NEW PV SYSTEM: 8.76 kWp

POTENZANO RESIDENCE

321 NEILLS CREEK RD
LILLINGTON, NC 27546
ASSESSOR'S #: 0660-84-7959.000

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:

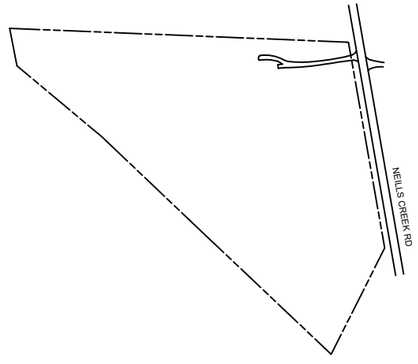
1.3.2 GROUND MOUNT RACKING - IRONRIDGE GROUND MOUNT SYSTEM
1.3.4 PV MODULE AND INVERTER INSTALLATION - REC SOLAR REC 365 NP2 BLK / SOLAR EDGE SE7600H-US (240V)
1.3.4 PV EQUIPMENT GROUNDING
1.3.5 PV LOAD CENTERS (IF INCLUDED)
1.3.6 PV METERING/MONITORING (IF INCLUDED)
1.3.7 PV DICONNECTS
1.3.8 PV GROUNDING ELECTRODE & BONDING TO (E) GEC
1.3.9 PV FINAL COMMISSIONING
1.3.10 (E) ELECTRICAL EQUIPMENT RETROFIT FOR PV
1.3.11 SIGNAGE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE
1.3.12 TRENCHING (IF NECESSARY)

SCOPE OF WORK

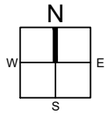
SYSTEM SIZE: STC 24 X 365 = 8.76 kW
PTC: 24 X 343.7 = 8.25 kW DC
(24) REC SOLAR REC365NP2 BLACK
(1) SOLAR EDGE SE7600H-US (240V)

ATTACHMENT TYPE: IRONRIDGE GROUND MOUNT SYSTEM
MSP UPGRADE: NO

01 AERIAL PHOTO
NOT TO SCALE



02 PLAT MAP
NOT TO SCALE



SHEET LIST TABLE

PROJECT INFORMATION

OWNER
NAME: JENNIFER POTENZANO

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: IBC 2015 , IRC 2015
ELECTRICAL: NEC 2017
FIRE: IFC 2015

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: 8.76 kWp

POTENZANO RESIDENCE

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LILLINGTON, NC 27546
APN: 0660-84-7959.000

ENGINEER OF RECORD

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

COVER PAGE

DATE: 12/21/2022

DRAFTED BY: L.J.

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

NEW PV SYSTEM: 8.76 kWp

POTENZANO RESIDENCE

321 NEILLS CREEK RD
LILLINGTON, NC 27546
APN: 0660-84-7959.000

ENGINEER OF RECORD

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

NOTES

DATE: 12/21/2022
DRAFTED BY: L.J.
CHECKED BY: H.E. & D.B.

REVISIONS:

G-001.00
(SHEET 2)

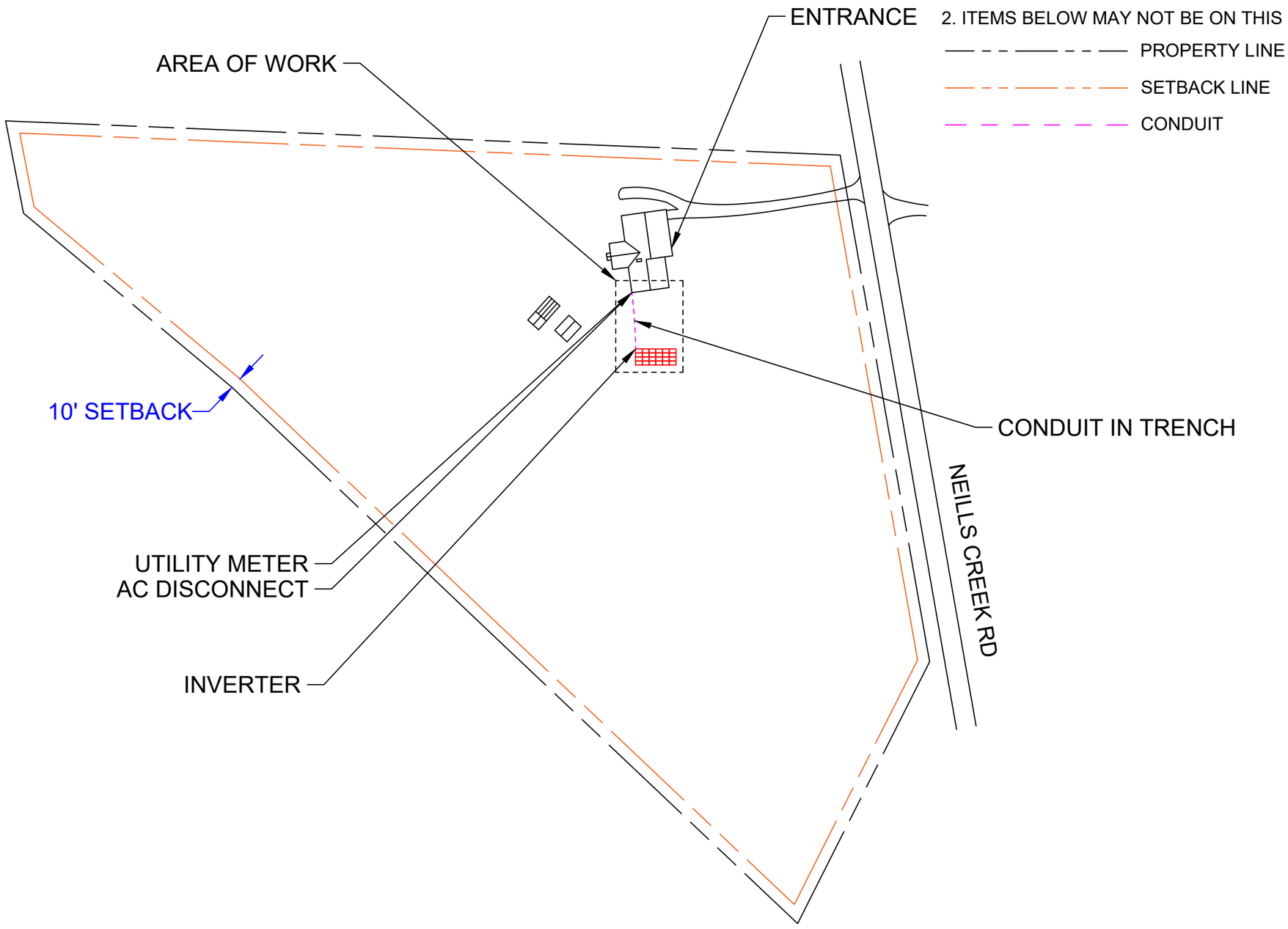
GENERAL NOTES

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

PROPERTY LINE

SETBACK LINE

CONDUIT



01 SOLAR SITE PLAN

1/96" = 1'

