



ELECTRICAL RESIDENTIAL

910-893-7525

www.harnett.org

PERMIT NUMBER

ERES2206-0002

JOB ADDRESS: 10 RAINMAKER ST	PERMIT SUBTYPE: RESIDENTIAL SOLAR PANELS	PARCEL NO: 0544-57-1522.000
DESCRIPTION: roof mounted solar panels	DATE ISSUED: 6/7/2022	DATE EXPIRED:
PLAN NAME:	ZONING DISTRICT: RA-20R - 0.64 acres (100.0%)	

APPLICANT: Sigora Solar 1222 Harris Street Charlottesville, VA 22903	PHONE: (434)465-6788 EMAIL: permitting@sigorasolar.com
CONTRACTOR: Sigora Solar 1222 Harris Street Charlottesville, VA 22903	PHONE: (434)465-6788 EMAIL: permitting@sigorasolar.com
OWNER: SOLANO ALBERTO 10 RAINMAKER ST LINDEN, NC 28356 LINDEN, NC 28356	PHONE: EMAIL:

REQUIRED INSPECTIONS

INSPECTION TYPE	APPROVAL	DATE	COMMENTS
FINAL**			
ROUGH IN			



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

June 29, 2022

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

Scott
Wyssling, PE

Digitally signed by Scott Wyssling, PE
DN: C=US, S=Utah, L=Alpine, O=Wyssling Consulting, OU=Owner, CN="Scott Wyssling, PE", E=swyssling@wysslingconsulting.com
Reason: I am the author of this document
Location: your signing location here
Date: 2022.06.29 14:30:48-06'00'
Foxit PDF Editor Version: 11.1.0

Re: Engineering Services (Post-Install)
Solano Residence
10 Rainmaker Street, Linden NC
10.000 kW System

To Whom It May Concern:

Pursuant to your request, we have reviewed the installation of the above-referenced solar panel system. As you are aware, this office initially prepared a structural assessment, dated May 26, 2022, of the solar panel installation. This installation was inspected and found to be in compliance with the layout plan as specified in our report, product installation criteria, and the requirements of the current building codes. The installation is in compliance with the 2018 North Carolina Residential Code Book, professional engineering assessment and judgment and covers this dwellings assessment for solar panel connections and support only. We have determined that the equipment will not create a negative impact on the building's structural design, including any additional loads imposed (dead, snow, wind).

This letter pertains only to the panel support attachments to the roof framing and not the engineered photovoltaic panel products, components, or electrical-related installations/connections.

Should you have any questions regarding the above or if you require additional information do not hesitate to contact me.

Very truly yours,

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

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # P-2308



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.

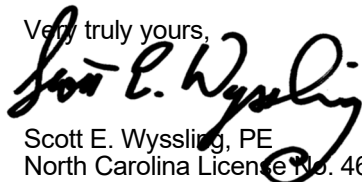
D. Solar Panel Anchorage

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 $2\frac{1}{2}$ ", 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 $2\frac{1}{2}$ " 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 information, please do not hesitate to contact me.

Very truly yours,



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

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



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

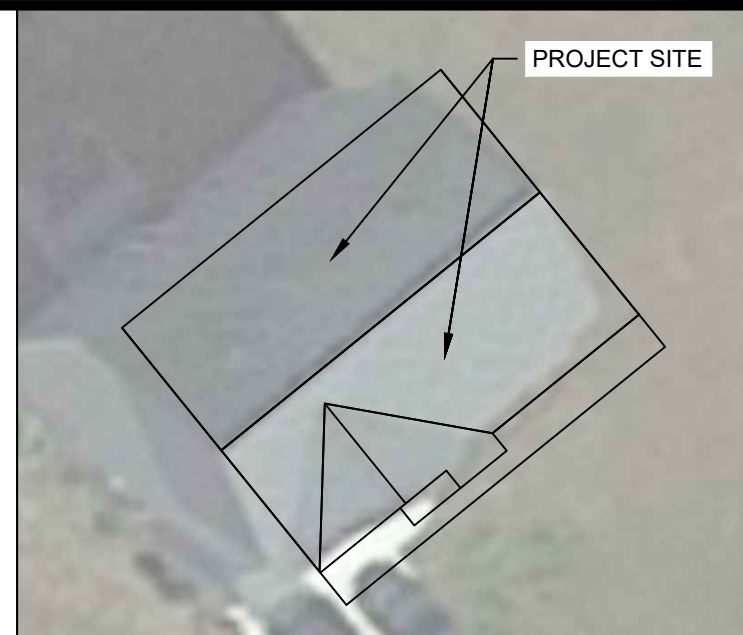
THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND
 SEALED BY SCOTT WYSSLING, PE USING A DIGITAL
 SIGNATURE AND DATE. PRINTED COPIES OF THIS
 DOCUMENT ARE NOT CONSIDERED SIGNED AND
 SEALED AND THE SIGNATURE MUST BE VERIFIED
 ON ANY ELECTRONIC COPIES

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



PROJECT SITE



SIGORA SOLAR LLC
 490 WESTFIELD RD STE A
 CHARLOTTEVILLE, 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

PLOT PLAN WITH
 ROOF PLAN

SHEET SIZE

ANSI B
 11" X 17"

SHEET NUMBER

PV-1

2 HOUSE PHOTO

PV-1 SCALE: NTS

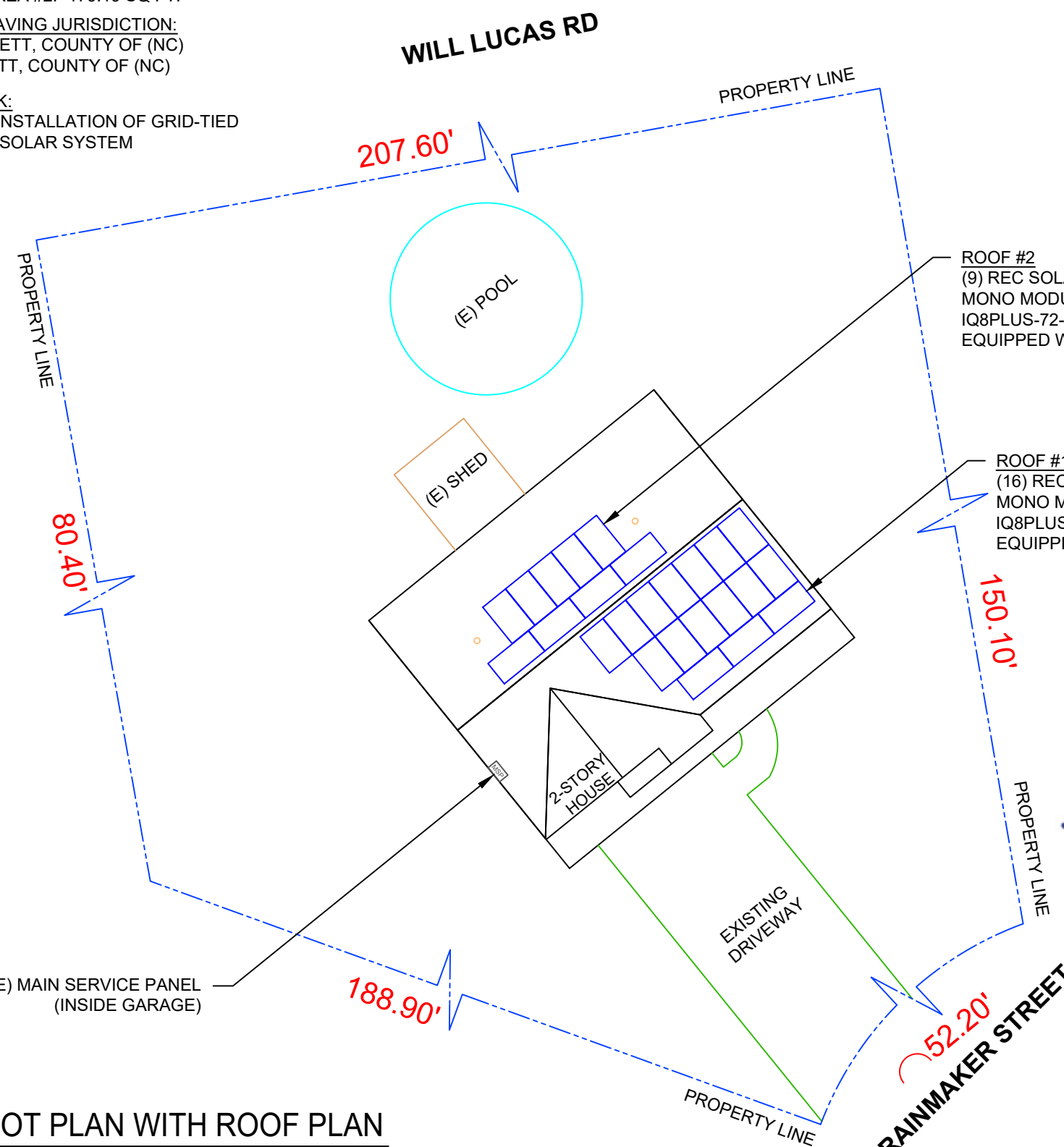


3 VICINITY MAP

PV-1 SCALE: NTS

SHEET INDEX

PV-1	PLOT PLAN WITH ROOF PLAN
PV-2	ROOF PLAN & MODULES
PV-2A	CIRCUIT LAYOUT
PV-3	ATTACHMENT DETAIL
PV-4	ELECTRICAL LINE DIAGRAM
PV-5	LABELS
PV-6	PLACARD
PV-7	MICRO INVERTER CHART
PV-8	MODULE SPECIFICATIONS
PV-9	INVERTER SPECIFICATIONS
PV-10	COMBINER SPECIFICATIONS
PV-11	RAIL SPECIFICATIONS
PV-12	ATTACHMENT SPECIFICATIONS
PV-13	SOLADECK SPECIFICATIONS



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



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"

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"



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

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	05/25/2022	

DATE: 05/25/2022

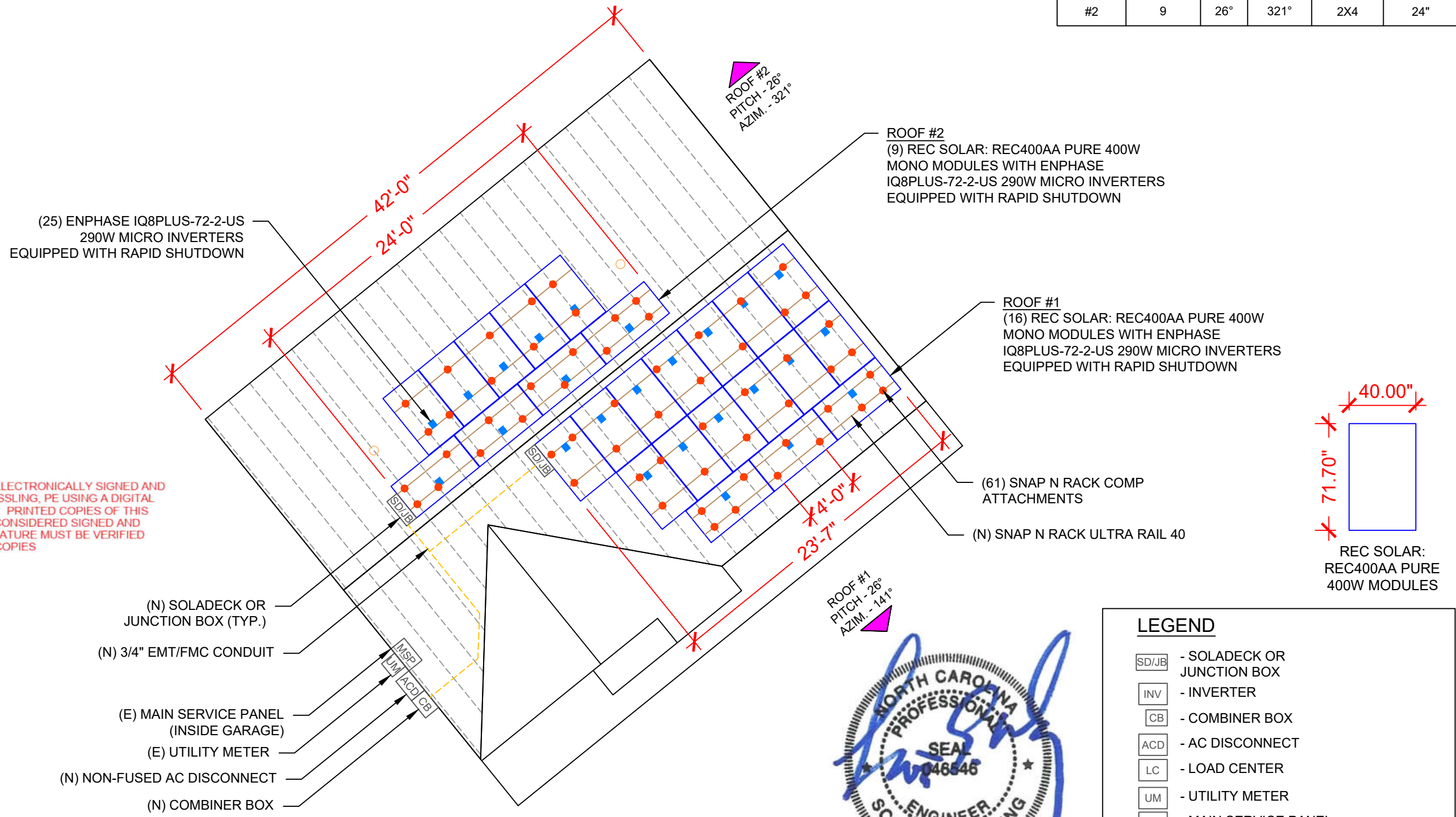
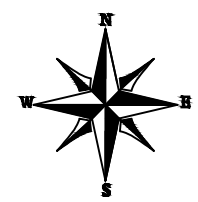
PROJECT NAME & ADDRESS
ALBERTO SOLANO RESIDENCE
 10 RAINMAKER STREET,
 LINDEN, NC 28356

DRAWN BY
ESR

SHEET NAME
ROOF PLAN & MODULES

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

SHEET NUMBER
PV-2



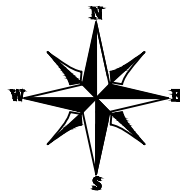
THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



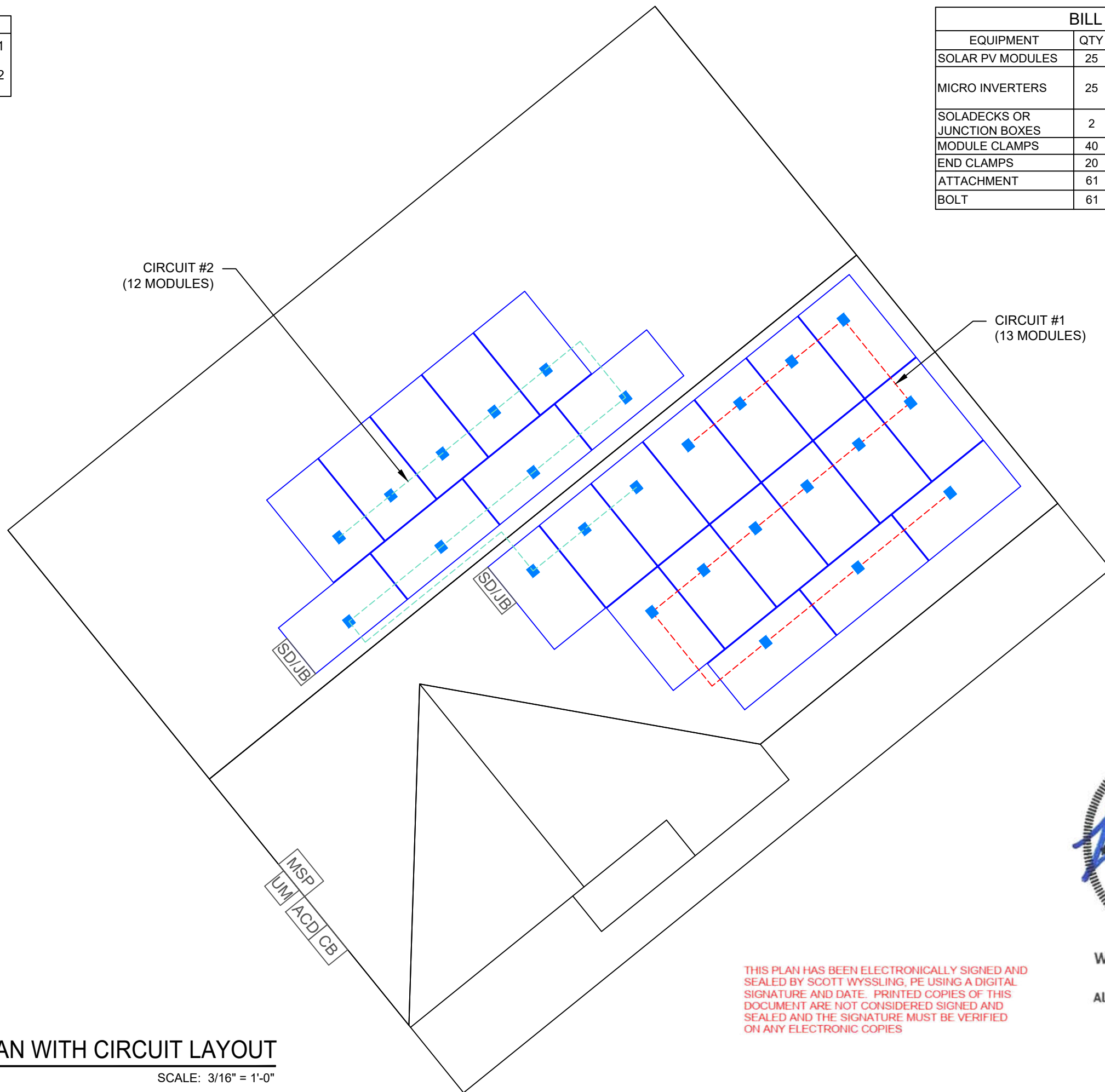
Wyssling Consulting, PLLC
 76 N Meadowbrook Drive
 Alpine UT 84004 COA # P-2308
 Date Signed 5/26/2022

