NEW PV SYSTEM: 9.13 kWp

DAMANTI RESIDENCE

405 PARKER CREEK RD
HOLLY SPRINGS, NC 27540
ASSESSOR'S #: 1500011889

GENERAL NOTES

1.1.1 PROJECT NOTES:

1.1.2 THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURERS'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.

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

1.1.4 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 690.4: PV MODULES: UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE INVERTERS: UL 1741 CERTIFIED, IEEE 1547, 929, 519 COMBINER BOX(ES): UL 1703 OR UL 1741 ACCESSORY

1.1.5 MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.

1.1.6 ALL INVERTERS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D). SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].

1.1.7 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.

1.2.1 SCOPE OF WORK:

1.2.2 PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR ROOF-MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT.

1.3.1 WORK INCLUDES:

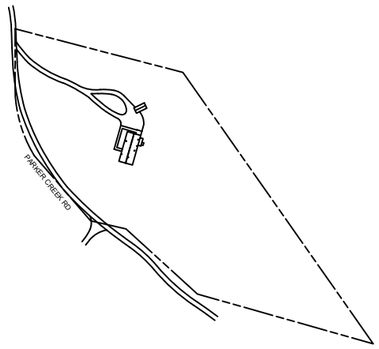
1.3.2 PV ROOF ATTACHMENTS - SNAPRACK UR 40 RAIL
1.3.3 PV RACKING SYSTEM INSTALLATION - SNAPNRACK
1.3.4 PV MODULE AND INVERTER INSTALLATION - REC SOLAR
REC 365 NP2 BLK / ENPHASE IQ7+ MICROINVERTER
1.3.5 PV EQUIPMENT GROUNDING
1.3.6 PV SYSTEM WIRING TO A ROOF-MOUNTED JUNCTION BOX
1.3.7 PV LOAD CENTERS (IF INCLUDED)
1.3.8 PV METERING/MONITORING (IF INCLUDED)
1.3.9 PV DISCONNECTS
1.3.10 PV FINAL COMMISSIONING
1.3.11 (E) ELECTRICAL EQUIPMENT RETROFIT FOR PV
1.3.12 SIGNAGE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE

SCOPE OF WORK

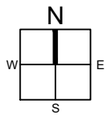
SYSTEM SIZE: STC 25 X 365 = 9.13 kW
PTC: 25 X 343.7 = 8.59 kW DC
(25) REC SOLAR REC 365NP2 BLACK
(25) ENPHASE IQ7PLUS-72-2-US

ATTACHMENT TYPE: SNAPRACK UR 40 RAIL
MSP UPGRADE: NO

01 AERIAL PHOTO
NOT TO SCALE



02 PLAT MAP
NOT TO SCALE



SHEET LIST TABLE

PROJECT INFORMATION

OWNER
NAME: DJ DAMANTI

PROJECT MANAGER
NAME: ANDREW O'DONNELL
PHONE: 704-525-6767

CONTRACTOR
NAME: RENU ENERGY SOLUTIONS, LLC
PHONE: 704-525-6767

AUTHORITIES HAVING JURISDICTION
BUILDING: HARNETT COUNTY
ZONING: HARNETT COUNTY
UTILITY: DUKE ENERGY CAROLINAS

DESIGN SPECIFICATIONS
OCCUPANCY: II
CONSTRUCTION: SINGLE-FAMILY
ZONING: RESIDENTIAL
GROUND SNOW LOAD: 15 PSF
WIND EXPOSURE: B
WIND SPEED: 115 MPH

APPLICABLE CODES & STANDARDS
BUILDING: 2015 IBC
ELECTRICAL: 2017 NEC
FIRE: 2015 IFC

CONTRACTOR

RENU ENERGY SOLUTIONS, LLC

PHONE: 704-525-6767
ADDRESS: 801 PRESSLEY ROAD SUITE 100
CHARLOTTE, NC 28217

LIC. NO.: 76615
HIC. NO.:
ELE. NO.: 20334U

NEW PV SYSTEM: 9.13 kWp

DAMANTI RESIDENCE

405 PARKER CREEK RD
HOLLY SPRINGS, NC 27540
APN: 1500011889

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

COVER PAGE

DATE: 10/03/2022

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CHECKED BY: H.E. & D.B.

REVISIONS:

T-001.00
(SHEET 1)

2.1.1 **SITE NOTES:**
2.1.2 A LADDER WILL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
2.1.3 THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THIS SYSTEM IS A UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.
2.1.4 THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
2.1.5 PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION NEC 110.26.
2.1.6 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.

2.2.1 **EQUIPMENT LOCATIONS:**
2.2.2 ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.
2.2.3 WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31 (A),(C) AND NEC TABLES 310.15 (B)(2)(A) AND 310.15 (B)(3)(C).
2.2.3 JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.
2.2.4 ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
2.2.5 ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.
2.2.6 ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

2.3.1 **STRUCTURAL NOTES:**
2.3.2 RACKING SYSTEM & PV ARRAY WILL BE INSTALLED ACCORDING TO 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, ACCORDING TO RAIL MANUFACTURER'S INSTRUCTIONS.
2.3.3 JUNCTION BOX WILL BE INSTALLED PER MANUFACTURERS' SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED & SEALED PER LOCAL REQUIREMENTS.
2.3.4 ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED W/ APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.
2.3.5 ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.
2.3.6 WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.

2.4.1 **GROUNDING NOTES:**
2.4.2 GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVISES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.
2.4.3 PV SYSTEMS REQUIRE AN EQUIPMENT GROUNDING CONDUCTOR. ALL METAL ELECTRICAL EQUIPMENT AND STRUCTURAL COMPONENTS BONDED TO GROUND, IN ACCORDANCE WITH 250.134 OR 250.136(A). ONLY THE DC CONDUCTORS ARE UNGROUNDED.
2.4.4 PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC 690.43 AND MINIMUM NEC TABLE 250.122.
2.4.5 METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURE CONSIDERED GROUNDED IN ACCORD WITH 250.134 AND 250.136(A).
2.4.6 EACH MODULE WILL BE GROUNDED USING WEEB GROUNDING CLIPS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURERS' INSTALLATION REQUIREMENTS.
2.4.7 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.
2.4.8 GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC 250.119]
2.4.9 THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH 250.106. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED ACCORDING TO NEC 250, NEC 690.47 AND AHJ.
2.4.10 DC PV ARRAYS SHALL BE PROVIDED WITH DC GROUND-FAULT PROTECTION MEETING THE REQUIREMENTS OF 690.41(B)(1) AND (2) TO REDUCE FIRE HAZARDS

2.5.1 **INTERCONNECTION NOTES:**
2.5.2 LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC 705.12 (B)]
2.5.3 THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS OUTPUT MAY NOT EXCEED 120% OF BUSBAR RATING [NEC 705.12(B)(2)(3)].
2.5.4 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 [NEC 705.12(B)(2)(3)].
2.5.5 AT MULTIPLE ELECTRIC POWER SOURCES OUTPUT COMBINER PANEL, TOTAL RATING OF ALL OVERCURRENT DEVICES SHALL NOT EXCEED AMPACITY OF BUSBAR. HOWEVER, THE COMBINED OVERCURRENT DEVICE MAY BE EXCLUDED ACCORDING TO NEC 705.12 (B)(2)(3)(C).
2.5.6 FEEDER TAP INTERCONECTION (LOAD SIDE) ACCORDING TO NEC 705.12 (B)(2)(1)
2.5.7 SUPPLY SIDE TAP INTERCONNECTION ACCORDING TO NEC 705.12 (A) WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC 230.42
2.5.8 BACKFEEDING BREAKER FOR ELECTRIC POWER SOURCES OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING [NEC 705.12 (B)(5)].