0 48' 96'

N
W E
S

CONTRACTOR

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SITE PLAN

DATE: 12/21/2022

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REVISIONS:

A-101.00
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GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
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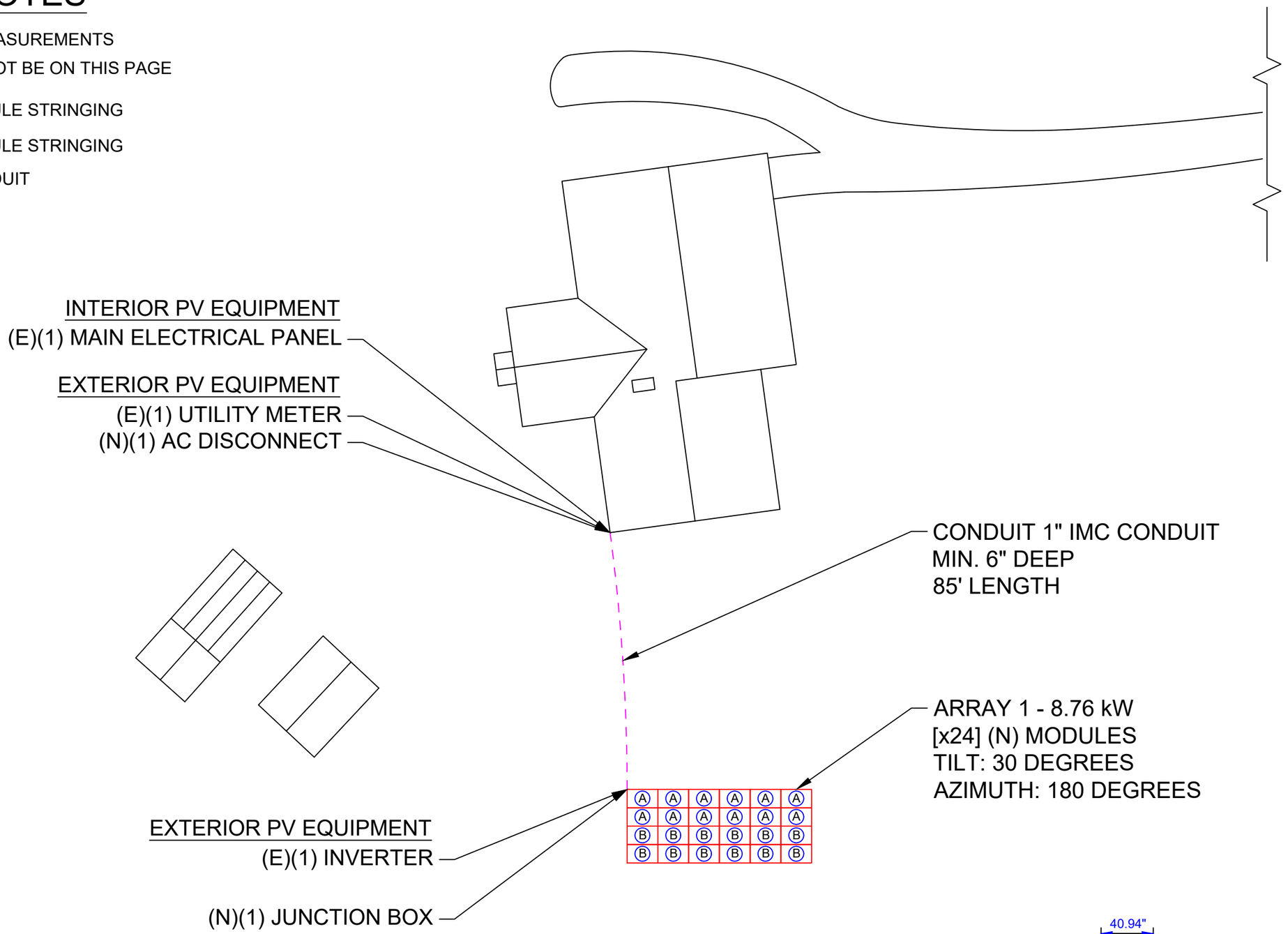
Ⓐ MODULE STRINGING

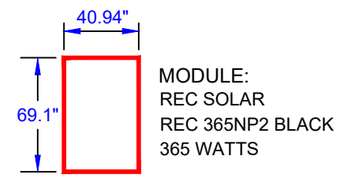
Ⓑ MODULE STRINGING

CONDUIT



01 SOLAR ELECTRICAL PLAN

1/20" = 1' 0 10' 20'



MODULE:
REC SOLAR
REC 365NP2 BLACK
365 WATTS

CONTRACTOR

RENU ENERGY SOLUTIONS, LLC

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ENGINEER OF RECORD

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

ELECTRICAL PLAN

DATE: 12/21/2022

DRAFTED BY: L.J.