LEGEND	
	- SOLADECK OR JUNCTION BOX
	- INVERTER
	- COMBINER BOX
	- AC DISCONNECT
	- LOAD CENTER
	- UTILITY METER
	- MAIN SERVICE PANEL
	- VENT, ATTIC FAN (ROOF OBSTRUCTION)
	- ROOF ATTACHMENT
	- TRUSS
	- CONDUIT

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




SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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"

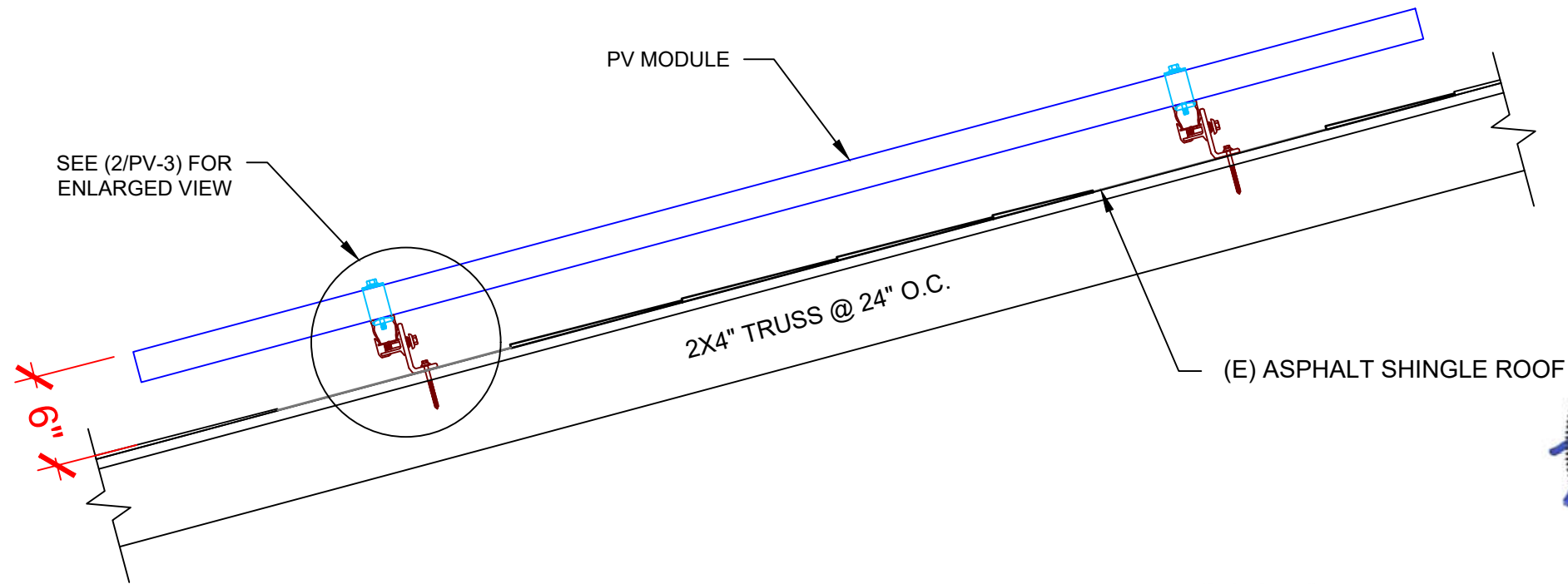
SHEET NUMBER
PV-2A

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

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



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



SEE (2/PV-3) FOR ENLARGED VIEW

PV MODULE

2X4" TRUSS @ 24" O.C.

(E) ASPHALT SHINGLE ROOF

9"

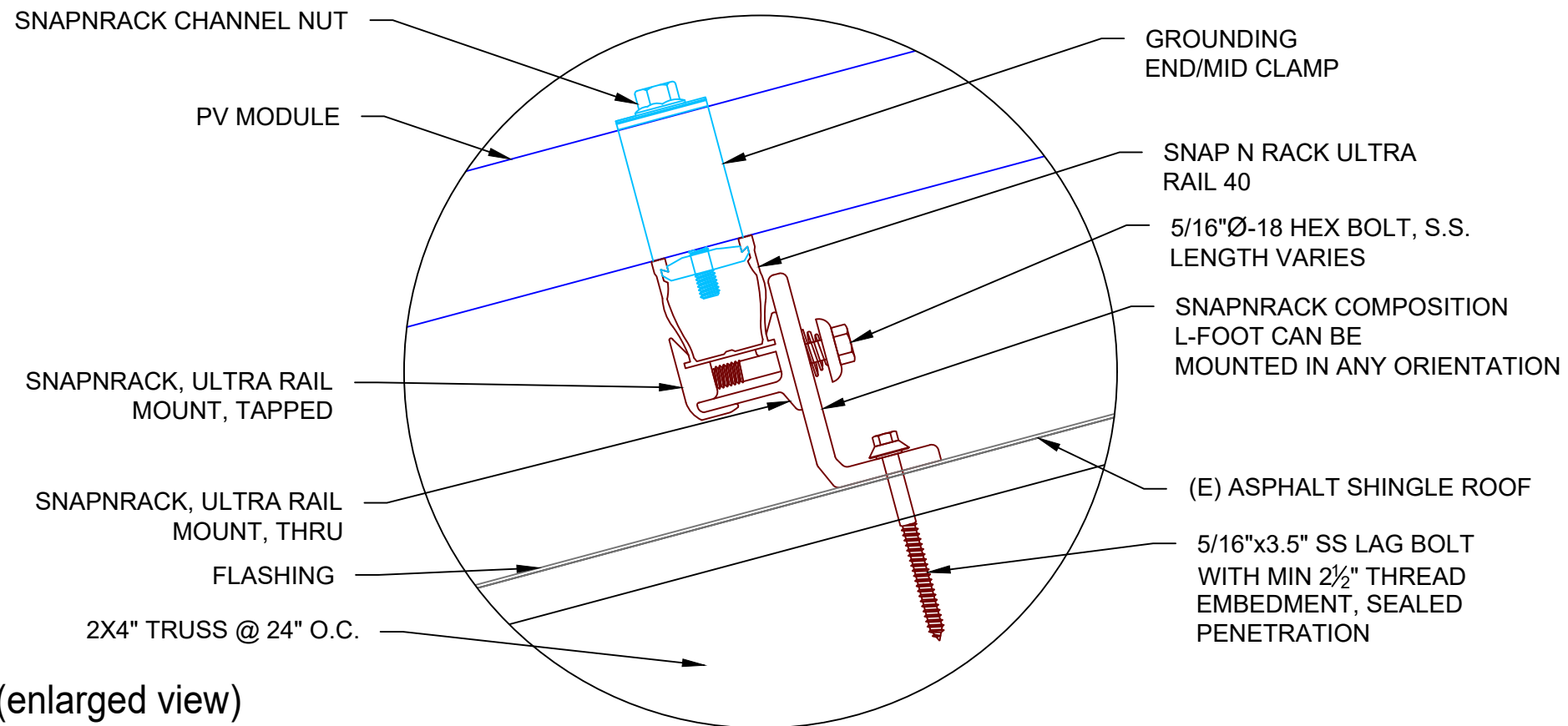
THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES



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

1 STRUCTURAL ATTACHMENT (SIDE VIEW)

PV-3 SCALE: N.T.S



SNAPNRACK CHANNEL NUT

PV MODULE

SNAPNRACK, ULTRA RAIL MOUNT, TAPPED

SNAPNRACK, ULTRA RAIL MOUNT, THRU

FLASHING

2X4" TRUSS @ 24" O.C.

GROUNDING END/MID CLAMP

SNAP N RACK ULTRA RAIL 40

5/16"Ø-18 HEX BOLT, S.S. LENGTH VARIES

SNAPNRACK COMPOSITION L-FOOT CAN BE MOUNTED IN ANY ORIENTATION

(E) ASPHALT SHINGLE ROOF

5/16"x3.5" SS LAG BOLT WITH MIN 2½" THREAD EMBEDMENT, SEALED PENETRATION

2 ATTACHMENT DETAIL (enlarged view)

PV-3 SCALE: N.T.S



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:

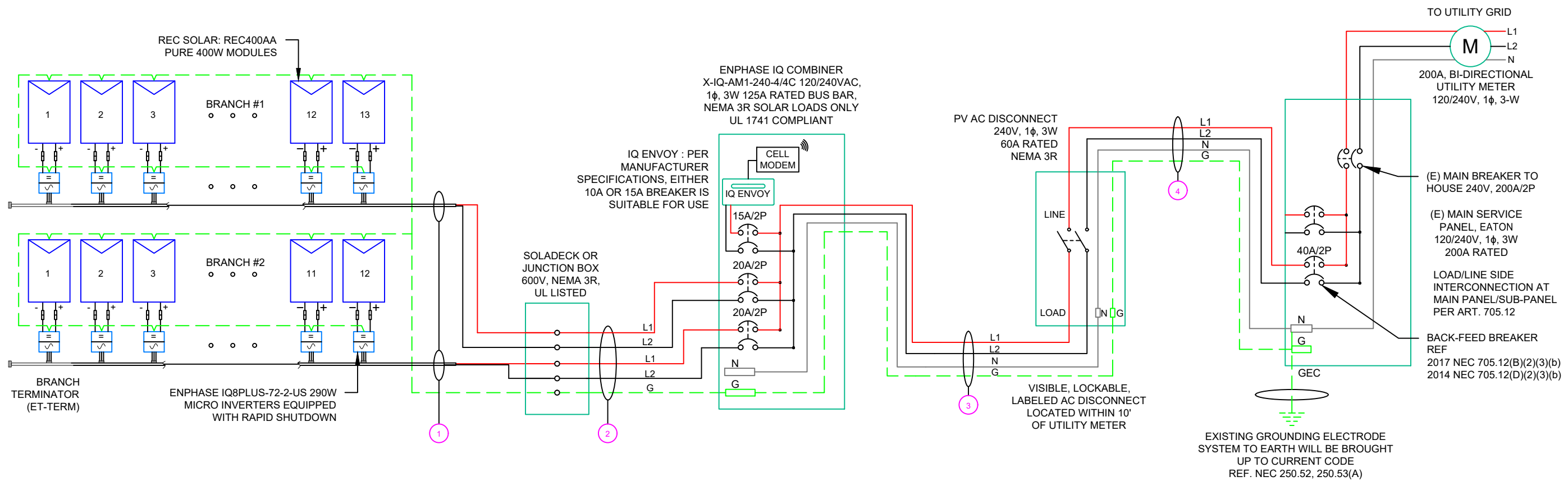
1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS)
2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH

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.



SIGORA SOLAR
SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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
ELECTRICAL LINE DIAGRAM

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

SHEET NUMBER
PV-4

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		
(2)	#8AWG - CU, THWN-2	EMT, LFMC OR PVC	3/4"
(1)	#8AWG - CU, THWN-2 N		
(1)	#10AWG - CU, THWN-2 GND		
(2)	#8AWG - CU, THWN-2	EMT, LFMC OR PVC	3/4"
(1)	#8AWG - CU, THWN-2 N		
(1)	#10AWG - CU, THWN-2 GND		

**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

LABEL 2

AT EACH PV DISCONNECTING MEANS

NEC 690.13(B)

(NOT USED FOR ENPHASE MICROINVERTERS)

DC DISCONNECT

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

LABEL 4

AT AC DISCONNECT

NEC 690.13(B)

AC DISCONNECT

PHOTOVOLTAIC AC DISCONNECT

LABEL 5

AT AC DISCONNECT

NEC 690.54

RATED AC OUTPUT CURRENT:
 NOMINAL OPERATING AC VOLTAGE:

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

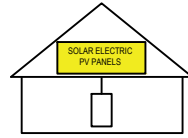
PLACED ADJACENT TO THE BACK-FED BREAKER FROM THE INVERTER IF TIE IN CONSISTS OF LOAD SIDE CONNECTION TO BUSBAR.
 NEC 705.12(D)(2)(3)(B)

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

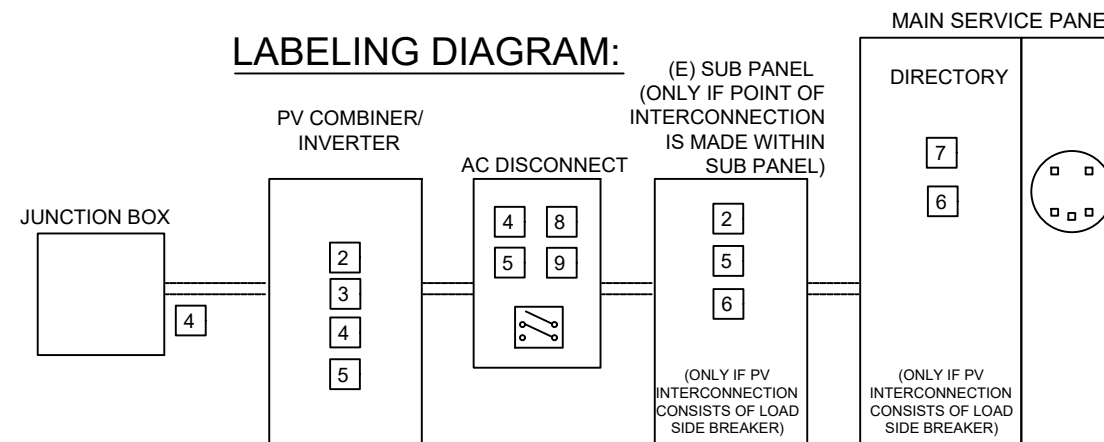
FOR PV SYSTEMS THAT SHUT DOWN THE ARRAY AND CONDUCTORS LEAVING THE ARRAY:
 SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT AWAY FROM SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION.
 [NEC 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 REPRESENTATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VARY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ELECTRICAL DIAGRAM PAGE. **



SIGORA SOLAR LLC
 490 WESTFIELD RD STE A
 CHARLOTTEVILLE, 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

LABELS

SHEET SIZE

ANSI B
 11" X 17"

SHEET NUMBER

PV-5



SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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

PLACARD

SHEET SIZE

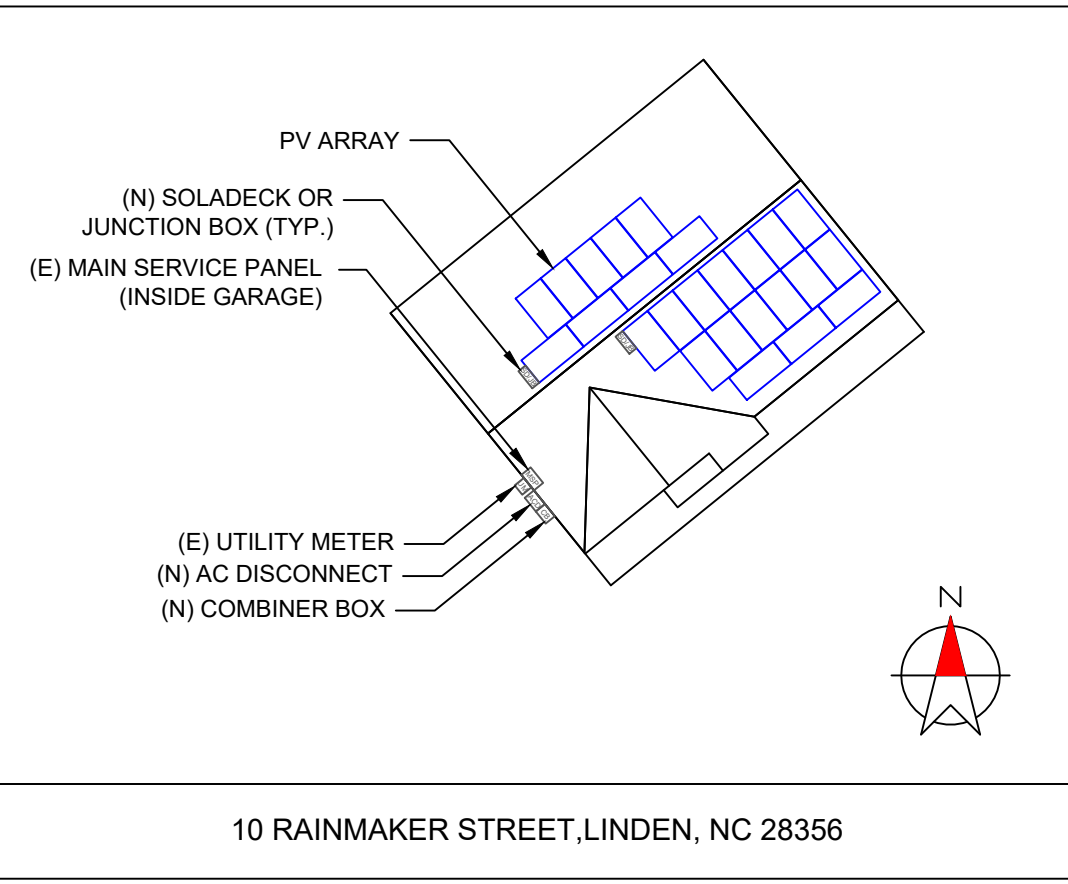
ANSI B
11" X 17"