2.6.1 **DISCONNECTION AND OVER-CURRENT PROTECTION NOTES:**
2.6.2 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).
2.6.3 DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH.
2.6.4 BOTH POSITIVE AND NEGATIVE PV CONDUCTORS ARE UNGROUNDED. THEREFORE BOTH MUST OPEN WHERE A DISCONNECT IS REQUIRED, ACCORDING TO NEC 690.13.
2.6.5 ISOLATING DEVICES OR EQUIPMENT DISCONNECTING MEANS SHALL BE INSTALLED IN CIRCUITS CONNECTED TO EQUIPMENT AT A LOCATION WITHIN THE EQUIPMENT, OR WITHIN SIGHT AND WITHIN 10 FT OF THE EQUIPMENT. AN EQUIPMENT DISCONNECTING MEANS SHALL BE PERMITTED TO BE REMOTE FROM THE EQUIPMENT WHERE THE EQUIPMENT DISCONNECTING MEANS CAN BE REMOTELY OPERATED FROM WITHIN 10 FT OF THE EQUIPMENT, ACCORDING TO NEC 690.15 (A).
2.6.6 PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION TO REDUCE SHOCK HAZARD FOR EMERGENCY RESPONDERS IN ACCORDANCE WITH 690.12(A) THROUGH (D)
2.6.7 ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9, AND 240.
2.6.8 BOTH POSITIVE AND NEGATIVE PV CONDUCTORS ARE UNGROUNDED, THEREFORE BOTH REQUIRE OVER-CURRENT PROTECTION, ACCORDING TO NEC 240.21. (SEE EXCEPTION IN NEC 690.9)
2.6.9 IF REQUIRED BY AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.

2.7.1 **WIRING & CONDUIT NOTES:**
2.7.2 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.
2.7.3 ALL CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.
2.7.4 EXPOSED PV SOURCE CIRCUITS AND OUTPUT CIRCUITS SHALL USE WIRE LISTED AND IDENTIFIED AS PHOTOVOLTAIC (PV) WIRE [690.31 (C)]. PV MODULES WIRE LEADS SHALL BE LISTED FOR USE ON PV ARRAYS, ACCORDING TO NEC 690.31 (A).
2.7.5 PV WIRE BLACK WIRE MAY BE FIELD-MARKED WHITE [NEC 200.6 (A)(6)].
2.7.6 MODULE WIRING SHALL BE LOCATED AND SECURED UNDER THE ARRAY.
2.7.7 ACCORDING TO NEC 200.7, UNGROUNDED SYSTEMS DC CONDUCTORS COLORED OR MARKED AS FOLLOWS:
DC POSITIVE- RED, OR OTHER COLOR EXCLUDING WHITE, GREY AND GREEN
DC NEGATIVE- BLACK, OR OTHER COLOR EXCLUDING WHITE, GREY AND GREEN
2.7.8 AC CONDUCTORS COLORED OR MARKED AS FOLLOWS:
PHASE A OR L1- BLACK
PHASE B OR L2- RED, OR OTHER CONVENTION IF THREE PHASE
PHASE C OR L3- BLUE, YELLOW, ORANGE*, OR OTHER CONVENTION
NEUTRAL- WHITE OR GREY

* IN 4-WIRE DELTA CONNECTED SYSTEMS THE PHASE WITH HIGHER VOLTAGE TO BE MARKED ORANGE [NEC 110.15].

CONTRACTOR

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ELE. NO.: 20334U

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HOLLY SPRINGS, NC 27540
APN: 1500011889

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

NOTES

DATE: 10/03/2022
DRAFTED BY: L.J.
CHECKED BY: H.E. & D.B.

REVISIONS:

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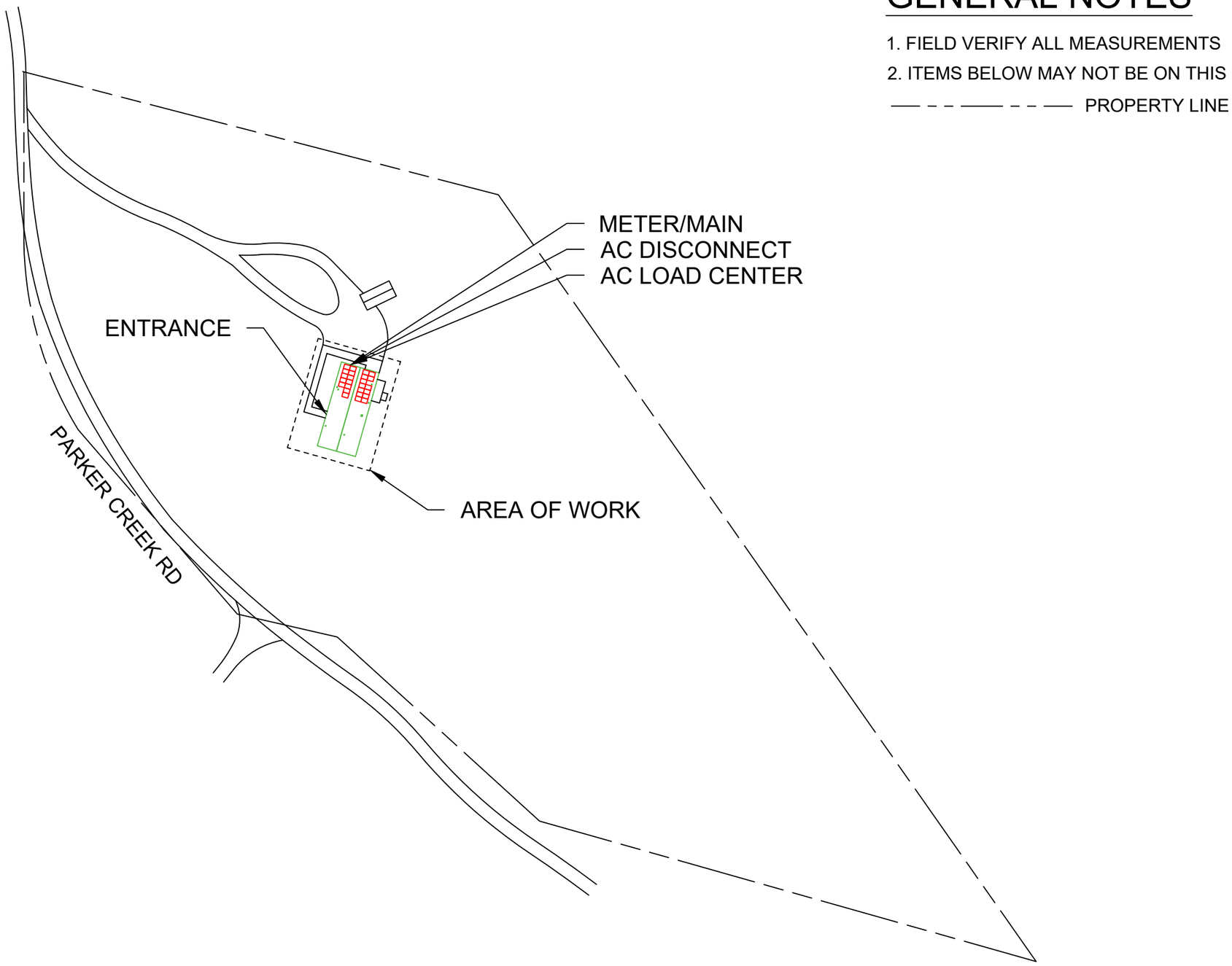
GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

