

**SCOPE OF WORK:**

TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 171 W STEWART ST COATS, NC 27521. THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT. THE PV SYSTEM DOES NOT INCLUDE STORAGE BATTERIES

**EQUIPMENT SUMMARY**

15 Q CEEL Q PEAK DUO BLK ML-G10+395 MODULES  
01 SOLAREEDGE SE5000H-US INVERTER  
15 SOLAREEDGE POWER OPTIMIZER P401

REV/DATE: 06/07/2022

**GENERAL NOTES:**

- THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS IN CONSTRUCTION DETAILS.
- ARCHITECT HAS NOT BEEN RETAINED TO SUPERVISE ANY CONSTRUCTION OR INSTALLATION OF ANY EQUIPMENT AT SITE.
- CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, OBTAINS ALL PERMITS, LICENSES AND PAY ALL REQUIRED FEES AND COMPLETE INSTALLATION.
- CONTRACTOR HAS THE FULL RESPONSIBILITY TO CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ANY WORK STARTED BEFORE CONSULTATION AND ACCEPTANCE BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTION BY THEM WITHOUT ADDITIONAL COMPENSATION.
- DAMAGE CAUSED TO THE EXISTING STRUCTURE, PIPES, DUCTS, WINDOWS, WALL, FLOORS, ETC. SHALL BE REPAIRED TO THE ORIGINAL CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER INSTALLATION AND COMPLETION OF THE WORK WITH APPROVED MATERIALS.
- NO CHANGES ARE TO BE MADE WITHOUT THE CONSULTATION AND APPROVAL OF THE ARCHITECT.
- CONTRACTOR SHALL OBTAIN BUILDING PERMIT. NO WORK TO START UNLESS BUILDING PERMIT IS PROPERLY DISPLAYED.
- ALL WORKMANSHIP AND MATERIALS SHALL BE OF FIRST QUALITY AND IN COMPLIANCE WITH THE REQUIREMENTS OF THE NC BUILDING CODE, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ALL PERTINENT AGENCIES.
- IT IS ESSENTIAL THAT ALL WORK PROCEED WITH THE MAXIMUM COOPERATION OF ALL PARTIES AND WITH MINIMUM INTERFERENCE TO THE OCCUPANTS WITHIN THE BUILDING. THE OWNER'S DIRECTIONS IN THIS REGARD SHALL BE FULLY COMPLIED WITH.
- ALL EXPOSED PLUMBING, HVAC, ELECTRICAL DUCTWORK, PIPING AND CONDUITS ARE TO BE PAINTED BY GENERAL CONTRACTOR.
- THE CONTRACTOR SHALL PERFORM THE WORK IN STRICT CONFORMANCE WITH THE LOCAL LAWS, REGULATIONS AND THE NATIONAL ELECTRIC CODE.
- THE CONTRACTOR SHALL OBTAIN ALL PERMITS, APPROVALS, AFFIDAVITS, CERTIFICATIONS, ETC. AND PAY ALL FEES AS REQUIRED BY THE LOCAL AUTHORITIES.
- CONTRACTORS SHALL OBTAIN FIRE CERTIF. UPON COMPLETION OF WORK.

