTRICAL DIAGRAM SHOWN ABOVE IS FOR LABELING PURPOSES ONLY. NOT AN ACTUAL REPRESENATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VERY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ELECTRICAL DIAGRAM PAGE. **

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |
| | | |
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| | | |
| | | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

LABELS

SHEET SIZE

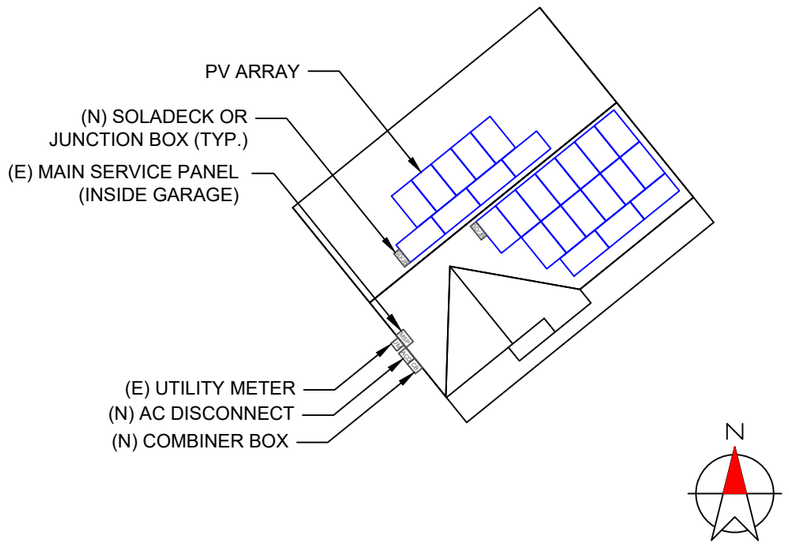
ANSI B
11" X 17"

SHEET NUMBER

PV-5

# CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM MULTIPLE SOURCES OF POWER WITH SAFETY DISCONNECTS AS SHOWN:



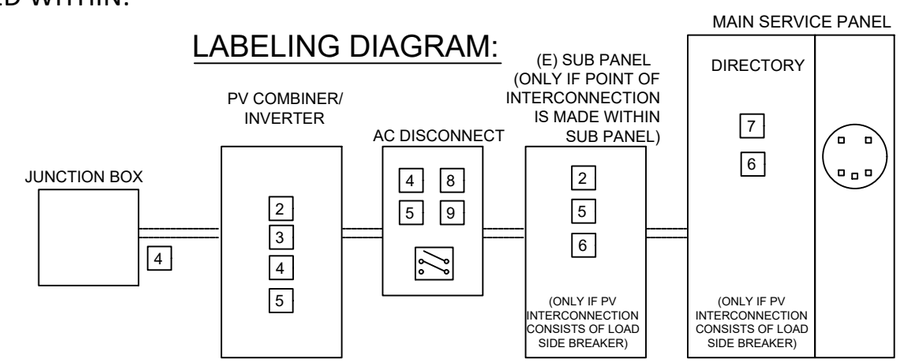

10 RAINMAKER STREET,LINDEN, NC 28356

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])

LABELING DIAGRAM:

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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 2017 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]