—— – – —— – – —— PROPERTY LINE



01 SOLAR SITE PLAN

1/84" = 1'

0 42' 84'

CONTRACTOR

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SITE PLAN

DATE: 10/03/2022

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(SHEET 3)

GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
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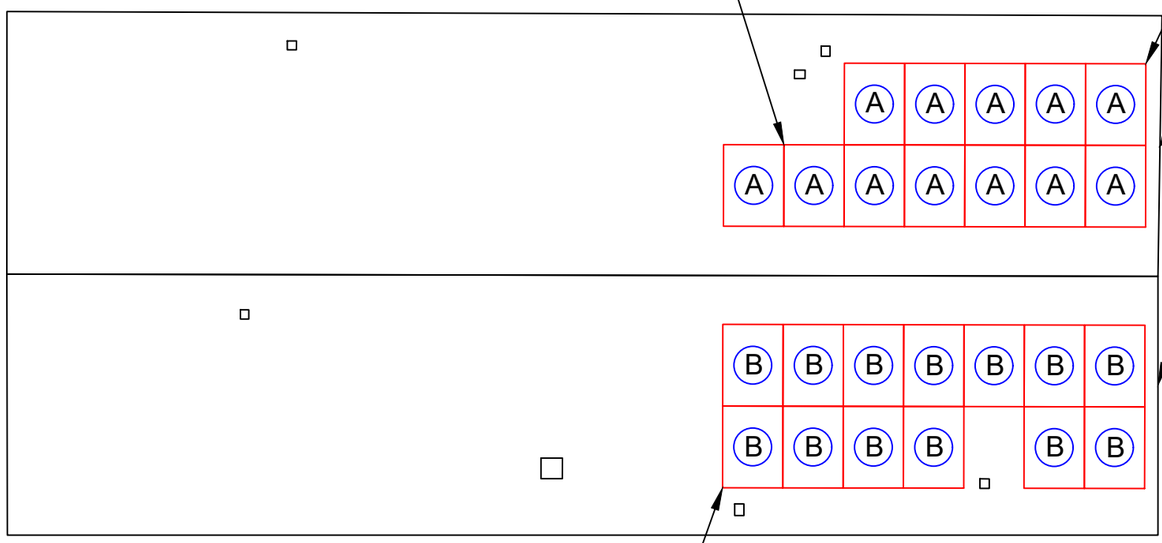
Ⓐ MODULE STRINGING

Ⓑ MODULE STRINGING

ARRAY 1 - 4.38 kW
[x12] (N) MODULES
TILT: 30 DEGREES
ROOF PITCH: 7:12
AZIMUTH: 286 DEGREES



(N)(1) JUNCTION BOX

EXTERIOR PV EQUIPMENT
(E)(1) METER/MAIN
(N)(1) AC DISCONNECT
(N)(1) AC LOAD CENTER

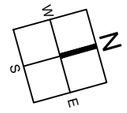
INTERIOR PV EQUIPMENT
(E)(1) MAIN ELECTRICAL PANEL

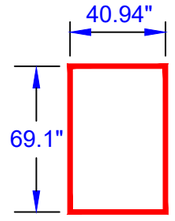
ARRAY 2 - 4.75 kW
[x13] (N) MODULES
TILT: 30 DEGREES
ROOF PITCH: 7:12
AZIMUTH: 106 DEGREES

01 SOLAR ELECTRICAL PLAN

1/9" = 1'

0 4.5' 9'





MODULE:
REC SOLAR
REC365NP2 BLACK
365 WATTS

CONTRACTOR

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ELECTRICAL PLAN

DATE: 10/03/2022

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GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
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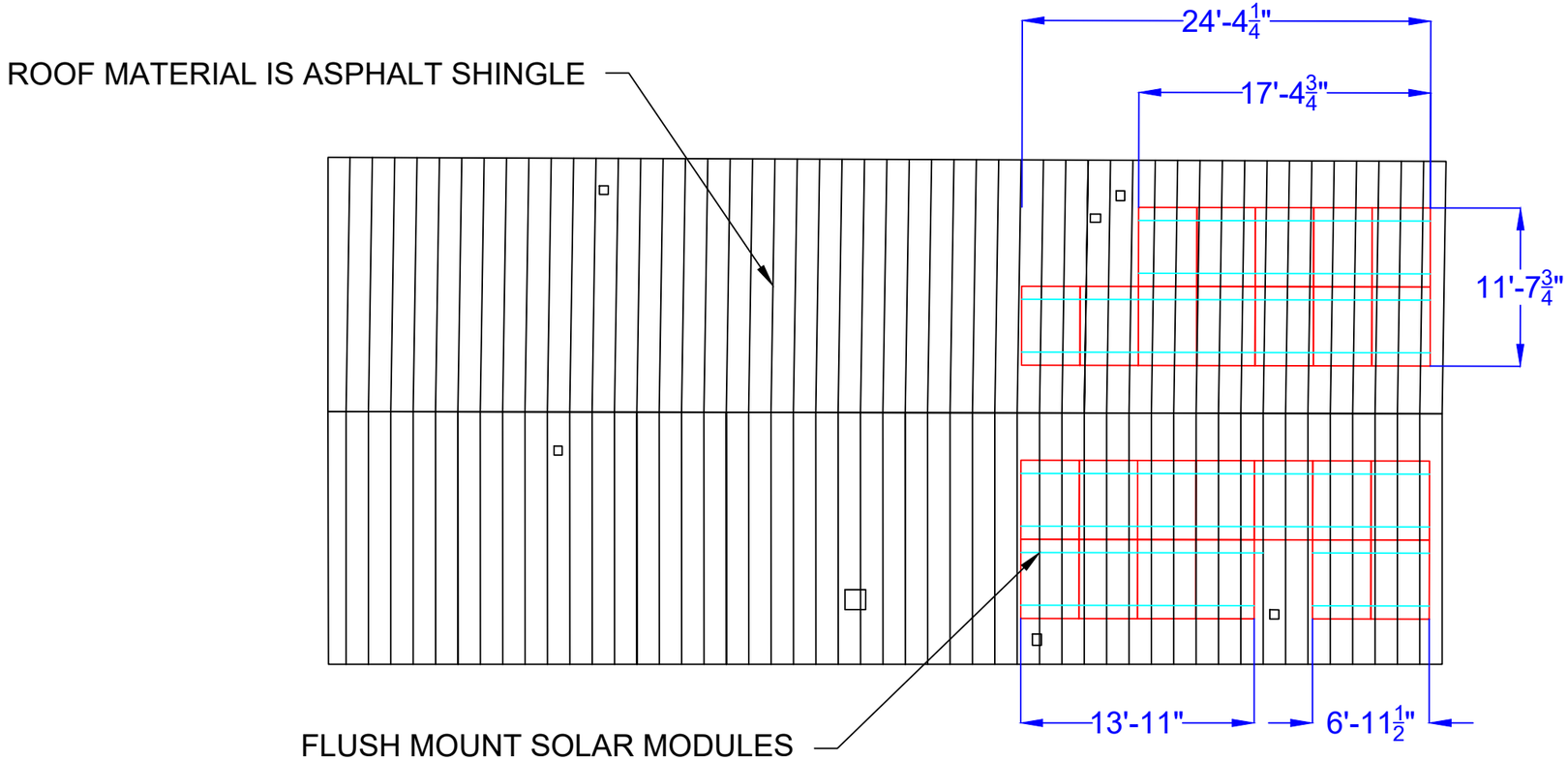
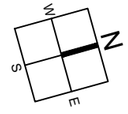
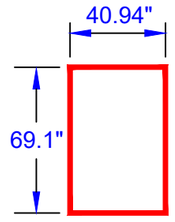