**ELECTRICAL NOTES:**

- THE EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE INSTALLED ONLY BY QUALIFIED PEOPLE. A QUALIFIED PERSON IS ONE WHO HAS SKILLS AND KNOWLEDGE RELATED TO THE CONSTRUCTION AND OPERATION OF THE ELECTRICAL EQUIPMENT AND INSTALLATIONS AND HAS RECEIVED SAFETY TRAINING TO RECOGNIZE AND AVOID THE HAZARDS INVOLVED. (NEC 690.4(E) AND 705.6)
- LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY SOLAR PHOTOVOLTAIC INSTALLATION. FOR A LINE SIDE TAP CONNECTION, UTILITY NEEDS TO BE NOTIFIED WELL IN ADVANCE TO COORDINATE BUILDING ELECTRICAL SHUT OFF.
- NEW CONDUIT ROUTING SHOWN IS ESSENTIALLY SCHEMATIC. SUBCONTRACTOR SHALL LAY OUT RUNS TO SUIT FIELD CONDITIONS AND THE COORDINATION REQUIREMENTS OF OTHER TRADES.
- ARRAY WIRING SHOULD NOT BE READILY ACCESSIBLE EXCEPT TO QUALIFIED PERSONNEL.
- ALL EXTERIOR CONDUIT, FITTINGS, AND BOXES SHALL BE WATERTIGHT AND APPROVED FOR USE IN WET LOCATIONS. (NEC 314.15A).
- WIRING METHODS FOR PV SYSTEM CONDUCTORS AREN'T PERMITTED WITHIN 10 IN. OF THE ROOF DECKING OR SHEATHING EXCEPT WHERE LOCATED DIRECTLY BELOW THE ROOF SURFACE THAT'S COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT WIRING
- BACK-FED BREAKER MUST BE AT THE OPPOSITE END OF BUS BAR FROM THE MAIN BREAKER OR MAIN LUG SUPPLYING CURRENT FROM THE UTILITIES.
- ALL CONDUCTORS AND WIRE TIES EXPOSED TO SUNLIGHT ARE LISTED AS UV RESISTANT.
- CONTRACTOR SHALL FOLLOW ALL ELECTRICAL EQUIPMENT LABELING REQUIREMENTS IN NEC 690 AND IFC 2018
- MEASURE THE LINE-TO-LINE AND LINE-TO-NEUTRAL VOLTAGE OF ALL SERVICE ENTRANCE CONDUCTORS PRIOR TO INSTALLING ANY SOLAR EQUIPMENT. THE VOLTAGES FOR THE 240VAC RATED.

**GOVERNING CODES**

2017 NPFA-70 NATIONAL ELECTRICAL CODE  
2018 INTERNATIONAL FIRE CODE  
2018 INTERNATIONAL BUILDING CODE  
2018 INTERNATIONAL RESIDENTIAL CODE  
2018 INTERNATIONAL ENERGY CONSERVATION CODE  
2018 INTERNATIONAL EXISTING BUILDING CODE  
2018 INTERNATIONAL SWIMMING POOL AND SPA CODE  
2018 UNIFORM MECHANICAL CODE  
2018 UNIFORM PLUMBING CODE

AUTHORITY HAVING JURISDICTION (AHJ): COATS TOWN

**WIRING AND CONDUIT NOTES:**

- ALL CONDUIT SIZES AND TYPES, SHALL BE LISTED FOR ITS PURPOSE AND APPROVED FOR THE SITE APPLICATIONS
- ALL PV CABLES AND HOMERUN WIRES BE #10AWG \*USE-2, PV WIRE, OR PROPRIETARY SOLAR CABLING SPECIFIED BY MFR, OR EQUIVALENT; ROUTED TO SOURCE CIRCUIT COMBINER BOXES AS REQUIRED
- ALL CONDUCTORS AND OCPD SIZES AND TYPES SPECIFIED ACCORDING TO [NEC 690.8 (A)(1) & (B)(1)], [NEC 240] [NEC 690.7] FOR MULTIPLE CONDUCTORS
- ALL PV DC CONDUCTORS IN CONDUIT EXPOSED TO SUNLIGHT SHALL BE DERATED ACCORDING TO [NEC TABLE 310.15 (B)(2)(C)] BLACK ONLY\*\*
- EXPOSED ROOF PV DC CONDUCTORS SHALL BE USE-2, 90°C RATED, WET AND UV RESISTANT, AND UL LISTED RATED FOR 600V, UV RATED SPIRAL WRAP SHALL BE USED TO PROTECT WIRE FROM SHARP EDGES
- PHASE AND NEUTRAL CONDUCTORS SHALL BE DUAL RATED THHN/THWN-2 INSULATED, 90°C RATED, WET AND UV RESISTANT, RATED FOR 600V PER NEC 2008 OR 1000V PER NEC 2011
- 4-WIRE DELTA CONNECTED SYSTEMS HAVE THE PHASE WITH THE HIGHER VOLTAGE TO GROUND MARKED ORANGE OR IDENTIFIED BY OTHER EFFECTIVE MEANS
- ALL SOURCE CIRCUITS SHALL HAVE INDIVIDUAL SOURCE CIRCUIT PROTECTION
- VOLTAGE DROP LIMITED TO 2% FOR DC CIRCUITS AND 1% FOR AC CIRCUITS
- NEGATIVE GROUNDED SYSTEMS DC CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS: DC POSITIVE - RED (OR MARKED RED), DC NEGATIVE - GREY (OR MARKED GREY)
- POSITIVE GROUNDED SYSTEMS DC CONDUCTORS COLOR CODED: DC POSITIVE - GREY (OR MARKED GREY), DC NEGATIVE - BLACK (OR MARKED BLACK)
- AC CONDUCTORS >4AWG COLOR CODED OR MARKED: PHASE A OR L1- BLACK, PHASE B OR L2- RED, PHASE C OR L3- BLUE, NEUTRAL- WHITE/GRAY