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

PLACARD

SHEET SIZE

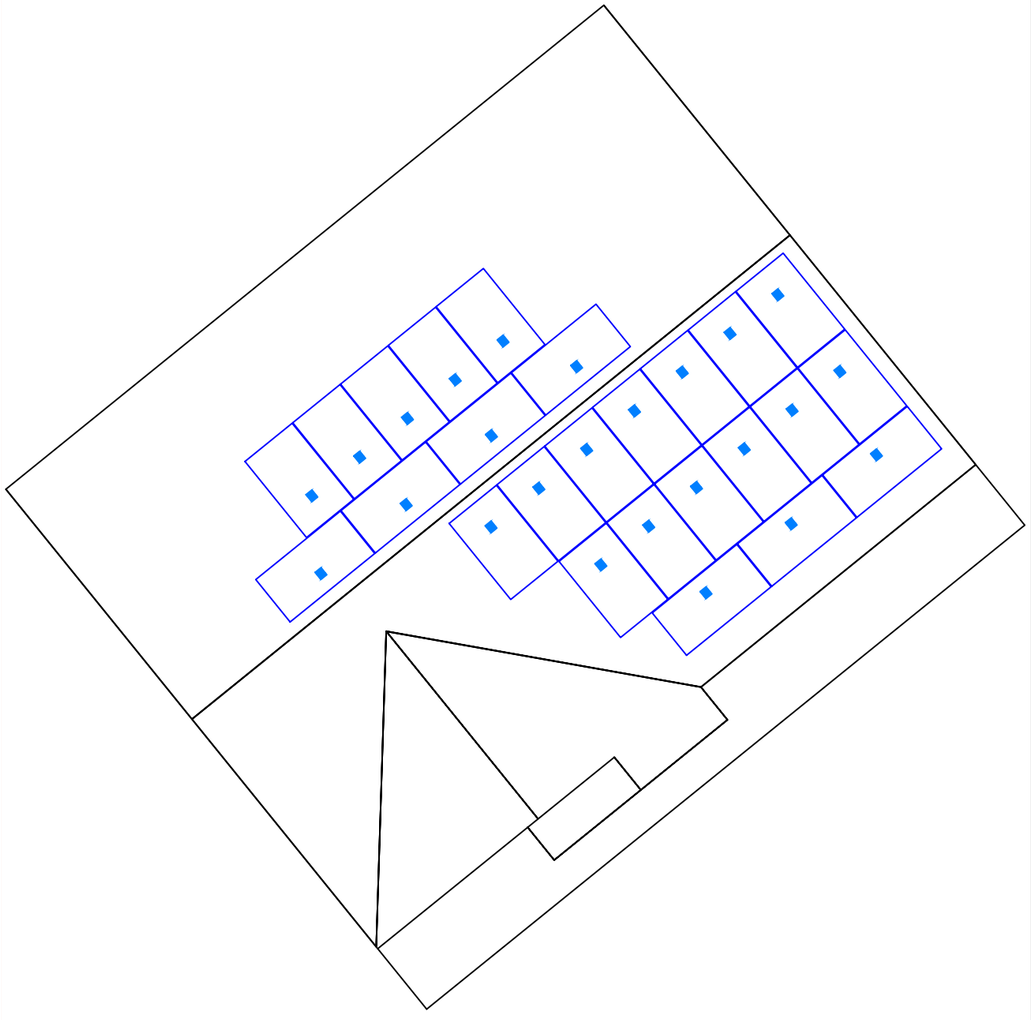
ANSI B
11" X 17"

SHEET NUMBER

PV-6

# MICRO INVERTER CHART

| | 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |



SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

MICRO INVERTER CHART

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-7

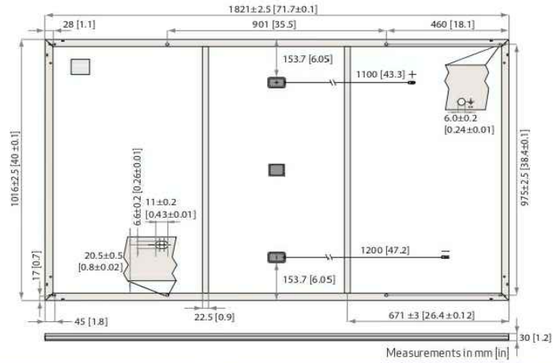

# REC ALPHA PURE SERIES

## PRODUCT SPECIFICATIONS

SOLAR'S MOST TRUSTED

### GENERAL DATA

| | |
|---|---|
| Cell type: | 132 half-cut REC heterojunction cells with lead-free, gapless technology, 6 strings of 22 cells in series |
| Glass: | 3.2 mm solar glass with anti-reflective surface treatment in accordance with EN 12150 |
| Backsheet: | Highly resistant polymer (black) |
| Frame: | Anodized aluminum (black) |
| Junction box: | 3-part, 3 bypass diodes, lead-free IP68 rated, in accordance with IEC 62790 |
| Connectors: | Stäubli MC4 PV-KBT4/KST4 (4 mm²) in accordance with IEC 62852, IP68 only when connected |
| Cable: | 4 mm² solar cable, 1.1 m + 1.2 m in accordance with EN 50618 |
| Dimensions: | 1821 x 1016 x 30 mm (1.85 m²) |
| Weight: | 20.5 kg |
| Origin: | Made in Singapore |




Measurements in mm [in]