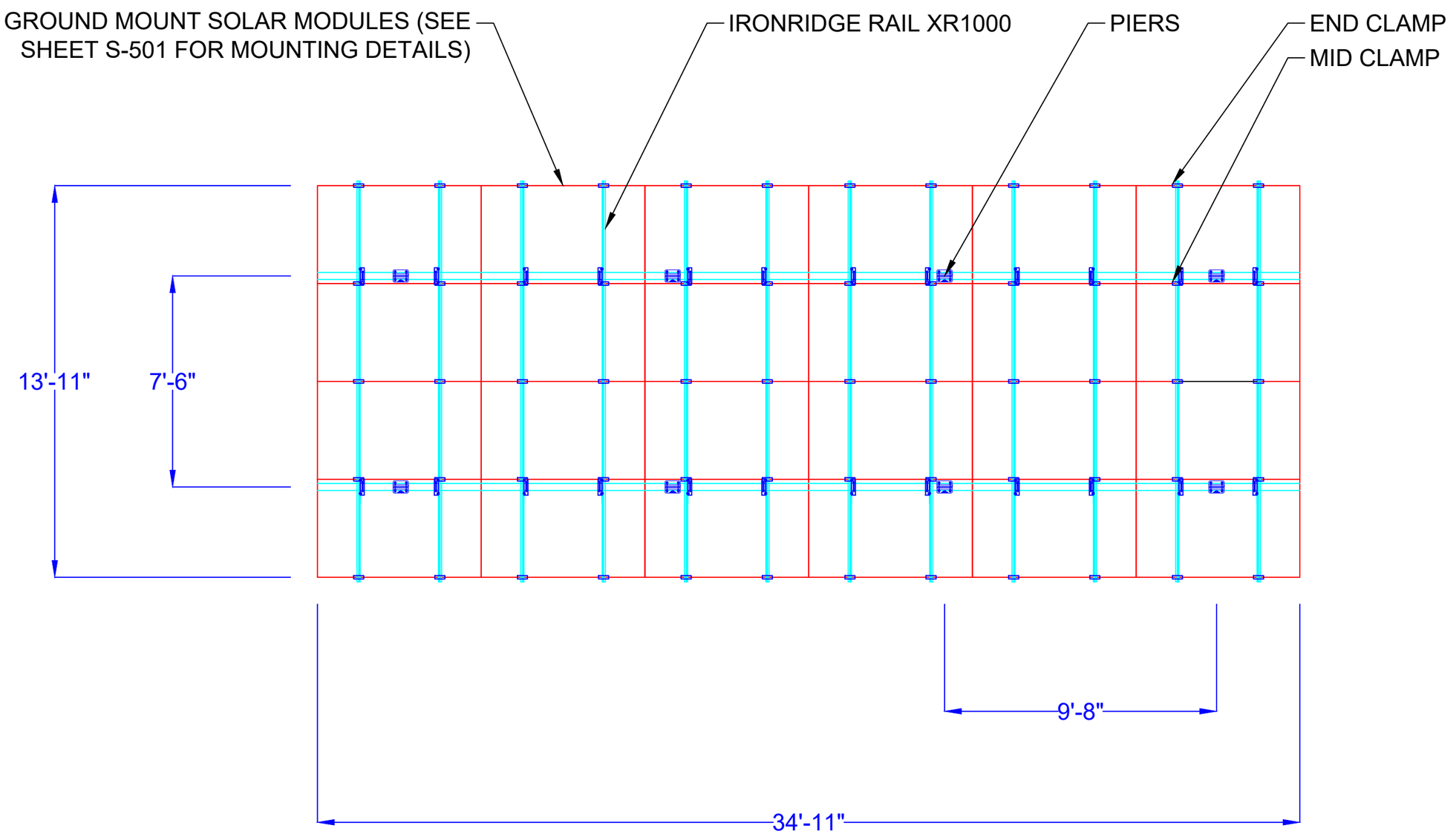
CHECKED BY: H.E. & D.B.

REVISIONS:

A-102.00
(SHEET 4)

GENERAL NOTES

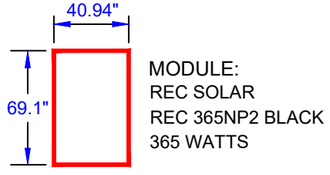
1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE



01 SOLAR ELECTRICAL PLAN

1/4" = 1' 0 2' 4'

N W E S



MODULE:
REC SOLAR
REC 365NP2 BLACK
365 WATTS

CONTRACTOR

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SOLAR ATTACHMENT PLAN

DATE: 12/21/2022
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CHECKED BY: H.E. & D.B.

REVISIONS:

A-103.00
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CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS

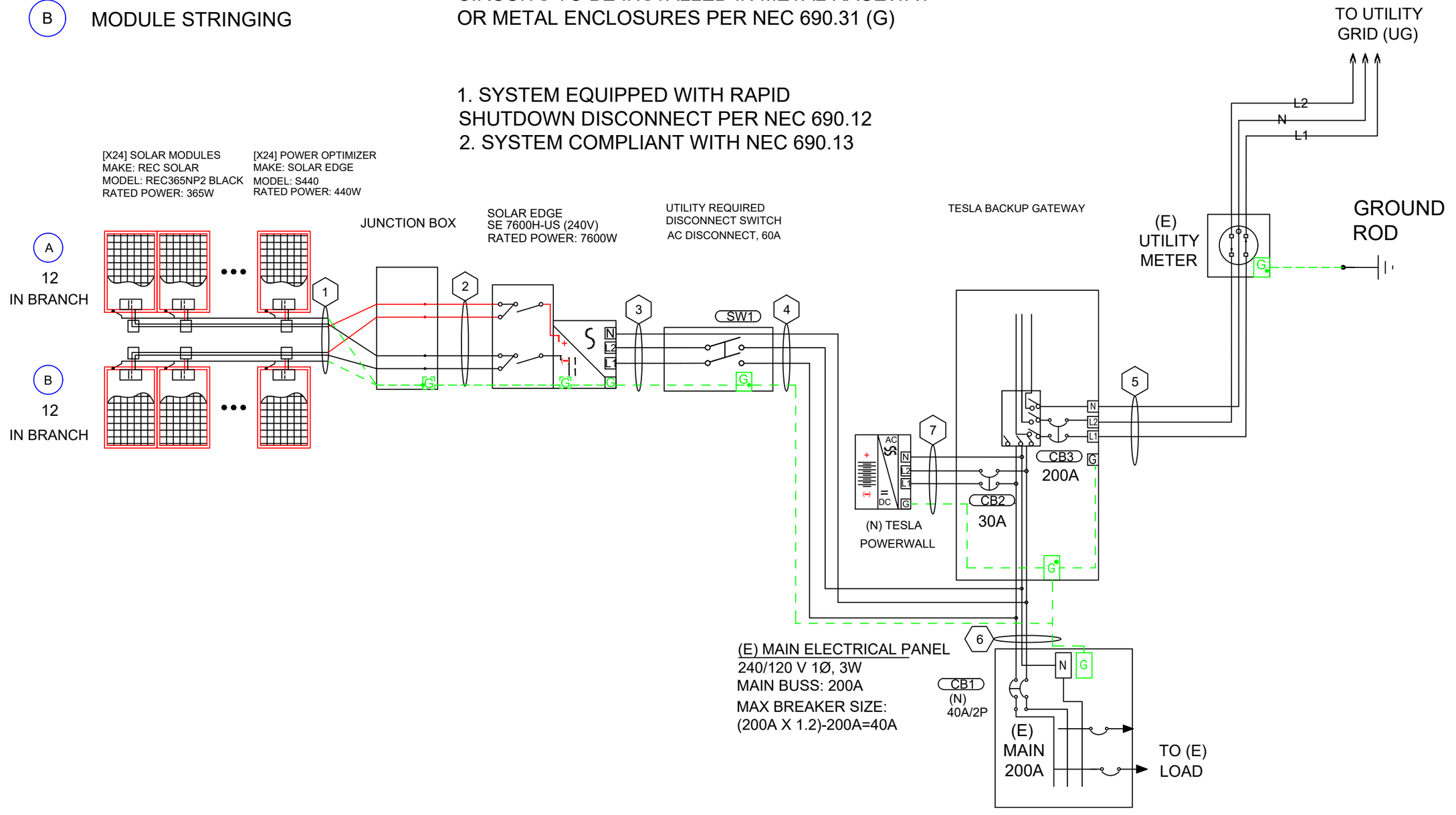
ID	TYPICAL	CONDUCTOR	CONDUIT	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OCPD	EGC	TEMP. CORR. FACTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT (125%)	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	AMP. @ TERMINAL
1	2	10 AWG PV WIRE, COPPER	FREE AIR	2	N/A	6 AWG BARE, COPPER	0.91 (35.1 °C)	1	15A	18.75A	55A	50.05A	75°C	50A
2	1	10 AWG THWN-2, COPPER	0.75" DIA	4	N/A	10 AWG THWN-2, COPPER	0.91 (35.1 °C)	0.8	15A	18.75A	40A	29.12A	75°C	35A
3	1	8 AWG THWN-2, COPPER	0.75" DIA	2	N/A	8 AWG THWN-2, COPPER	0.91 (35.1 °C)	1	31.66A	39.58A	55A	50.05A	75°C	50A
4	1	8 AWG THWN-2, COPPER	0.75" DIA	2	40A	8 AWG THWN-2, COPPER	0.91 (35.1 °C)	1	31.66A	39.58A	55A	50.05A	75°C	50A
5	1	4/0 AWG SER, ALUMINUM	2.00" DIA	2	200A	4/0 AWG THWN-2, COPPER	0.91 (35.1 °C)	1	-	200A	205A	186.55A	75°C	180A
6	1	4/0 AWG SER, ALUMINUM	2.00" DIA	2	200A	4/0 AWG THWN-2, COPPER	0.91 (35.1 °C)	1	-	200A	205A	186.55A	75°C	180A
7	1	10 AWG THWN-2, COPPER	0.75" DIA	2	30A	10 AWG THWN-2, COPPER	0.91 (35.1 °C)	1	20.83A	26.04A	40A	36.4A	75°C	35A

A MODULE STRINGING

B MODULE STRINGING

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

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



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LINE DIAGRAM

DATE: 12/21/2022

DRAFTED BY: L.J.

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

REVISIONS:

E-601.00

(SHEET 6)

SYSTEM SUMMARY

	INVERTER #1	
	STRING #1	STRING #2
POWERBOX MAX OUTPUT CURRENT	15A	15A
OPTIMIZERS IN SERIES	12	12
NOMINAL STRING VOLTAGE	380V	380V
ARRAY OPERATING CURRENT	15A	15A
ARRAY STC POWER	8,760W	
ARRAY PTC POWER	8,248.8W	
MAX AC CURRENT	31.66A	
MAX AC POWER	7,600W	
DERATED (CEC) AC POWER	7,600W	

DESIGN TEMPERATURES

ASHRAE EXTREME LOW	-11.1°C (12.0°F), SOURCE: HARNETT COUNTY (35.38°;-78.73°)
ASHRAE 2% HIGH	37.1°C (98.8°F), SOURCE: HARNETT COUNTY (35.38°;-78.73°)

MODULES

REF.	QTY.	MAKE AND MODEL	PMAX	PTC	ISC	IMP	VOC	VMP	TEMP. COEFF. OF VOC	FUSE RATING
PM1-24	24	REC SOLAR REC365NP2 BLACK	365W	343.7W	11.36A	10.65A	40.9V	34.3V	-0.106V/°C (-0.26%/°C)	25A

POWER OPTIMIZERS

REF.	QTY.	MODEL	RATED INPUT POWER	MAX OUTPUT CURRENT	MAX INPUT ISC	MAX DC VOLTAGE	WEIGHTED EFFICIENCY
PO1-24	24	SOLAR EDGE S440	440W	15A	14.5A	60V	98.6%

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	1	SOLAR EDGE SE7600H-US (240V)	240V	FLOATING	40A	7600W	32A	20A	480V	99.0%

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	1	40A	240VAC
CB2	1	30A	240VAC
CB3	1	200A	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: 8.76 kWp

POTENZANO RESIDENCE

321 NEILLS CREEK RD
LILLINGTON, NC 27546
APN: 0660-84-7959.000

ENGINEER OF RECORD

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

DESIGN TABLES

DATE: 12/21/2022

DRAFTED BY: L.J.