SHEET NUMBER

PV-6

CAUTION

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

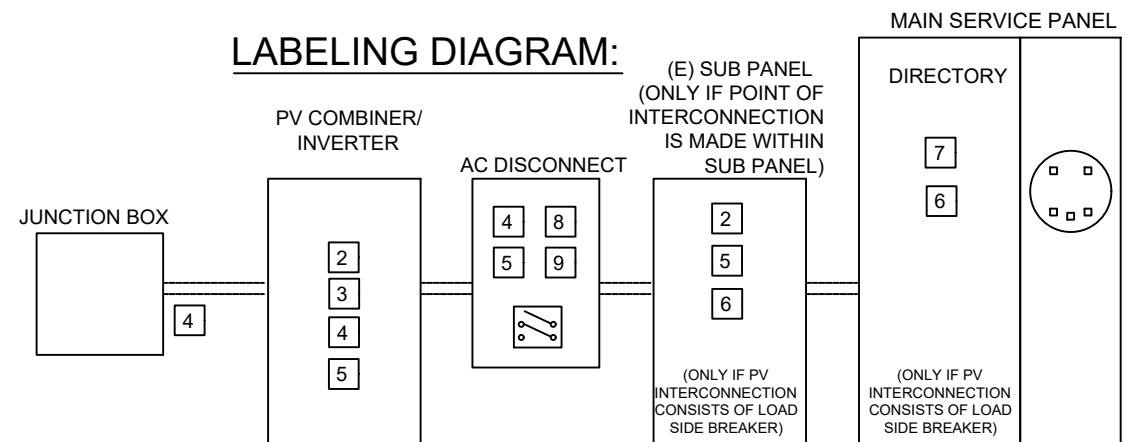


DIRECTORY

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:

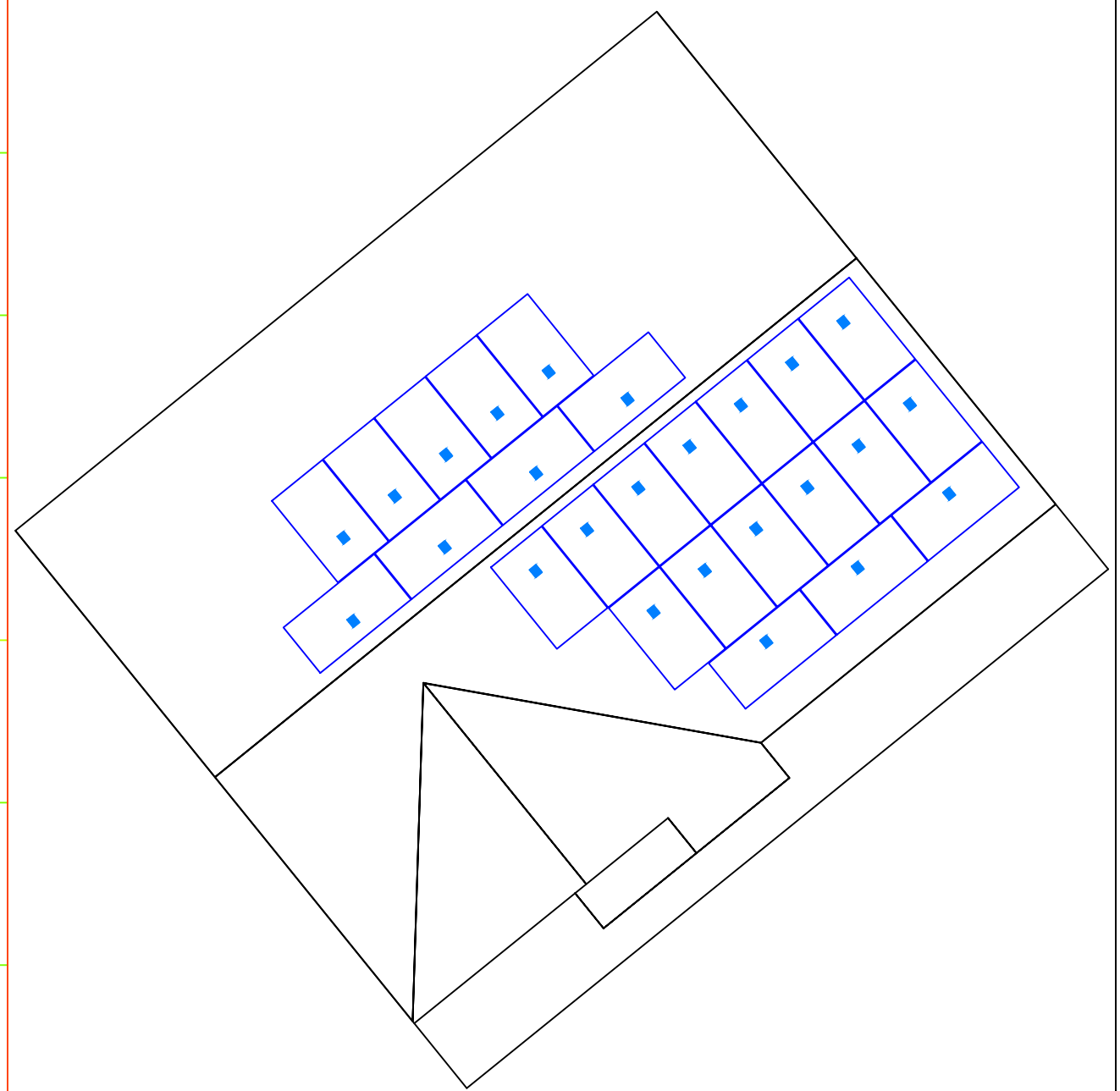
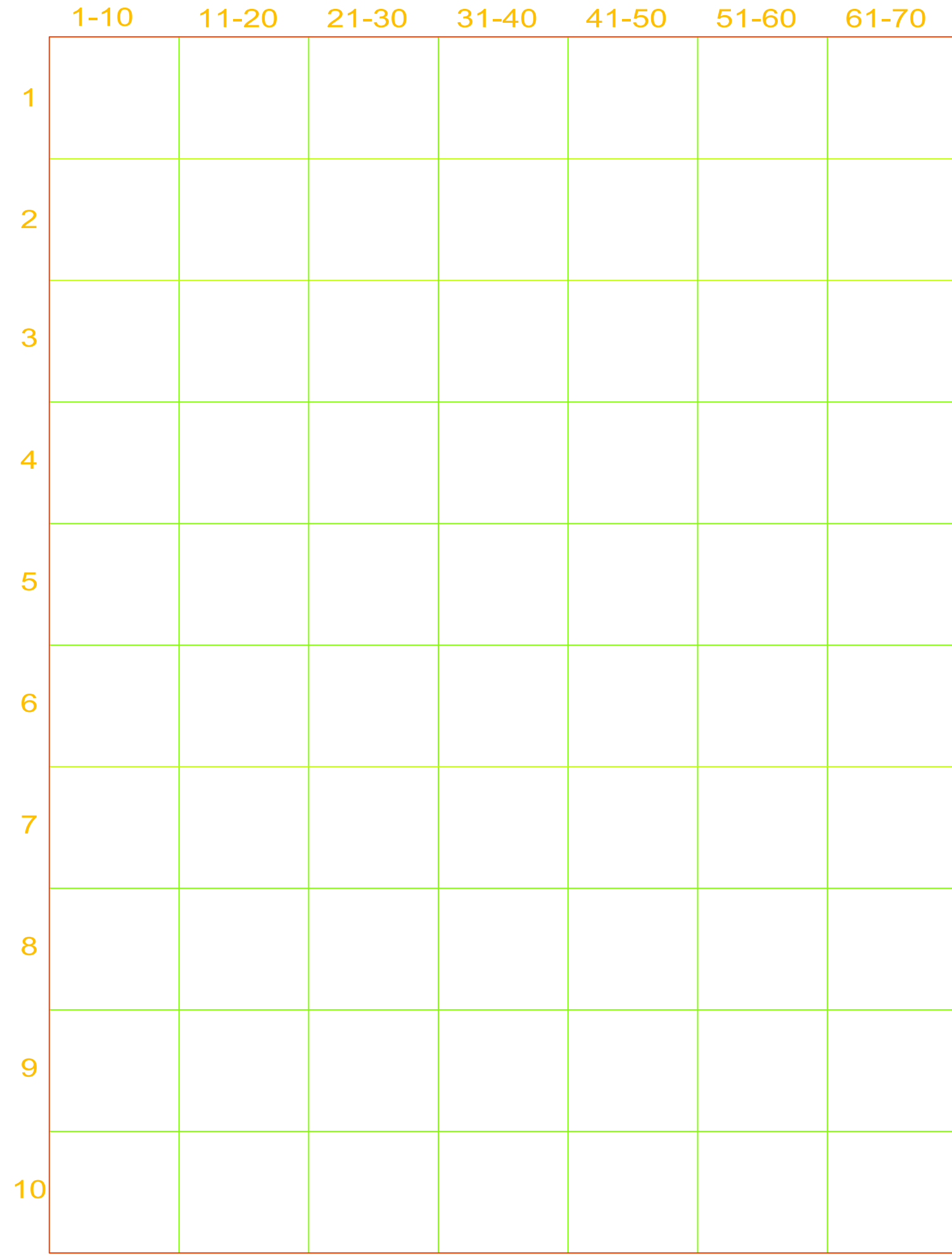


** ELECTRICAL DIAGRAM SHOWN ABOVE IS FOR LABELING PURPOSES ONLY. NOT AN ACTUAL REPRESENTATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VARY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ELECTRICAL DIAGRAM PAGE. **

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]

MICRO INVERTER CHART



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
**MICRO INVERTER
 CHART**

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

SHEET NUMBER
PV-7

SOLAR'S MOST TRUSTED



REC ALPHA PURE SERIES

PRODUCT SPECIFICATIONS



REC ALPHA[®] PURE SERIES

PRODUCT SPECIFICATIONS

COMPACT PANEL SIZE

410 WP
222 W/M²

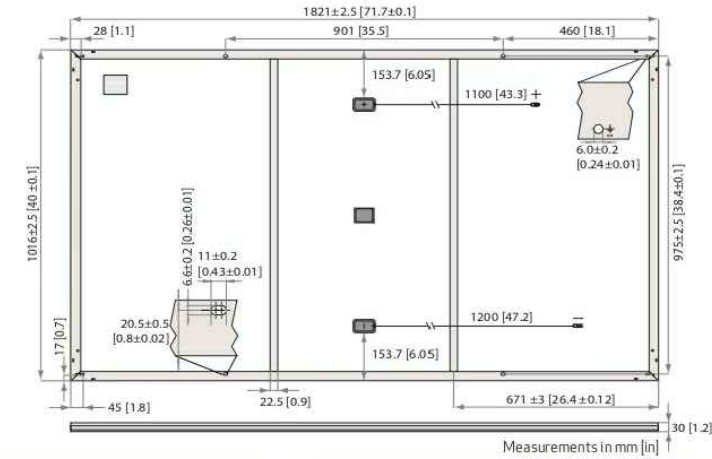


ELIGIBLE



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 mm ²) in accordance with IEC 62852, IP68 only when connected
Cable:	4 mm ² solar cable, 1.1 m + 1.2 m in accordance with EN 50618
Dimensions:	1821 x 1016 x 30 mm (1.85 m ²)
Weight:	20.5 kg
Origin:	Made in Singapore



ELECTRICAL DATA

Product Code*: RECxxxAA Pure

	385	390	395	400	405	410
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/m ²)	208	211	214	216	219	222
Panel Efficiency (%)	20.8	21.1	21.4	21.6	21.9	22.2
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

STC

NMOT

Values at standard test conditions (STC: air mass AM1.5, 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 AM1.5, irradiance 800 W/m², temperature 20°C, wind speed 1 m/s). * Where xxx indicates the nominal power class (P_{MAX}) at STC above.

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (713 kg/m ²)*
Maximum test load (rear):	-4000 Pa (407 kg/m ²)*
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
System Size	All	<25 kW 25-500 kW
Product Warranty (yrs)	20	25
Power Warranty (yrs)	25	25
Labor Warranty (yrs)	0	10
Power in Year 1	98%	98%
Annual Degradation	0.25%	0.25%
Power in Year 25	92%	92%

See warranty documents for details. Conditions apply

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



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

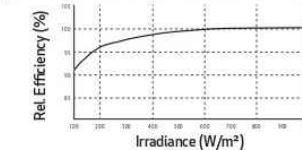
* The temperature coefficients stated are linear values

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



www.recgroup.com



SIGORA SOLAR LLC
490 WESTFIELD RD STE. A
CHARLOTTEVILLE, 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
MODULE
SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-8

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.



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.



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.



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

© 2022 Enphase Energy. All rights reserved. Enphase, the Enphase logo, IQ8 Microinverters, and other names are trademarks of Enphase Energy, Inc. Data subject to change.

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

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

* 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
Overtoltage 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%
Overtoltage 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/IEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 1071-01	
		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 LLC
 490 WESTFIELD RD STE A
 CHARLOTTEVILLE, 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
**INVERTER
 SPECIFICATION**

SHEET SIZE

**ANSI B
 11" X 17"**

SHEET NUMBER

PV-9

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



To learn more about Enphase offerings, visit enphase.com

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



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 COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support 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 • 60 A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors 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 Production metering: ANSI C12.20 accuracy class 0.5 (PV production) 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

© 2022 Enphase Energy. All rights reserved. Enphase, the Enphase logo, IQ Combiner 4/4C, and other names are trademarks of Enphase Energy, Inc. Data subject to change. 02-14-2022



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
COMBINER
SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-10

DESCRIPTION:
SNAPNRACK, UR-40 RAIL

DRAWN BY:
mwatkins

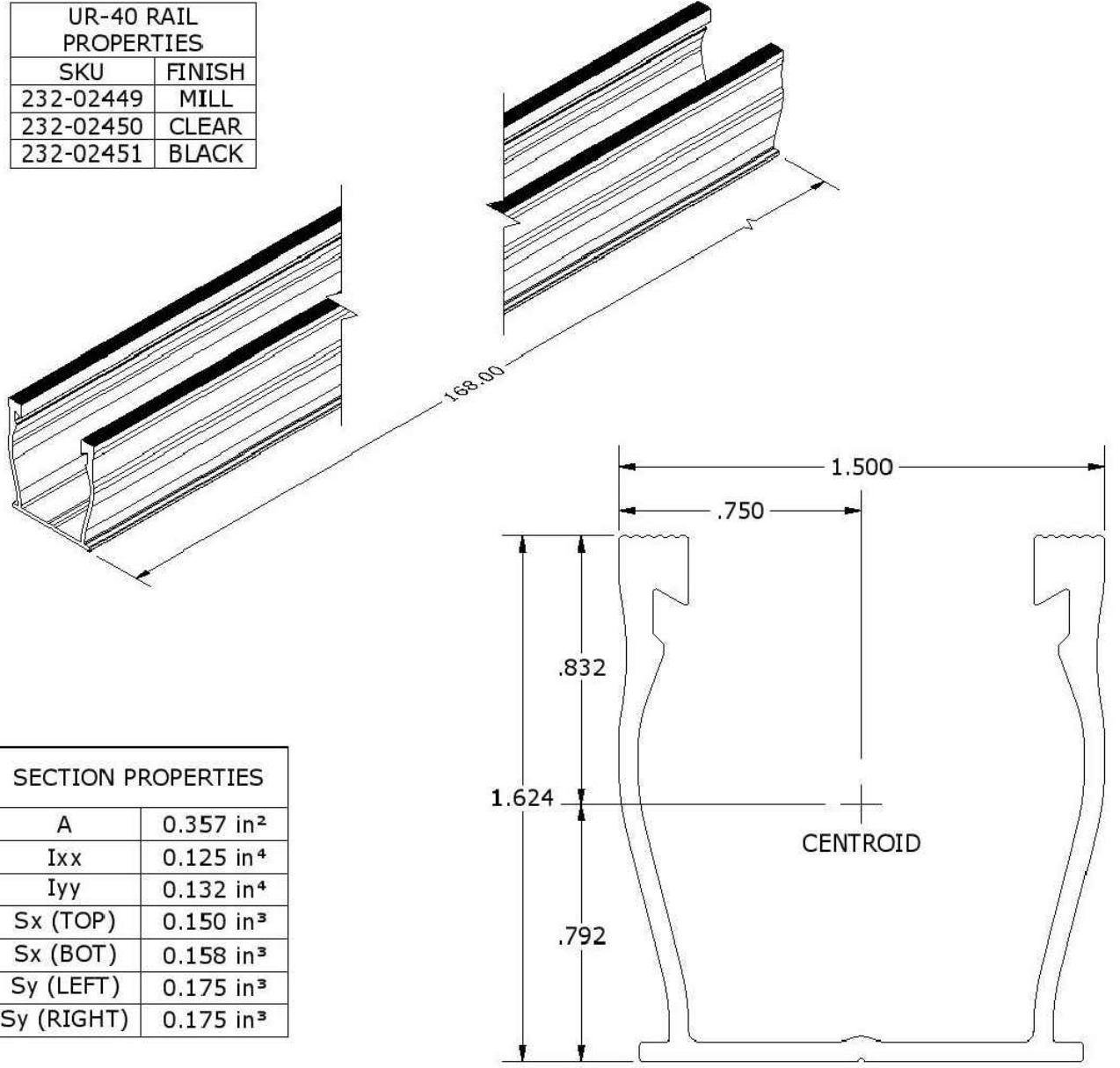


PART NUMBER(S):
232-02449, 232-02450, 232-02451

REVISION:
B

595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA.
PHONE (415) 580-6900 • FAX (415) 580-6902
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 in ²
I _{xx}	0.125 in ⁴
I _{yy}	0.132 in ⁴
S _x (TOP)	0.150 in ³
S _x (BOT)	0.158 in ³
S _y (LEFT)	0.175 in ³
S _y (RIGHT)	0.175 in ³

