

NEW PHOTOVOLTAIC ROOF MOUNT SYSTEM

12 MODULES-ROOF MOUNTED - 5.520 kW DC, 4.560 kW AC, 142 HIGH ST, BRISTOL, RI 02809

NEW PV SYSTEM SPECIFICATIONS:

SYSTEM SIZE:	
DC SIZE:	5.520 KW DC-(STC)
AC SIZE:	4.560 KW AC
MODULE TYPE & AMOUNT:	(12) REC SOLAR REC 460AA PURE-RX[460W]
MODULE DIMENSIONS:	(L/W/H) 68.03"/47.40"/1.18"
INVERTER:	(12) ENPHASE IQ8X-80-M-US [240V]
UTILITY NAME:	RI ENERGY
METER NUMBER:	199 621 409
AHJ:	TOWN OF BRISTOL
INTERCONNECTION METHOD:	LOAD SIDE TAP

PROJECT NOTES

1.1.1 THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE RELEVANT YEAR OF THE NATIONAL ELECTRIC CODE (NEC), ALL MANUFACTURER'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.

1.1.2 THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND THE PV SYSTEM MUST BE INSPECTED PRIOR TO OPERATION

1.1.3 ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC AND OTHER GOVERNING CODES

1.1.4 ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

DESIGN CRITERIA

ROOF SURFACE TYPE: ASPHALT SHINGLES
ROOF FRAMING: RAFTER 2"x8" @ 16" O.C.
GROUND SNOW LOAD: 30 PSF
WIND SPEED: 128 MPH
WIND EXPOSURE: B
RISK CATEGORY: II
ROOF LIVE LOAD: 20 PSF TYPICAL

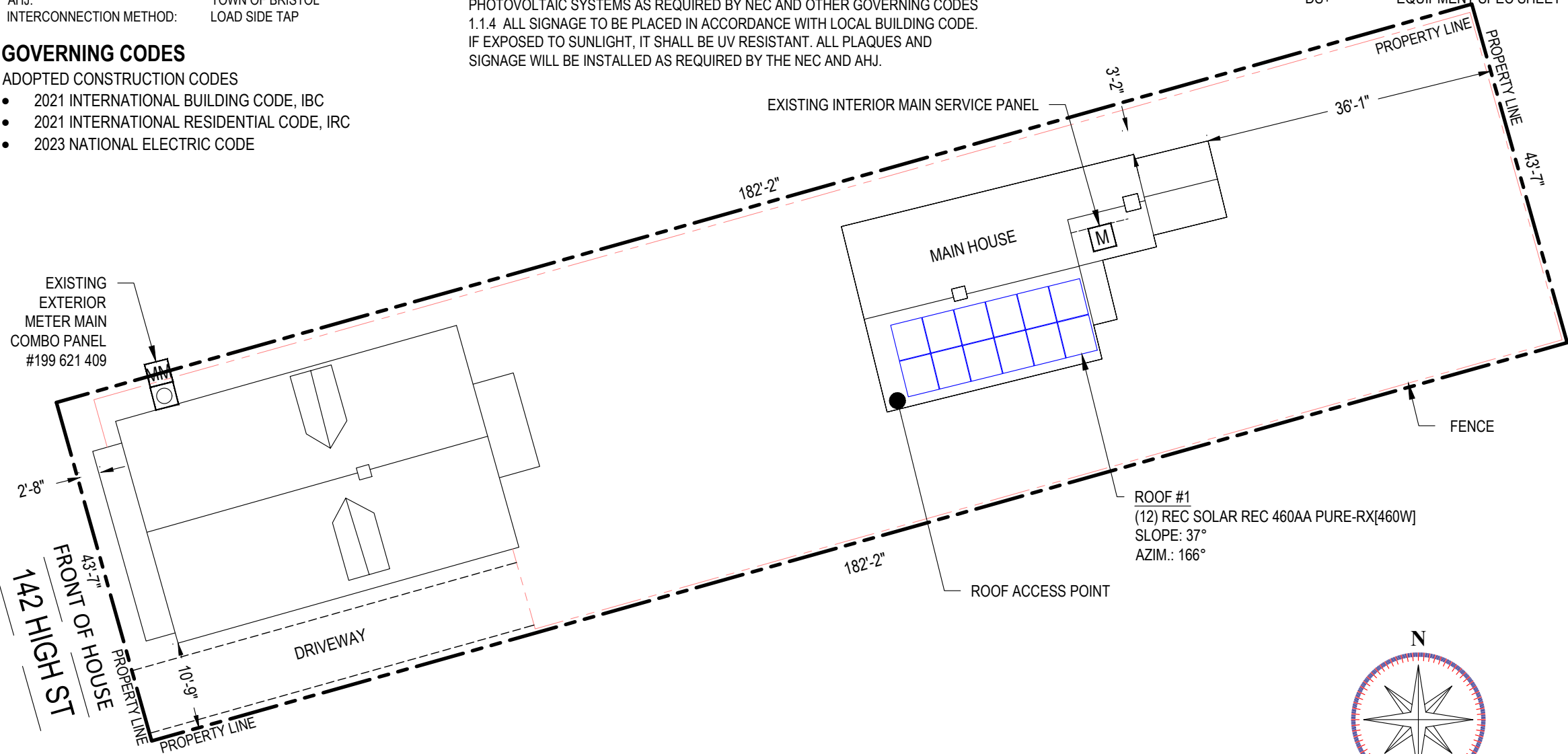
SHEET INDEX:

PV 0.0:	COVER SHEET
PV 1.0:	SITE PLAN
S 1.1:	MOUNT DETAILS
S 1.2:	ROOF SECTION
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E 1.3:	WARNING LABELS
DS+	EQUIPMENT SPEC SHEET

GOVERNING CODES

ADOPTED CONSTRUCTION CODES

- 2021 INTERNATIONAL BUILDING CODE, IBC
- 2021 INTERNATIONAL RESIDENTIAL CODE, IRC
- 2023 NATIONAL ELECTRIC CODE



SCOPE OF WORK

1.2.1 CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM. THE CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTION OF EXISTING ONSITE CONDITIONS TO DESIGN, SPECIFY, AND INSTALL THE ROOF-MOUNTED PHOTOVOLTAIC SYSTEM DETAILED IN THIS DOCUMENT

ROOF ACCESS POINT

ROOF ACCESS POINT SHALL NOT BE LOCATED IN AREAS THAT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES OR SIGNS.

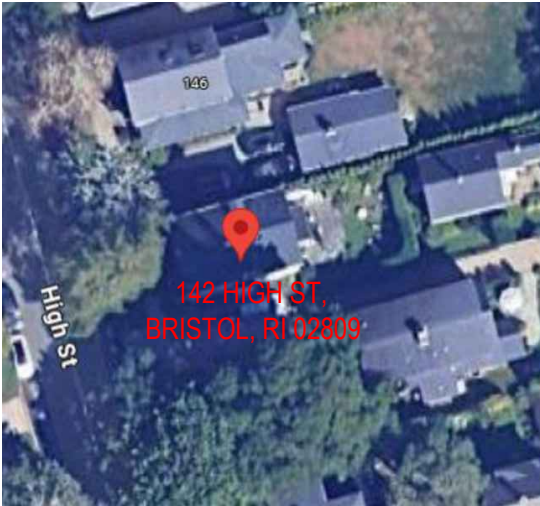
SIGNATURE WITH SEAL

NEC
ELECTRIC + SOLAR
121 BROADCOMMON
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PH#:(401) 644-5692
RI AC4585
MA A20803

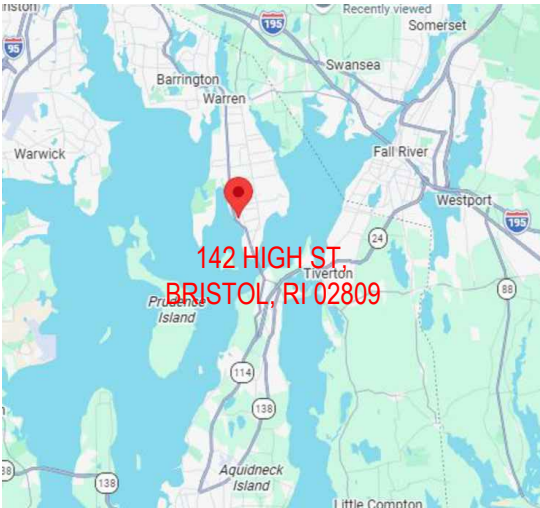
REVISIONS		
Description	Date	Rev
Revision	5/9/2026	01

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Project Name & Address
CORNELIA MURPHY RESIDENCE
142 HIGH ST,
BRISTOL, RI 02809
APN NO.: BRISM19L106