01 SOLAR ELECTRICAL PLAN

1/9" = 1' 0 4.5' 9'





MODULE:
REC SOLAR
REC365NP2 BLACK
365 WATTS

CONTRACTOR

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ELEC ELEVATION

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CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS

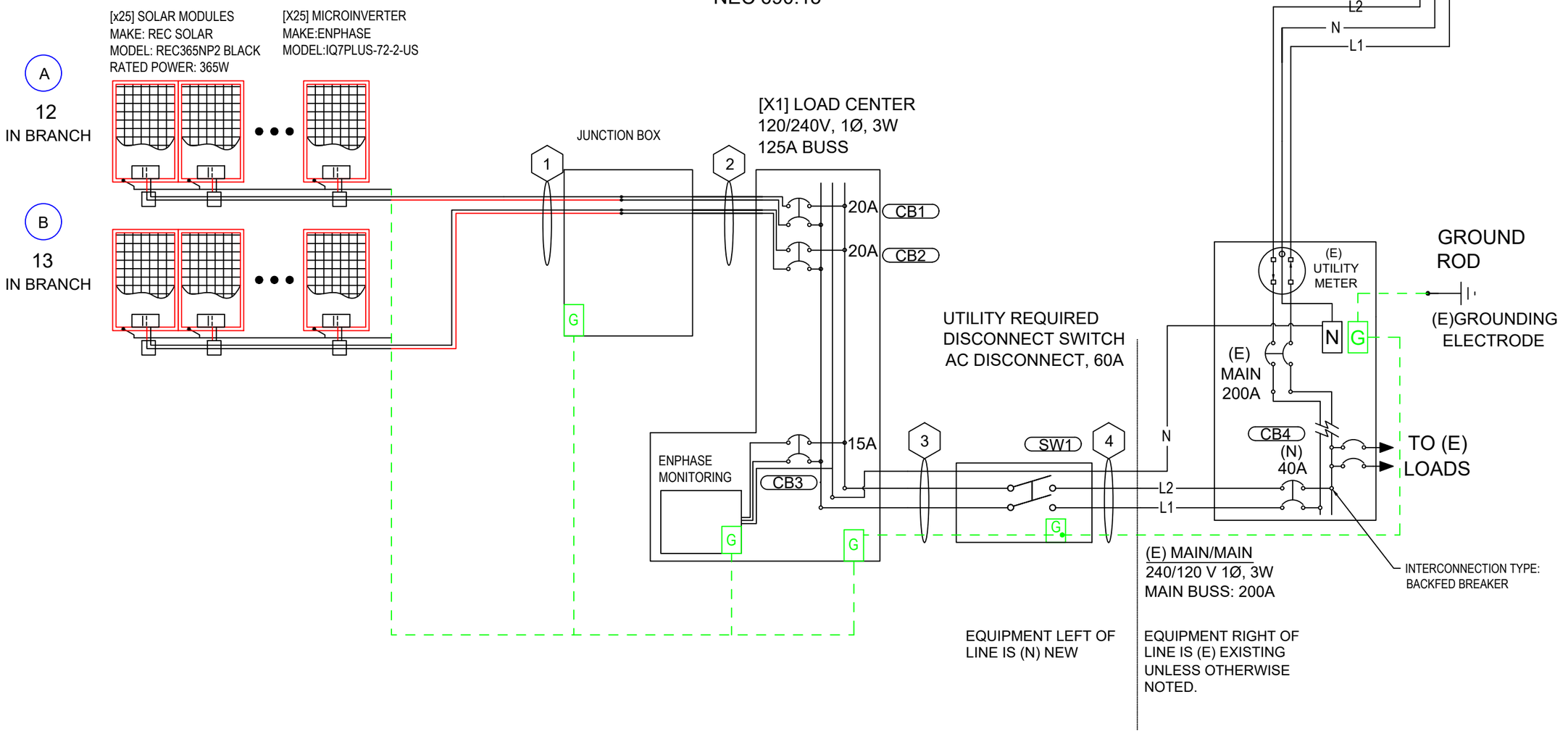
ID	TYPICAL	CONDUCTOR	CONDUIT	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OCPD	NEUTRAL	EGC	TEMP. CORR. FACTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT (125%)	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	AMP. @ TERMINAL
1	4	12 AWG PV WIRE	FREE AIR	N/A	N/A	-	6 AWG BARE, COPPER	0.91 (35.1 °C)	1	14.52A	18.15A	30A	27.3A	75°C	25A
2	1	10 AWG THWN-2, COPPER	0.75" DIA	4	20A	-	10 AWG THWN-2, COPPER	0.91 (35.1 °C)	0.8	14.52A	18.15A	40A	29.12A	75°C	35A
3	1	8 AWG THWN-2, COPPER	0.75" DIA	2	40A	8 AWG THWN-2, COPPER	6 AWG THWN-2, COPPER	0.91 (35.1 °C)	1	29.04A	36.3A	55A	50.05A	75°C	50A
4	1	8 AWG THWN-2, COPPER	0.75" DIA	2	N/A	8 AWG THWN-2, COPPER	6 AWG THWN-2, COPPER	0.91 (35.1 °C)	1	29.04A	36.3A	55A	50.05A	75°C	50A

A MODULE STRINGING

B MODULE STRINGING

DC PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS TO BE INSTALL IN METAL RACEWAY OR METAL ENCLOSURES PER NEC 690.31 (G)

1.PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN DISCONNECT PER NEC 690.12
2.SYSTEM COMPLIANT WITH NEC 690.13



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LINE DIAGRAM

DATE: 10/03/2022

DRAFTED BY: L.J.

CHECKED BY: H.E. & D.B.

REVISIONS:

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(SHEET 6)

SYSTEM SUMMARY

	BRANCH #1	BRANCH #2
INVERTERS PER BRANCH	12	13
MAX AC CURRENT	14.5A	15.7A
MAX AC OUTPUT POWER	3,480W	3,770W
ARRAY STC POWER	9,125W	
ARRAY PTC POWER	8,593W	
MAX AC CURRENT	30.2A	
MAX AC POWER	7,250W	
DERATED (CEC) AC POWER	7,250W	

DESIGN TEMPERATURES

ASHRAE EXTREME LOW	-12°C (10.4°F), SOURCE: RALEIGH DURHAM INTERNATIONAL
ASHRAE 2% HIGH	34°C (93.2°F), SOURCE: RALEIGH DURHAM INTERNATIONAL

MODULES

REF.	QTY.	MAKE AND MODEL	PMAX	PTC	ISC	IMP	VOC	VMP	TEMP. COEFF. OF VOC	FUSE RATING
PM1-25	25	REC SOLAR REC365NP2 BLACK	365W	343.7W	11.36A	10.65A	40.9V	34.3V	-0.106V/°C (-0.26%/°C)	25A