### ELECTRICAL DATA

**Product Code*: RECxxxAA Pure**

| | | | | | | |
|---|---|---|---|---|---|---|
| STC | | | | | | |
| Power Output - $P_{MAX}$ (Wp) | 385 | 390 | 395 | 400 | 405 | 410 |
| Watt Class Sorting - (W) | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 | 0/+5 |
| Nominal Power Voltage - $V_{MPP}$ (V) | 41.2 | 41.5 | 41.8 | 42.1 | 42.4 | 42.7 |
| Nominal Power Current - $I_{MPP}$ (A) | 9.35 | 9.40 | 9.45 | 9.51 | 9.56 | 9.61 |
| Open Circuit Voltage - $V_{OC}$ (V) | 48.5 | 48.6 | 48.7 | 48.8 | 48.9 | 49.0 |
| Short Circuit Current - $I_{SC}$ (A) | 10.18 | 10.19 | 10.20 | 10.25 | 10.30 | 10.35 |
| Power Density (W/m²) | 208 | 211 | 214 | 216 | 219 | 222 |
| Panel Efficiency (%) | 20.8 | 21.1 | 21.4 | 21.6 | 21.9 | 22.2 |
| NMOT | | | | | | |
| Power Output - $P_{MAX}$ (Wp) | 293 | 297 | 301 | 305 | 309 | 312 |
| Nominal Power Voltage - $V_{MPP}$ (V) | 38.8 | 39.1 | 39.4 | 39.7 | 40.0 | 40.2 |
| Nominal Power Current - $I_{MPP}$ (A) | 7.55 | 7.59 | 7.63 | 7.68 | 7.72 | 7.76 |
| Open Circuit Voltage - $V_{OC}$ (V) | 45.7 | 45.8 | 45.9 | 46.0 | 46.1 | 46.2 |
| Short Circuit Current - $I_{SC}$ (A) | 8.16 | 8.20 | 8.24 | 8.28 | 8.32 | 8.36 |

Values at standard test conditions (STC: air mass AM 1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of $P_{MAX}$, $V_{OC}$ & $I_{SC}$ ±3% within one watt class. Nominal module operating temperature (NMOT: air mass AM 1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s). * Where xxx indicates the nominal power class ($P_{MAX}$) at STC above.

### CERTIFICATIONS

| | |
|---|---|
| IEC 61215:2016, IEC 61730:2016, UL 61730 | |
| IEC 62804 | PID |
| IEC 61701 | Salt Mist |
| IEC 62716 | Ammonia Resistance |
| ISO 11925-2 | Ignitability (Class E) |
| IEC 62782 | Dynamic Mechanical Load |
| IEC 61215-2:2016 | Hailstone (35mm) |
| IEC 62321 | Lead-free acc. to RoHS EU 863/2015 |
| ISO 14001, ISO 9001, IEC 45001, IEC 62941 | |

Lead-Free

take-e-way WEEE-compliant recycling scheme

### TEMPERATURE RATINGS*

| | |
|---|---|
| Nominal Module Operating Temperature: | 44°C (±2°C) |
| Temperature coefficient of $P_{MAX}$: | -0.26 %/°C |
| Temperature coefficient of $V_{OC}$: | -0.24 %/°C |
| Temperature coefficient of $I_{SC}$: | 0.04 %/°C |

*The temperature coefficients stated are linear values

### MAXIMUM RATINGS

| | |
|---|---|
| Operational temperature: | -40 ... +85°C |
| Maximum system voltage: | 1000 V |
| Maximum test load (front): | +7000 Pa (713 kg/m²)* |
| Maximum test load (rear): | -4000 Pa (407 kg/m²)* |
| Max series fuse rating: | 25 A |
| Max reverse current: | 25 A |

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

### WARRANTY

| | Standard | REC ProTrust | |
|---|---|---|---|
| Installed by an REC Certified Solar Professional | No | Yes | Yes |
| System Size | All | ≤25 kW | 25-500 kW |
| Product Warranty (yrs) | 20 | 25 | 25 |
| Power Warranty (yrs) | 25 | 25 | 25 |
| Labor Warranty (yrs) | 0 | 25 | 10 |
| Power in Year 1 | 98% | 98% | 98% |
| Annual Degradation | 0.25% | 0.25% | 0.25% |
| Power in Year 25 | 92% | 92% | 92% |

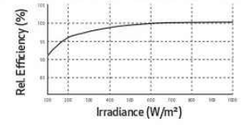
See warranty documents for details. Conditions apply

### DELIVERY INFORMATION

| | |
|---|---|
| Panels per pallet: | 33 |
| Panels per 40 ft GP/high cube container: | 792 (24 pallets) |
| Panels per 13.6 m truck: | 924 (28 pallets) |
| Panels per 53 ft truck: | 891 (27 pallets) |

### LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:




Specifications subject to change without notice.