2 SATELLITE VIEW
PV 0.0 SCALE: NTS



3 VICINITY MAP
PV 0.0 SCALE: NTS

1 PLOT PLAN
PV 0.0 SCALE: 1/16" = 1'

Sheet Name
COVER SHEET

Sheet Size
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11" X 17"**

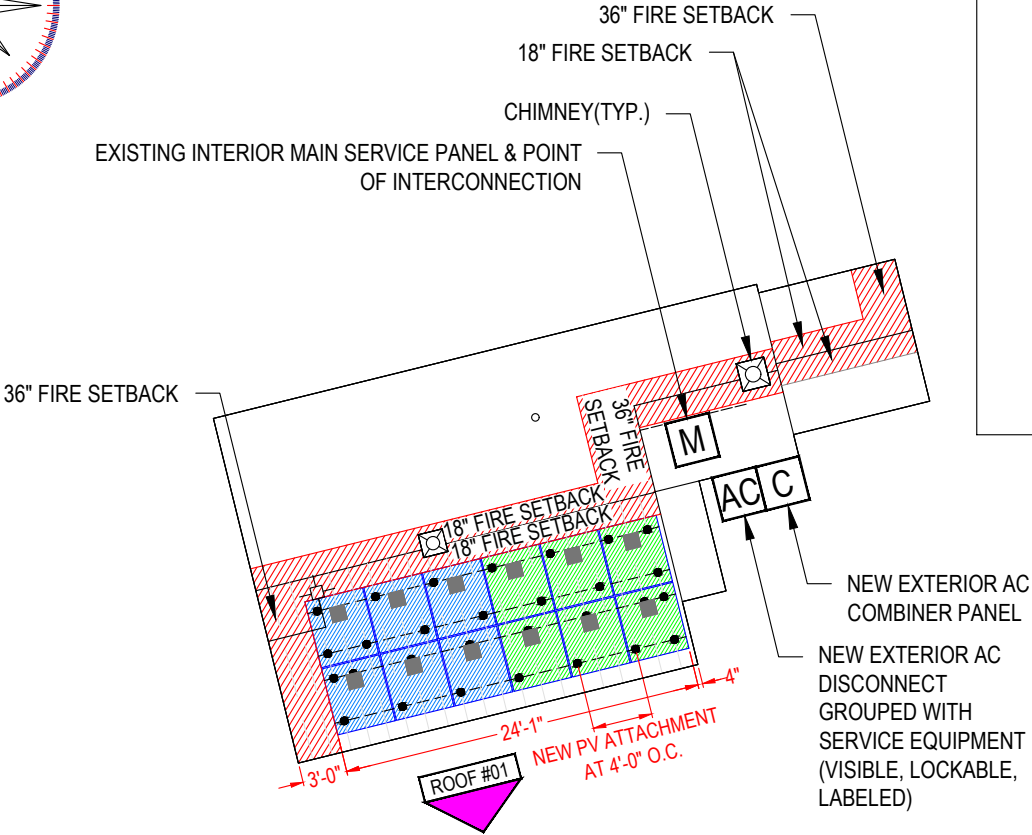
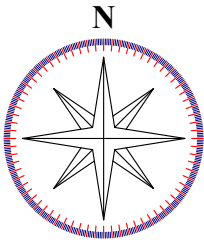
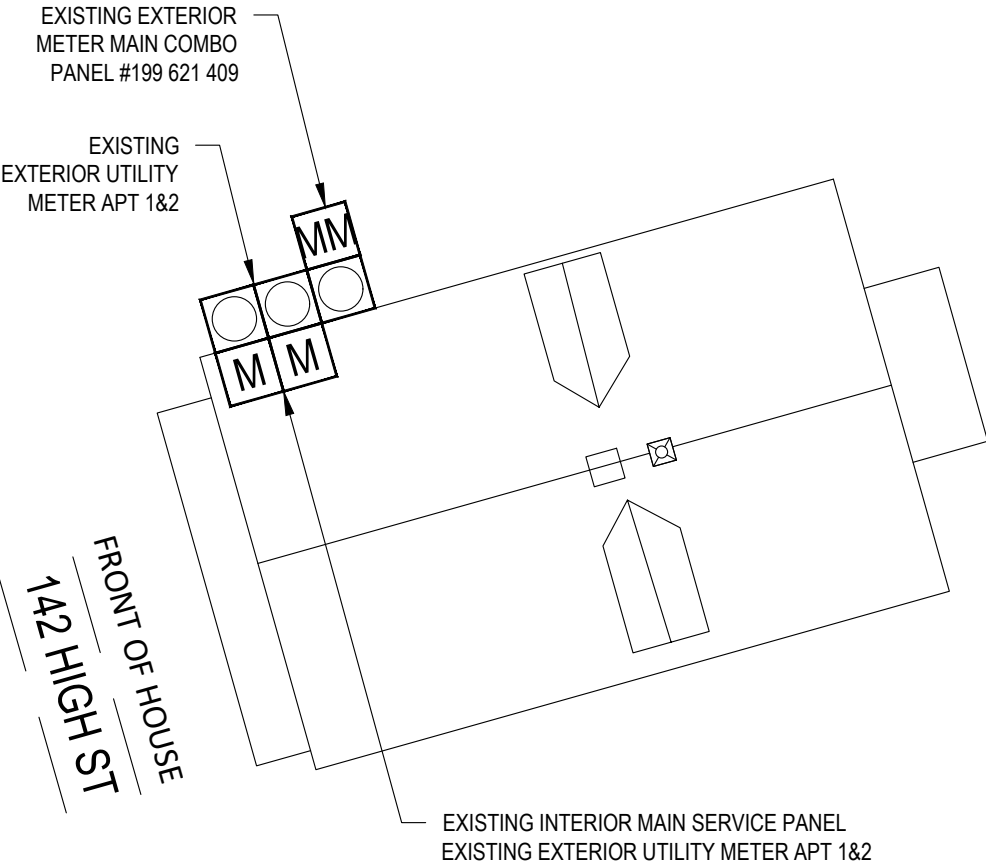
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INTERCONNECTION METHOD:	LOAD SIDE TAP



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SYSTEM LEGEND

- METER MAIN PANEL
- MAIN SERVICE PANEL
- UTILITY METER
- AC DISCONNECT
- COMBINER PANEL.
- 12 NEW REC SOLAR REC 460AA PURE-RX[460W] MODULES WITH NEW 12 - ENPHASE IQ8X-80-M-US [240V] INVERTERS, MOUNTED ON THE BACK OF EACH MODULES.
- = FIRE PATHWAY
- = ROOF OBSTRUCTIONS
- = ATTACHMENT POINTS
- = RAFTER
- = RACKING SYSTEM
- = EXTERIOR RUN
- = CONDUIT ROOF TOP JUNCTION BOX

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Sheet Name
SITE PLAN

Sheet Size
**ANSI B
11" X 17"**

Sheet Number
PV 1.0

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ROOF SECTIONS

ROOF #01 MODULE - 12
SLOPE - 37°
AZIMUTH - 166°
MATERIAL - ASPHALT SHINGLES
RAFTER SIZE & SPACING - 2"X8" @ 16" O.C.

CIRCUIT(S)

- CIRCUIT #1 - 06 MODULES
- CIRCUIT #2 - 06 MODULES

MODULE, ARRAY WEIGHT (LOAD CALC'S)

Number of Modules	12	
Module Weight	50.05	LBS
Total Module (Array) Weight	600.60	LBS
Number of Attachment point	29	
Mounting System Weight (Per Module)	1.5	LBS
Mounting System Weight	43.50	LBS
Total System Weight (Module Weight + Mounting System Weight)	644.10	LBS
Weight at Each Attachment Point (Array Weight / Number of Attachment Point)	20.71	LBS
Module Area (68.03"x47.40")	22.39	SqFt
Total Array Area	268.72	SqFt
Distributed Load (Total System Weight / Total Array Area)	2.30	Per SqFt
Total Roof Area	879	SqFt
Total Percentage or Roof Covered (Total Array Area / Total Roof Area)*100	30.57%	

BILL OF MATERIALS

NUMBER OF MODULES	12	REC SOLAR REC 460AA PURE-RX[460W]
NUMBER OF MICROINVERTER	12	ENPHASE IQ8X-80-M-US [240V]
COMBINER PANEL	01	125A ENPHASE IQ COMBINER 5/5C X-IQ-AM1-240-5/5C, 240V
AC DISCONNECT	1	60A FUSIBLE AC DISCONNECT, WITH 30A FUSES, 240V
NUMBER OF ATTACHMENTS	29	SNAPNRACK UMBRELLA L FOOT ATTACHMENT
RAILS	7	SNAPNRACK UR- 45 RAIL, 172", BLACK SECTION
RAIL SPLICE	4	SPLICE KIT
MID CLAMPS	20	MID CLAMPS / UFO
END CLAMPS	8	END CLAMPS / STOPPER SLEEVE
GROUNDING LUG	2	GROUNDING LUG

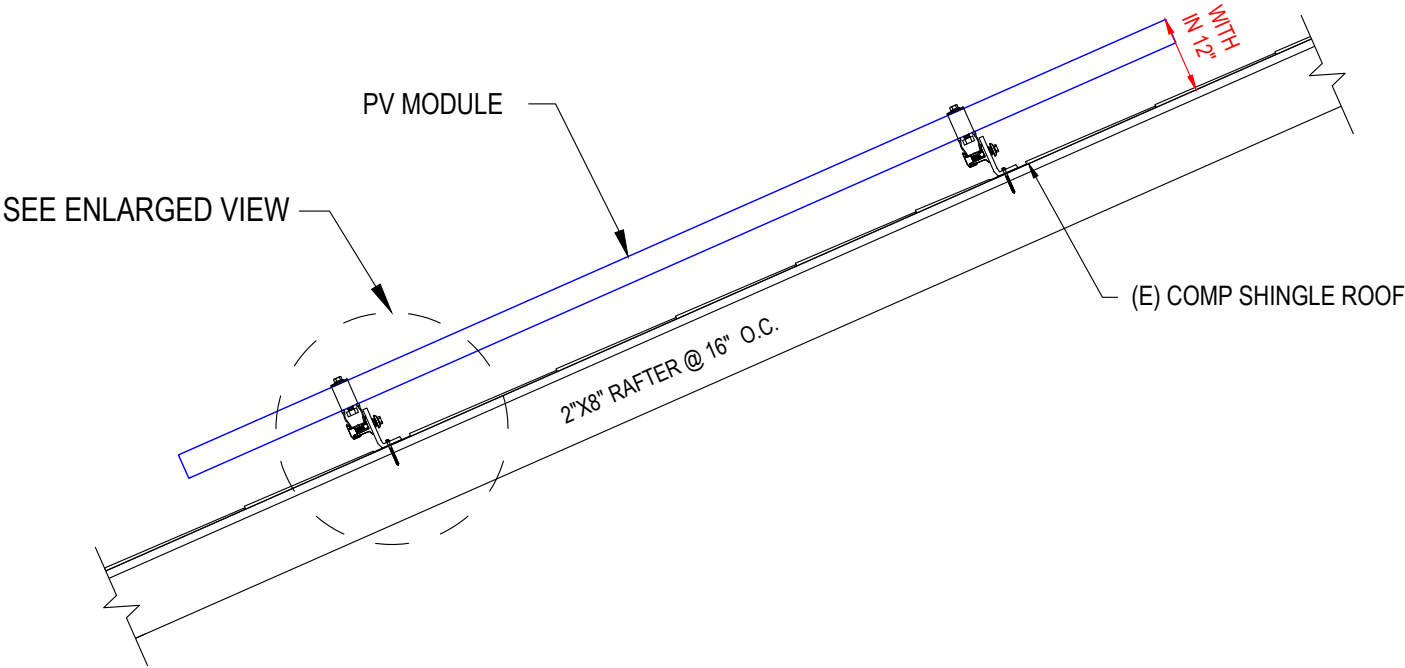
1 SITE PLAN

PV 1.0 SCALE: 5/64" = 1'-0"

GENERAL STRUCTURAL NOTES:

- 1. THE SOLAR PANELS ARE TO BE MOUNTED TO THE ROOF FRAMING USING THE SNAPNRACK UR- 45 RAIL, 172", BLACK RACKING SYSTEM WITH SNAPNRACK UMBRELLA L FOOT ATTACHMENT. THE MOUNTING FEET ARE TO BE SPACED AS SHOWN IN THE DETAILS, AND MUST BE STAGGERED TO ADJACENT FRAMING MEMBERS TO SPREAD OUT THE ADDITIONAL LOAD.
- 2. UNLESS NOTED OTHERWISE, MOUNTING ANCHORS SHALL BE INSTALLED WITH PENETRATION INTO ROOF FRAMING AS SHOWN IN ATTACHMENT DETAIL (ENLARGED VIEW).
- 3. THE PROPOSED PV SYSTEM ADDS 2.30 PSF TO THE ROOF FRAMING SYSTEM.