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

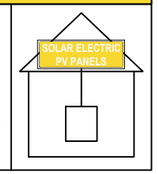
REVISIONS:

E-602.00

(SHEET 7)

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

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



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

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

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

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

WARNING
ELECTRIC SHOCK HAZARD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

LABEL 3
AT POINT OF INTERCONNECTION; LABEL, SUCH AS LABEL 4 OR LABEL 5 MUST IDENTIFY PHOTOVOLTAIC SYSTEM [NEC 705.12(B)(4)]

PHOTOVOLTAIC SYSTEM
DC DISCONNECT

OPERATING VOLTAGE:	240 VDC
OPERATING CURRENT:	31.66 A
MAX SYSTEM VOLTAGE:	480 VDC
SHORT CIRCUIT CURRENT:	45 A
CHARGE CONTROLLER MAX:	N/A

LABEL 4
AT EACH DC DISCONNECTING MEANS
[NEC 690.53]

PHOTOVOLTAIC SYSTEM
AC DISCONNECT

RATED AC OUTPUT CURRENT:	31.66A AC
NOMINAL OPERATING VOLTAGE:	240/480 V AC

LABEL 5
AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT
[NEC 690.15]

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

LABEL 6
AT POINT OF INTERCONNECTION; LABEL, SUCH AS LABEL 4 OR LABEL 5 MUST IDENTIFY PHOTOVOLTAIC SYSTEM [NEC 705.12(B)(4)]

WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL 7
AT POINT OF INTERCONNECTION; LABEL, SUCH AS LABEL 4 OR LABEL 5 MUST IDENTIFY PHOTOVOLTAIC SYSTEM [NEC 705.12(B)(4)]

WARNING: PHOTOVOLTAIC POWER SOURCE

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

RAPID SHUTDOWN PV ARRAY

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

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
[NEC 690.56(B)]
WHERE THE PV SYSTEMS ARE REMOTELY LOCATED FROM EACH OTHER, A DIRECTORY IN ACCORDANCE WITH 705.10 SHALL BE PROVIDED AT EACH PV SYSTEM DISCONNECTING MEANS. PV SYSTEM EQUIPMENT AND DISCONNECTING MEANS SHALL NOT BE INSTALLED IN BATHROOMS
[NEC 690.4(D),(E)]

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

CONTRACTOR

RENU ENERGY SOLUTIONS, LLC

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ENGINEER OF RECORD

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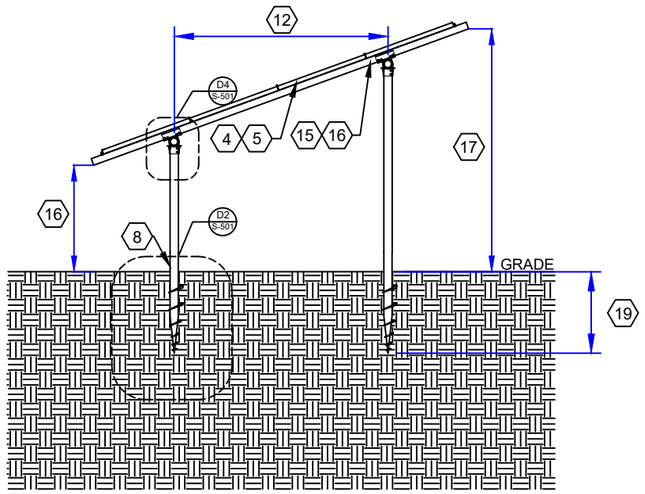
PLACARDS

DATE: 12/21/2022
DRAFTED BY: L.J.
CHECKED BY: H.E. & D.B.

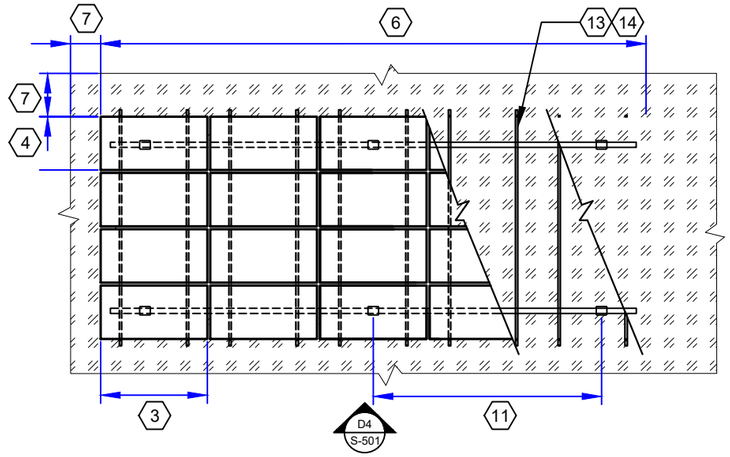
REVISIONS:

E-603.00
(SHEET 8)



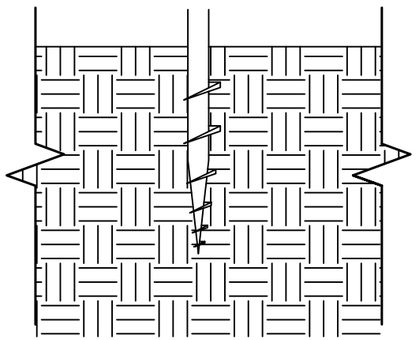
D1 RACKING DETAIL (TRANSVERSE)

NOT TO SCALE



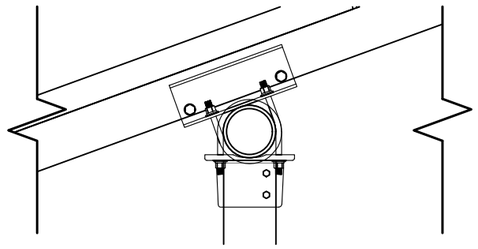
D3 RACKING DETAIL (TRANSVERSE)

NOT TO SCALE



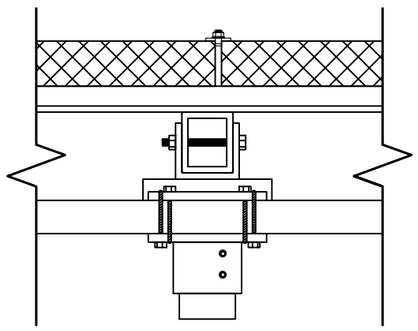
D2 DETAIL (TRANSVERSE)

NOT TO SCALE



D4 DETAIL (TRANSVERSE)

NOT TO SCALE



D5 DETAIL (LONGITUDINAL)

NOT TO SCALE

SHEET KEYNOTES

1. MODULE MANUFACTURER: REC SOLAR
2. MODULE MODEL: REC365NP2 BLACK
3. MODULE LENGTH: 69.1"
4. MODULE WIDTH: 40.94"
5. MODULE WEIGHT: 44 LBS.
6. SEE SHEET A-103 FOR DIMENSION(S)
7. MIN. SETBACK REQUIREMENT: 10 FT.
8. FOUNDATION/ANCHOR TYPE: EARTH SCREWS
9. TOTAL # OF FOUNDATION / CONCRETE PIER: 8
10. TOTAL AREA: 471.49 SQ. FT.
11. EAST/WEST SPACING: 9'-8"
12. NORTH/SOUTH SPACING: 7'-6"
13. RACKING MANUFACTURER (OR EQUIV): IRONRIDGE
14. RACKING MODEL (OR EQUIV): GROUND MOUNT SYSTEM
15. PIPE DIAMETER: 3"
16. FRONT CLEARANCE: 1'-4"
17. REAR CLEARANCE: 7'-4"
18. DIAGONAL BRACING: NO
19. POLE EMBEDMENT DEPTH: 5FT
20. WIND EXPOSURE: C
21. WIND SPEED: 110 MPH
22. ARRAY TILT: 25 DEGREES