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	



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

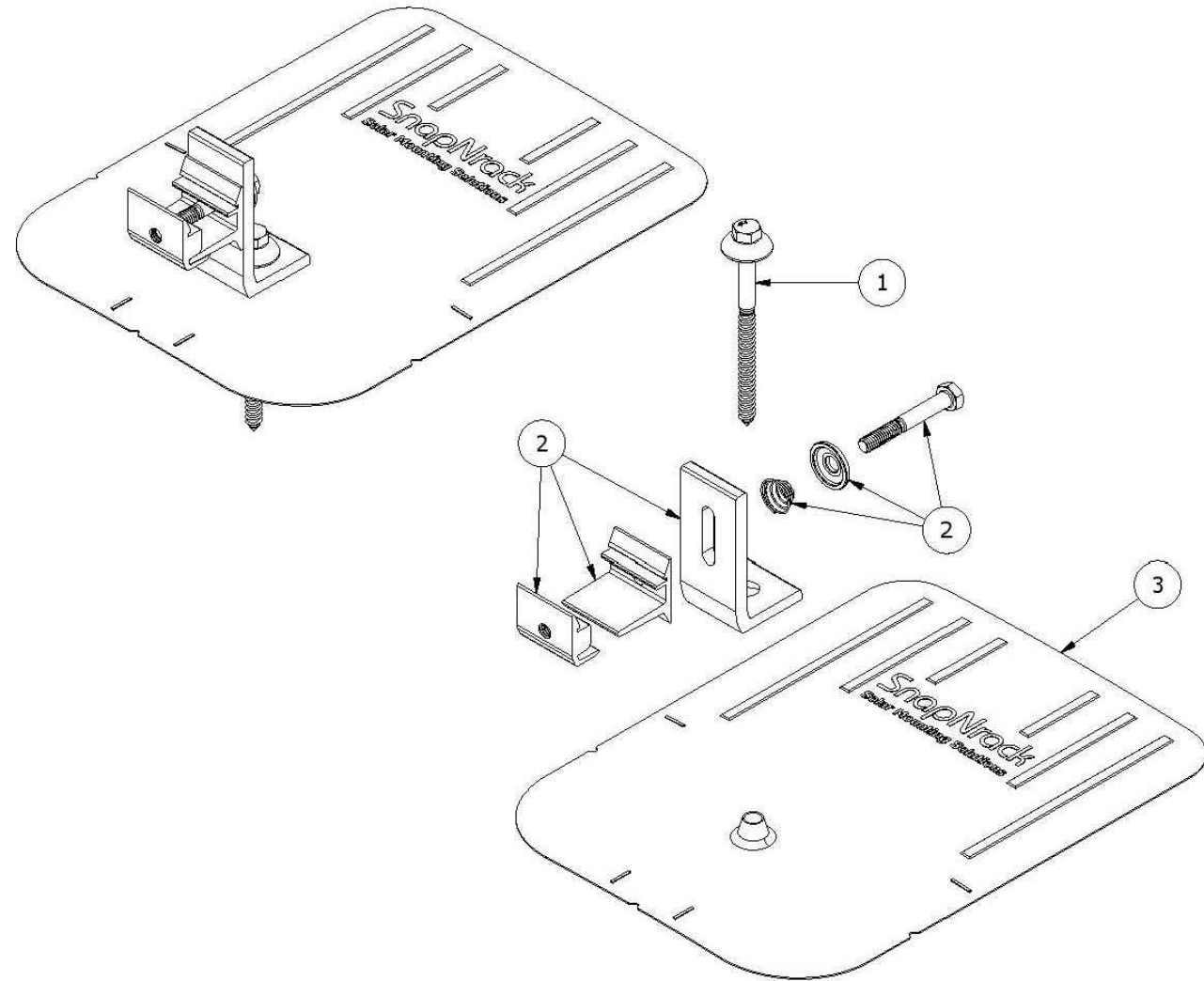
SHEET NAME
RAIL SPECIFICATION

SHEET SIZE
ANSI B 11" X 17"

SHEET NUMBER
PV-11

DESCRIPTION: SNAPNRACK, ULTRA RAIL COMP KIT	DRAWN BY: mwatkins	
PART NUMBER(S): SEE BELOW	REVISION: B	

595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 550-6900 • FAX (415) 550-6902
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.

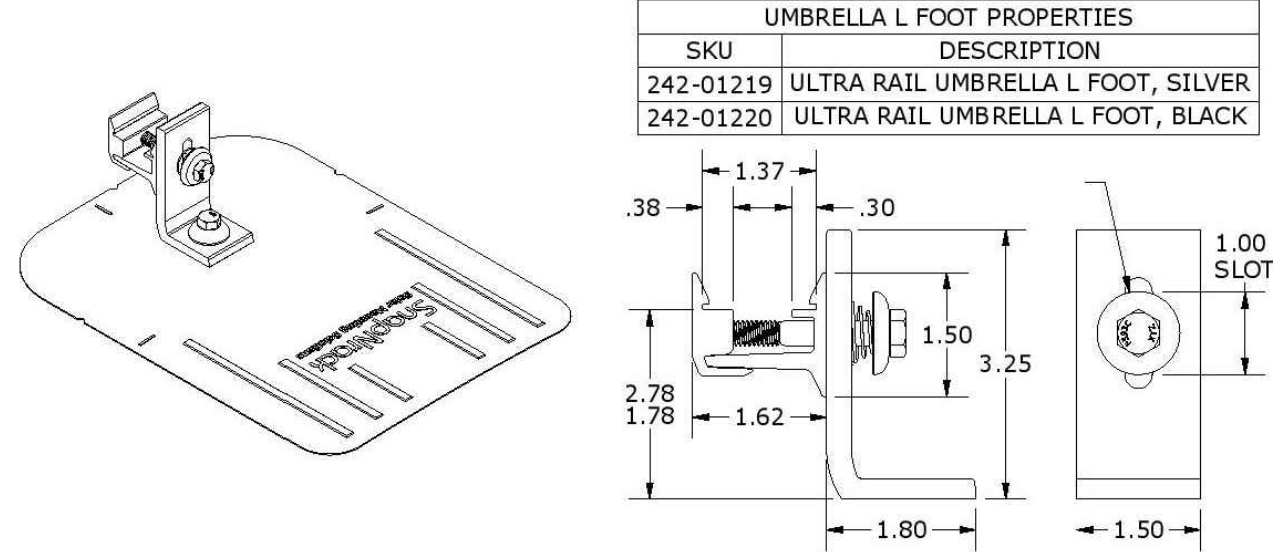


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	242-92266	SNAPNRACK, UMBRELLA LAG, TYPE 3, 4IN, SS
2	1	242-01219, 242-01220	SNAPNRACK, ULTRA FOOT FOR U FLASHING, SILVER / BLACK
3	1	232-01375, 232-01376	SNAPNRACK, COMP FLASHING, 9IN X 12IN, SILVER / BLACK ALUM

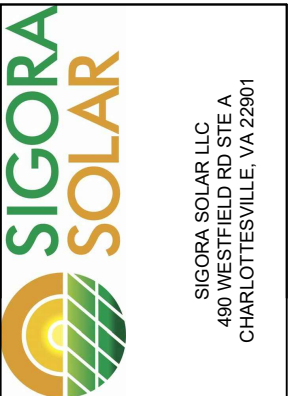
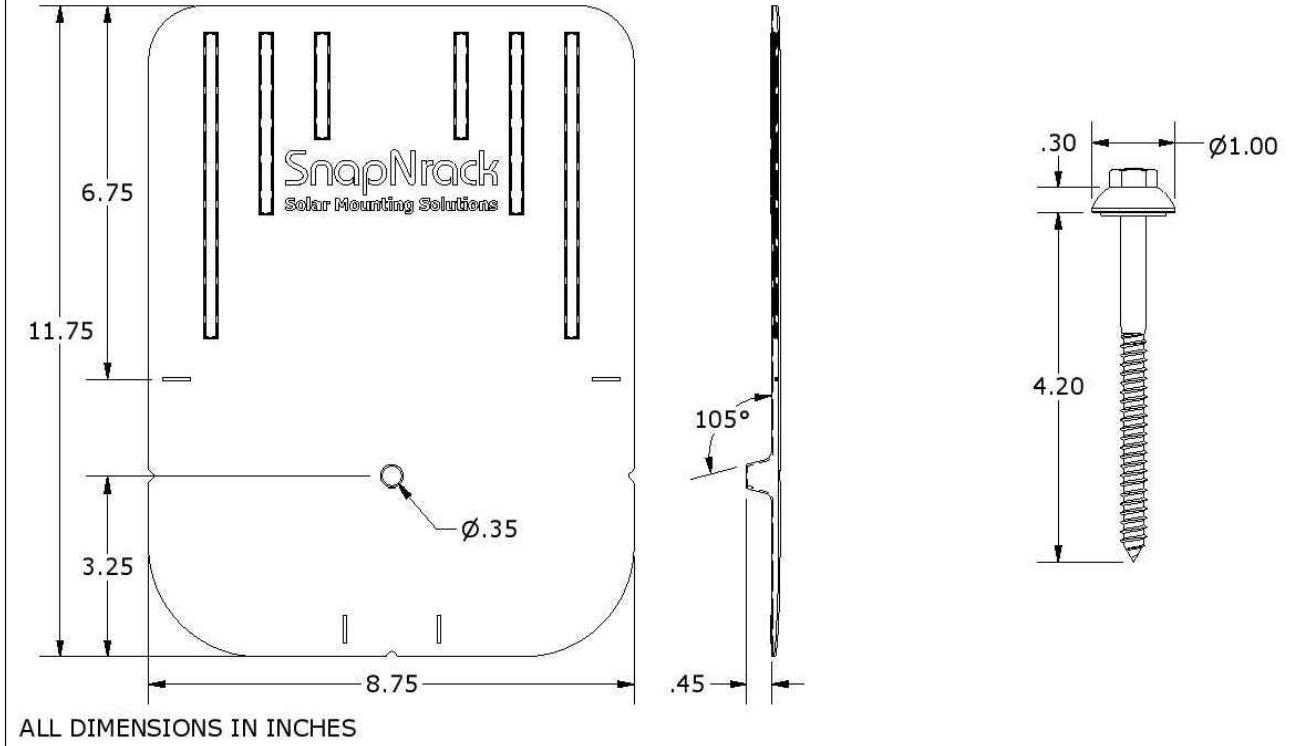
MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL, RUBBER
DESIGN LOAD (LBS):	802 UP, 1333 DOWN, 356 SIDE
ULTIMATE LOAD (LBS):	2005 UP, 4000 DOWN, 1070 SIDE
TORQUE SPECIFICATION:	12 LB-FT
CERTIFICATION:	UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM UL SUBJECT 2582
WEIGHT (LBS):	0.80

DESCRIPTION: SNAPNRACK, ULTRA RAIL COMP KIT	DRAWN BY: mwatkins	
PART NUMBER(S): SEE BELOW	REVISION: B	

595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 550-6900 • FAX (415) 550-6902
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.



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



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 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.



SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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

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.

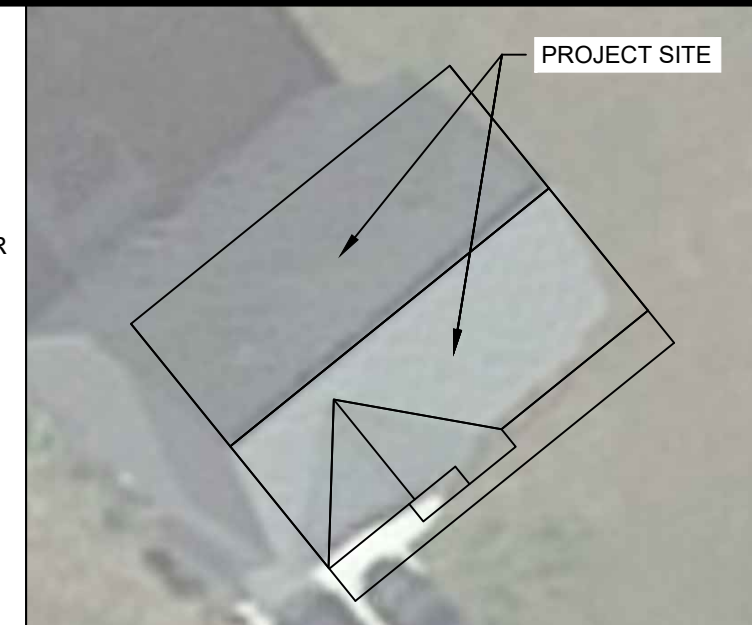
AUTHORITIES HAVING JURISDICTION:
 BUILDING: HARNETT, COUNTY OF (NC)
 ZONING: HARNETT, COUNTY OF (NC)

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



PROJECT SITE



SIGORA SOLAR LLC
 490 WESTFIELD RD STE A
 CHARLOTTEVILLE, 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
**PLOT PLAN WITH
 ROOF PLAN**

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

SHEET NUMBER
PV-1

2 HOUSE PHOTO

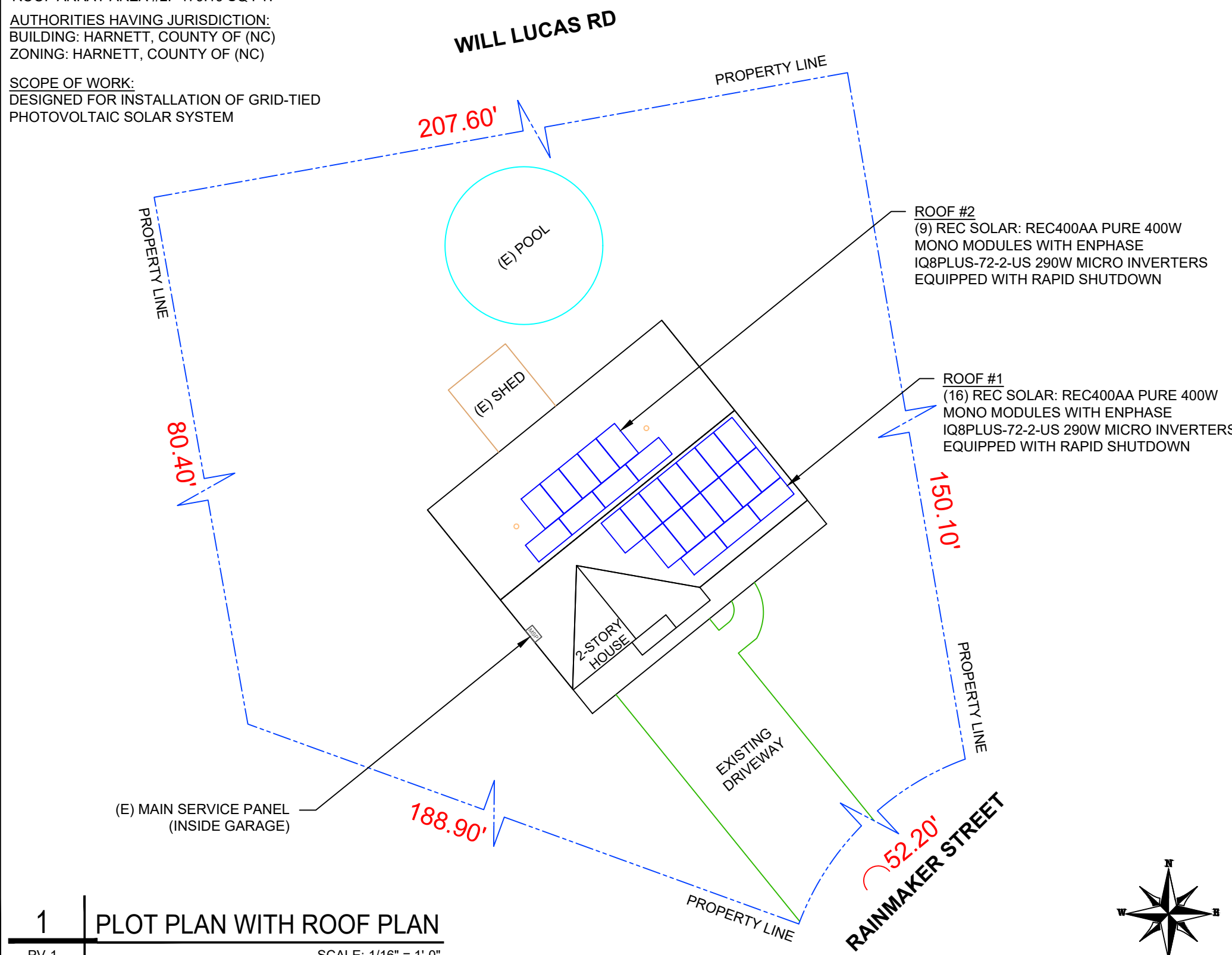
PV-1 | SCALE: NTS



3 VICINITY MAP

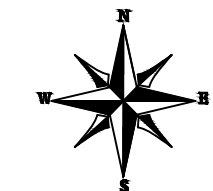
PV-1 | SCALE: NTS

SHEET INDEX	
PV-1	PLOT PLAN WITH ROOF PLAN
PV-2	ROOF PLAN & MODULES
PV-2A	CIRCUIT LAYOUT
PV-3	ATTACHMENT DETAIL
PV-4	ELECTRICAL LINE DIAGRAM
PV-5	LABELS
PV-6	PLACARD
PV-7	MICRO INVERTER CHART
PV-8	MODULE SPECIFICATIONS
PV-9	INVERTER SPECIFICATIONS
PV-10	COMBINER SPECIFICATIONS
PV-11	RAIL SPECIFICATIONS
PV-12	ATTACHMENT SPECIFICATIONS
PV-13	SOLADECK SPECIFICATIONS



1 PLOT PLAN WITH ROOF PLAN

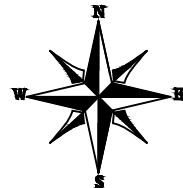
PV-1 | SCALE: 1/16" = 1'-0"



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"