Ref: PM-DS-12-06-Rev- E 11.21

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

www.recgroup.com

SIGORA SOLAR

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PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

MODULE SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-8

ENPHASE

DATA SHEET


# IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.

Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

**Easy to install**

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

**High productivity and reliability**

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

**Microgrid-forming**

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements



IQ8SP-DS-0002-01-EN-US-2022-03-17

* Only when installed with IQ System Controller 2, meets UL 1741.
** IQ8 and IQ8Plus supports split phase, 240V installations only.

## IQ8 and IQ8+ Microinverters

| INPUT DATA (DC) | | IQ8-60-2-US | IQ8PLUS-72-2-US |
|---|---|---|---|
| Commonly used module pairings[1] | W | 235 – 350 | 235 – 440 |
| Module compatibility | | 60-cell/120 half-cell | 60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell |
| MPPT voltage range | V | 27 – 37 | 29 – 45 |
| Operating range | V | 25 – 48 | 25 – 58 |
| Min/max start voltage | V | 30 / 48 | 30 / 58 |
| Max input DC voltage | V | 50 | 60 |
| Max DC current[2] [module Isc] | A | 15 | |
| Overvoltage class DC port | | II | |
| DC port backfeed current | mA | 0 | |
| PV array configuration | | 1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit | |
| **OUTPUT DATA (AC)** | | **IQ8-60-2-US** | **IQ8PLUS-72-2-US** |
| Peak output power | VA | 245 | 300 |
| Max continuous output power | VA | 240 | 290 |
| Nominal (L-L) voltage/range[3] | V | 240 / 211 – 264 | |
| Max continuous output current | A | 1.0 | 1.21 |
| Nominal frequency | Hz | 60 | |
| Extended frequency range | Hz | 50 – 68 | |
| AC short circuit fault current over 3 cycles | Arms | 2 | |
| Max units per 20 A (L-L) branch circuit[4] | | 16 | 13 |
| Total harmonic distortion | | <5% | |
| Overvoltage class AC port | | III | |
| AC port backfeed current | mA | 30 | |
| Power factor setting | | 1.0 | |
| Grid-tied power factor (adjustable) | | 0.85 leading – 0.85 lagging | |
| Peak efficiency | % | 97.5 | 97.6 |
| CEC weighted efficiency | % | 97 | 97 |
| Night-time power consumption | mW | 60 | |
| **MECHANICAL DATA** | | | |
| Ambient temperature range | | -40°C to +60°C (-40°F to +140°F) | |
| Relative humidity range | | 4% to 100% (condensing) | |
| DC Connector type | | MC4 | |
| Dimensions (HxWxD) | | 212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2") | |
| Weight | | 1.08 kg (2.38 lbs) | |
| Cooling | | Natural convection – no fans | |
| Approved for wet locations | | Yes | |
| Pollution degree | | PD3 | |
| Enclosure | | Class II double-insulated, corrosion resistant polymeric enclosure | |
| Environ. category / UV exposure rating | | NEMA Type 6 / outdoor | |
| **COMPLIANCE** | | | |
| Certifications | | CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01<br><br>This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions. | |

(1) No enforced DC/AC ratio. See the compatibility calculator at https://link.enphase.com/module-compatibility
(2) Maximum continuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SP-DS-0002-01-EN-US-2022-03-17

SIGORA SOLAR

SIGORA SOLAR LLC
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CHARLOTTESVILLE, VA 22901

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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

INVERTER SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-9

Data Sheet
Enphase Networking

# Enphase IQ Combiner 4/4C

## X-IQ-AM1-240-4
## X-IQ-AM1-240-4C


X-IQ-AM1-240-4C

X-IQ-AM1-240-4

The **Enphase IQ Combiner 4/4C** with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.

### Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

### Simple

- Centered mounting brackets support single stud mounting
- Supports bottom, back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

### Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed

UL LISTED

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE

## Enphase IQ Combiner 4/4C

| | |
|---|---|
| **MODEL NUMBER** | |
| IQ Combiner 4 (X-IQ-AM1-240-4) | IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat. |
| IQ Combiner 4C (X-IQ-AM1-240-4C) | IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat. |
| **ACCESSORIES AND REPLACEMENT PARTS** | (not included, order separately) |
| Ensemble Communications Kit<br>COMMS-CELLMODEM-M1-06<br>CELLMODEM-M1-06-SP-05<br>CELLMODEM-M1-06-AT-05 | - Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites<br>- 4G based LTE-M1 cellular modem with 5-year Sprint data plan<br>- 4G based LTE-M1 cellular modem with 5-year AT&T data plan |
| Circuit Breakers<br>BRK-10A-2-240V<br>BRK-15A-2-240V<br>BRK-20A-2P-240V<br>BRK-15A-2P-240V-B<br>BRK-20A-2P-240V-B | Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers.<br>Circuit breaker, 2 pole, 10A, Eaton BR210<br>Circuit breaker, 2 pole, 15A, Eaton BR215<br>Circuit breaker, 2 pole, 20A, Eaton BR220<br>Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support<br>Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support |
| EPLC-01 | Power line carrier (communication bridge pair), quantity - one pair |
| XA-SOLARSHIELD-ES | Replacement solar shield for IQ Combiner 4/4C |
| XA-PLUG-120-3 | Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01) |
| XA-ENV-PCBA-3 | Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C |
| X-IQ-NA-HD-125A | Hold down kit for Eaton circuit breaker with screws. |
| **ELECTRICAL SPECIFICATIONS** | |
| Rating | Continuous duty |
| System voltage | 120/240 VAC, 60 Hz |
| Eaton BR series busbar rating | 125 A |
| Max. continuous current rating | 65 A |
| Max. continuous current rating (input from PV/storage) | 64 A |
| Max. fuse/circuit rating (output) | 90 A |
| Branch circuits (solar and/or storage) | Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included) |
| Max. total branch circuit breaker rating (input) | 80A of distributed generation / 95A with IQ Gateway breaker included |
| Envoy breaker | 10A or 15A rating GE/Siemens/Eaton included |
| Production metering CT | 200 A solid core pre-installed and wired to IQ Gateway |
| Consumption monitoring CT (CT-200-SPLIT) | A pair of 200 A split core current transformers |
| **MECHANICAL DATA** | |
| Dimensions (WxHxD) | 37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.06" (53.5 cm) with mounting brackets. |
| Weight | 7.5 kg (16.5 lbs) |
| Ambient temperature range | -40° C to +46° C (-40° to 115° F) |
| Cooling | Natural convection, plus heat shield |
| Enclosure environmental rating | Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction |
| Wire sizes | • 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors<br>• 60 A breaker branch input: 4 to 1/0 AWG copper conductors<br>• Main lug combined output: 10 to 2/0 AWG copper conductors<br>• Neutral and ground: 14 to 1/0 copper conductors<br>Always follow local code requirements for conductor sizing. |
| Altitude | To 2000 meters (6,560 feet) |
| **INTERNET CONNECTION OPTIONS** | |
| Integrated Wi-Fi | 802.11b/g/n |
| Cellular | CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations. |
| Ethernet | Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included) |
| **COMPLIANCE** | |
| Compliance, IQ Combiner | UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003<br>Production metering: ANSI C12.20 accuracy class 0.5 (PV production)<br>Consumption metering: accuracy class 2.5 |
| Compliance, IQ Gateway | UL 60601-1/CANCSA 22.2 No. 61010-1 |

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE



SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

| DESCRIPTION | DATE | REV |
|---|---|---|
| INITIAL | 05/25/2022 | |
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| | | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO RESIDENCE

10 RAINMAKER STREET, LINDEN, NC 28356

DRAWN BY

ESR

SHEET NAME

COMBINER SPECIFICATION

SHEET SIZE

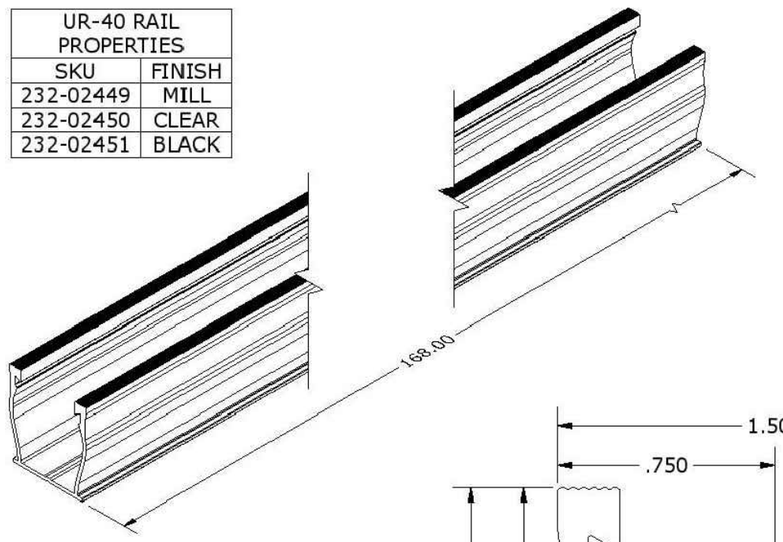
ANSI B
11" X 17"