DESIGN CRITERIA
ROOF SURFACE TYPE: ASPHALT SHINGLES
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GROUND SNOW LOAD: 30 PSF
WIND SPEED: 128 MPH
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Sheet Name
MOUNT
DETAILS

Sheet Size
ANSI B
11" X 17"

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S 1.1

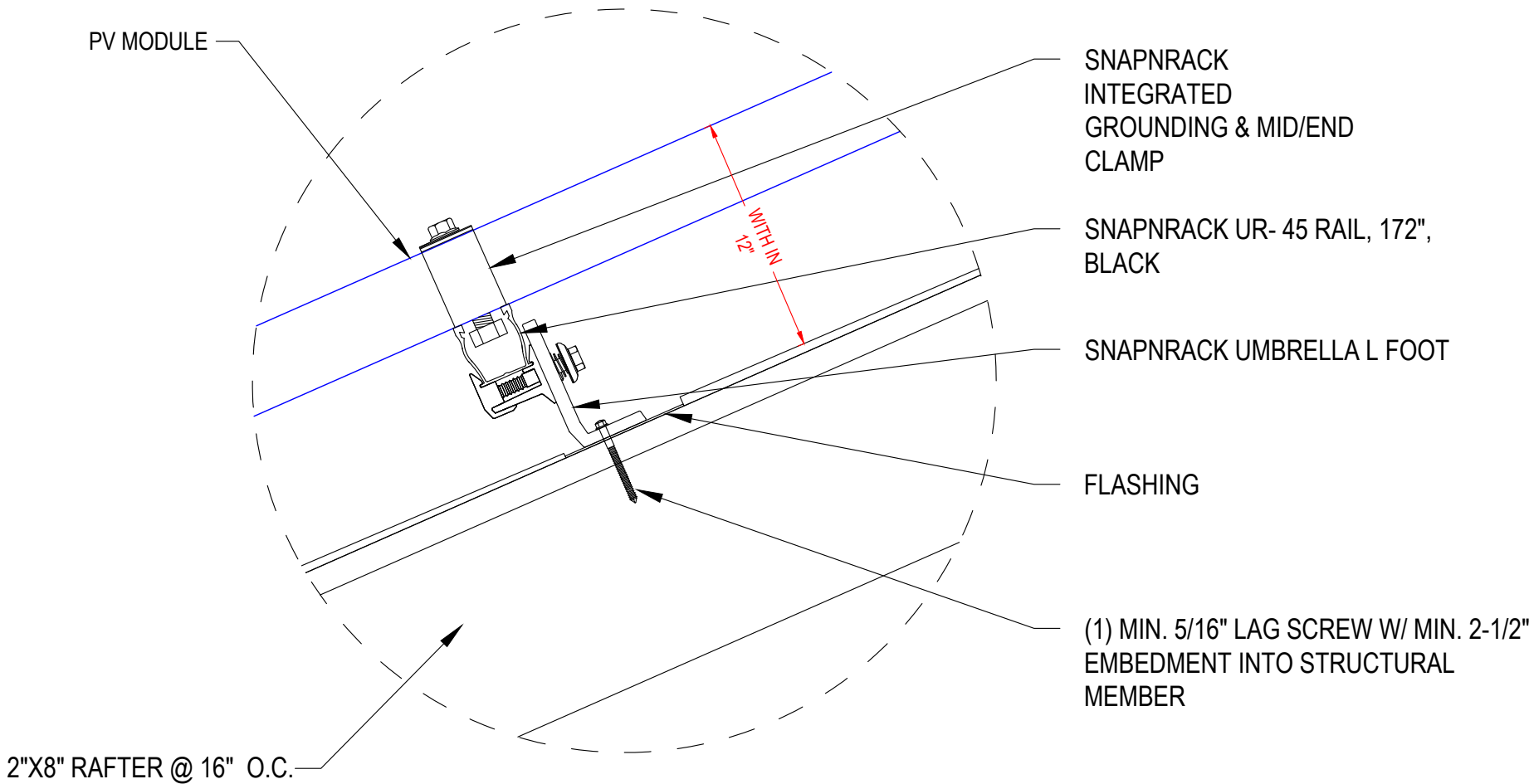
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1 ATTACHMENT DETAIL (SIDE VIEW)

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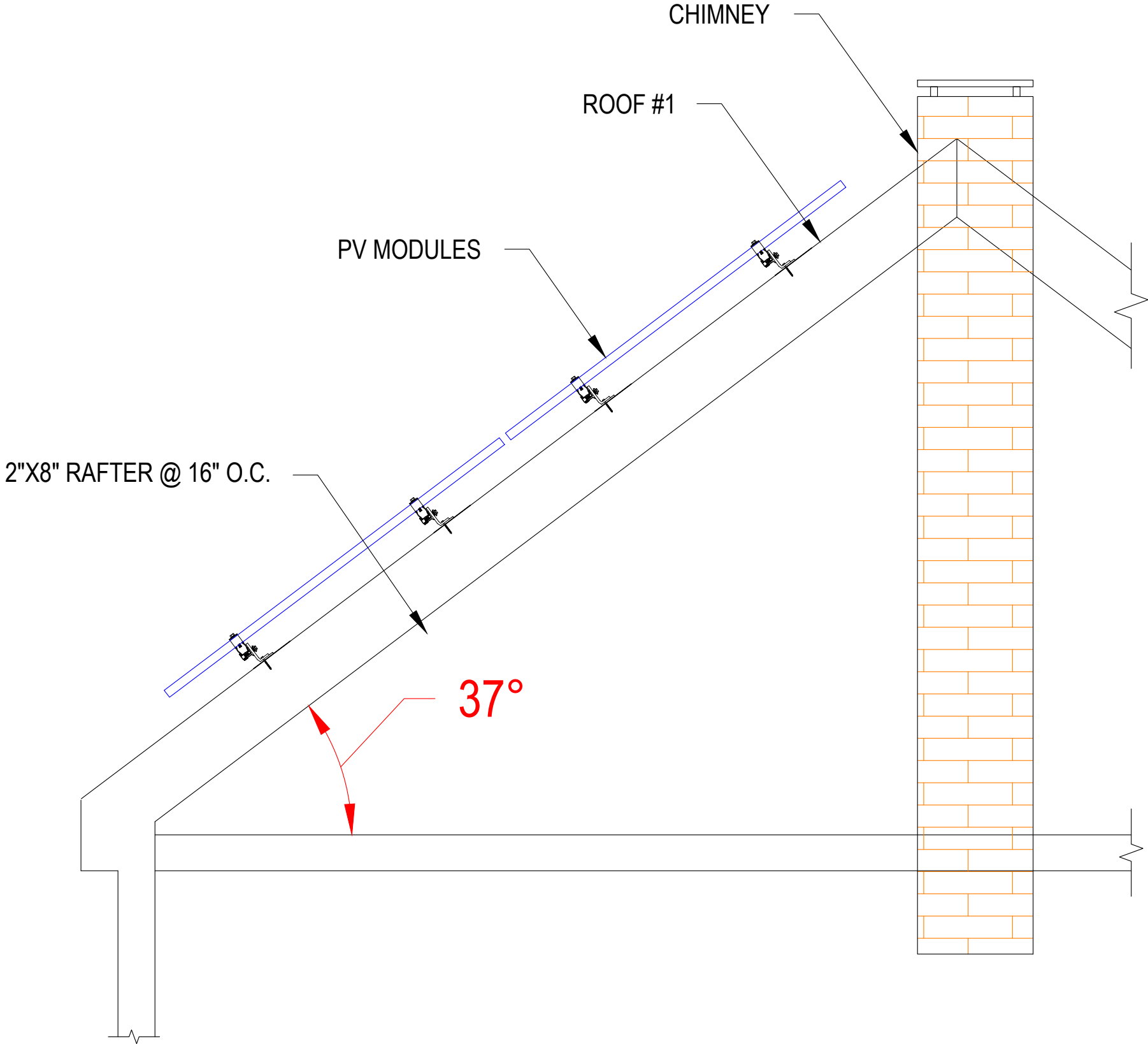
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2 ATTACHMENT DETAIL (ENLARGED VIEW)

S 1.1

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Sheet Name
ROOF SECTION

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Rooftop conductor ampacities designed in compliance with art. 690.8, Tables 310.15(B)(2)(a), 310.15(B)(3)(a), 310.15(B)(3)(c), 310.15(B)(16), Chapter 9 Table 4, 5, & 9. Location specific temperature obtained from ASHRAE 2017 data tables

RECORD LOW TEMP	-17°C
AMBIENT TEMP (HIGH TEMP 2%)	32°C
CONDUIT HEIGHT	0.5"
ROOF TOP TEMP	54°C
CONDUCTOR TEMPERATURE RATE	90°C

THIS PANEL IS FED BY MULTIPLE SOURCES (UTILITY AND SOLAR)	
AC OUTPUT CURRENT	18.96A
NOMINAL AC VOLTAGE	240V

PV MODULE RATING @ STC	
MANUFACTURER	REC SOLAR REC 460AA PURE-RX[460W]
MAX. POWER-POINT CURRENT (IMP)	8.38 AMPS
MAX. POWER-POINT VOLTAGE (VMP)	54.9 VOLTS
OPEN-CIRCUIT VOLTAGE (VOC)	65.7 VOLTS
SHORT-CIRCUIT CURRENT (ISC)	8.88 AMPS
NOM. MAX. POWER AT STC (P _{MAX})	460 WATT
MAX. SYSTEM VOLTAGE	1000V
VOC TEMPERATURE COEFFICIENT	-0.24 %/°C
PHOTOVOLTAIC SYSTEM SPECIFICATIONS:	
SYSTEM SIZE:	5.520 kW DC 4.560 kW AC
MODULE TYPE & AMOUNT:	(12) REC SOLAR REC 460AA PURE-RX[460W]
MICROINVERTER:	(12) ENPHASE IQ8X-80-M-US [240V]

INVERTER SPECIFICATIONS	
MANUFACTURER	ENPHASE IQ8X-80-M-US [240V]
MAX. DC VOLT RATING	79.5 VOLTS
MAX. POWER AT 40 C	380WATTS
NOMINAL AC VOLTAGE	240 VOLTS
MAX. AC CURRENT	1.58 AMPS
MAX. MODULE ISC	13 AMPS
MAX. PANELS/CIRCUIT	10
SHORT CIRCUIT CURRENT	16 AMPS

ENPHASE Q CABLE TO BE ATTACHED TO RAIL MIN. 3-1/2" ABOVE ROOF SURFACE

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Sheet Name
3-LINE
DIAGRAM

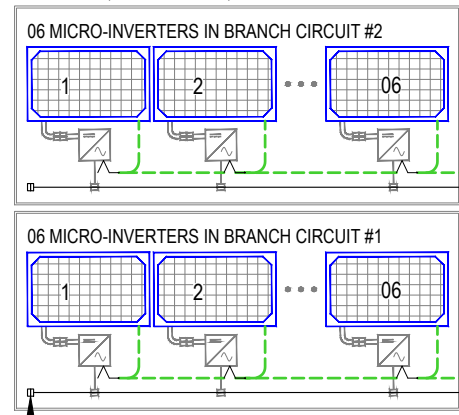
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12 NEW REC SOLAR REC 460AA
PURE-RX[460W] MODULES WITH (12)
(ENPHASE IQ8X-80-M-US [240V])
MICROINVERTERS 240VAC, 1.58A MAX
CEC WEIGHTED EFFICIENCY 97.2%
NEMA 4R, UL LISTED, INTERNAL GFDI