SIGORA SOLAR LLC
 490 WESTFIELD RD STE A
 CHARLOTTEVILLE, 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

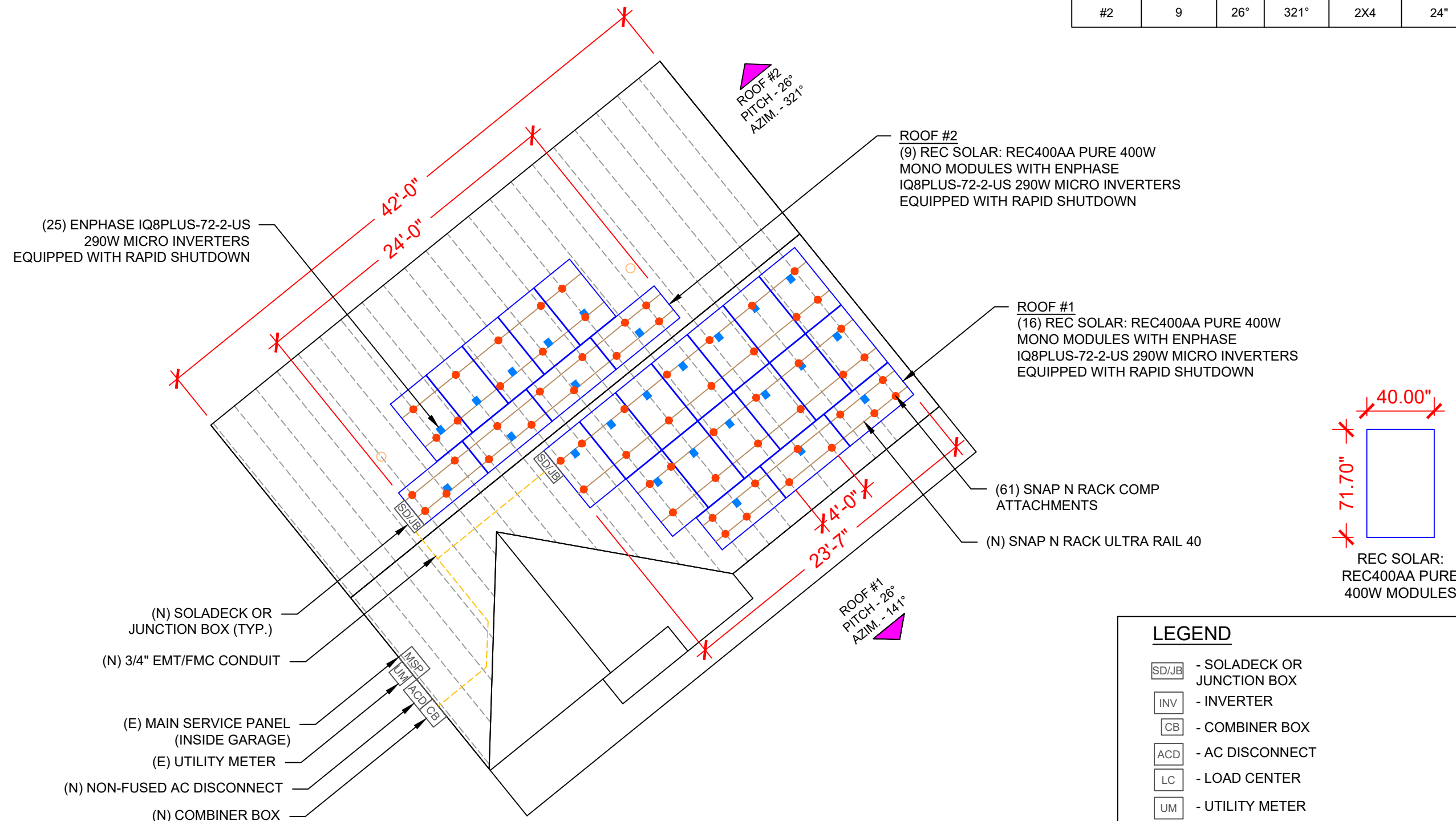
SHEET NAME
ROOF PLAN & MODULES

SHEET SIZE

ANSI B
 11" X 17"

SHEET NUMBER

PV-2





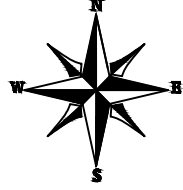
LEGEND	
	- SOLADECK OR JUNCTION BOX
	- INVERTER
	- COMBINER BOX
	- AC DISCONNECT
	- LOAD CENTER
	- UTILITY METER
	- MAIN SERVICE PANEL
	- VENT, ATTIC FAN (ROOF OBSTRUCTION)
	- ROOF ATTACHMENT
	- TRUSS
	- CONDUIT

1 ROOF PLAN & MODULES

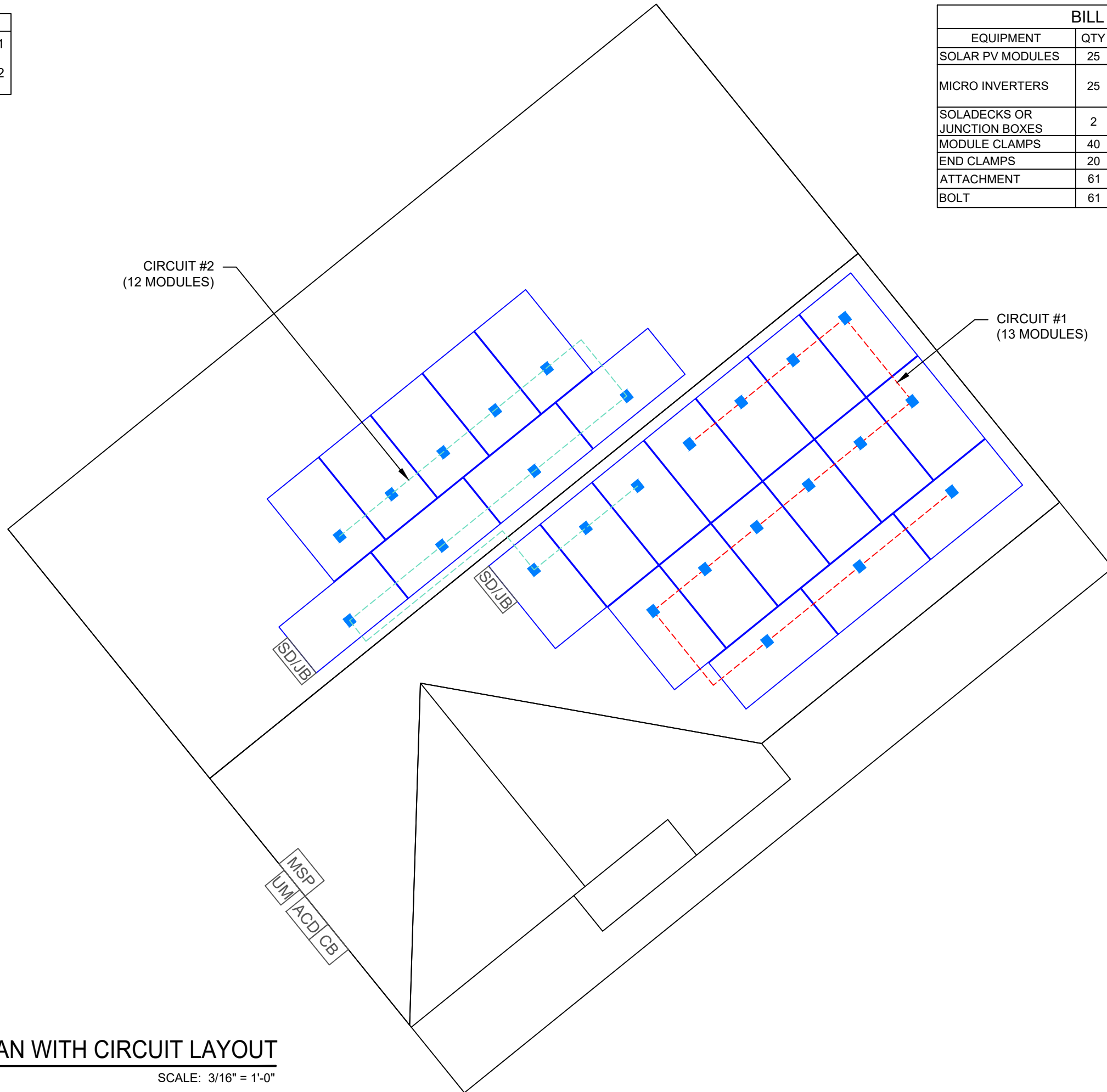

PV-2

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

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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"

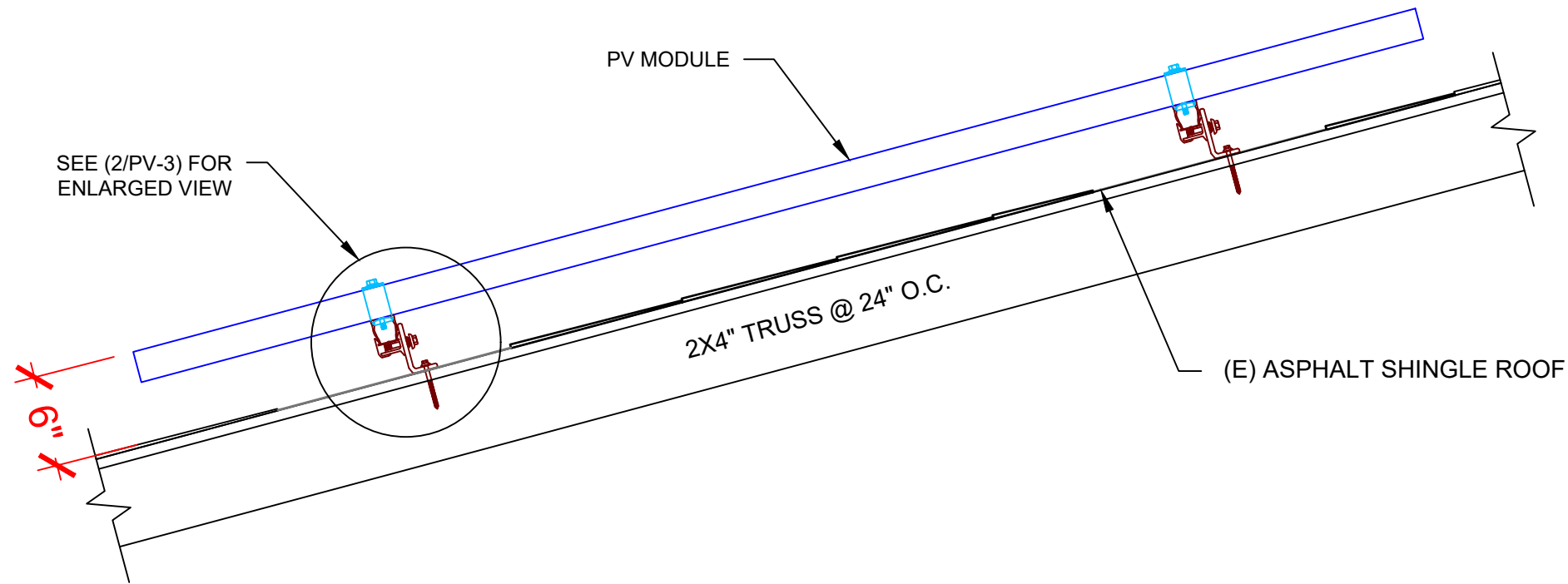
SHEET NUMBER

PV-2A

1 ROOF PLAN WITH CIRCUIT LAYOUT

PV-2A

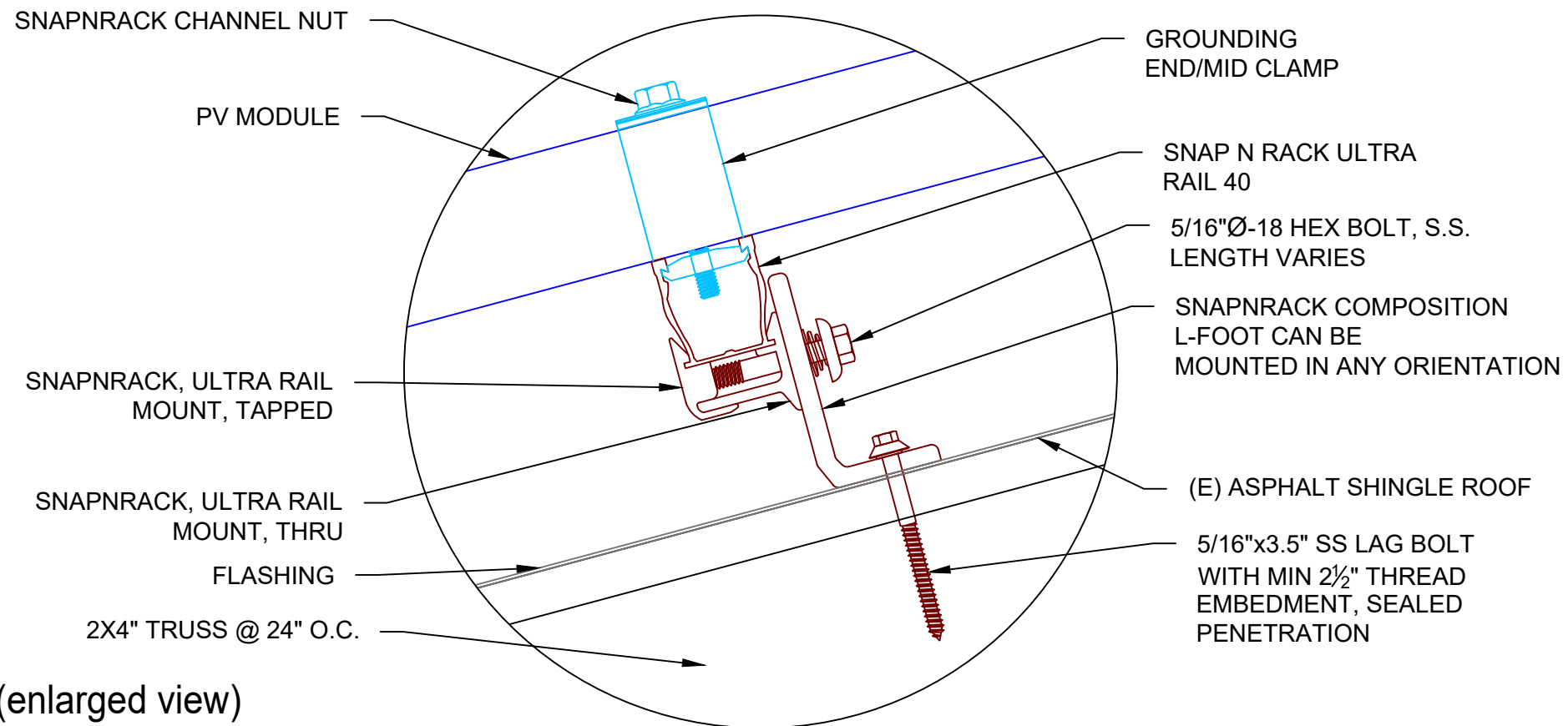
SCALE: 3/16" = 1'-0"



1 | **STRUCTURAL ATTACHMENT (SIDE VIEW)**

PV-3

SCALE: N.T.S



2 | **ATTACHMENT DETAIL (enlarged view)**

PV-3

SCALE: N.T.S



SIGORA SOLAR LLC
490 WESTFIELD RD STE. A
CHARLOTTEVILLE, 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:

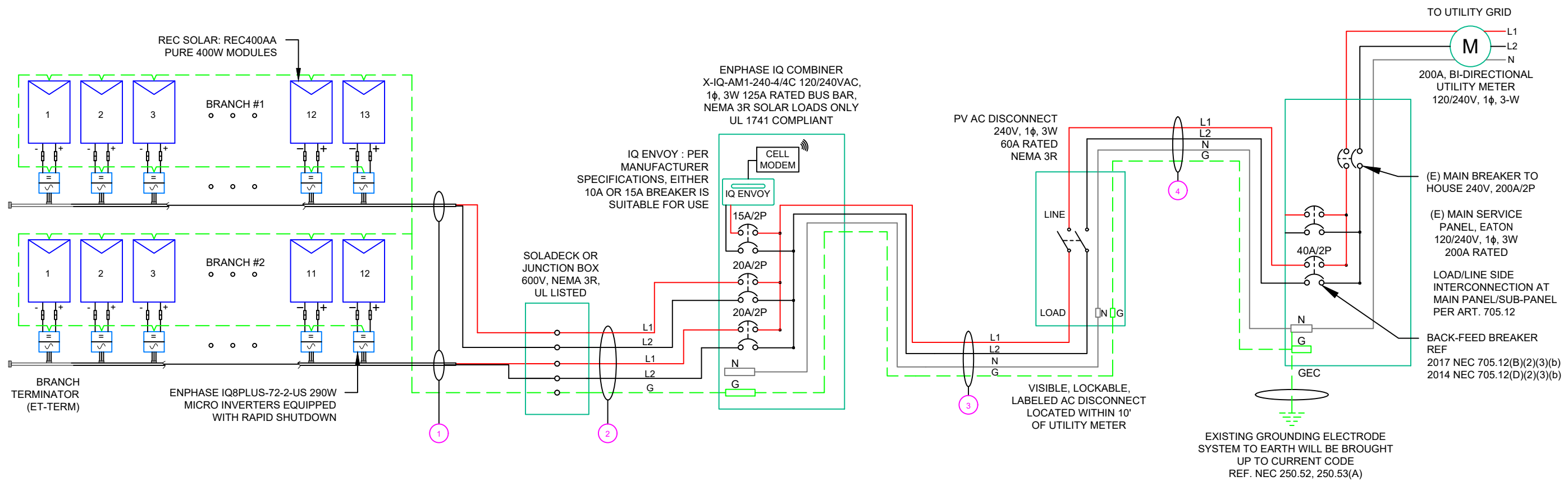
1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS)
2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH

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.