**SYSTEM RATING**

5.925 KWDC

5.0 KWAC

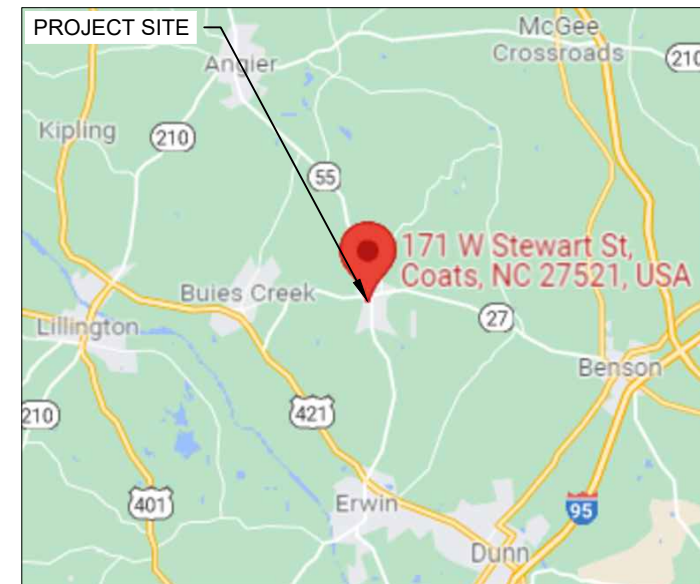
PHOTOVOLTAIC SYSTEM  
FIRE CLASSIFICATION  
LISTING IN ACCORDANCE  
WITH UL1703 STANDARD.

**SHEET INDEX**

PV-0	COVER PAGE
PV-1	SITE PLAN
PV-2	ROOF PLAN & MODULES
PV-2A	STRING LAYOUT & BOM
PV-3	ATTACHMENT DETAIL
PV-3A	ATTACHMENT DETAIL
PV-4	ELECTRICAL LINE DIAGRAM & CALCS.
PV-4A	ELECTRICAL LINE DIAGRAM & CALCS.
PV-4B	SPECIFICATIONS & NOTES
PV-5	SIGNAGE
PV-6	JOB SAFETY PLAN
PV-7+	EQUIPMENT SPECIFICATIONS

**PROJECT SITE**

1 PV-0 HOUSE PHOTO SCALE: NTS



2 PV-0 VICINITY MAP SCALE: NTS



TITAN SOLAR POWER

210 N Sunway Dr,  
Gilbert, AZ 85233

www.titansolarpower.com

ELECTRICAL LIC#: U.33714

**REVISIONS**

DESCRIPTION	DATE	REV
REVISION	06/07/2022	A
REVISION	08/25/2022	B

Signature with Seal



2nd revision

**PROJECT NAME & ADDRESS**

ROBERT MCEACHIN  
RESIDENCE  
171 W STEWART ST  
COATS, NC 27521  
PH NO. (910) 658-9005  
EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

SHEET NAME

COVER PAGE

SHEET SIZE

ANSI B  
11" X 17"