TERMINATOR CAP ON LAST CABLE
CONNECTOR AC TRUNK CABLE (TYP)

(N) JUNCTION BOX
600 V, NEMA 4X
UL LISTED
(ON ROOF)

(N) 125A ENPHASE IQ COMBINER 5/5C
X-IQ-AM1-240-5/5C, 240V NEMA 3R
(OUTSIDE WALL)

(N) BLADE TYPE
FUSIBLE AC
DISCONNECT
NEMA 3R 60A-2P
120/240VAC
(VISIBLE, LOCKABLE,
LABELED)
(INSIDE WALL)

30A FUSES

EXISTING
BI-DIRECTIONAL
UTILITY METER,
1-PHASE, 3-W,
120V/240V

#3 EXISTING
240V/100A BUS BAR
RATING, METER
MAIN PANEL,
SINGLE PHASE,
WITH A 100A MAIN
BREAKER

EXISTING GROUNDING
ELECTRODE SYSTEM

WIRE TAG #	WIRE FROM --	CONDUIT	WIRE QTY	WIRE GAUGE:	WIRE RATING	TEMP RATING:	WIRE AMP	TEMP DE-RATE:	CONDUIT FILL:	WIRE OCP:	INVERTER QTY:	NOC:	NEC:	STRING AMPS	GRND SIZE	GRND WIRE TYPE
①	ARRAY TO JUNCTION BOX	TRUNK CABLE	4	#12	TRUNK CABLE	90°	30A	x 0.96	x N/A	= 28.80A	06	x 1.58A	x 1.25	= 11.85A	#6	SBC
②	JUNCTION BOX TO COMBINER PANEL	1" PVC SCH 80	4	#10	THWN-2	90°	40A	x 0.76	x 0.80	= 24.32A	06	x 1.58A	x 1.25	= 11.85A	#10	THHN-2
③	COMBINER PANEL TO MSP	1" PVC SCH 80	3	#10	THWN-2	75°	35A	x 0.94	x 1.00	= 32.90A	12	x 1.58A	x 1.25	= 23.70A	#10	THHN-2

GENERAL NOTES

SITE NOTES

- 2.1.1 A LADDER WILL BE IN PLACE FOR INSPECTION IN ACCORDANCE WITH OSHA REGULATIONS.
- 2.1.2 THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.
- 2.1.3 THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- 2.1.4 PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED IN ACCORDANCE WITH SECTION NEC 110
- 2.1.5 ROOF COVERINGS SHALL BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THIS CODE AND THE APPROVED MANUFACTURER'S INSTRUCTIONS SUCH THAT THE ROOF COVERING SERVES TO PROTECT THE BUILDING OR STRUCTURE.

EQUIPMENT LOCATIONS

- 2.2.1 ALL EQUIPMENT SHALL MEET MINIMUM WORKING CLEARANCES IN ACCORDANCE WITH NEC 110.26.
- 2.2.2 WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY 2020 NFPA 70 NATIONAL ELECTRICAL CODE.
- 2.2.3 JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES IN ACCORDANCE WITH NEC 690
- 2.2.4 ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL IN ACCORDANCE WITH NEC APPLICABLE CODES.
- 2.2.5 ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

STRUCTURAL NOTES

- 2.3.1 RACKING SYSTEM & PV ARRAY WILL BE INSTALLED IN ACCORDANCE WITH THE CODE-COMPLIANT INSTALLATION MANUAL. TOP CLAMPS REQUIRE A DESIGNATED SPACE BETWEEN MODULES, AND RAILS MUST ALSO EXTEND A MINIMUM DISTANCE BEYOND EITHER EDGE OF THE ARRAY/SUBARRAY, IN ACCORDANCE WITH RAIL MANUFACTURER'S INSTALLATION PRACTICES.
- 2.3.2 JUNCTION BOX WILL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED & SEALED PER LOCAL REQUIREMENTS.
- 2.3.3 ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED W/ APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.
- 2.3.4 ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER OR PROFESSIONAL ENGINEERING GUIDANCE.
- 2.3.5 WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.

WIRING & CONDUIT NOTES

- 2.4.1 ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING.
- 2.4.2 CONDUCTORS SIZED IN ACCORDANCE WITH THE NEC
- 2.4.3 AC CONDUCTORS TO BE COLORED OR MARKED PER NEC
- 2.4.4 LISTED OR LABELED EQUIPMENT SHALL BE INSTALLED AND USED IN ACCORDANCE WITH ANY INSTRUCTIONS INCLUDED IN THE LISTING OR LABELING PER NEC

GROUNDING NOTES

- 2.5.1 GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVICES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.
- 2.5.2 PV EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH NEC 690 AND NEC TABLE 250.122.
- 2.5.3 METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES CONSIDERED GROUNDED IN ACCORDANCE WITH NEC 250.
- 2.5.4 EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH NEC 690 AND INVERTER MANUFACTURER'S INSTALLATION PRACTICES
- 2.5.5 EACH MODULE WILL BE GROUNDED AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ.
- 2.5.6 THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.
- 2.5.7 GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER PER NEC 250
- 2.5.8 THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690 AND NEC 250. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED IN ACCORDANCE WITH NEC 250, NEC 690 AND THE AHJ.
- 2.5.9 GROUND-FAULT DETECTION SHALL COMPLY WITH NEC 690 TO REDUCE FIRE HAZARDS

DISCONNECTION AND OVERCURRENT PROTECTION NOTES

- 2.6.1 DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS).
- 2.6.2 DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
- 2.6.3 PV SYSTEM CIRCUITS INSTALLED ON OR IN HABITABLE BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION TO REDUCE SHOCK HAZARD FOR EMERGENCY RESPONDERS IN ACCORDANCE WITH 690
- 2.6.4 ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690 AND 240.
- 2.6.5 INVERTER ON-GRID BRANCHES SHALL BE CONNECTED TO A SINGLE BREAKER OR GROUPED FUSE DISCONNECT(S) IN ACCORDANCE WITH NEC 110.
- 2.6.6 IF REQUIRED BY THE AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION IN ACCORDANCE WITH NEC 690.11 AND UL1699B.

INTERCONNECTION NOTES

- 2.7.1 LOAD SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH NEC 705.
- 2.7.2 THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS OUTPUT MAY NOT EXCEED 120 PERCENT OF BUSBAR RATING PER NEC 705.
- 2.7.3 THE SUM OF 125 PERCENT OF THE POWER SOURCE(S) OUTPUT CIRCUIT CURRENT AND THE RATING OF THE OVERCURRENT DEVICE PROTECTING THE BUSBAR SHALL NOT EXCEED 120 PERCENT OF THE AMPACITY OF THE BUSBAR, PV DEDICATED BACKFEED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD IN ACCORDANCE WITH NEC 705.
- 2.7.4 AT MULTIPLE ELECTRIC POWER SOURCES OUTPUT COMBINER PANEL, TOTAL RATING OF ALL OVERCURRENT PROTECTION DEVICES SHALL NOT EXCEED AMPACITY OF BUSBAR. HOWEVER, THE MAIN OVERCURRENT PROTECTION DEVICE MAY BE EXCLUDED IN ACCORDANCE WITH NEC 705.
- 2.7.5 FEEDER TAP INTERCONNECTION (LOAD SIDE) IN ACCORDANCE WITH NEC 705.
- 2.7.6 SUPPLY SIDE TAP INTERCONNECTION IN ACCORDANCE WITH TO NEC 705 WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC 230.
- 2.7.7 BACKFEEDING BREAKER FOR ELECTRIC POWER SOURCES OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING PER NEC 705.

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Sheet Name

NOTES

Sheet Size

ANSI B
11" X 17"

Sheet Number

E 1.2

Drawn Date

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Drawn By

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WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON THE LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION

LABEL LOCATION: COMBINER PANEL, AC DISCONNECT,
POINT OF INTERCONNECTION
PER CODE: NEC 705.20(7), NEC 690.13(B)

⚠️

WARNING

TURN OFF PHOTOVOLTAIC AC
DISCONNECT PRIOR TO
WORKING INSIDE PANEL

LABEL LOCATION: COMBINER PANEL(S), MAIN SERVICE DISCONNECT
PER CODE: NEC 110.27(C), OSHA 1910.145(f)(7)

⚠️

WARNING

DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION: MAIN SERVICE DISCONNECT, PRODUCTION/NET METER
PER CODE: NEC 690.59, 705.30(C)

⚠️

WARNING

THIS EQUIPMENT FED BY MULTIPLE
SOURCES:
TOTAL RATING OF ALL OVERCURRENT
DEVICES EXCLUDING MAIN POWER
SUPPLY SHALL NOT EXCEED
AMPACITY OF BUSBAR

LABEL LOCATION: POINT OF INTERCONNECTION, COMBINER PANEL
PER CODE: NEC 705.12(B)(3)

PV SYSTEM

DISCONNECT

LABEL LOCATION: AC DISCONNECT
PER CODE: NEC 690.13(B)

⚠️

WARNING

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

LABEL LOCATION: POINT OF INTERCONNECTION
PER CODE: NEC 705.12(B)(2)

MAIN PHOTOVOLTAIC
SYSTEM DISCONNECT

LABEL LOCATION: MAIN SERVICE DISCONNECT, UTILITY METER
PER CODE: NEC 690.13(B)

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 LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 690.12(D)

RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM

LABEL LOCATION: RSD INITIATION DEVICE, AC DISCONNECT
PER CODE: NEC 690.12(D)(2)

⚠️

CAUTION

PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LABEL LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 705.30(D), NEC 690.59

DO NOT DISCONNECT
UNDER LOAD

LABEL LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 690.15(B) & NEC 690.33(D)(2)

SOLAR PV DC CIRCUIT

LABEL LOCATION: DC CONDUIT, DC JUNCTION BOX
PER CODE: NEC 690.31(D)(2)

PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION: DC CONDUIT, DC JUNCTION BOX
PER CODE: NEC 690.31(D)(2)

NEC ELECTRIC + SOLAR
(401) 644-5692
FOR IMMEDIATE ASSISTANCE CALL 911

LABEL LOCATION: POINT OF INTERCONNECTION
PER CODE: NEC 705.10

SIGNATURE WITH SEAL

NEC ELECTRIC + SOLAR
121 BROADCOMMON
RD. BRISTOL, RI 02809,
PH#:(401) 644-5692
RI AC4585
MA A20803

REVISIONS		
Description	Date	Rev
Revision	5/9/2026	01

Signature with Seal

Project Name &
Address

CORNELIA MURPHY RESIDENCE

142 HIGH ST,
BRISTOL, RI 02809
APN NO.: BRISM19L106

Sheet Name
WARNING
LABELS

Sheet Size
ANSI B
11" X 17"