SIGORA SOLAR

SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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

ELECTRICAL LINE DIAGRAM

SHEET SIZE

**ANSI B
11" X 17"**

SHEET NUMBER

PV-4

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		
(2)	#8AWG - CU, THWN-2	EMT, LFMC OR PVC	3/4"
③ (1)	#8AWG - CU, THWN-2 N		
(1)	#10AWG - CU, THWN-2 GND		
(2)	#8AWG - CU, THWN-2	EMT, LFMC OR PVC	3/4"
④ (1)	#8AWG - CU, THWN-2 N		
(1)	#10AWG - CU, THWN-2 GND		

**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

LABEL 2

AT EACH PV DISCONNECTING MEANS

NEC 690.13(B)

(NOT USED FOR ENPHASE MICROINVERTERS)

DC DISCONNECT

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

LABEL 4

AT AC DISCONNECT

NEC 690.13(B)

AC DISCONNECT

PHOTOVOLTAIC AC DISCONNECT

LABEL 5

AT AC DISCONNECT

NEC 690.54

RATED AC OUTPUT CURRENT:
 NOMINAL OPERATING AC VOLTAGE:

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)



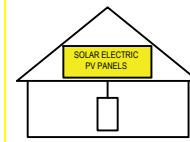
WARNING: DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

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

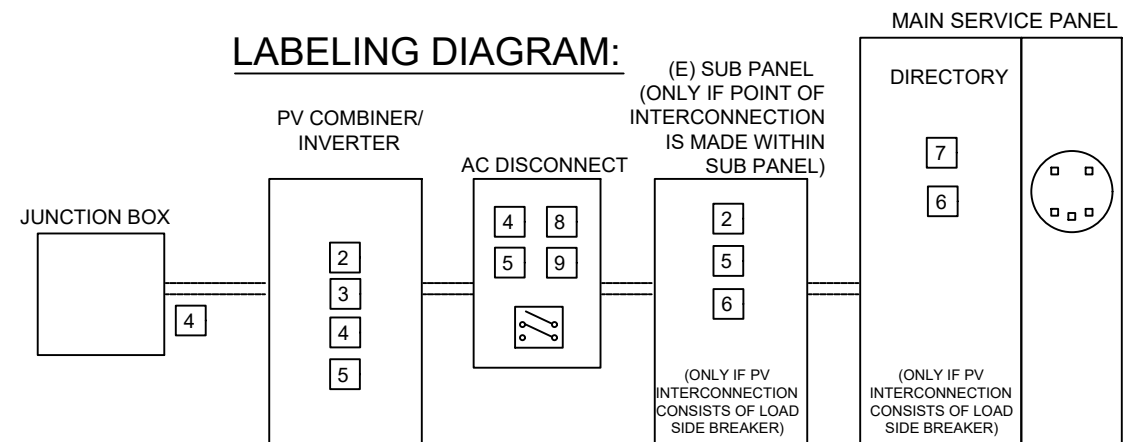
FOR PV SYSTEMS THAT SHUT DOWN THE ARRAY AND CONDUCTORS LEAVING THE ARRAY:
SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT AWAY FROM SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION.
[NEC 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 REPRESENTATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VARY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ELECTRICAL DIAGRAM PAGE. **



SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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

LABELS

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-5



SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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

PLACARD

SHEET SIZE

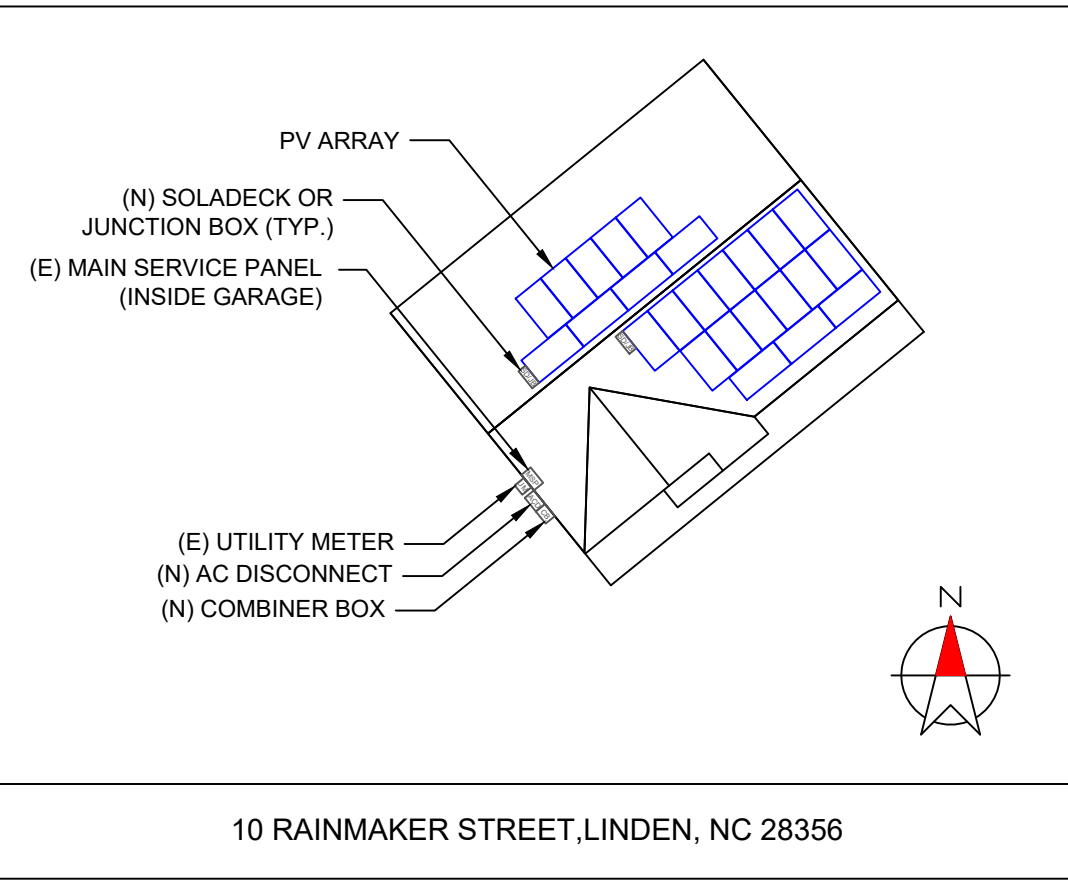
ANSI B
11" X 17"

SHEET NUMBER

PV-6

CAUTION

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

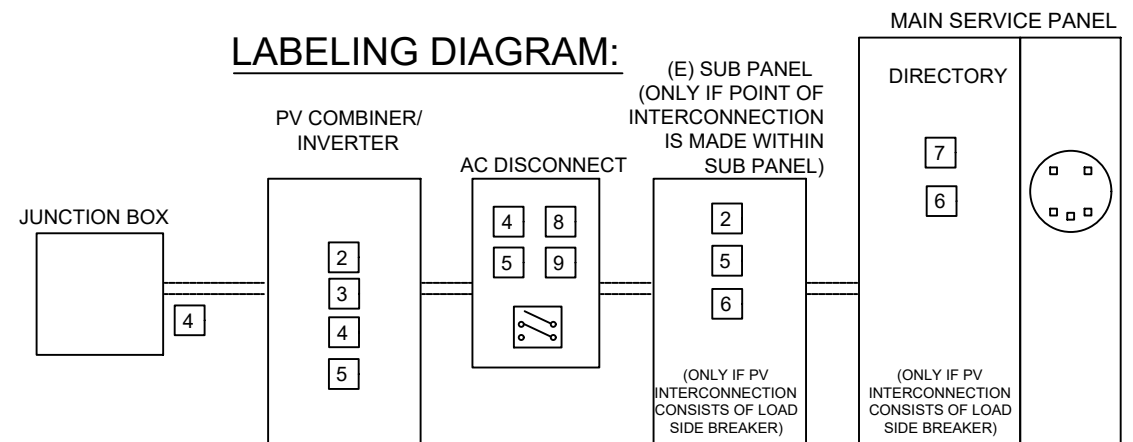


DIRECTORY

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:

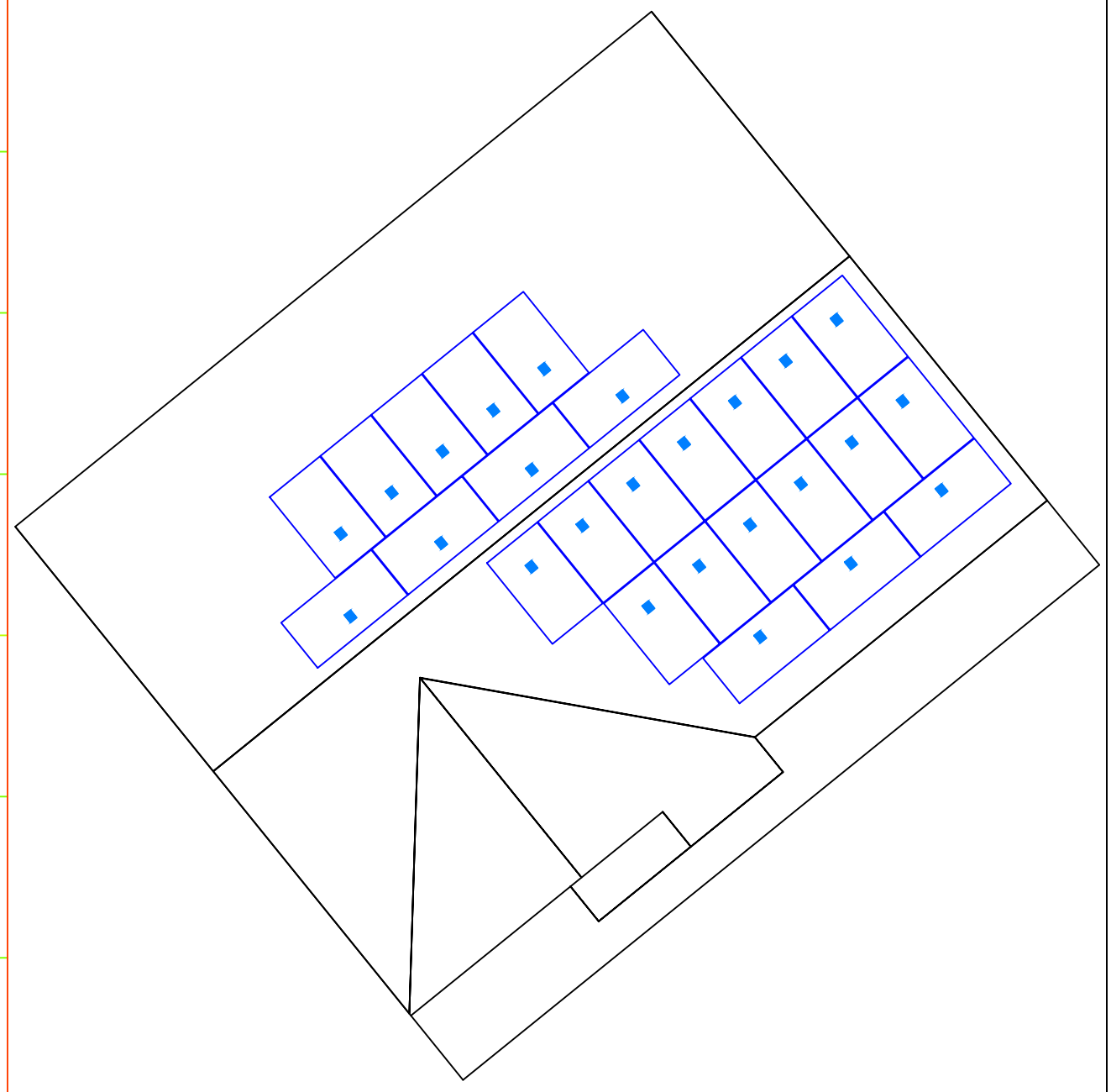
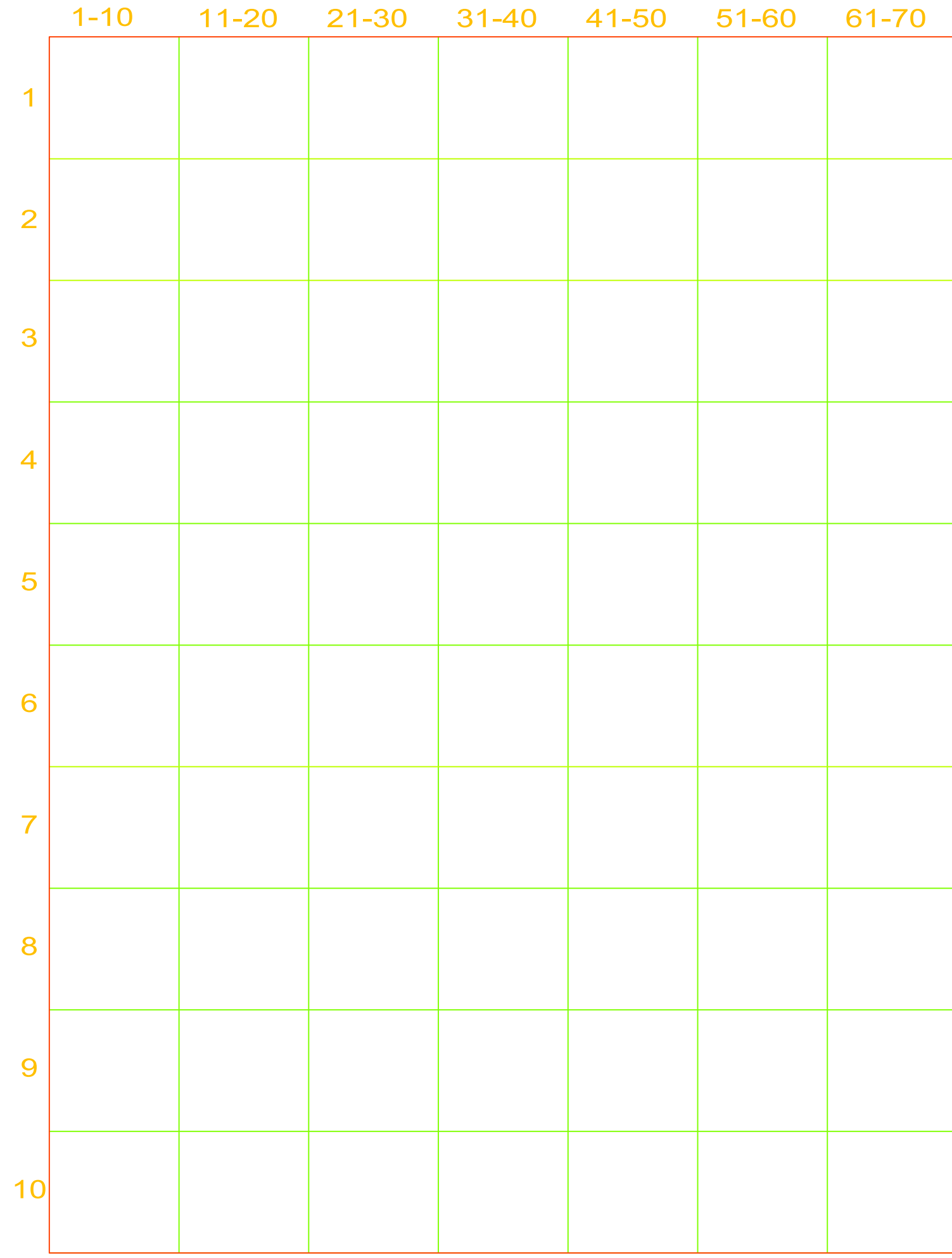


** ELECTRICAL DIAGRAM SHOWN ABOVE IS FOR LABELING PURPOSES ONLY. NOT AN ACTUAL REPRESENTATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VARY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ELECTRICAL DIAGRAM PAGE. **

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]

MICRO INVERTER CHART



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
**MICRO INVERTER
 CHART**

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

SHEET NUMBER
PV-7

SOLAR'S MOST TRUSTED



REC ALPHA PURE SERIES

PRODUCT SPECIFICATIONS



REC ALPHA[®] PURE SERIES

PRODUCT SPECIFICATIONS

COMPACT PANEL SIZE

410 WP
222 W/M²

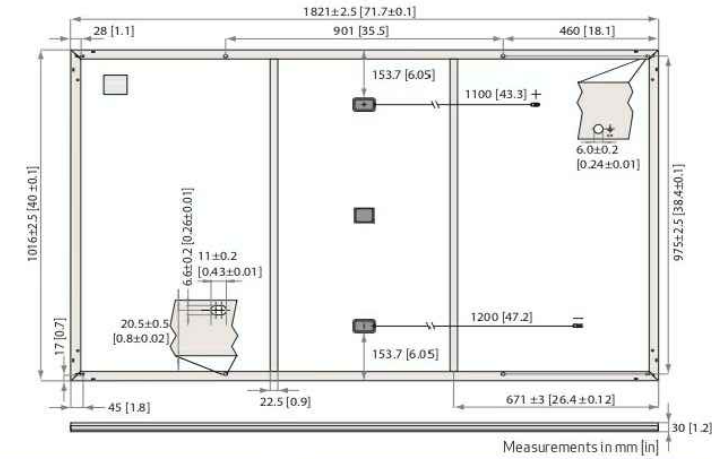


ELIGIBLE



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 mm ²) in accordance with IEC 62852, IP68 only when connected
Cable:	4 mm ² solar cable, 1.1 m + 1.2 m in accordance with EN 50618
Dimensions:	1821 x 1016 x 30 mm (1.85 m ²)
Weight:	20.5 kg
Origin:	Made in Singapore



ELECTRICAL DATA

Product Code*: RECxxxAA Pure

	385	390	395	400	405	410
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/m ²)	208	211	214	216	219	222
Panel Efficiency (%)	20.8	21.1	21.4	21.6	21.9	22.2
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

STC

NMOT

Values at standard test conditions (STC: air mass AM1.5, 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 AM1.5, irradiance 800 W/m², temperature 20°C, wind speed 1 m/s). * Where xxx indicates the nominal power class (P_{MAX}) at STC above.