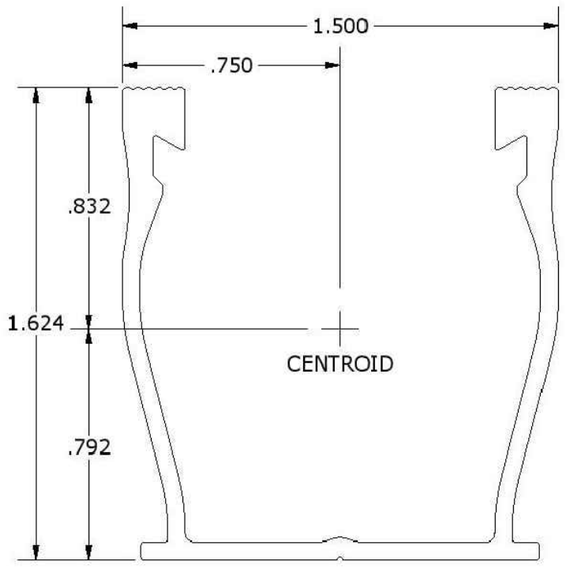
SHEET NUMBER

PV-10

| DESCRIPTION: | DRAWN BY: | SnapNrack™ Solar Mounting Solutions |
|---|---|---|
| SNAPNRACK, UR-40 RAIL | mwatkins | |
| PART NUMBER(S): | REVISION: | 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA. PHONE (415) 580-6900 • FAX (415) 580-6902 |
| 232-02449, 232-02450, 232-02451 | B | THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC. |

| UR-40 RAIL PROPERTIES | |
|---|---|
| SKU | FINISH |
| 232-02449 | MILL |
| 232-02450 | CLEAR |
| 232-02451 | BLACK |




| SECTION PROPERTIES | |
|---|---|
| A | 0.357 in² |
| Ixx | 0.125 in⁴ |
| Iyy | 0.132 in⁴ |
| Sx (TOP) | 0.150 in³ |
| Sx (BOT) | 0.158 in³ |
| Sy (LEFT) | 0.175 in³ |
| Sy (RIGHT) | 0.175 in³ |

ALL DIMENSIONS IN INCHES

| | | |
|---|---|---|
| MATERIALS: | 6000 SERIES ALUMINUM | OPTIONS: |
| DESIGN LOAD (LBS): | N/A | CLEAR / BLACK ANODIZED |
| ULTIMATE LOAD (LBS): | N/A | MILL FINISH |
| TORQUE SPECIFICATION: | N/A LB-FT | BUNDLES OF 144 |
| CERTIFICATION: | UL 2703, FILE E359313 | BOXES OF 8 |
| WEIGHT (LBS): | 5.85 | |