INVERTERS

REF.	QTY.	MAKE AND MODEL	AC VOLTAGE	GROUND	OCPD RATING	RATED POWER	MAX OUTPUT CURRENT	MAX INPUT CURRENT	MAX INPUT VOLTAGE	CEC WEIGHTED EFFICIENCY
I1-25	25	ENPHASE IQ7PLUS-72-2-US	240V	FLOATING	20A	290W	1.21A	15A	60V	97.0%

DISCONNECTS

REF.	QTY.	MAKE AND MODEL	RATED CURRENT	MAX RATED VOLTAGE
SW1	1	EATON DG22XXRB OR EQUIV.	60A	240VAC

OCPDS

REF.	QTY.	RATED CURRENT	MAX VOLTAGE
CB1-2	2	20A	240VAC
CB3	1	15A	240VAC
CB4	1	40A	240VAC

CONTRACTOR

RENU ENERGY SOLUTIONS, LLC

PHONE: 704-525-6767

ADDRESS: 801 PRESSLEY ROAD SUITE 100
CHARLOTTE, NC 28217

LIC. NO.: 76615
HIC. NO.:
ELE. NO.: 20334U

NEW PV SYSTEM: 9.13 kWp

DAMANTI RESIDENCE

405 PARKER CREEK RD
HOLLY SPRINGS, NC 27540
APN: 1500011889

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

DESIGN TABLES

DATE: 10/03/2022

DRAFTED BY: L.J.

CHECKED BY: H.E. & D.B.

REVISIONS:

E-602.00
(SHEET 7)

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

⚠ WARNING
ELECTRICAL SHOCK HAZARD
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL 1
AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT (2" X 4").
[NEC 690.13].

⚠ WARNING
POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL 2
AT POINT OF INTERCONNECTION OVERCURRENT DEVICE (2" X 4").
[NEC 705.12(B)(2)(3)(B)].

PHOTOVOLTAIC SYSTEM AC DISCONNECT ⚠ ⚠

RATED AC OUTPUT CURRENT 30.2 A
NOMINAL OPERATING AC VOLTAGE 240 V

LABEL 3
AT POINT OF INTERCONNECTION, MARKED AT DISCONNECTING MEANS (4" X 2").
[NEC 690.54]

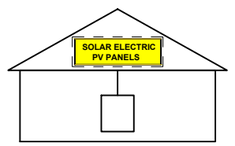
PHOTOVOLTAIC SOLAR AC DISCONNECT

LABEL 4
AT EACH AC DISCONNECTING MEANS (4" X 1").
[NEC 690.13(B)].

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL 5
AT RAPID SHUTDOWN DISCONNECT SWITCH (5 1/4" X 2").
[NEC 690.56(C)(3)].

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 ARRAY

LABEL 6
AT RAPID SHUTDOWN SYSTEM (3 3/4" X 5 1/4"). [NEC 690.56(C)(1)(A)].

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

LABEL 7
AT POINT OF INTERCONNECTION (2 3/4" X 1 5/8").
[NEC 705.12(B)(3)]

⚠ WARNING
SOLAR ELECTRIC CIRCUIT BREAKER IS BACKFED

LABEL 8
AT POINT OF INTERCONNECTION (2" X 1").
[NEC 705.12(B)(3)]

INTERACTIVE PHOTOVOLTAIC SYSTEM CONNECTED
PHOTOVOLTAIC SYSTEM DISCONNECT LOCATED WEST SIDE OF THE HOUSE

DIRECTORY
PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS IF NOT IN THE SAME LOCATION (5 3/4" X 1 1/8").
[NEC 690.56(B)]

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

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL 9
AT EXPOSED RACEWAYS, CABLE TRAYS, AND OTHER WIRING METHODS; SPACED AT MAXIMUM 10 FT SECTION OR WHERE SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS (5 3/4" X 1 1/8").
[NEC 690.31(G)]
LETTERS AT LEAST 3/8 INCH; WHITE ON RED BACKGROUND; REFLECTIVE
[IFC 605.11.1.1]

⚠ CAUTION
SOLAR ELECTRIC SYSTEM CONNECTED

LABEL 10
AT UTILITY METER (5 3/4" X 1 1/8")
[NEC 690.56(B)]

CONTRACTOR
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PLACARDS

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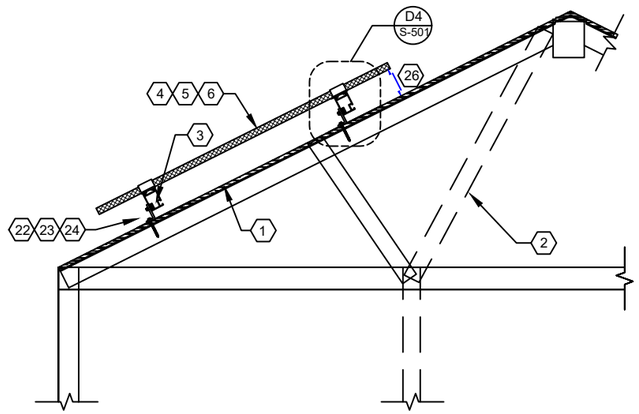
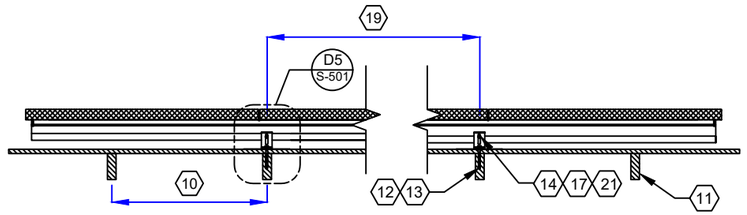


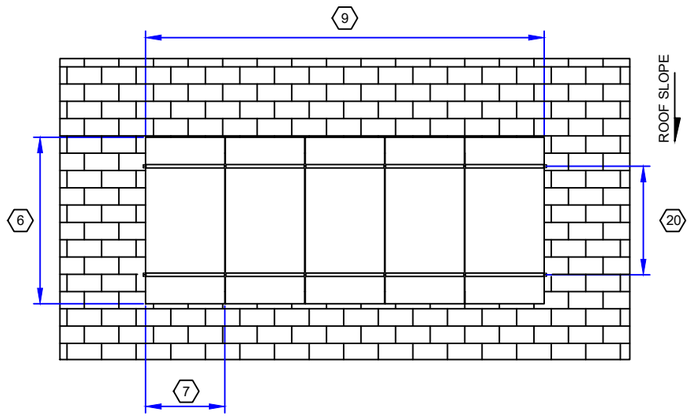
D1 RACKING DETAIL (TRANSVERSE)

NOT TO SCALE



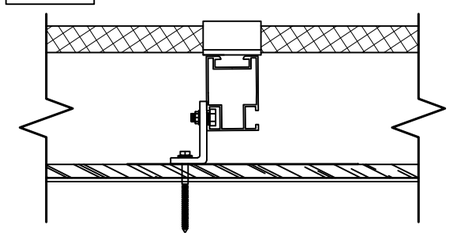
D2 RACKING DETAIL (LONGITUDINAL)

NOT TO SCALE



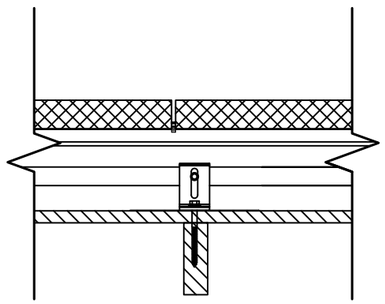
D3 RACKING DETAIL (TOP)