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (713 kg/m ²)*
Maximum test load (rear):	-4000 Pa (407 kg/m ²)*
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
System Size	All	<25 kW 25-500 kW
Product Warranty (yrs)	20	25
Power Warranty (yrs)	25	25
Labor Warranty (yrs)	0	25
Power in Year 1	98%	98%
Annual Degradation	0.25%	0.25%
Power in Year 25	92%	92%

See warranty documents for details. Conditions apply

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



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

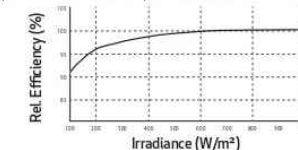
* The temperature coefficients stated are linear values

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



www.recgroup.com



SIGORA SOLAR LLC
490 WESTFIELD RD STE. A
CHARLOTTEVILLE, 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
MODULE
SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-8

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.



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.



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.



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

© 2022 Enphase Energy. All rights reserved. Enphase, the Enphase logo, IQ8 Microinverters, and other names are trademarks of Enphase Energy, Inc. Data subject to change.

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

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

* 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
Overtoltage 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%
Overtoltage 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/IEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 1071-01	
		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 LLC
 490 WESTFIELD RD STE A
 CHARLOTTEVILLE, 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
**INVERTER
 SPECIFICATION**

SHEET SIZE

**ANSI B
 11" X 17"**

SHEET NUMBER

PV-9

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



To learn more about Enphase offerings, visit enphase.com

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



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 COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support 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 • 60 A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors 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 Production metering: ANSI C12.20 accuracy class 0.5 (PV production) 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

© 2022 Enphase Energy. All rights reserved. Enphase, the Enphase logo, IQ Combiner 4/4C, and other names are trademarks of Enphase Energy, Inc. Data subject to change. 02-14-2022



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
COMBINER
SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-10

DESCRIPTION:
SNAPNRACK, UR-40 RAIL

DRAWN BY:
mwatkins

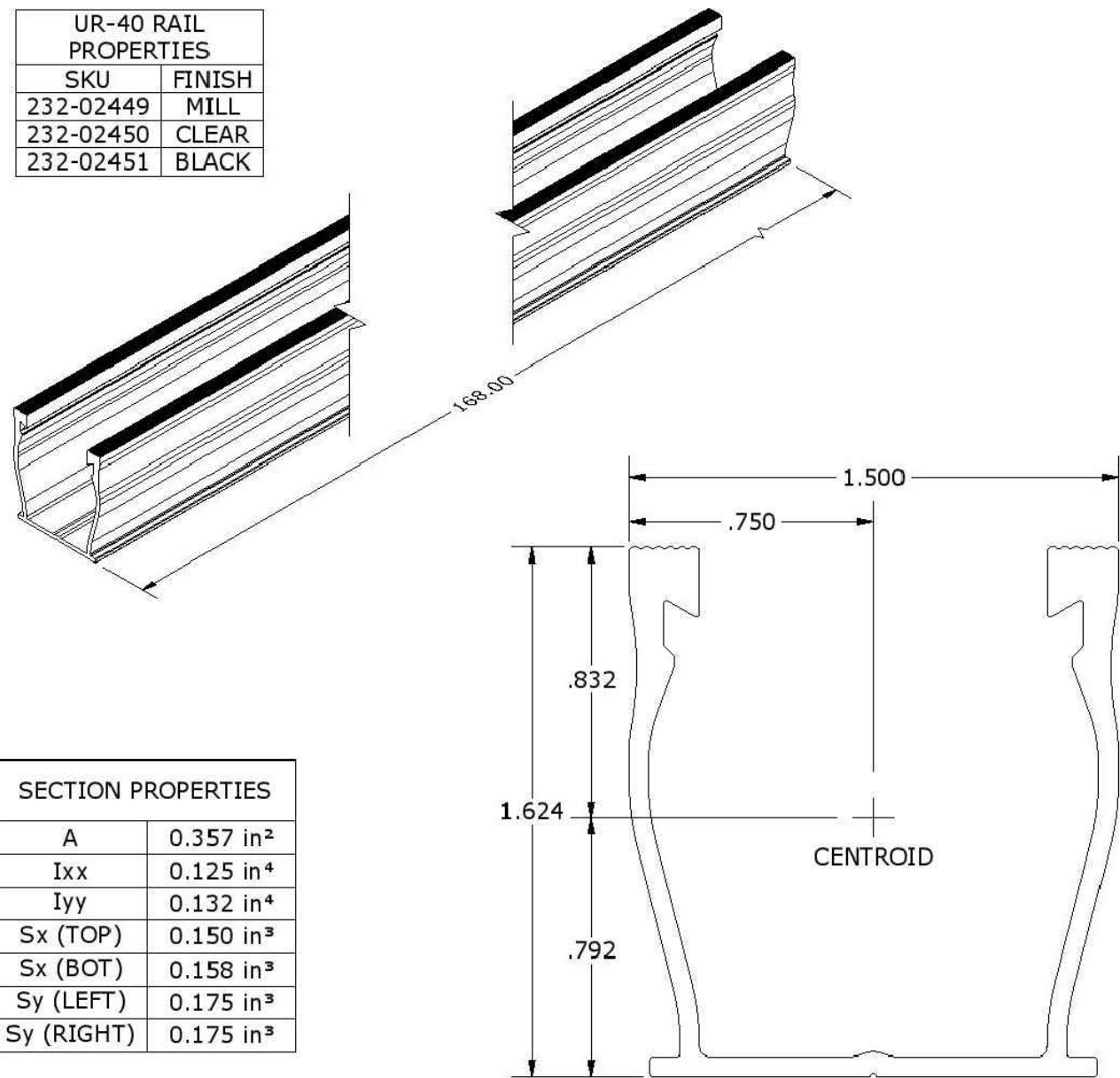


PART NUMBER(S):
232-02449, 232-02450, 232-02451

REVISION:
B

595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA.
PHONE (415) 580-6900 • FAX (415) 580-6902
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 in ²
I _{xx}	0.125 in ⁴
I _{yy}	0.132 in ⁴
S _x (TOP)	0.150 in ³
S _x (BOT)	0.158 in ³
S _y (LEFT)	0.175 in ³
S _y (RIGHT)	0.175 in ³

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 LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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


RAIL
SPECIFICATION

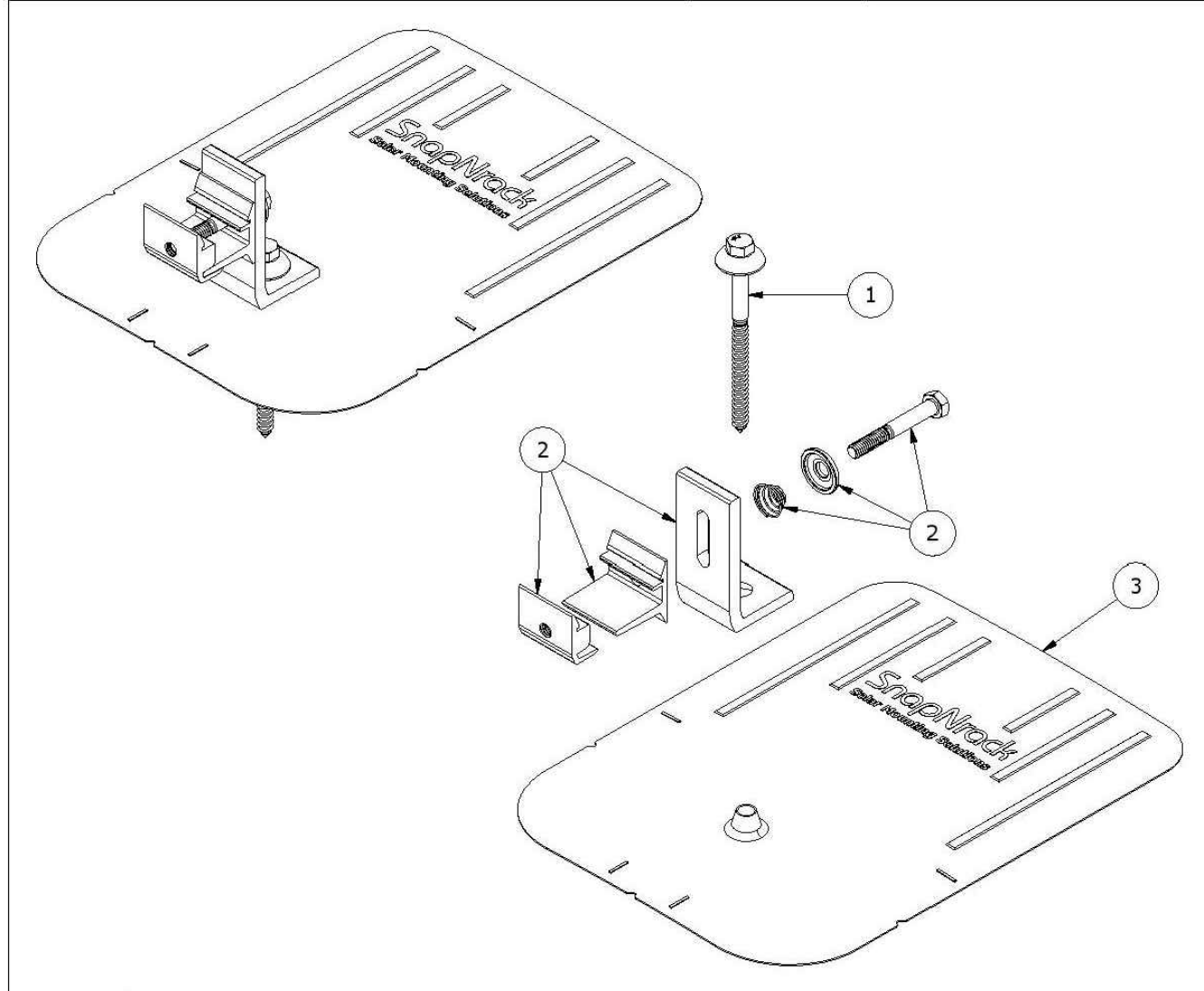
SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-11

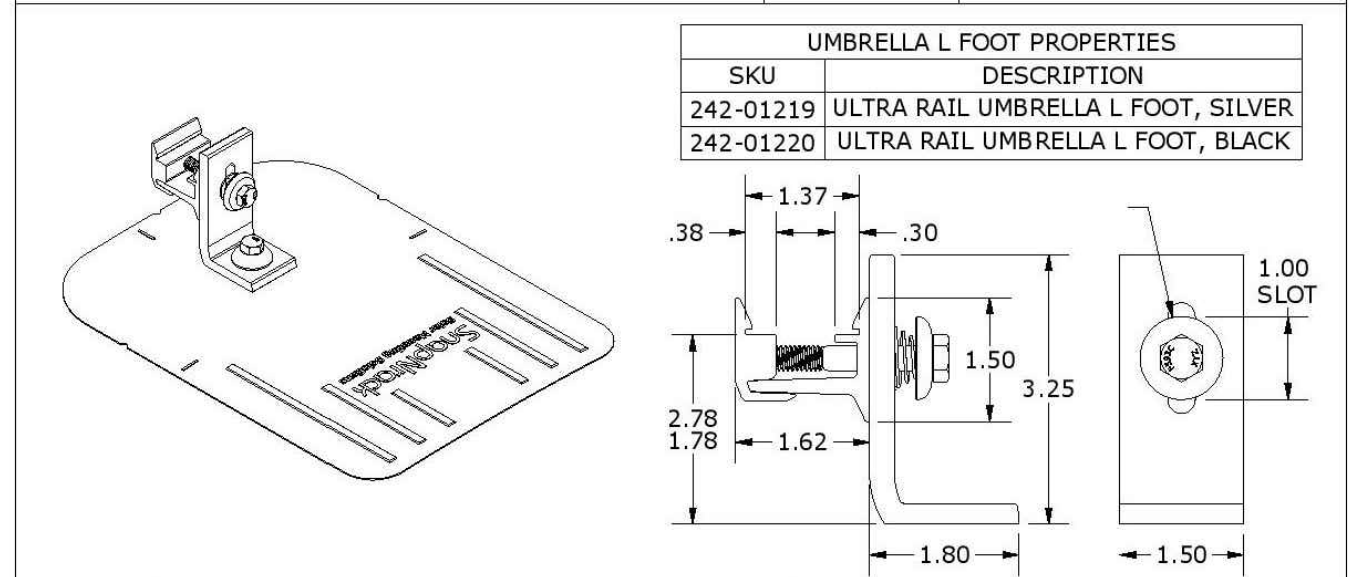
DESCRIPTION: SNAPNRACK, ULTRA RAIL COMP KIT	DRAWN BY: mwatkins	
PART NUMBER(S): SEE BELOW	REVISION: B	



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

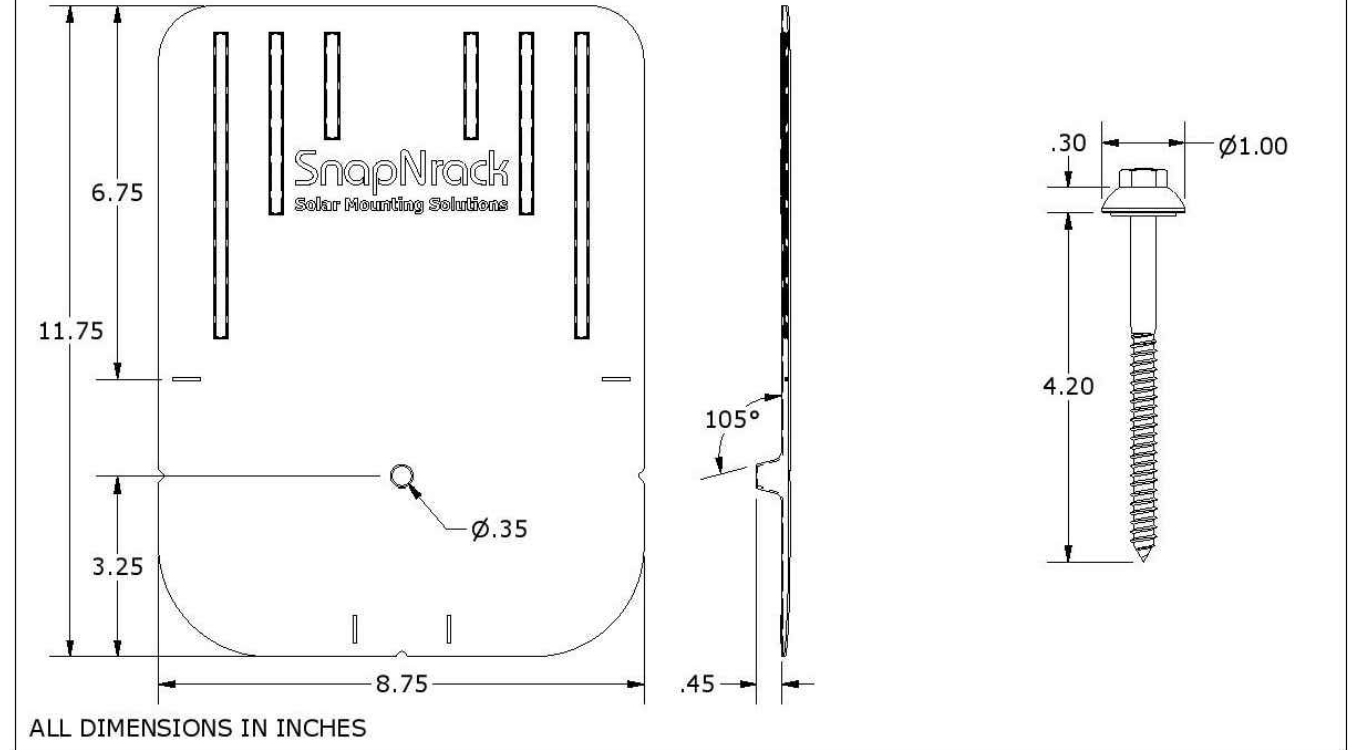
MATERIALS:	6000 SERIES ALUMINUM, STAINLESS STEEL, RUBBER
DESIGN LOAD (LBS):	802 UP, 1333 DOWN, 356 SIDE
ULTIMATE LOAD (LBS):	2005 UP, 4000 DOWN, 1070 SIDE
TORQUE SPECIFICATION:	12 LB-FT
CERTIFICATION:	UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM UL SUBJECT 2582
WEIGHT (LBS):	0.80

DESCRIPTION: SNAPNRACK, ULTRA RAIL COMP KIT	DRAWN BY: mwatkins	
PART NUMBER(S): SEE BELOW	REVISION: B	



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

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
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.