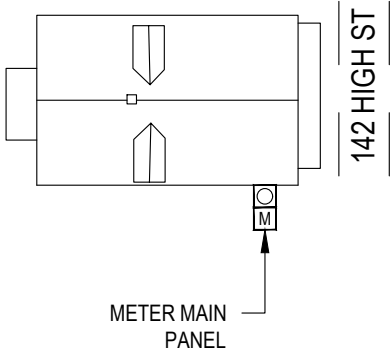
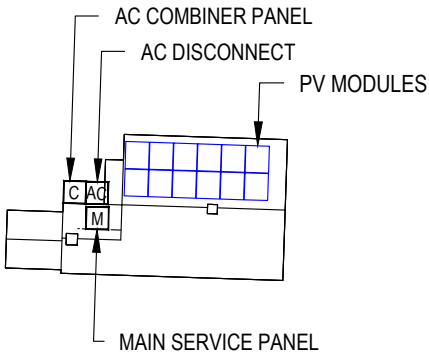
Sheet Number
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Drawn Date
4/29/2026

Drawn By
PremiumCAD

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

CAUTION:
POWER TO THIS BUILDING IS ALSO SUPPLIED FROM
THE FOLLOWING SOURCES WITH DISCONNECT(S)
LOCATED AS SHOWN.
DANGEROUS VOLTAGE MAY BE PRESENT AT ALL TIMES





REC ALPHA[®] PURE-RX

DATASHEET

OUR STRONGEST PANEL

45 MM HAIL RESISTANT

+7000 PA / -4000 PA
WITH 4 POINT CLAMPING

+10000 PA / -6000 PA
WITH 6 POINT CLAMPING

450 - 470W
HETEROJUNCTION
TECHNOLOGY

226 W/m² POWER DENSITY
>92% POWER IN YEAR 25
-0.24%/°C TEMPERATURE
COEFFICIENT OF P_{MAX}

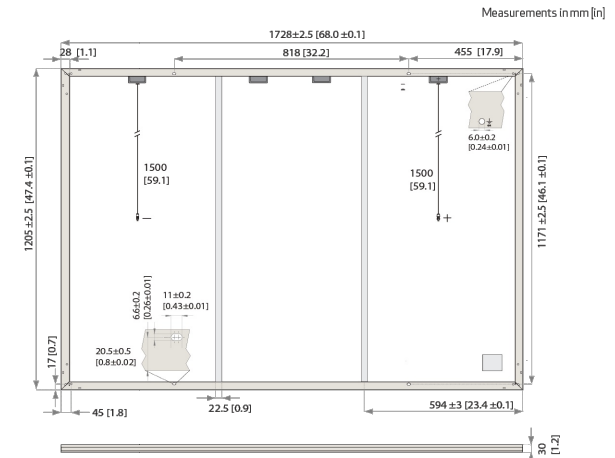


REC ALPHA[®] PURE-RX DATASHEET



GENERAL DATA

Cell Type	88 half-cut bifacial REC heterojunction cells, with gapless technology
Glass	3.2 mm solar glass with anti-reflective surface treatment in accordance with EN12150
Backsheet	Highly resistant polymer (Black)
Frame	Anodized aluminum (Black)
Junction Box	4-part, 4 bypass diodes, IP68 rated, in accordance with IEC 62790:2020
Connectors	Stäubli MC4 PV-KBT4/KST4 (4 mm ²) in accordance with IEC 62852:2014, IP68 only when connected
Cable	4 mm ² solar cable, 1.50 m + 1.50 m in accordance with EN50618:2014
Dimensions	1728 x 1205 x 30 mm (2.08 m ²)
Weight	22.7 kg
Origin	Made in Singapore



Specifications subject to change without notice.

ELECTRICAL DATA

		PRODUCT CODE*: RECxxxAA Pure-RX	
Power Output - P _{MAX} (W _p)	450	460	470
Watt Class Sorting - (W)	0/+10	0/+10	0/+10
Nominal Power Voltage - V _{MPP} (V)	54.3	54.9	55.4
Nominal Power Current - I _{MPP} (A)	8.29	8.38	8.49
Open Circuit Voltage - V _{OC} (V)	65.6	65.7	65.7
Short Circuit Current - I _{SC} (A)	8.81	8.88	8.95
Power Density (W/m ²)	216	221	226
Panel Efficiency (%)	21.6	22.1	22.6

STC

Power Output - P _{MAX} (W _p)	342	350	358
Nominal Power Voltage - V _{MPP} (V)	51.2	51.7	52.2
Nominal Power Current - I _{MPP} (A)	6.70	6.77	6.86
Open Circuit Voltage - V _{OC} (V)	61.8	61.9	61.9
Short Circuit Current - I _{SC} (A)	7.12	7.18	7.23

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, windspeed 1 m/s). *Where xxx indicates the nominal power class (P_{MAX}) at STC above.

TEMPERATURE COEFFICIENTS*

P _{MAX} -0.24%/°C	V _{OC} -0.24%/°C	I _{SC} 0.04%/°C	*The temperature coefficients stated are linear values
----------------------------	---------------------------	--------------------------	--

MODULE RATINGS

Module Operating Temperature [T98] ^{§§}	80°C
Min Environmental Temperature	-40°C
Nominal Module Operating Temperature	44 ± 2°C
Max Hail Rating [§]	45 mm @ 30.7 m/s
System Voltage	1000 V
Max Series Fuse Rating	25 A
Max Reverse Current	25 A

[§] 98th percentile operating temperature
^{§§} Based on third party testing

MAXIMUM TEST LOAD*

Front (4-Point)*	+7000 Pa (714 Kg/m ²)
Rear (4-Point)*	-4000 Pa (408 Kg/m ²)
Front (6-Point)**	+10000 Pa (1,020 Kg/m ²)
Rear (6-Point)**	-6000 Pa (612 Kg/m ²)

Design load = Test load / 1.5 (safety factor)

*IEC 61730/UL 61730 certified. Refer to installation manual.

**Internal testing. Refer to installation manual.

CERTIFICATIONS

ISO 14001; ISO 9001; IEC 45001; IEC 62941
IEC 61215:2021; IEC 61730:2023; UL 61730
IEC 61730 Fire Class C
ISO 11925-2 Ignitability (EN 13501-1 Class E)
IEC 62716 Ammonia Resistance
IEC 61701 Salt Mist (SM6)
IEC 61215:2021 Hailstone (35 mm)
UL 61730 Fire Type 2
IEC TS 63126 Level 1



WARRANTY

	Standard	REC ProTrust	
Installed by an REC	No	Yes	Yes
Certified Professional			
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%

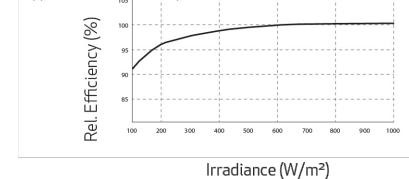
REC ProTrust Warranty applies only for: i) REC panels installed by an REC Certified Solar Professional, and ii) panels have been registered by the installer with REC. Subject to System Size and further conditions. See www.recgroup.com for details.

DELIVERY INFORMATION

Panels per Pallet	33
Panels per 40 ft GP/high cube container	594 (18 Pallets)
Panels per 13.6 m truck	660 (20 Pallets)

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



Available from:



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.

REC Solar PTE. LTD.
20 Tuas South Ave. 14
Singapore 637312
post@recgroup.com
www.recgroup.com



IECEN10.2025 V5 REF-PM-DS-12-06/06/06.04.06.01



IQ8X Microinverter

Our newest IQ8 Series 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. IQ8X Microinverter is the latest addition to this family, designed to support PV modules with higher input DC voltage and cell counts, such as 96 cells, 80 half-cut cells, and 88 half-cut cells. 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 55 nm technology with high-speed digital logic and has superfast 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 IQ Battery, 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 the IQ8 Series Microinverters that have integrated MC4 connectors.



IQ8 Series Microinverters are UL listed as PV rapid shutdown equipment and conform with various regulations when installed according to the manufacturer’s instructions.

*Only when installed with IQ System Controller 2, meets UL 1741.

Easy to install

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

High productivity and reliability

- Produces 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) and IEEE 1547:2018 (UL 1741-SB)

Note:

IQ8 Series Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, and so on) in the same system.

IQ8X Microinverter

INPUT DATA (DC)		IQ8X-80-M-US	
Commonly used module pairings ¹	W	320–540	
Module compatibility		To meet compatibility, PV modules must be within Max. Input DC voltage and Max module I _{sc} listed below Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator	
MPPT voltage range	V	43–60	
Operating range	V	25–79.5	
Minimum and Maximum start voltage	V	30–79.5	
Max. input DC voltage	V	79.5	
Max. continuous operating DC current	A	10	
Max. input DC short-circuit current	A	16	
Max. module I _{sc}	A	13	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
PV array configuration		Ungrounded array; no additional DC side protection required; AC side protection requires max 20 A per branch circuit	
OUTPUT DATA (AC)		IQ8X-80-M-US @240 VAC	IQ8X-80-M-US @208 VAC
Peak output power	VA	384	366
Max. continuous output power	VA	380	360
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180°	208, single-phase (L-L), 120°
Minimum and Maximum grid voltage ²	V	211–264	183–229
Max. continuous output current	A	1.58	1.73
Nominal frequency	Hz	60	
Extended frequency range	Hz	47–68	
AC short circuit fault current over three cycles I _{Arms}		2.70	
Max. units per 20 A (L-L) branch circuit ³		10	9
Total harmonic distortion	%	< 5	
Overvoltage class AC port		III	
AC port backfeed current	mA	18	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading...0.85 lagging	
Peak efficiency	%	97.6	97.4
CEC weighted efficiency	%	97.2	96.9
Nighttime power consumption	mW	22	29
MECHANICAL DATA			
Ambient temperature range		–40°C to 65°C (–40°F to 149°F)	
Relative humidity range		4% to 100% (condensing)	
DC connector type		Stäubli MC4	
Dimensions (H × W × D); Weight		212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2"); 1.1 kg (2.43 lbs)	
Cooling		Natural convection – no fans	
Approved for wet locations; Pollution degree		Yes; 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, IEEE 1547:2018 (UL 1741-SB), FCC Part 15 Class B, ICES–0003 Class B, CAN/CSA–C22.2 NO. 107.1-01 This product is UL Listed as PV rapid shutdown 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 the manufacturer’s instructions.		

(1) No enforced DC/AC ratio.
(2) Nominal voltage range can be extended beyond nominal if required by the utility.
(3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.



DATA SHEET



X-IQ-AM1-240-5
X-IQ-AM1-240-5C

IQ Combiner 5/5C

The IQ Combiner 5/5C consolidates interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications. IQ Combiner 5/5C uses wired control communication and is compatible with IQ System Controller 3/3G and IQ Battery 5P.