NOT TO SCALE



D4 DETAIL (TRANSVERSE)

NOT TO SCALE



D5 DETAIL (LONGITUDINAL)

NOT TO SCALE

SHEET KEYNOTES

1. ROOF MATERIAL: ASPHALT SHINGLE
2. ROOF STRUCTURE: BEAMS AND PURLINS
3. ATTACHMENT TYPE: SNAPNRACK L FOOT MOUNT
4. MODULE MANUFACTURER: REC SOLAR
5. MODULE MODEL: REC365NP2 BLACK
6. MODULE LENGTH: 69.1"
7. MODULE WIDTH: 40.94"
8. MODULE WEIGHT: 44 LBS.
9. SEE SHEET A-103 FOR DIMENSION(S)
10. MIN. FIRE OFFSET: NO FIRE CODE ENFORCED
11. TRUSS SPACING: 16 IN. O.C.
12. TRUSS SIZE: 2X6
13. LAG BOLT DIAMETER: 5/16"
14. LAG BOLT EMBEDMENT: 2-3/4"
15. TOTAL # OF ATTACHMENTS: 48
16. TOTAL AREA: 491.13 SQ. FT.
17. TOTAL WEIGHT: 1209.68 LBS.
18. WEIGHT PER ATTACHMENT: 24.4 LBS.
19. DISTRIBUTED LOAD: 2.46 PSF
20. MAX. HORIZONTAL STANDOFF: 48 IN.
21. MAX. VERTICAL STANDOFF:
    LANDSCAPE: 26 IN., PORTRAIT: 33 IN.
22. STANDOFF STAGGERING: YES
23. RAIL MANUFACTURER (OR EQUIV.): SNAP-N-RACK
24. RAIL MODEL (OR EQUIVALENT): SNAP-N-RACK UR-40 RAIL
25. RAIL WEIGHT: 0.42 PLF.
26. MAX. TRUSS SPAN: 138 IN.
27. MODULE CLEARANCE: 3 IN. MIN., 6 IN. MAX.

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ASSEMBLY DETAILS

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CHECKED BY: H.E. & D.B.

REVISIONS:

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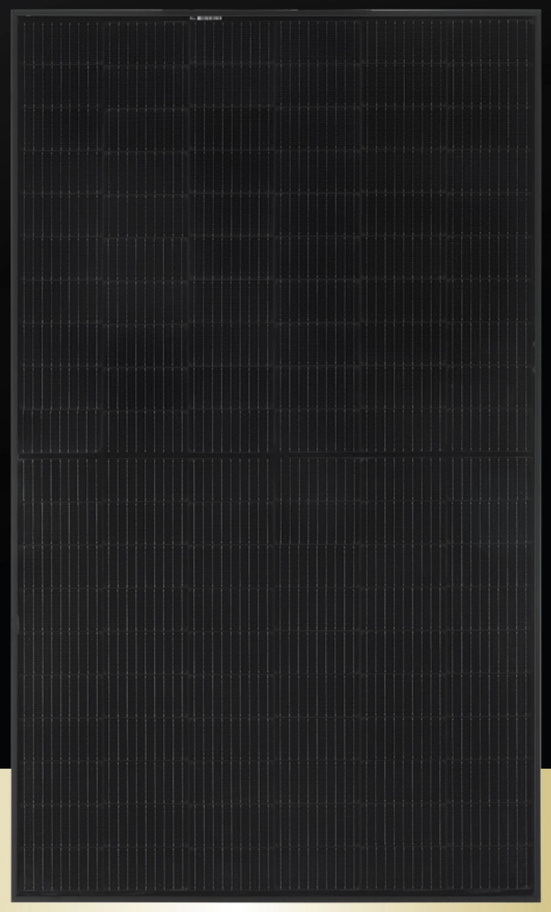
(SHEET 9)

SOLAR'S MOST TRUSTED

REC

REC N-PEAK 2 BLACK SERIES

PREMIUM FULL BLACK MONO N-TYPE SOLAR PANELS



MONO N-TYPE: THE MOST EFFICIENT C-SI TECHNOLOGY

NO LIGHT INDUCED DEGRADATION

SUPER-STRONG FRAME UP TO 7000 PA SNOW LOAD

FLEXIBLE INSTALLATION OPTIONS

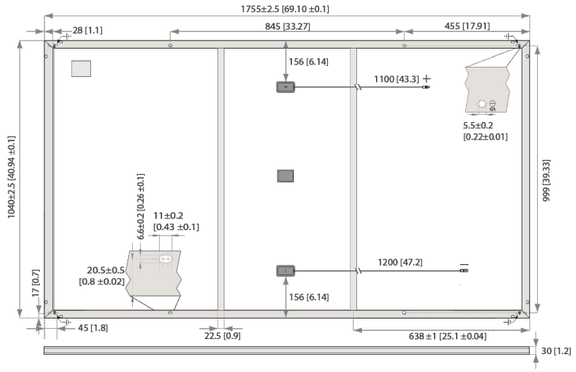
FEATURING REC'S PIONEERING TWIN DESIGN

HIGH POWER FOR 25 YEARS

370 WP POWER

PRODUCT REC 25 YEAR PROTRUST WARRANTY LABOR PERFORMANCE ELIGIBLE

REC N-PEAK 2 BLACK SERIES



Measurements in mm [in]

ELECTRICAL DATA @ STC	Product code*: RECxxxNP2 Black			
Nominal Power - P_{MAX} (Wp)	355	360	365	370
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V_{MPP} (V)	33.5	33.9	34.3	34.7
Nominal Power Current - I_{MPP} (A)	10.60	10.62	10.65	10.68
Open Circuit Voltage - V_{OC} (V)	40.7	40.8	40.9	41.1
Short Circuit Current - I_{SC} (A)	11.27	11.31	11.36	11.41
Panel Efficiency (%)	19.4	19.7	20.0	20.3

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

ELECTRICAL DATA @ NOCT	Product code*: RECxxxNP2 Black			
Nominal Power - P_{MAX} (Wp)	268	272	276	280
Nominal Power Voltage - V_{MPP} (V)	31.3	31.7	32.1	32.5
Nominal Power Current - I_{MPP} (A)	8.56	8.58	8.60	8.63
Open Circuit Voltage - V_{OC} (V)	38.1	38.2	38.2	38.4
Short Circuit Current - I_{SC} (A)	9.10	9.13	9.18	9.22

Nominal operating cell temperature (NOCT: air mass AM 1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s).
* Where xxx indicates the nominal power class (P_{MAX}) at STC above.

CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730 (Pending)

ISO 14001:2004, ISO 9001:2015, OHSAS 18001:2007, IEC 62941

Intertek

WARRANTY

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

See warranty documents for details. Some conditions apply.