SIGORA SOLAR LLC
490 WESTFIELD RD STE A
CHARLOTTEVILLE, 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

SOLADECK
SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-13





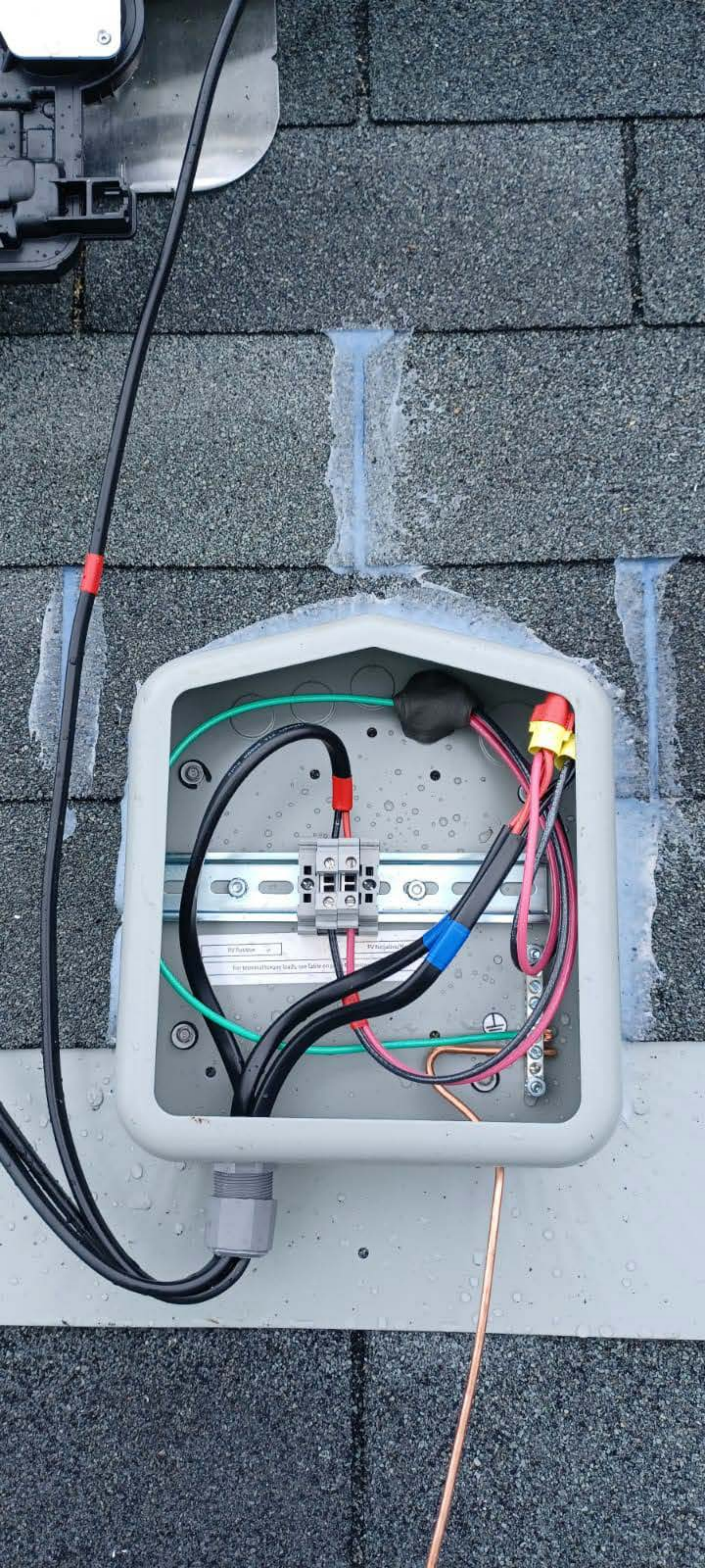








SOLADECK
SOLAR PANEL CONNECTOR
12VDC 10A
UL LISTED
E166433
WARNING
AVERTISSEMENT
ATTENTION: This device is not to be used in wet or damp conditions.
ATTENTION: Ce dispositif n'est pas à utiliser dans des conditions humides ou humides.
ATTENTION: This device is not to be used in wet or damp conditions.
ATTENTION: Ce dispositif n'est pas à utiliser dans des conditions humides ou humides.



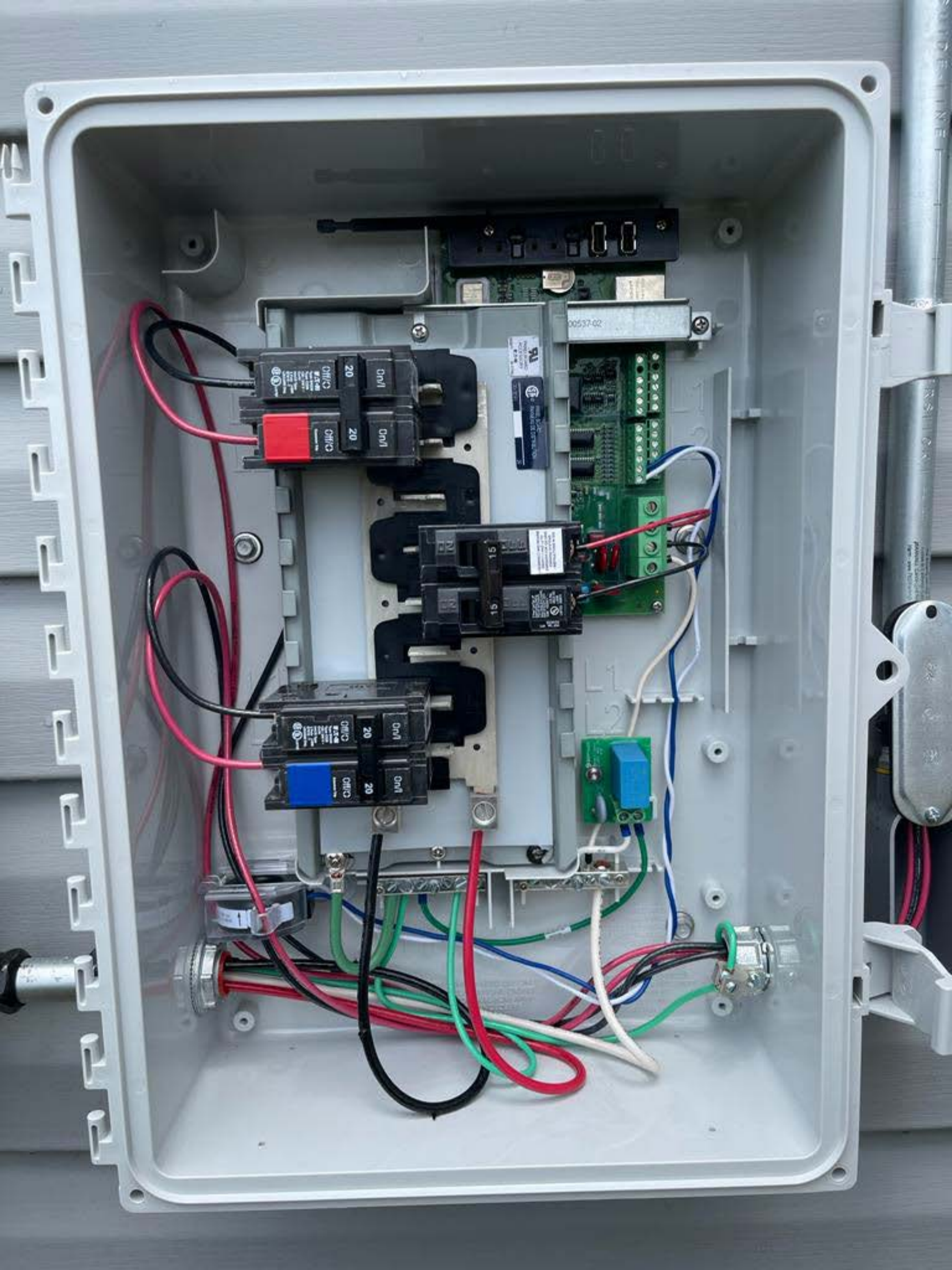
WARNING PHOTOVOLTAIC
POWER SOURCE

VHT









Cleaning cap included - Clean hubs separately per hub
ch. below

CONDUIT	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
PLUG NO.	B-975	B-100	B-125	B-150	B-200	B-250

INSPECTED BY / INSPECCIONADO POR

según el cuadro de receptáculos que aparece más abajo

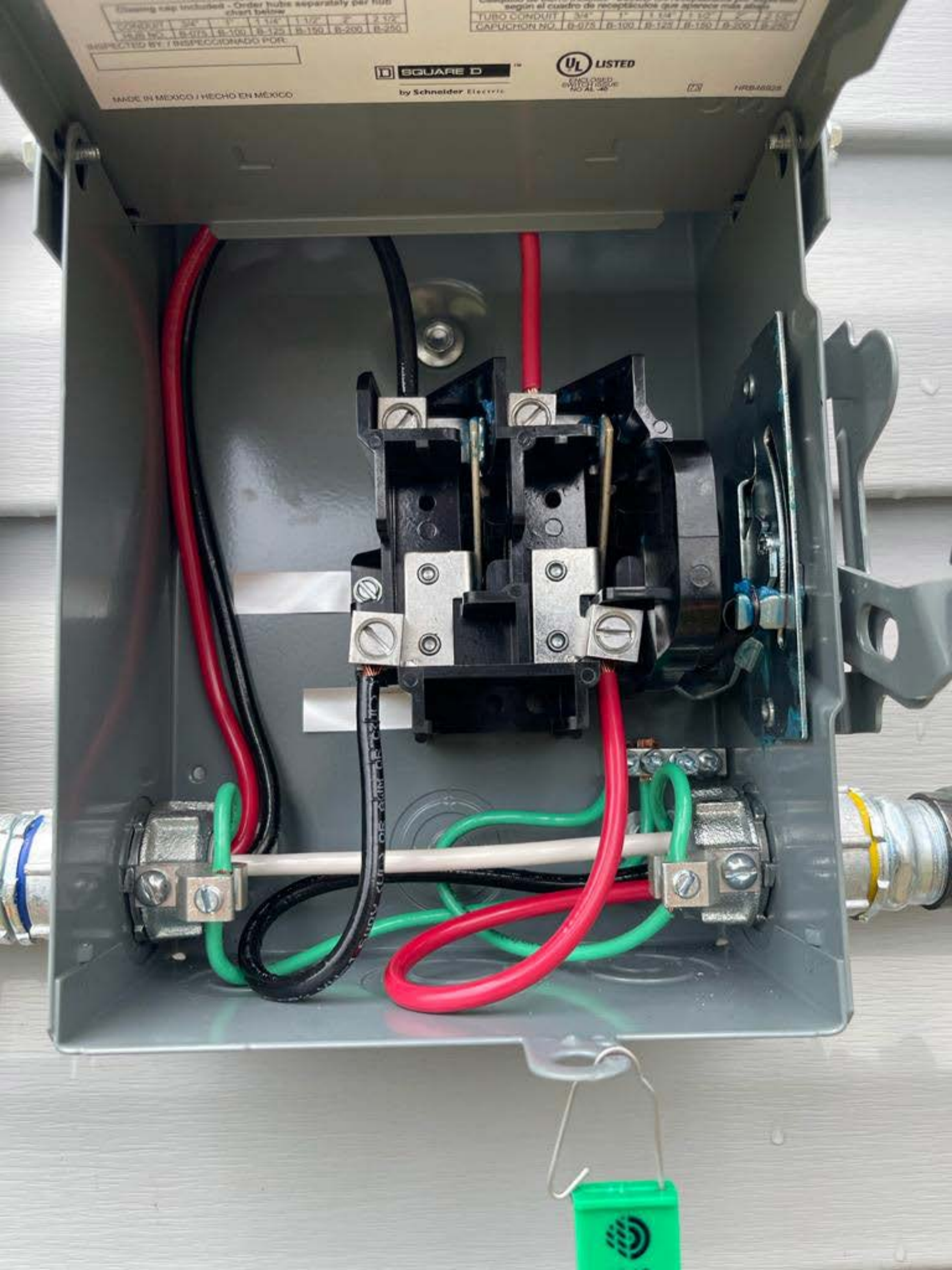
TUBO CONDUIT	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
CEPUCHÓN NO.	B-975	B-100	B-125	B-150	B-200	B-250

SQUARE D
by Schneider Electric

UL LISTED
ENCLOSED
SWITCHES
NO. AL-46

MADE IN MEXICO / HECHO EN MEXICO

1HRB16828





TEST REPORT
DATE: 10/10/2018
BY: [Signature]
PROJECT: [Signature]

NO.	DESCRIPTION	RESULT
1	Visual Inspection	OK
2	Temperature	OK
3	Vibration	OK
4	Humidity	OK
5	Pressure	OK
6	Current	OK
7	Voltage	OK
8	Power	OK
9	Efficiency	OK
10	Power Factor	OK
11	Harmonics	OK
12	THD	OK
13	THFi	OK
14	THDv	OK
15	THFv	OK
16	THDf	OK
17	THFf	OK
18	THDg	OK
19	THFg	OK
20	THDh	OK
21	THFh	OK
22	THDi	OK
23	THFdi	OK
24	THDj	OK
25	THFj	OK
26	THDk	OK
27	THFk	OK
28	THDl	OK
29	THFl	OK
30	THDm	OK
31	THFm	OK
32	THDn	OK
33	THFn	OK
34	THDo	OK
35	THFo	OK
36	THDp	OK
37	THFp	OK
38	THDq	OK
39	THFq	OK
40	THDr	OK
41	THFr	OK
42	THDs	OK
43	THFs	OK
44	THDt	OK
45	THFt	OK
46	THDu	OK
47	THFu	OK
48	THDv	OK
49	THFv	OK
50	THDw	OK
51	THFw	OK
52	THDx	OK
53	THFx	OK
54	THDy	OK
55	THFy	OK
56	THDz	OK
57	THFz	OK
58	THD0	OK
59	THF0	OK
60	THD1	OK
61	THF1	OK
62	THD2	OK
63	THF2	OK
64	THD3	OK
65	THF3	OK
66	THD4	OK
67	THF4	OK
68	THD5	OK
69	THF5	OK
70	THD6	OK
71	THF6	OK
72	THD7	OK
73	THF7	OK
74	THD8	OK
75	THF8	OK
76	THD9	OK
77	THF9	OK
78	THD10	OK
79	THF10	OK
80	THD11	OK
81	THF11	OK
82	THD12	OK
83	THF12	OK
84	THD13	OK
85	THF13	OK
86	THD14	OK
87	THF14	OK
88	THD15	OK
89	THF15	OK
90	THD16	OK
91	THF16	OK
92	THD17	OK
93	THF17	OK
94	THD18	OK
95	THF18	OK
96	THD19	OK
97	THF19	OK
98	THD20	OK
99	THF20	OK
100	THD21	OK
101	THF21	OK
102	THD22	OK
103	THF22	OK
104	THD23	OK
105	THF23	OK
106	THD24	OK
107	THF24	OK
108	THD25	OK
109	THF25	OK
110	THD26	OK
111	THF26	OK
112	THD27	OK
113	THF27	OK
114	THD28	OK
115	THF28	OK
116	THD29	OK
117	THF29	OK
118	THD30	OK
119	THF30	OK
120	THD31	OK
121	THF31	OK
122	THD32	OK
123	THF32	OK
124	THD33	OK
125	THF33	OK
126	THD34	OK
127	THF34	OK
128	THD35	OK
129	THF35	OK
130	THD36	OK
131	THF36	OK
132	THD37	OK
133	THF37	OK
134	THD38	OK
135	THF38	OK
136	THD39	OK
137	THF39	OK
138	THD40	OK
139	THF40	OK
140	THD41	OK
141	THF41	OK
142	THD42	OK
143	THF42	OK
144	THD43	OK
145	THF43	OK
146	THD44	OK
147	THF44	OK
148	THD45	OK
149	THF45	OK
150	THD46	OK
151	THF46	OK
152	THD47	OK
153	THF47	OK
154	THD48	OK
155	THF48	OK
156	THD49	OK
157	THF49	OK
158	THD50	OK
159	THF50	OK
160	THD51	OK
161	THF51	OK
162	THD52	OK
163	THF52	OK
164	THD53	OK
165	THF53	OK
166	THD54	OK
167	THF54	OK
168	THD55	OK
169	THF55	OK
170	THD56	OK
171	THF56	OK
172	THD57	OK
173	THF57	OK
174	THD58	OK
175	THF58	OK
176	THD59	OK
177	THF59	OK
178	THD60	OK
179	THF60	OK
180	THD61	OK
181	THF61	OK
182	THD62	OK
183	THF62	OK
184	THD63	OK
185	THF63	OK
186	THD64	OK
187	THF64	OK
188	THD65	OK
189	THF65	OK
190	THD66	OK
191	THF66	OK
192	THD67	OK
193	THF67	OK
194	THD68	OK
195	THF68	OK
196	THD69	OK
197	THF69	OK
198	THD70	OK
199	THF70	OK
200	THD71	OK
201	THF71	OK
202	THD72	OK
203	THF72	OK
204	THD73	OK
205	THF73	OK
206	THD74	OK
207	THF74	OK
208	THD75	OK
209	THF75	OK
210	THD76	OK
211	THF76	OK
212	THD77	OK
213	THF77	OK
214	THD78	OK
215	THF78	OK
216	THD79	OK
217	THF79	OK
218	THD80	OK
219	THF80	OK
220	THD81	OK
221	THF81	OK
222	THD82	OK
223	THF82	OK
224	THD83	OK
225	THF83	OK
226	THD84	OK
227	THF84	OK
228	THD85	OK
229	THF85	OK
230	THD86	OK
231	THF86	OK
232	THD87	OK
233	THF87	OK
234	THD88	OK
235	THF88	OK
236	THD89	OK
237	THF89	OK
238	THD90	OK
239	THF90	OK
240	THD91	OK
241	THF91	OK
242	THD92	OK
243	THF92	OK
244	THD93	OK
245	THF93	OK
246	THD94	OK
247	THF94	OK
248	THD95	OK
249	THF95	OK
250	THD96	OK
251	THF96	OK
252	THD97	OK
253	THF97	OK
254	THD98	OK
255	THF98	OK
256	THD99	OK
257	THF99	OK
258	THD100	OK
259	THF100	OK

WARNING
DANGER
HIGH VOLTAGE
ELECTRIC SHOCK
Hazardous Voltage
Do Not Touch
When Power is On

DANGER



RECEPT OUTLET TYPE
EXCEPT DO NOT
BACK OUT & RE-INSTALL
ON INSTALLATION
REMOVING THE
THIS DEVICE FROM THE PANEL

DO NOT REMOVE SCREW
TO REMOVE COVER
TO REMOVE SCREW
TO REMOVE COVER
TO REMOVE SCREW
TO REMOVE COVER
FLUID-CH NEUTRAL



⚠ DANGER
Electrical Shock Hazard
Do Not Touch
Exposed Conductive Parts
When the Cover is Removed
The Main Switch is
Always Energized