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

REVISIONS

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| | | |
| | | |
| | | |

DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

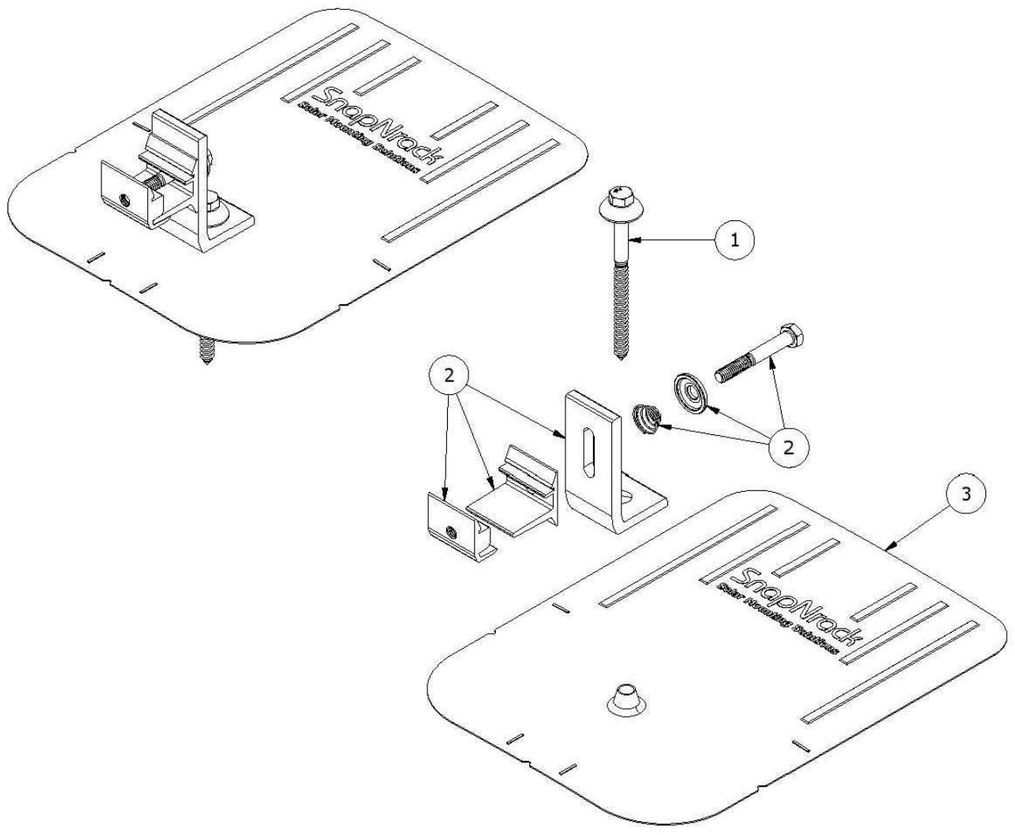
DRAWN BY
ESR

SHEET NAME
RAIL SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-11

| DESCRIPTION: | DRAWN BY: | SnapNrack™ Solar Mounting Solutions |
|---|---|---|
| SNAPNRACK, ULTRA RAIL COMP KIT | mwatkins | |
| PART NUMBER(S): | REVISION: | 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA<br>PHONE (415) 580-6900 • FAX (415) 580-6902 |
| SEE BELOW | B | THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY. ANY REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF SUNRUN SOUTH LLC. |




| PARTS LIST | | | |
|---|---|---|---|
| ITEM | QTY | PART NUMBER | DESCRIPTION |
| 1 | 1 | 242-92266 | SNAPNRACK, UMBRELLA LAG, TYPE 3, 4IN, SS |
| 2 | 1 | 242-01219, 242-01220 | SNAPNRACK, ULTRA FOOT FOR U FLASHING, SILVER / BLACK |
| 3 | 1 | 232-01375, 232-01376 | SNAPNRACK, COMP FLASHING, 9IN X 12IN, SILVER / BLACK ALUM |

| | |
|---|---|
| MATERIALS: | 6000 SERIES ALUMINUM, STAINLESS STEEL, RUBBER |
| DESIGN LOAD (LBS): | 802 UP, 1333 DOWN, 356 SIDE |
| ULTIMATE LOAD (LBS): | 2005 UP, 4000 DOWN, 1070 SIDE |
| TORQUE SPECIFICATION: | 12 LB-FT |
| CERTIFICATION: | UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM UL SUBJECT 2582 |
| WEIGHT (LBS): | 0.80 |