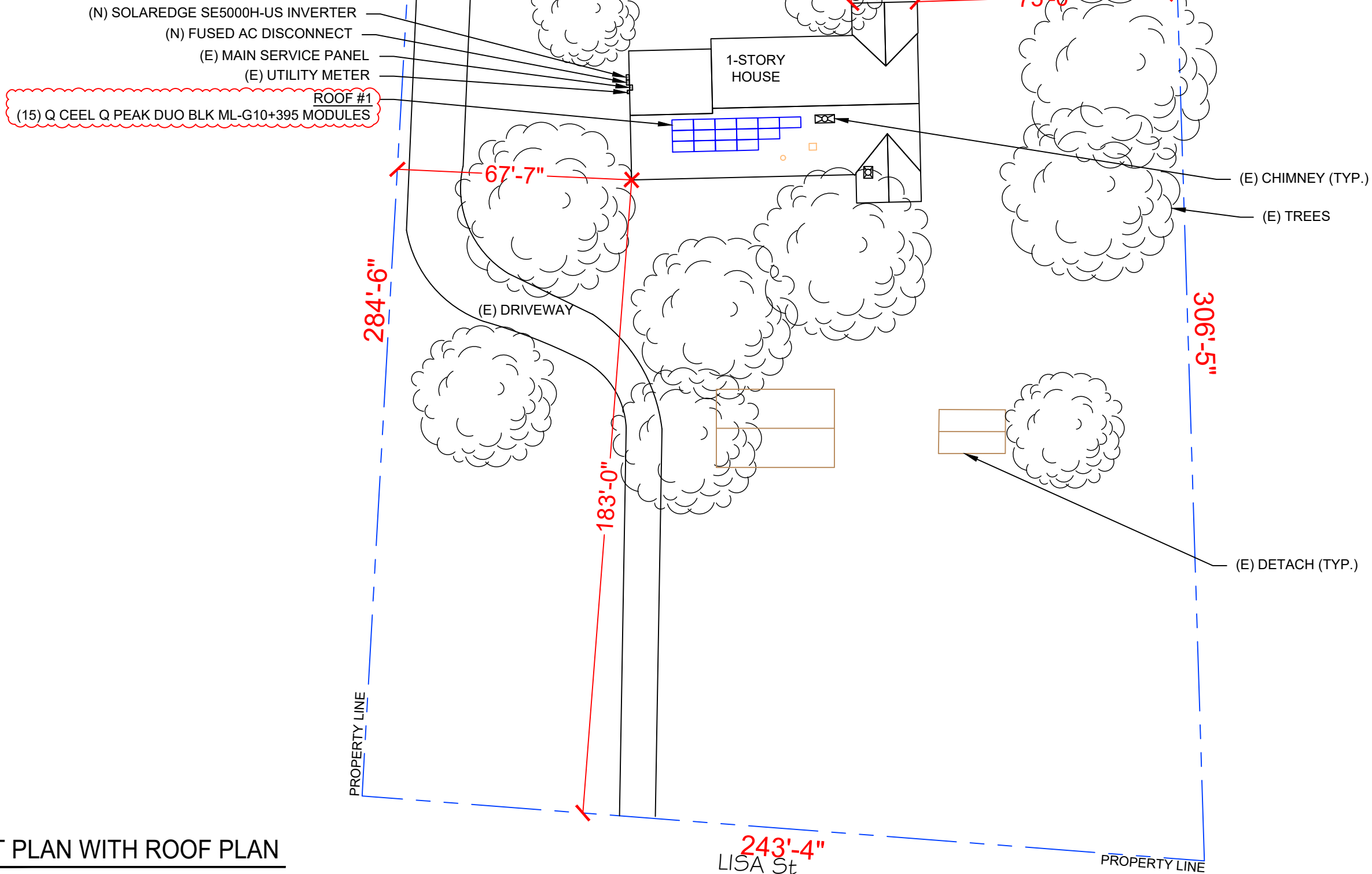
SHEET NUMBER

PV-0

**SITE NOTES**

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

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DATE: 08/25/2022

SHEET NAME

SITE PLAN

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-1



1

PLOT PLAN WITH ROOF PLAN

PV-1

SCALE: 1/32" = 1'-0"