CONTRACTOR

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ASSEMBLY DETAILS

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

REVISIONS:

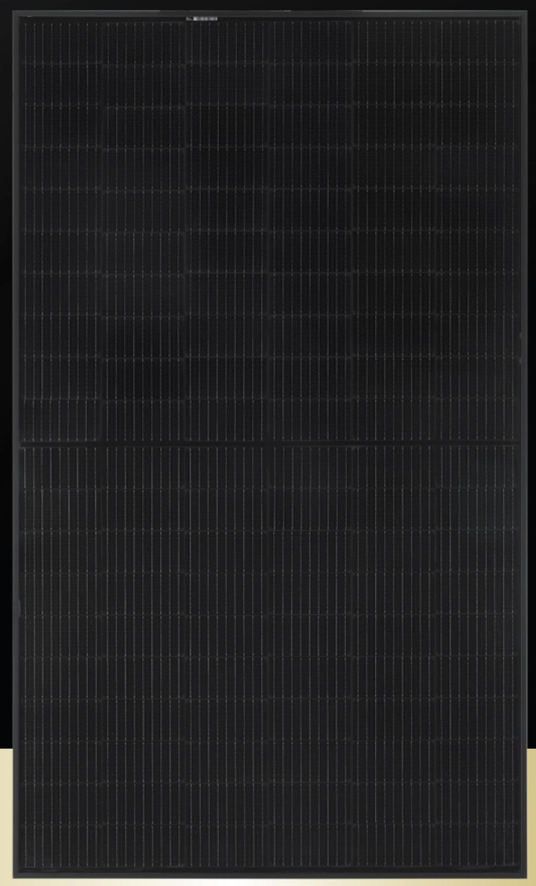
S-501.00
(SHEET 9)

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

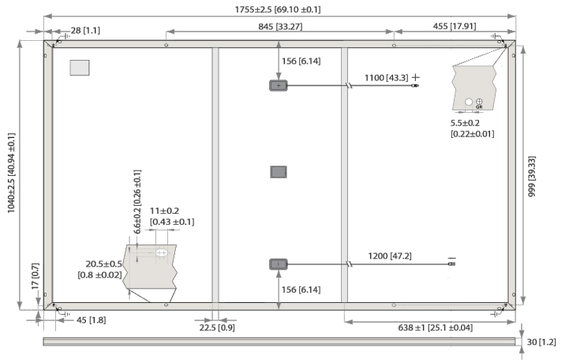
FEATURING REC'S PIONEERING TWIN DESIGN

HIGH POWER FOR 25 YEARS

370 WP POWER

PRODUCT REC 25 YEAR PROTRUST WARRANTY PERFORMANCE LABOR 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)

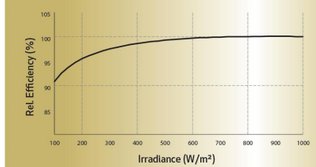
TEMPERATURE RATINGS *

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

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DRAFTED BY: L.J.

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

REVISIONS:

R-001.00

(SHEET 10)

Single Phase Inverter with HD-Wave Technology

for North America

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

INVERTERS

Optimized installation with HD-Wave technology

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

solaredge.com

solaredge

Single Phase Inverter with HD-Wave Technology

for North America

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

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SExxxxH-xxxxxBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600ku Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

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

Single Phase Inverter with HD-Wave Technology

for North America

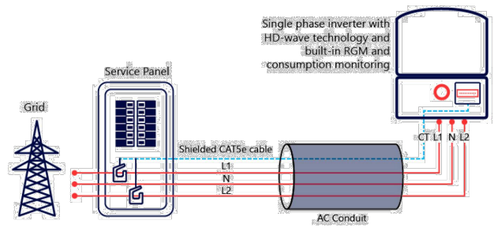
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Metering, ANSI C12.20	Optional[3]							
Consumption metering								
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection							
Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020, 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG					1" Maximum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG					1" Maximum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10		25.1 / 11.4		26.2 / 11.9	38.8 / 17.6		lb / kg
Noise	< 25					<50		dBA
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -40 to +60[4]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

(3) Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BNI4 . For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box
(4) Full power up to at least 50°C / 122°F; for power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills



RoHS

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REVISIONS:

R-002.00

(SHEET 11)

Power Optimizer
For Residential Installations

S440, S500, S500B

POWER OPTIMIZER

Enabling PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules

* Functionality subject to inverter model and firmware version

solaredge.com

solaredge

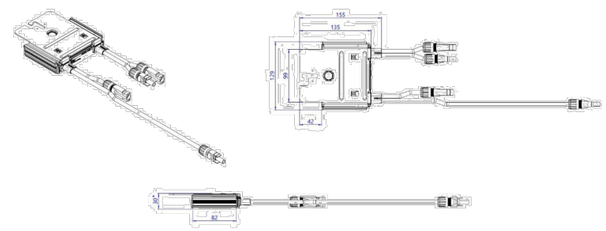
Power Optimizer
For Residential Installations
S440, S500, S500B

	S440	S500	S500B	UNIT
Rated Input DC Power(1)	440	500		W
Absolute Maximum Input Voltage (Voc)	60		125	Vdc
MPPT Operating Range	8 - 60		12.5 - 105	Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	14.5	15		Adc
Maximum Efficiency	99.5			%
Weighted Efficiency	98.6			%
Overvoltage Category	II			
OUTPUT DURING OPERATION				
Maximum Output Current	15			Adc
Maximum Output Voltage	60		80	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)				
Safety Output Voltage per Power Optimizer	1 +/- 0.1			Vdc
STANDARD COMPLIANCE				
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3, CISPR11, EN-55011			
Safety	IEC62109-1 (class II safety), UL1741			
Material	UL94 V-0, UV Resistant			
RoHS	Yes			
Fire Safety	VDE-AR-E 2100-712:2013-05			
INSTALLATION SPECIFICATIONS				
Maximum Allowed System Voltage	1000			Vdc
Dimensions (W x L x H)	129 x 155 x 30		129 x 155 x 45	mm
Weight (including cables)	655			gr
Input Connector	MC4(2)			
Input Wire Length	0.1			m
Output Connector	MC4			
Output Wire Length	(+) 2.3, (-) 0.10			m
Operating Temperature Range(3)	-40 to +85			°C
Protection Rating	IP68			
Relative Humidity	0 - 100			%

(1) Rated power of the module at STC will not exceed the Power Optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed.
(2) For other connector types please contact SolarEdge.
(3) For ambient temperature above +70°C power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for details.