| DESCRIPTION: | DRAWN BY: | SnapNrack™ Solar Mounting Solutions |
|---|---|---|
| SNAPNRACK, ULTRA RAIL COMP KIT | mwatkins | |
| PART NUMBER(S): | REVISION: | 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA<br>PHONE (415) 580-6900 • FAX (415) 580-6902 |
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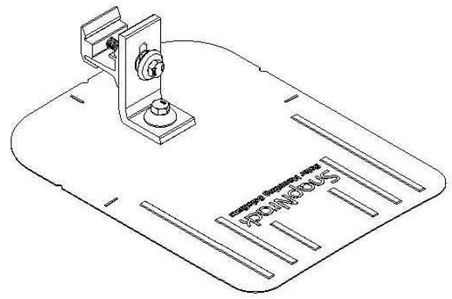
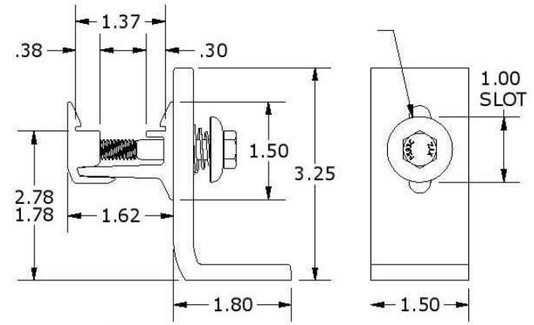
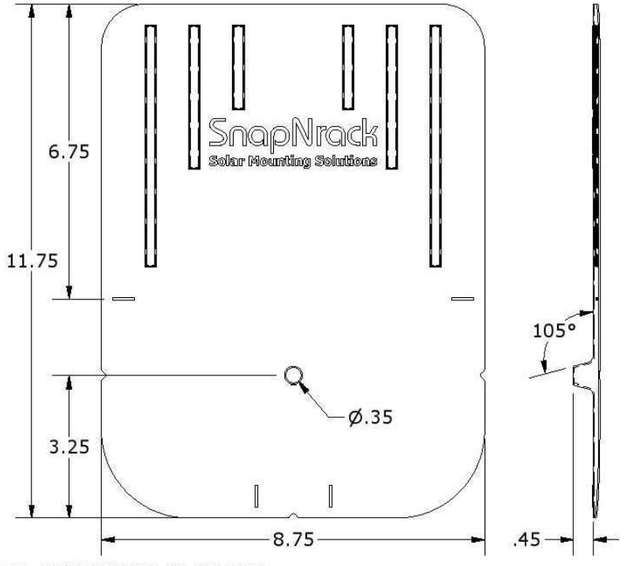
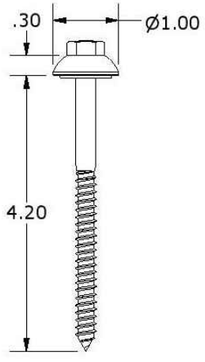



| UMBRELLA L FOOT PROPERTIES | |
|---|---|
| SKU | DESCRIPTION |
| 242-01219 | ULTRA RAIL UMBRELLA L FOOT, SILVER |
| 242-01220 | ULTRA RAIL UMBRELLA L FOOT, BLACK |




| COMP FLASHING PROPERTIES | |
|---|---|
| SKU | DESCRIPTION |
| 232-01375 | COMP FLASHING, 9" X 12", BLACK ALUM |
| 232-01376 | COMP FLASHING, 9" X 12", SILVER ALUM |




ALL DIMENSIONS IN INCHES

SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTESVILLE, VA 22901

| REVISIONS | | |
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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ATTACHMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-12

# SolaDeck

FLASHED PV ROOF-MOUNT COMBINER/ENCLOSURE

**Basic Features**

- Stamped Seamless Construction
- 18 Gauge Galvanized Steel
- Powder Coated Surfaces
- Flashes into the roof deck
- 3 Roof deck knockouts .5", .75", 1"
- 5 Centering dimples for entry/exit fittings or conduit
- 2 Position Ground lug installed
- Mounting Hardware Included

SolaDeck Model SD 0783

## SolaDeck UL50 Type 3R Enclosures

Available Models:
Model SD 0783 - (3" fixed Din Rail)
Model SD 0786 - (6" slotted Din Rail)

## SolaDeck UL 1741 Combiner/Enclosures

Models SD 0783-41 and SD 0786-41 are labeled and ETL listed UL STD 1741 according to the UL STD 1741 for photovoltaic combiner enclosures.

Max Rated - 600VDC, 120AMPS

**Model SD 0783-41** 3" Fixed Din Rail fastened using Norlock System

****Typical System Configuration**

4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
1- Power Distribution Block 600VDC 175AMP
1- Bus Bar with UL lug

**Model SD 0786-41** 6" Slotted Din Rail fastened using steel studs

****Typical System Configuration**

4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
4- Din Rail Mounted Terminal Blocks
Bus Bars with UL lug

**Fuse holders and terminal blocks added in the field must be UL listed or recognized and meet 600 VDC 30 AMP 110C for fuse holders, 600V 50 AMP 90C for rail mounted terminal blocks and 600 V 175 AMP 90C for Power Distribution Blocks. Use Copper Wire Conductors.

Cover is trimmed to allow conduit or fittings, base is center dimpled for fitting locations.

Model SD 0783-41, wired with Din Rail mounted fuse holders, bus bar and power distribution block.

Model SD 0786-41, wired with Din Rail mounted fuse holders, terminal blocks and bus bars.



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DATE:05/25/2022

PROJECT NAME & ADDRESS

ALBERTO SOLANO
RESIDENCE

10 RAINMAKER STREET,
LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
SOLADECK
SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-13