DEAD LOAD CALCULATION			
BOM	QUANTITY	LBS/UNIT	TOTAL WEIGHT(LBS)
MODULES	15	48.50	727.50
MID CLAMP	24	0.30	7.20
END CLAMP	12	0.31	3.72
RAIL LENGTH	15	10.0	150.00
SPLICE BAR	10	0.65	6.50
SPLICEFOOT X	54	0.9	48.60
<b>TOTAL WEIGHT OF THE SYSTEM (LBS)</b>			943.52
<b>TOTAL ARREY AREA ON THE ROOF (SQ. FT.)</b>			286.42
<b>WEIGHT PER SQ. FT.(LBS)</b>			943.52
<b>WEIGHT PER PENETRATION (LBS)</b>			17.47

MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	15 MODULES
MODULE TYPE:	Q CEEL Q PEAK DUO BLK ML-G10+395
MODULE WEIGHT:	48.5LBS
MODULE DIMENSIONS:	74.0" X 41.1" = 21.12 SF
UNIT WEIGHT OF AREA:	2.29 PSF

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE 7-16):	15 PSF
EXPOSURE CATEGORY:	B
WIND SPEED (ASCE 7-16):	119 MPH

LEGEND	
	- JUNCTION BOX
	- INVERTER
	- AC DISCONNECT
	- MAIN SERVICE PANEL
	- UTILITY METER
	- VENT, ATTIC FAN (ROOF OBSTRUCTION)
	- ROOF ATTACHMENT
	- CONDUIT

ROOF DESCRIPTION					
ROOF #	ROOF TILT	AZIMUTH	RAFTER SIZE	RAFTER SPACING	ROOF MATERIAL
#1	24°	179°	2"X6"	16" O.C.	COMP. SHINGLE
PANEL HEIGHT OFF ROOF					4"

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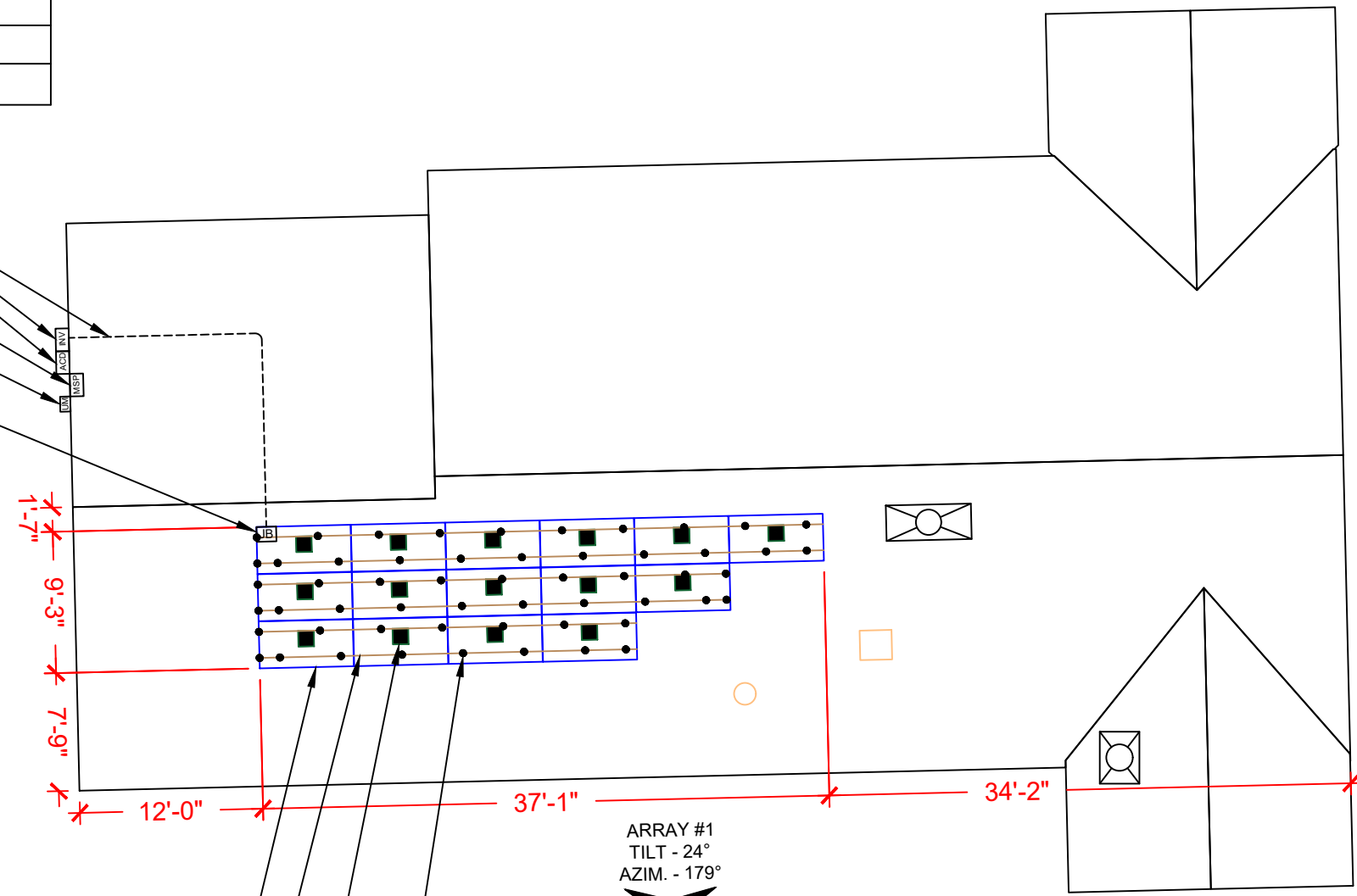
DATE: 08/25/2022
SHEET NAME <b>ROOF PLAN &amp; MODULES</b>
SHEET SIZE <b>ANSI B 11" X 17"</b>
SHEET NUMBER <b>PV-2</b>