GENERAL DATA

Cell type:	120 half-cut mono c-Si n-type cells 6 strings of 20 cells in series
Glass:	0.13" (3.2 mm) solar glass with anti-reflection surface treatment
Backsheet:	Highly resistant polymeric construction (black)
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, IP68 rated in accordance with IEC 62790
Cable:	12 AWG (4 mm²) PV wire, 43 + 47" (1.1 m + 1.2 m) in accordance with EN 50618
Connectors:	Stäubli MC4 PV-KBT4/KST4, 12 AWG (4 mm²) in accordance with IEC 62852 IP68 only when connected
Origin:	Made in Singapore

MECHANICAL DATA

Dimensions:	69.1 x 40.94 x 1.2 in (1755 x 1040 x 30 mm)
Area:	19.70 sq ft (1.83 m²)
Weight:	44.0 lbs (20.0 kg)

MAXIMUM RATINGS

Operational temperature:	-40 ... +85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (146 psf)*
Maximum test load (rear):	-4000 Pa (83.5 psf)*
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)

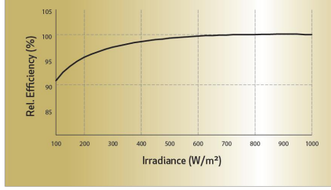
TEMPERATURE RATINGS *

Nominal Operating Cell Temperature:	44.3°C (±2°C)
Temperature coefficient of P_{MAX}:	-0.34 %/°C
Temperature coefficient of V_{OC}:	-0.26 %/°C
Temperature coefficient of I_{SC}:	0.04 %/°C

*The temperature coefficients stated are linear values

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC.



Specifications subject to change without notice.

Ref: PM-DS-11-05 Rev: A 07.21

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

REC

www.recgroup.com

CONTRACTOR

RENU ENERGY SOLUTIONS, LLC

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RESOURCE DOCUMENT

DATE: 10/03/2022

DRAFTED BY: L.J.

CHECKED BY: H.E. & D.B.

REVISIONS:

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(SHEET 10)

Data Sheet
Enphase Microinverters
Region: AMERICAS

Enphase IQ 7 and IQ 7+ Microinverters

The high-powered smart grid-ready **Enphase IQ 7 Micro™** and **Enphase IQ 7+ Micro™** dramatically simplify the installation process while achieving the highest system efficiency.

Part of the Enphase IQ System, the IQ 7 and IQ 7+ Microinverters integrate with the Enphase IQ Envoy™, Enphase IQ Battery™, and the Enphase Enlighten™ monitoring and analysis software.

IQ Series Microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.

Easy to Install

- Lightweight and simple
- Faster installation with improved, lighter two-wire cabling
- Built-in rapid shutdown compliant (NEC 2014 & 2017)

Productive and Reliable

- Optimized for high powered 60-cell/120 half-cell and 72-cell/144 half-cell* modules
- More than a million hours of testing
- Class II double-insulated enclosure
- UL listed

Smart Grid Ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing grid requirements
- Configurable for varying grid profiles
- Meets CA Rule 21 (UL 1741-SA)

* The IQ 7+ Micro is required to support 72-cell/144 half-cell modules.

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

ENPHASE.

Enphase IQ 7 and IQ 7+ Microinverters

INPUT DATA (DC)	IQ7-60-2-US		IQ7PLUS-72-2-US	
Commonly used module pairings[1]	235 W - 350 W +		235 W - 440 W +	
Module compatibility	60-cell/120 half-cell PV modules only		60-cell/120 half-cell and 72-cell/144 half-cell PV modules	
Maximum input DC voltage	48 V		60 V	
Peak power tracking voltage	27 V - 37 V		27 V - 45 V	
Operating range	16 V - 48 V		16 V - 60 V	
Min/Max start voltage	22 V / 48 V		22 V / 60 V	
Max DC short circuit current (module Isc)	15 A		15 A	
Overvoltage class DC port	II		II	
DC port backfeed current	0 A		0 A	
PV array configuration	1 x 1 ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit			
OUTPUT DATA (AC)	**IQ 7 Microinverter**		**IQ 7+ Microinverter**	
Peak output power	250 VA		295 VA	
Maximum continuous output power	240 VA		290 VA	
Nominal (L-L) voltage/range[2]	240 V / 211-264 V	208 V / 183-229 V	240 V / 211-264 V	208 V / 183-229 V
Maximum continuous output current	1.0 A (240 V)	1.15 A (208 V)	1.21 A (240 V)	1.39 A (208 V)
Nominal frequency	60 Hz		60 Hz	
Extended frequency range	47 - 68 Hz		47 - 68 Hz	
AC short circuit fault current over 3 cycles	5.8 Arms		5.8 Arms	
Maximum units per 20 A (L-L) branch circuit[3]	16 (240 VAC)	13 (208 VAC)	13 (240 VAC)	11 (208 VAC)
Overvoltage class AC port	III		III	
AC port backfeed current	18 mA		18 mA	
Power factor setting	1.0		1.0	
Power factor (adjustable)	0.85 leading ... 0.85 lagging		0.85 leading ... 0.85 lagging	
EFFICIENCY	**@240 V**	**@208 V**	**@240 V**	**@208 V**
Peak efficiency	97.6 %	97.6 %	97.5 %	97.3 %
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %
MECHANICAL DATA				
Ambient temperature range	-40°C to +65°C			
Relative humidity range	4% to 100% (condensing)			
Connector type	MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)			
Dimensions (HxWxD)	212 mm x 175 mm x 30.2 mm (without bracket)			
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			
Environmental category / UV exposure rating	NEMA Type 6 / outdoor			
FEATURES				
Communication	Power Line Communication (PLC)			
Monitoring	Enlighten Manager and MyEnlighten monitoring options. Both options require installation of an Enphase IQ Envoy.			
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.			
Compliance	CA Rule 21 (UL 1741-SA) UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 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 C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions.			

1. No enforced DC/AC ratio. See the compatibility calculator at https://enphase.com/en-us/support/module-compatibility.
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.

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

ENPHASE.

CONTRACTOR

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CHECKED BY: H.E. & D.B.

REVISIONS:

R-002.00
(SHEET 11)

Data Sheet
Enphase Networking

Enphase IQ Combiner 4/4C

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

X-IQ-AM1-240-4C

X-IQ-AM1-240-4

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

Smart

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

Simple

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

Reliable

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

UL LISTED

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

ENPHASE.

Enphase IQ Combiner 4/4C

MODEL NUMBER	
IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.
ACCESSORIES AND REPLACEMENT PARTS	(not included, order separately)
Ensemble Communications Kit 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
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**

ENPHASE.

CONTRACTOR

RENU ENERGY SOLUTIONS, LLC

PHONE: 704-525-6767
ADDRESS: 801 PRESSLEY ROAD SUITE 100
CHARLOTTE, NC 28217

LIC. NO.: 76615
HIC. NO.:
ELE. NO.: 20334U

NEW PV SYSTEM: 9.13 kWp

DAMANTI RESIDENCE

405 PARKER CREEK RD
HOLLY SPRINGS, NC 27540
APN: 1500011889

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

RESOURCE DOCUMENT

DATE: 10/03/2022

DRAFTED BY: L.J.

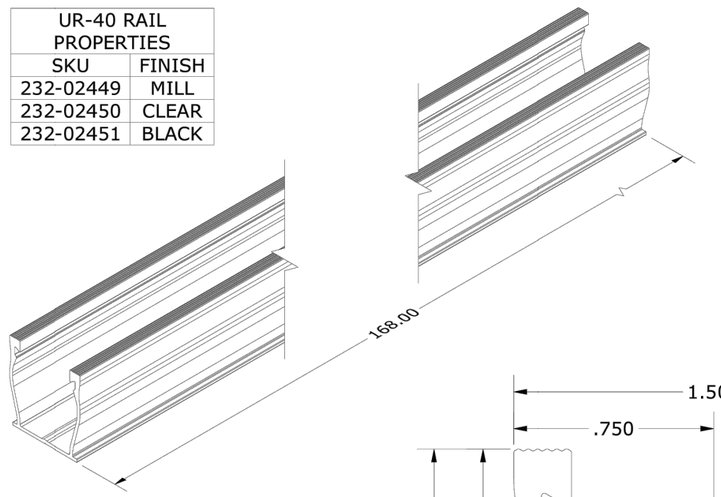
CHECKED BY: H.E. & D.B.