The IQ Combiner 5/5C, IQ Series Microinverters, IQ System Controller 3/3G, and IQ Battery 5P provide a complete grid-agnostic Enphase Energy System.



IQ Series Microinverters
The high-powered smart grid-ready IQ Series Microinverters (IQ6, IQ7, and IQ8 Series) simplify the installation process.



IQ System Controller 3/3G
Provides microgrid interconnection device (MID) functionality by automatically detecting grid failures and seamlessly transitioning the home energy system from grid power to backup power.



IQ Battery 5P
Fully integrated AC battery system. Includes six field-replaceable IQ8D-BAT Microinverters.



IQ Load Controller
Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.



5-year limited warranty



*For country-specific warranty information, see the <https://enphase.com/installers/resources/warranty> page.

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Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect (CELLMODEM-M1-06-SP-05), only with IQ Combiner 5C
- Supports flexible networking: Wi-Fi, Ethernet, or cellular
- Provides production metering (revenue grade) and consumption monitoring

Easy to install

- Mounts to one stud with centered brackets
- Supports bottom, back, and side conduit entries
- Supports up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80 A total PV branch circuits
- Bluetooth-based Wi-Fi provisioning for easy Wi-Fi setup

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- 5-year limited warranty
- 2-year labor reimbursement program coverage included for both the IQ Combiner SKUs¹
- UL1741 Listed

IQ Combiner 5/5C

MODEL NUMBER	
IQ Combiner 5 (X-IQ-AM1-240-5)	IQ Combiner 5 with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (± 2.5%), and IQ Battery monitoring (±2.5%). Includes a silver solar shield to deflect heat.
IQ Combiner 5C (X-IQ-AM1-240-5C)	IQ Combiner 5C with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (±2.5%) and IQ Battery monitoring (±2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05) ¹ . Includes a silver solar shield to deflect heat.
WHAT'S IN THE BOX	
IQ Gateway printed circuit board	IQ Gateway is the platform for total energy management for comprehensive, remote maintenance, and management of the Enphase Energy System
Busbar	80 A busbar with support for 1 × IQ Gateway breaker and 4 × 20 A breaker for installing IQ Series Microinverters and IQ Battery 5P
IQ Gateway breaker	Circuit breaker, 2-pole, 10 A/15 A
Production CT	Pre-wired revenue-grade solid-core CT, accurate up to ±0.5%
Consumption CT	Two consumption metering clamp CTs, shipped with the box, accurate up to ±2.5%
IQ Battery CT	One battery metering clamp CT, shipped with the box, accurate up to ±2.5%
CTRL board	Control board for wired communication with IQ System Controller 3/3G and the IQ Battery 5P
Enphase Mobile Connect (only with IQ Combiner 5C)	4G-based LTE-M1 cellular modem (CELLMODEM-M1-06-SP-05) with a 5-year T-Mobile data plan
Accessories kit	Spare control headers for the COMMS-KIT-02 board
ACCESSORIES AND REPLACEMENT PARTS (NOT INCLUDED, ORDER SEPARATELY)	
CELLMODEM-M1-06-SP-05	4G-based LTE-M1 cellular modem with a 5-year T-Mobile data plan
CELLMODEM-M1-06-AT-05	4G-based LTE-M1 cellular modem with a 5-year AT&T data plan
Circuit breakers (off-the-shelf)	Supports Eaton BR2XX, Siemens Q2XX and GE/ABB THQL21XX Series circuit breakers (XX represents 10, 15, 20, 30, 40, 50, or 60). Also supports Eaton BR220B, BR230B, and BR240B circuit breakers compatible with the hold-down kit.
Circuit breakers (provided by Enphase)	BRK-10A-2-240V, BRK-15A-2-240V, BRK-20A-2P-240V, BRK-15A-2P-240V-B, and BRK-20A-2P-240V-B (more details in the "Accessories" section)
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 5/5C
XA-ENV2-PCBA-5	IQ Gateway replacement printed circuit board (PCB) for IQ Combiner 5/5C
X-IQ-NA-HD-125A	Hold-down kit compatible with Eaton BR-B Series circuit breakers (with screws)
XA-COMMS2-PCBA-5	Replacement COMMS-KIT-02 printed circuit board (PCB) for IQ Combiner 5/5C
ELECTRICAL SPECIFICATIONS	
Rating	80 A
System voltage and frequency	120/240 VAC, 60 Hz
Busbar rating	125 A
Fault current rating	10 kAIC
Maximum continuous current rating (input from PV/storage)	64 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR, Siemens Q, or GE/ABB THQL Series distributed generation (DG) breakers only (not included)
Maximum total branch circuit breaker rating (input)	80 A of distributed generation/95 A with IQ Gateway breaker included
IQ Gateway breaker	10 A or 15 A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-CLAMP)	A pair of 200 A clamp-style current transformers is included with the box
IQ Battery metering CT	200 A clamp-style current transformer for IQ Battery metering, included with the box

1. A plug-and-play industrial-grade cell modem for systems of up to 60 microinverters. Available in the United States, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.

CERTIFICATE OF COMPLIANCE

Certificate Number 20211109-E341165
Report Reference E341165-20210317
Issue Date 2021-11-09

Issued to: Enphase Energy Inc.
1420 N. McDowell Blvd. Petaluma, CA 94954-6515

This is to certify that representative samples of Grid Support, Utility Interactive Supporting Energy Storage, Multimode, Bi-directional Microinverters

Models IQ8-60, IQ8PLUS-72, IQ8M-72, IQ8A-72, IQ8H-208-72, IQ8H-240-72, may be f/b -2, -5, -E, or -M, may be f/b -ACM, f/b -US, may be f/b -NM, may be f/b -RMA, may be f/b -&, where "&" designates additional characters.

Has been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: See Page 2

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

This Certificate of Compliance is provided as a courtesy to help our customers communicate product compliance information, as documented in our UL Follow-Up Services procedure. This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark shall be considered as being UL Certified and covered under UL's Follow-Up Services. Look for the UL Certification Mark on the product.

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Bruce Mahrenholz, Director North American Certification Program
UL LLC

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CERTIFICATE OF COMPLIANCE

Certificate Number 20211109-E341165
Report Reference E341165-20210317
Issue Date 2021-11-09

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Standards for Safety:

UL 62109-1, STANDARD FOR SAFETY OF POWER CONVERTERS FOR USE IN PHOTOVOLTAIC POWER SYSTEMS - PART 1: GENERAL REQUIREMENTS, Edition 1, Revision Date 04/30/2019

IEC 62109-2, SAFETY OF POWER CONVERTERS FOR USE IN PHOTOVOLTAIC POWER SYSTEMS - PART 2: PARTICULAR REQUIREMENTS FOR INVERTERS, Edition 1, Issue Date 06/2011

UL 1741, Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources, Edition 2, Revision Date 06/10/2021, including the requirements in UL 1741 Supplement SA, sections as noted in the Technical considerations.

IEEE 1547, IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems.

IEEE 1547.1, IEEE Standard for Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.

CSA C22.2 No. 62109-1, Safety of Power Converters for Use in Photovoltaic Power Systems - Part 1: General Requirements, Edition 1, Issue Date 07/2016

CSA C22.2 No. 62109-2, Safety of Power Converters for Use in Photovoltaic Power Systems - Part 2: Particular Requirements for Inverters, Edition 1, Issue Date 07/2016


Bruce Mahrenholz, Director North American Certification Program
UL LLC

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DESCRIPTION:

SNAPNRACK, TDS, UR-45 RAIL

PART NUMBER(S):

232-10095, 232-10096, 232-10097, 232-10098,

UNITS: IN, LB, DEG [MM, KG, DEG]SHEET: 1:1

DOC NUMBER:

SNR-DC-01420

DRAWN BY:

H.WULFEKOETTER

REV:

A

DATE:

3/6/2024

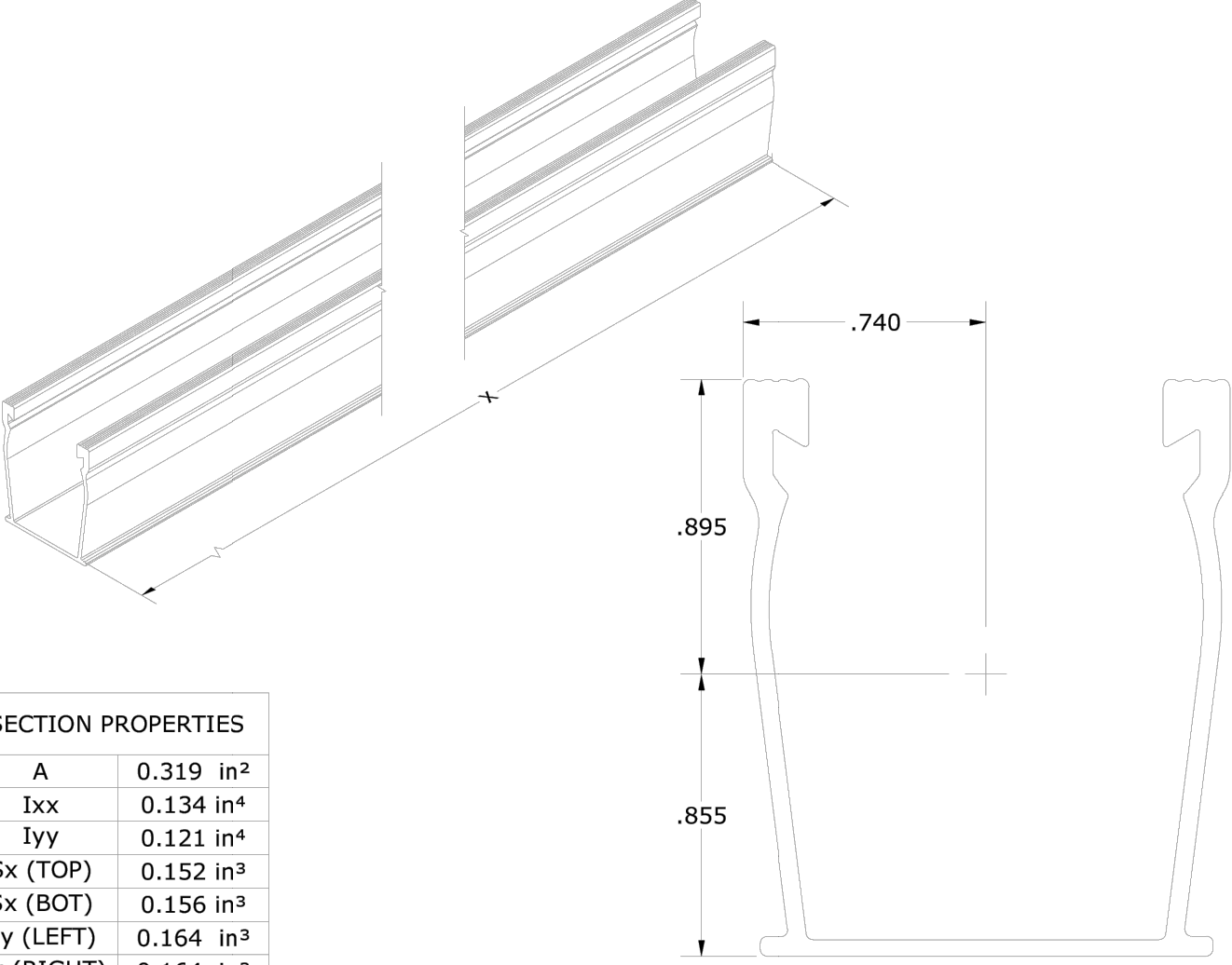
SnapNrack®

SUNRUN INSTALLATION SERVICES INC.