PV System Design Using a SolarEdge Inverter(4)		Single Phase HD-Wave	Three Phase SExxK-RWB	Three Phase for 230/400V Grid	Three Phase for 277/480V Grid	
Minimum String Length (Power Optimizers)	S440, S500	8	9	16	18	
	S500B	6	8	14		
Maximum String Length (Power Optimizers)		25	20	50		
Maximum Continuous Power per String		5700	5625	11250	12750	W
Maximum Allowed Connected Power per String (Permitted only when the power difference between strings is less than 2,000W)		See(5)	See(5)	13500	15000	W
Parallel Strings of Different Lengths or Orientations		Yes				

(4) It is not allowed to mix S-series and P-series Power Optimizers in new installations.
(5) If the inverter's rated AC power ≤ maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DCpower. Refer to https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf.



*45mm for S500B

CE RoHS

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: 8.76 kWp

POTENZANO RESIDENCE

321 NEILLS CREEK RD
LILLINGTON, NC 27546
APN: 0660-84-7959.000

ENGINEER OF RECORD

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

RESOURCE DOCUMENT

DATE: 12/21/2022

DRAFTED BY: L.J.

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

REVISIONS:

R-003.00
(SHEET 12)

Datasheet

IRONRIDGE

Ground Mount System

Mount on all terrains, in no time.

The IronRidge Ground Mount System combines our XR1000 rails with locally-sourced steel pipes, or mechanical tubing, to create a cost-effective structure capable of handling any site or terrain challenge.

Installation is simple with only a few structural components and no drilling, welding, or heavy machinery required. In addition, the system works with a variety of foundation options, including concrete piers and driven piles.

Rugged Construction
Engineered steel and aluminum components ensure durability.

PE Certified
Pre-stamped engineering letters available in most states.

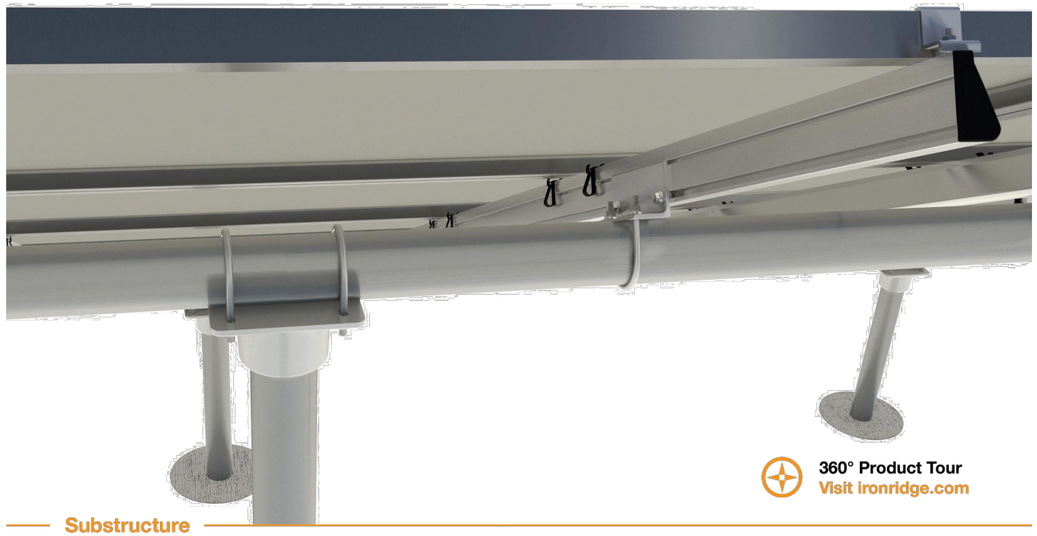
Simple Assembly
Just a few simple components and no heavy equipment.

Design Software
Online tool generates engineering values and bill of materials.

Flexible Architecture
Multiple foundation and array configuration options.

20 Year Warranty
Twice the protection offered by competitors.

Datasheet



360° Product Tour
Visit ironridge.com

Substructure

Top Caps

Connect vertical and cross pipes.

Rail Connectors

Attach Rail Assembly to horizontal pipes.

Diagonal Braces

Optional Brace provides additional support.

Cross Pipe & Piers

Steel pipes or mechanical tubing for substructure.

Rail Assembly

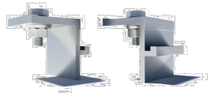
XR1000 Rails

Curved rails increase spanning capabilities.

Top-Down Clamps

Secure modules to rails and substructure.

Under Clamps



Alternative clamps for pre-attaching modules to rails.

Accessories

Wire Clips and End Caps provide a finished look.