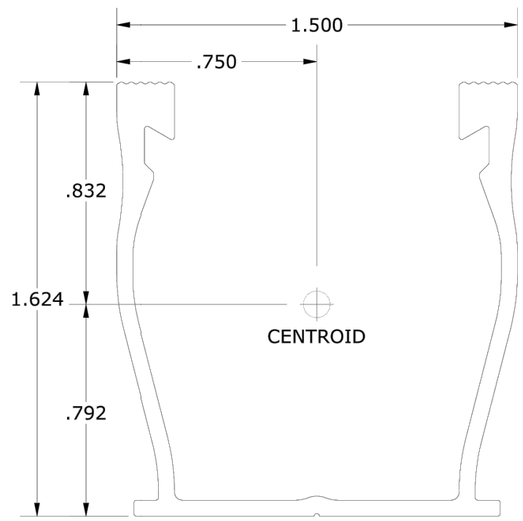
REVISIONS:

R-003.00
(SHEET 12)

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

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





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

ALL DIMENSIONS IN INCHES

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

CONTRACTOR

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PAPER SIZE: 11" x 17" (ANSI B)

RESOURCE DOCUMENT

DATE: 10/03/2022

DRAFTED BY: L.J.

CHECKED BY: H.E. & D.B.

REVISIONS:

R-004.00
(SHEET 13)

DESCRIPTION:

SNAPNRACK, ULTRA RAIL COMP KIT

PART NUMBER(S):

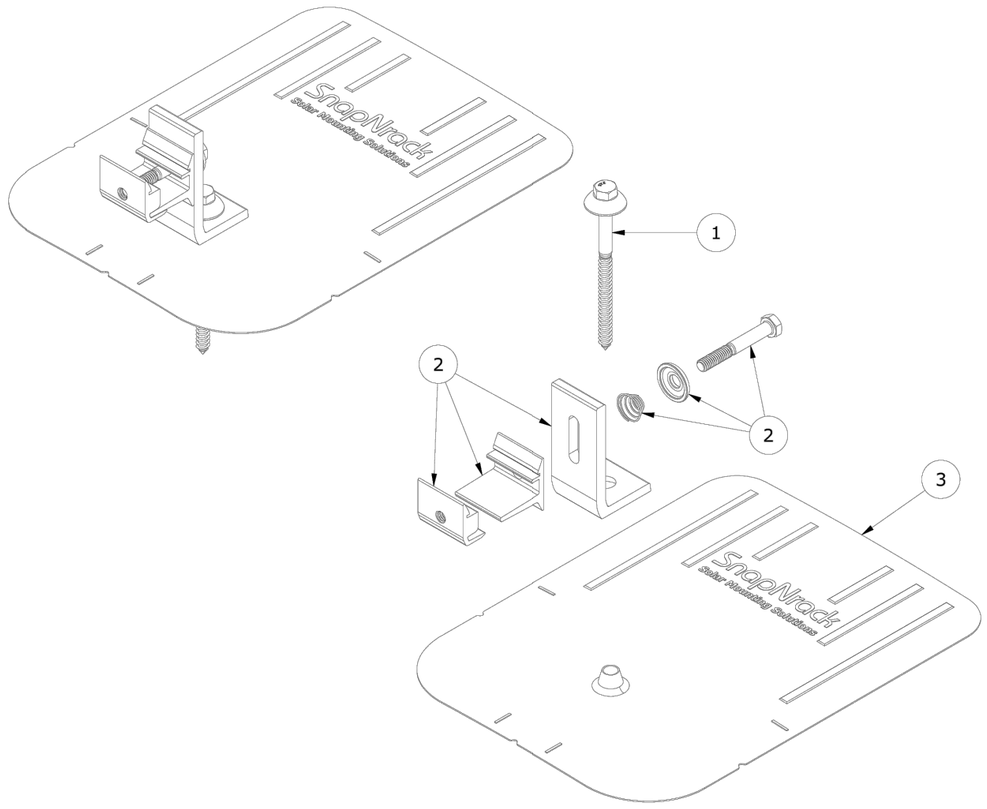
SEE BELOW

DRAWN BY: mwatkins

REVISION: B

SnapNrack™ Solar Mounting Solutions

595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 580-6900 • FAX (415) 580-6902



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):	405 UP, 788 DOWN, 236 SIDE
ULTIMATE LOAD (LBS):	2006 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

PART NUMBER(S):

SEE BELOW

DRAWN BY: mwatkins

REVISION: B

SnapNrack™ Solar Mounting Solutions

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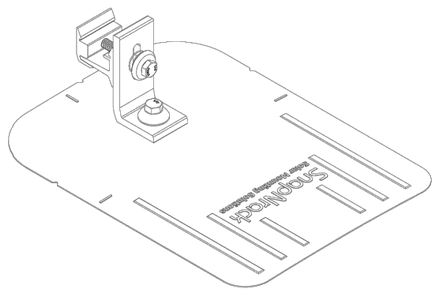
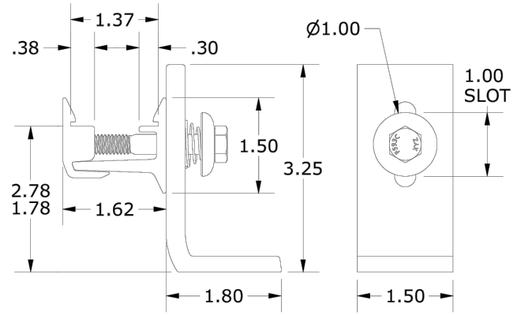
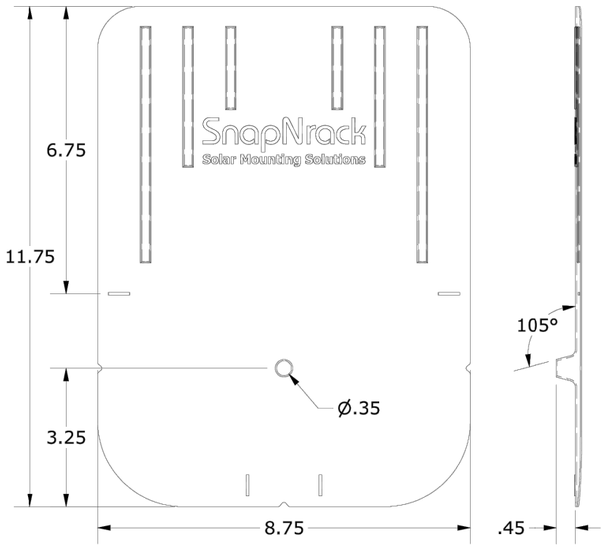
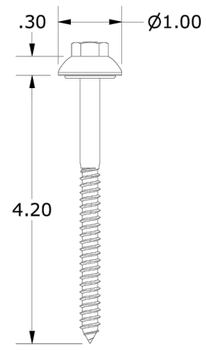


UMBRELLA L FOOT PROPERTIES	
SKU	DESCRIPTION
242-01219	ULTRA RAIL UMBRELLA L FOOT, SILVER
242-01220	ULTRA RAIL UMBRELLA L FOOT, BLACK



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





ALL DIMENSIONS IN INCHES

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R-005.00

(SHEET 14)