225 BUSH STREET, SUITE 1400 • SAN FRANCISCO, CA 94104 USA
PHONE (877) 732-2860 • CONTACT@SNAPNRACK.COM
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-45 RAIL PROPERTIES

SKU	FINISH	RAIL LENGTH	WEIGHT (lb)
232-10095	MILL	172 in	5.55
232-10096	BLACK	172 in	5.55
232-10097	MILL	94 in	3.03
232-10098	BLACK	94 in	3.03



SECTION PROPERTIES

A	0.319 in ²
Ixx	0.134 in ⁴
Iyy	0.121 in ⁴
Sx (TOP)	0.152 in ³
Sx (BOT)	0.156 in ³
Sy (LEFT)	0.164 in ³
Sy (RIGHT)	0.164 in ³

MATERIALS:6005-T5 ALUMINUM

DESIGN LOAD (LBS):N/A

ULTIMATE LOAD (LBS):N/A

TORQUE SPECIFICATION:N/A FT-LBS

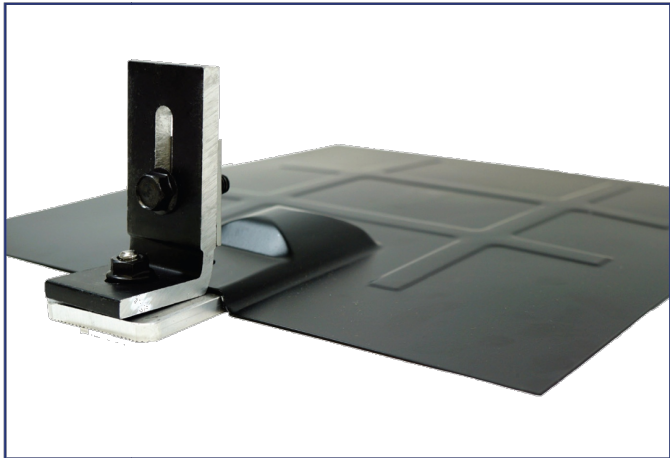
CERTIFICATION:UL 2703, FILE E359313

WEIGHT (LBS):5.48 - 5.62 (172 in), 2.96 - 3.10 (94 in)

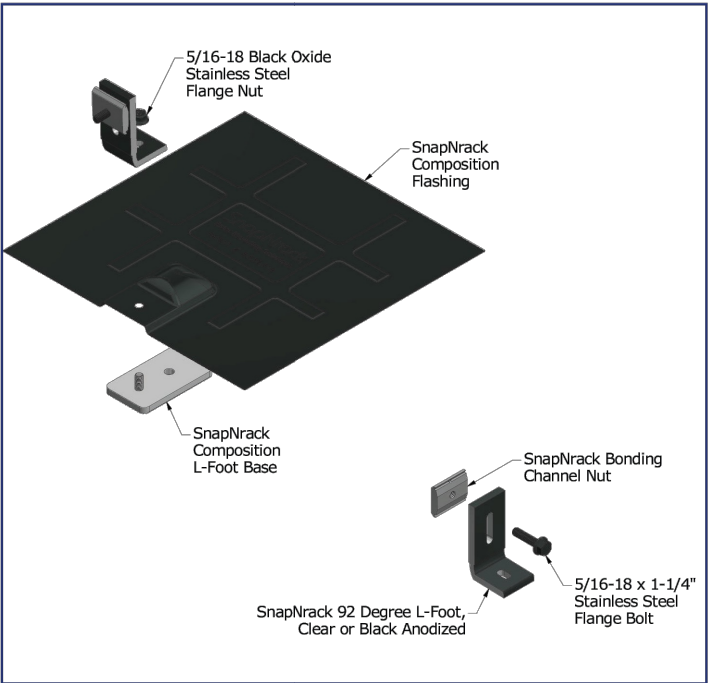
Series 100 Flashed L Foot Kit

SnapNrack Series 100 Flashed L Foot Kit is an innovative solution to provide a long lasting, watertight seal over the life of the system. The Flashed L Foot provides a fully flashed roof fastener for attachment to composition roof with no required cutting of shingles. The L Foot is engineered for maximum adjustability for a clean, level installation.

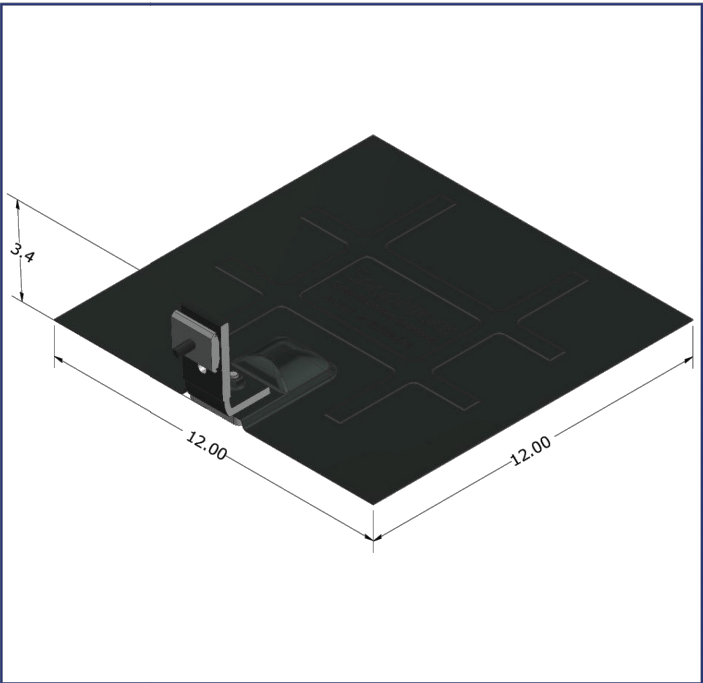
- Slotted attachment provides 1" vertical adjustability for array leveling
- 1" spacers available for increased elevation adjustability
- Clear or black anodized aluminum components. Both are available with black galvanized steel or aluminum flashing.
- No cutting of shingles



Flashed L Foot Kit Assembly



Flashed L Foot Kit Dimensions



Features Include



Snap in
Hardware



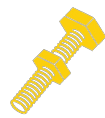
Single Tool
Installation



Easy
Leveling



No Cutting
or Drilling



Preassembled
hardware



Integrated bonding



UL 2703 Certified

FLASHED L FOOT KIT TECHNICAL DATA

Materials

- 6000 Series aluminum L foot & base
- Stainless steel hardware
- Galvanized steel or aluminum flashing w/ black all weather coating