Resources

Design Assistant
Go from rough layout to fully engineered system. For free.
Go to ironridge.com/gm

NABCEP Certified Training
Earn free continuing education credits, while learning more about our systems.
Go to ironridge.com/training

CONTRACTOR

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(SHEET 13)

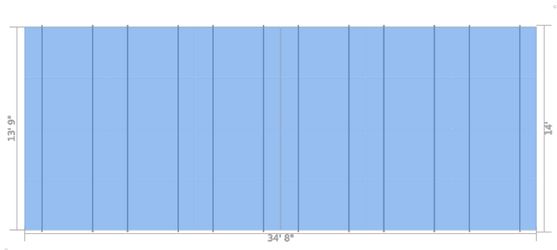
IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

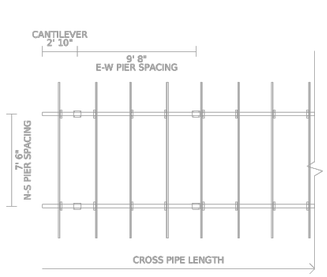
Project Details			
Name	Jennifer Potenzano	**Date**	12/12/2022
Location	321 Neills Creek Road, Lillington, NC 27546	**ASCE code**	7.16
Total modules	24	**Wind speed**	110 mph
Module	REC Solar: REC365NP2 Black (30mm)	**Snow load**	10 psf
Dimensions	Dimensions: 69.09" x 40.94" x 1.18" (1755.0mm x 1040.0mm x 30.0mm)	**Wind exposure**	C
Total watts	8,760 kW	**Piers**	8

Substructure & Foundation			
Tilt	25°	**South facing grade**	0°
Pipe/tubing diameter	3"	**Soil class**	2 - 5
Foundation type	Ground screws	**Screw length**	63"
Freeze thaw depth		**Hex head set screws / Screw**	4

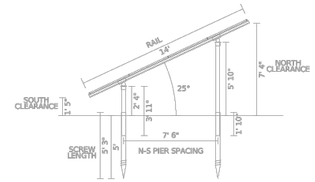
IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Sub array #1					
Rows	4	**Columns**	6	**# Arrays**	1
Area	34' 8" (EW) x 13' 11" (NS)	**Rail type**	XR1000	**Diagonal bracing**	no
E/W spacing	9' 8"	**Rail cantilever**	2' 10"	**Pipe cantilever**	2' 10"
Piers/array	8	**Total south piers**	4 (3' 11")	**Total north piers**	4 (7' 5")
Total cross pipes	2 (34' 8")	**Total pipe length**	114' 11"		
Shear	1,138 lbs	**Moment**	2,845 ft-lbs	**Uplift**	-1,472 lbs



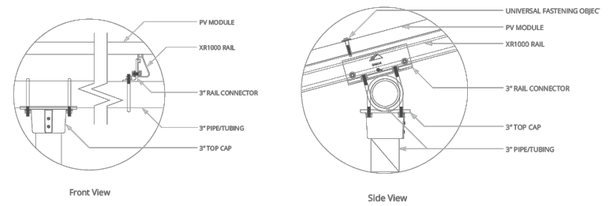


IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

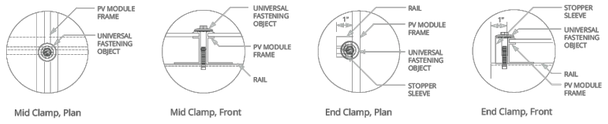


Pipe Fitting Detail

XR1000 Rail



Clamp Detail



CONTRACTOR

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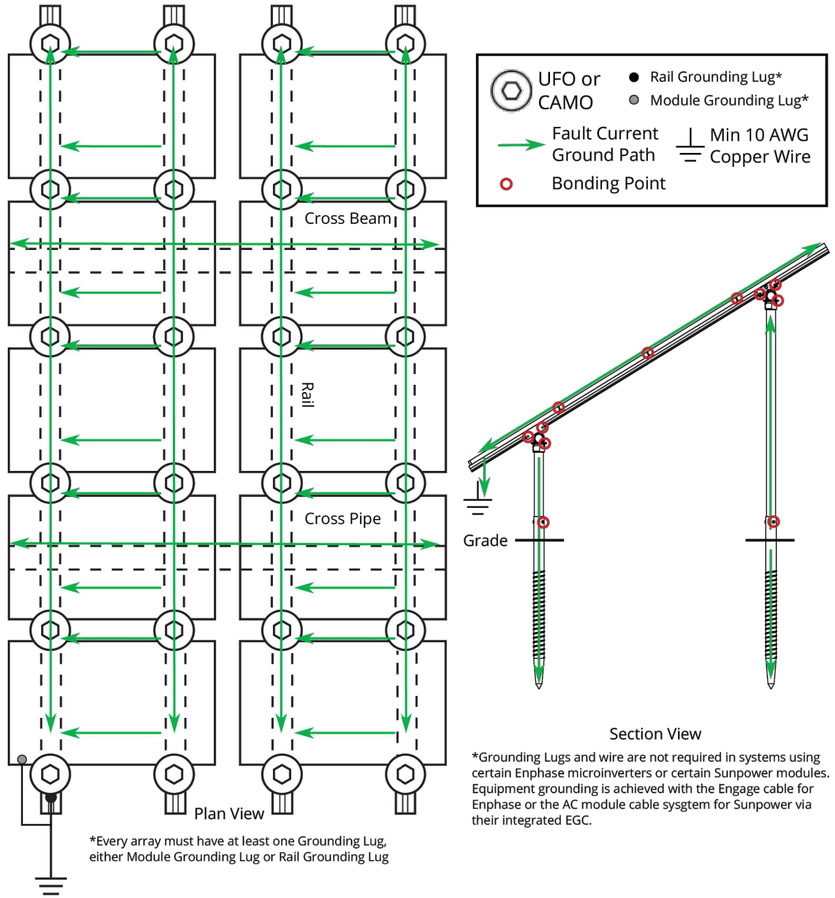
(SHEET 14)

Grounding Diagram



*Every array must have at least one Grounding Lug, either Module Grounding Lug or Rail Grounding Lug

*Grounding Lugs and wire are not required in systems using certain Enphase microinverters or certain Sunpower modules. Equipment grounding is achieved with the Engage cable for Enphase or the AC module cable sysgtem for Sunpower via their integrated EGC.

Jennifer Potenzano (#1081081)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Bill of Materials

Part	Spares	Total Qty
Rails		
XR-1000-168A XR1000, Rail 168" (14 Feet) Clear	0	12
Clamps & Grounding		
UFO-CL-01-B1 Universal Module Clamp, Black	0	60
UFO-STP-30MM-B1 Stopper Sleeve, 30MM, Black	0	24
XR-LUG-03-A1 Grounding Lug, Low Profile	0	1
Substructure		
70-0300-SGA SGA Top Cap at 3"	0	8
GM-BRC-003 Ground Mount Bonded Rail Connector - 3"	0	24
GM-HSHW-01-M1 Hex Head Set Screw	0	32
Accessories		
XR-1000-CAP Kit, End Cap XR1000 (10 sets per bag)	0	2
BHW-MI-01-A1 Microinverter/MLPE Bonding Hardware, T-Bolt	0	24

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R-006.00
(SHEET 15)