Material Finish

Clear and black anodized aluminum

Weight

1.3 lbs

Design Uplift Load

350 lbs uplift

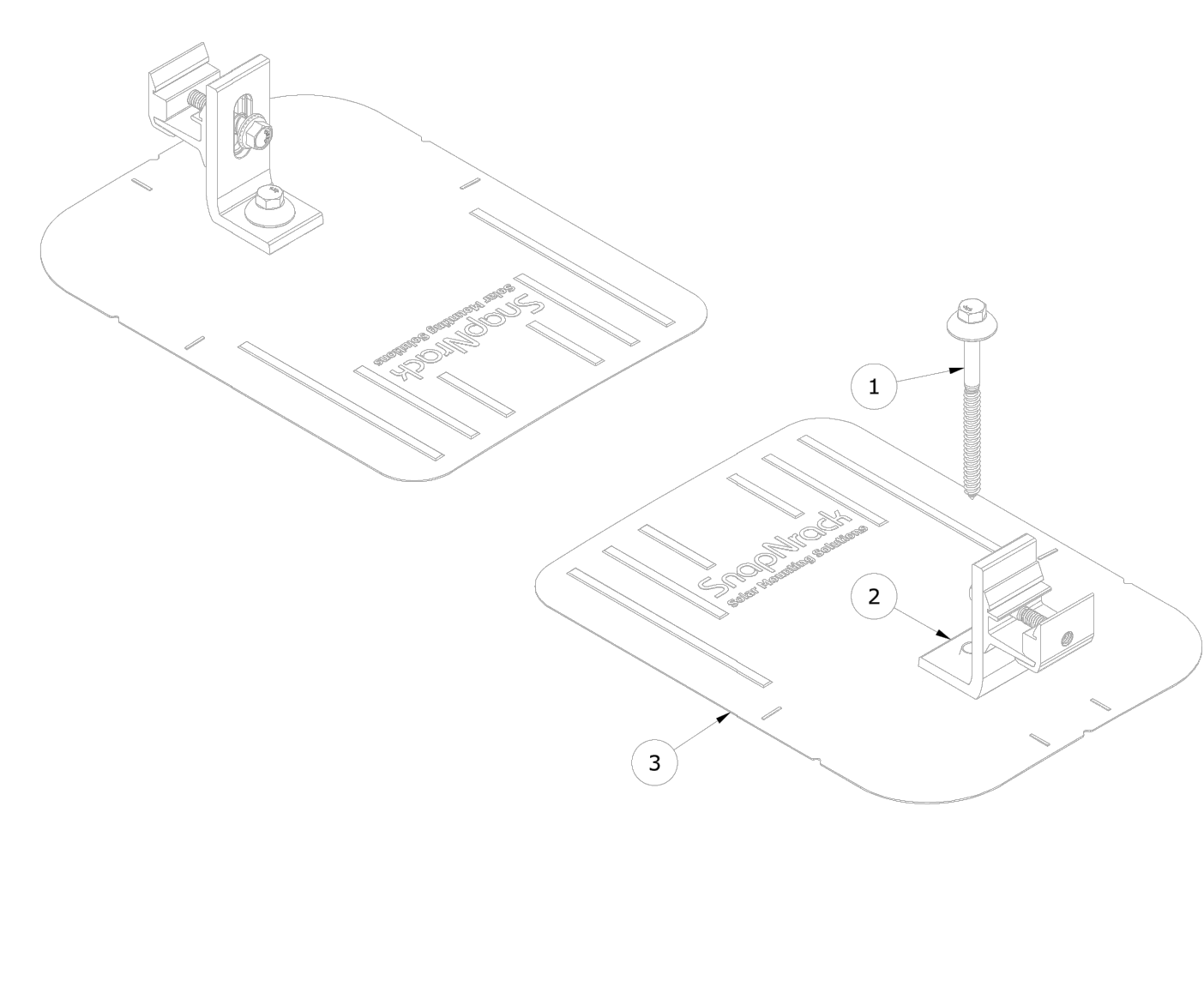
Design Ultimate Load

1,000 lbs uplift

Warranty

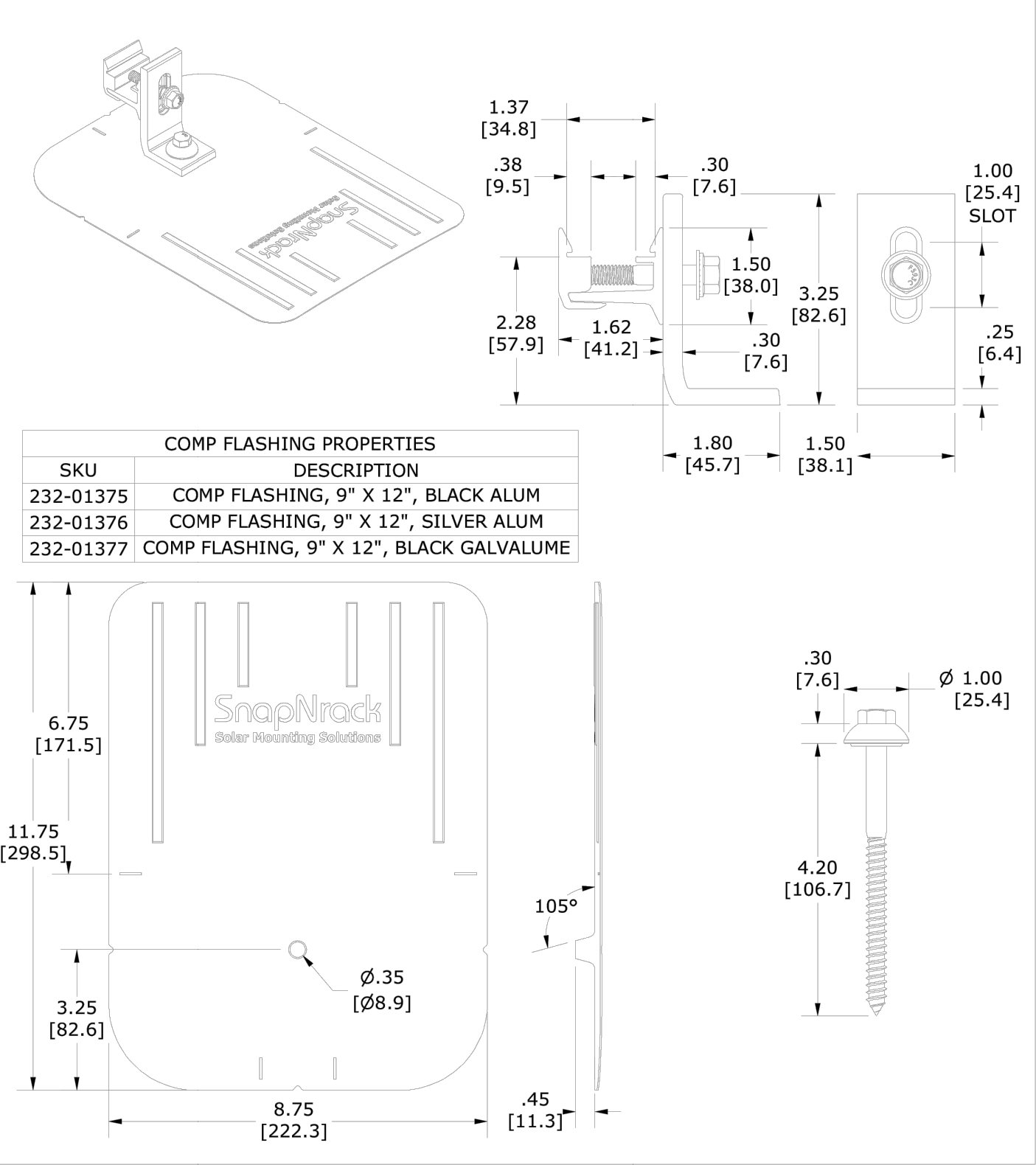
10 year limited product warranty; 5 year limited finish warranty

DESCRIPTION: SNAPNRACK, TDS, ULTRA RAIL COMP KIT		DOC NUMBER: SNR-DC-01342		
PART NUMBER(S): 242-92266, 242-01219, 242-01220, 232-01375, 232-01376, 232-01377		DRAWN BY: H.WULFEKOETTER		
		REV: D	DATE: 1/20/2023	
UNITS: IN, LB, DEG [MM, KG, DEG]		SHEET: 1:2		



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 RAIL UMBRELLA L FOOT, SILVER / BLACK
3	1	232-01375, 232-01376, 232-01377	SNAPNRACK, COMP FLASHING, 9IN X 12IN, SILVER / BLACK
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 FT-LBS	
CERTIFICATION:		UL 2703, FILE E359313; WIND-DRIVEN RAIN TEST FROM UL SUBJECT 2582	
WEIGHT (LBS):		0.93 -1.03	

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		REV: D	DATE: 1/20/2023	
UNITS: IN, LB, DEG [MM, KG, DEG]		SHEET: 2:2		



SnapNrack UL 2703 Fire Classification

March 2019

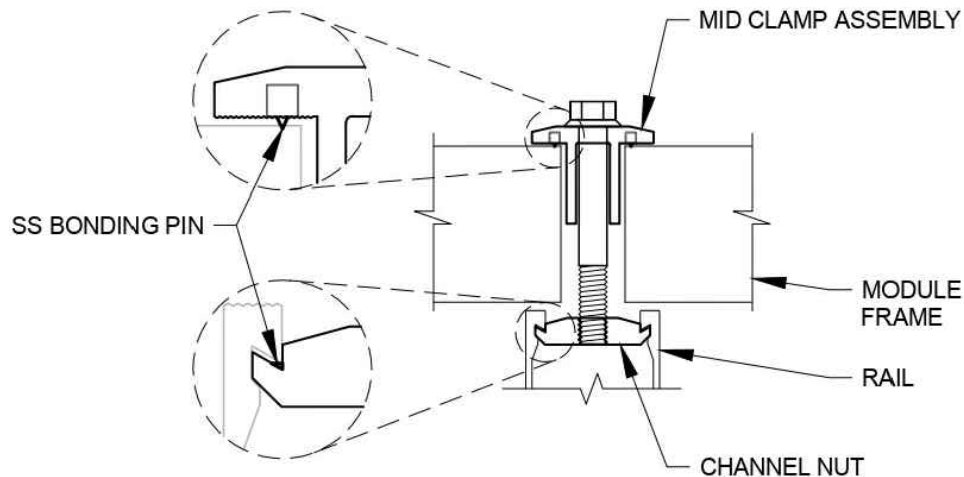
As of January 1st, 2015 many jurisdictions are now enforcing codes based upon updates to the International Building Code (IBC) and UL Standards 1703 (modules) and 2703 (mounting systems). The language included in the 2012 IBC requires that the combination of roof mounted solar modules and racking components is to be considered a system (IBC Section 1509.7.2). Additionally, it requires that this system shall meet or exceed the fire classification of the roof assembly.

The objective is to ensure that the PV system does not adversely affect the fire rating of the roof. Roof surface fire ratings are classified either A, B, or C; Class A being the most resistant to the spread of flame.

Since the physical characteristics of the PV module (material, thickness of glass, etc) also potentially affect how a fire will act, modules are now tested and assigned a “type” based upon these characteristics and spread of flame test results. There are 15 total module types, Types 1, 2 and 3 represent differences in the module composition and Types 4 – 15 are the same module compositions as Types 1 – 3 with differing fire test performance.

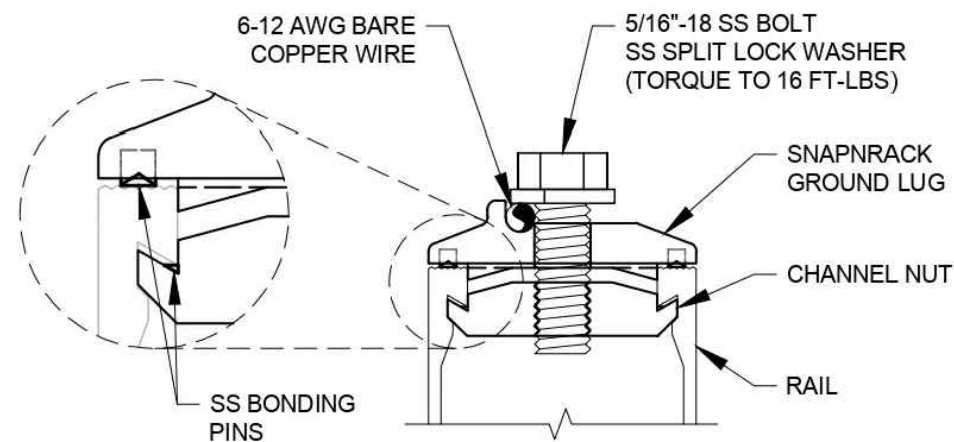
SnapNrack Series 100, Ultra Rail and RL systems have been Certified for a Class A fire rating with Type 1 and Type 2 modules, in accordance with the standards set forth in UL1703/2703 and IBC 2012. In order to maintain this classification, the SnapNrack mounting systems must be installed per the UL-approved [Installation Manuals](#). Because the test was conducted with the modules at 5 inches from the roof surface (worst case scenario), there is no restriction to the standoff height.

Attachment 1 is the SnapNrack QIMS File which is accessed through the UL Online Certification Directory, or available here: [SnapNrack QIMS File](#).



NOTE:

1. ADJUSTABLE END CLAMPS USE SAME BONDING PIN DESIGN TO BOND MODULES TO RAIL



NOTE:

1. ALL HARDWARE IS INCLUDED FROM MANUFACTURER
2. A MINIMUM OF ONE GROUND LUG IS TO BE INSTALLED ON EVERY CONTINUOUS ROW OF MODULES
3. GROUND LUG MAY BE INSTALLED IN EITHER RAIL CHANNEL
4. GROUND LUG MAY BE INSTALLED SO GROUND WIRE IS PARALLEL OR PERPENDICULAR TO RAIL
5. ENSURE SPLIT LOCK WASHER IS INSTALLED ON TOP OF COPPER WIRE

ASSEMBLER:

INSPECTOR:

DESCRIPTION:

SNAPNRACK MOUNTING SYSTEM
GROUNDING DETAILS

DRAWN BY: MIKE WATKINS

APPROVED BY: CODY NORMAN

REVISION:
G 1/11/2016 NEW ITEM

SnapNrack™
Solar Mounting Solutions

Sunrun South LLC

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PART NUMBER:

SCALE:

DNS

Resources snapnrack.com/resources
877-732-2860

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www.snapnrack.com

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