W STEWART ST  
 (E) FRONT OF RESIDENCE

(E) BACK OF RESIDENCE  
 LISA St

ARRAY AREA & ROOF AREA CALC'S				
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	TOTAL ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
#1	15	286.42	3598.79	7.96
<b>TOTAL ROOF AREA COVERED BY ARRAY AREA (%)</b>		286.42	3598.79	7.96

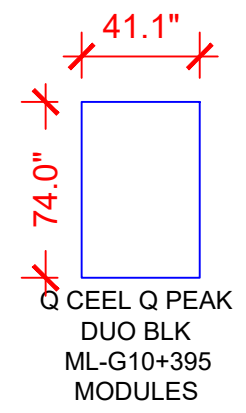
REV/DATE: 06/07/2022



ROOF #1  
 (15) Q CEEL Q PEAK DUO BLK ML-G10+395 MODULES

(N) K2 CROSSRAIL 48-X  
 (15) SOLAREEDGE POWER OPTIMIZER P401

(54) SPLICE FOOT X @ 48"O.C





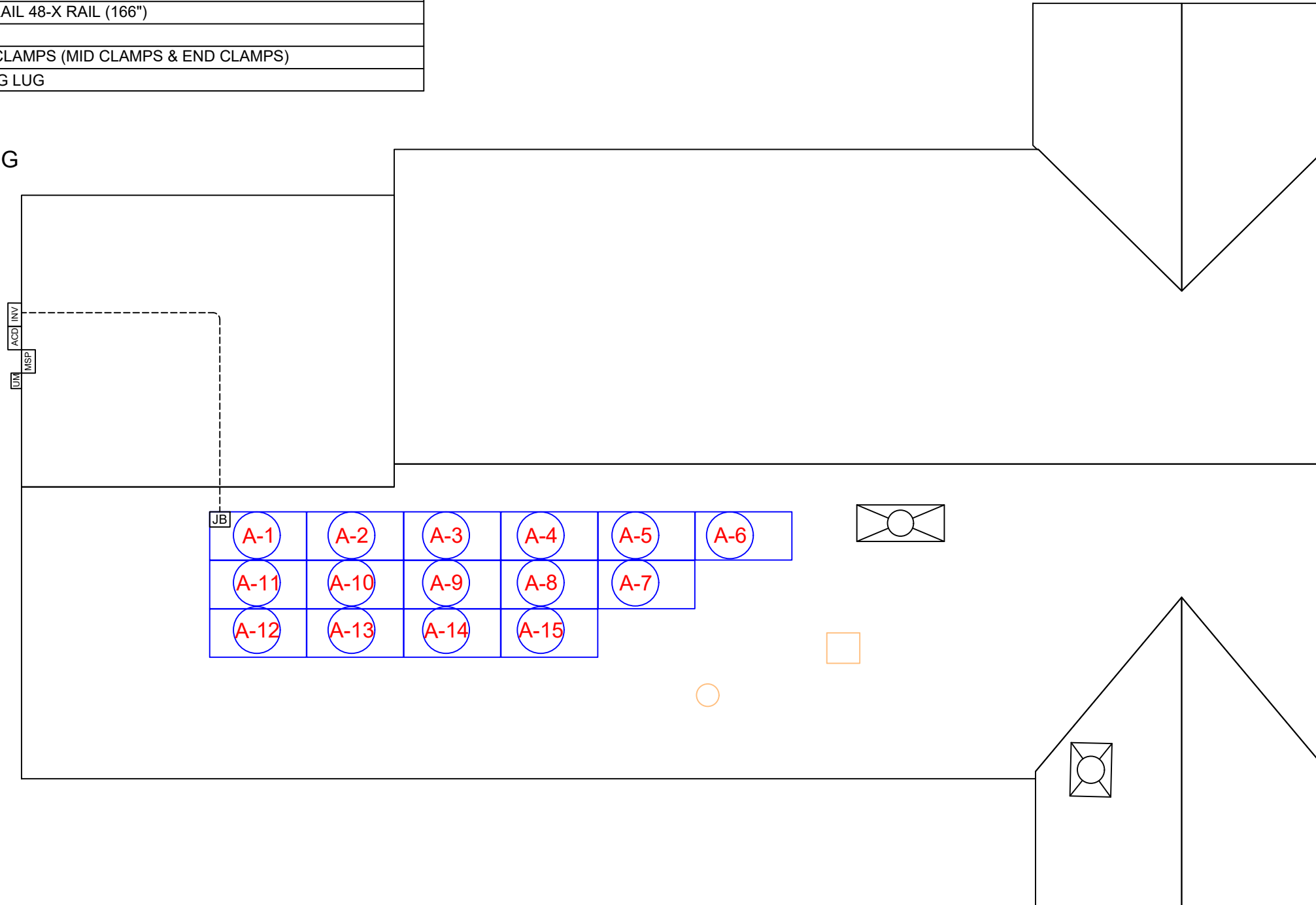
**BILL OF MATERIALS**

EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	15	Q CEEL Q PEAK DUO BLK ML-G10+395
OPTIMIZER	15	SOLAREGE POWER OPTIMIZER P401
INVERTER	1	SOLAREGE SE5000H-US
AC DISCONNECT	1	EATON DG222NRB, PV SYSTEM AC DISCONNECT SWITCH FUSED, 60A W/X FUSES, 120/240V 2P NEMA 3R
JUNCTION BOX	1	JUNCTION BOX, NEMA 3R, UL LISTED
ATTACHMENT	54	SPLICE FOOT X
ATTACHMENT	54	K2 SOLAR SEAL BUTYL PAD
ATTACHMENT	108	MS X 60 LAG SCREWS
ATTACHMENT	54	CAP SCREW, HEX HEAD, 5/16"-18" X 1"
RAILS	14	K2 CROSSRAIL 48-X RAIL (166")
BONDED SPLICE	10	SPLICE KIT
CLAMPS	36	MODULES CLAMPS (MID CLAMPS & END CLAMPS)
GROUNDING LUG	3	GROUNDING LUG

REV/DATE: 06/07/2022

W STEWART ST  
(E) FRONT OF RESIDENCE

**A - MODULE STRINGING**



(E) BACK OF RESIDENCE  
LISA St



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EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

SHEET NAME  
**STRING LAYOUT & BOM**

SHEET SIZE

**ANSI B  
11" X 17"**

SHEET NUMBER

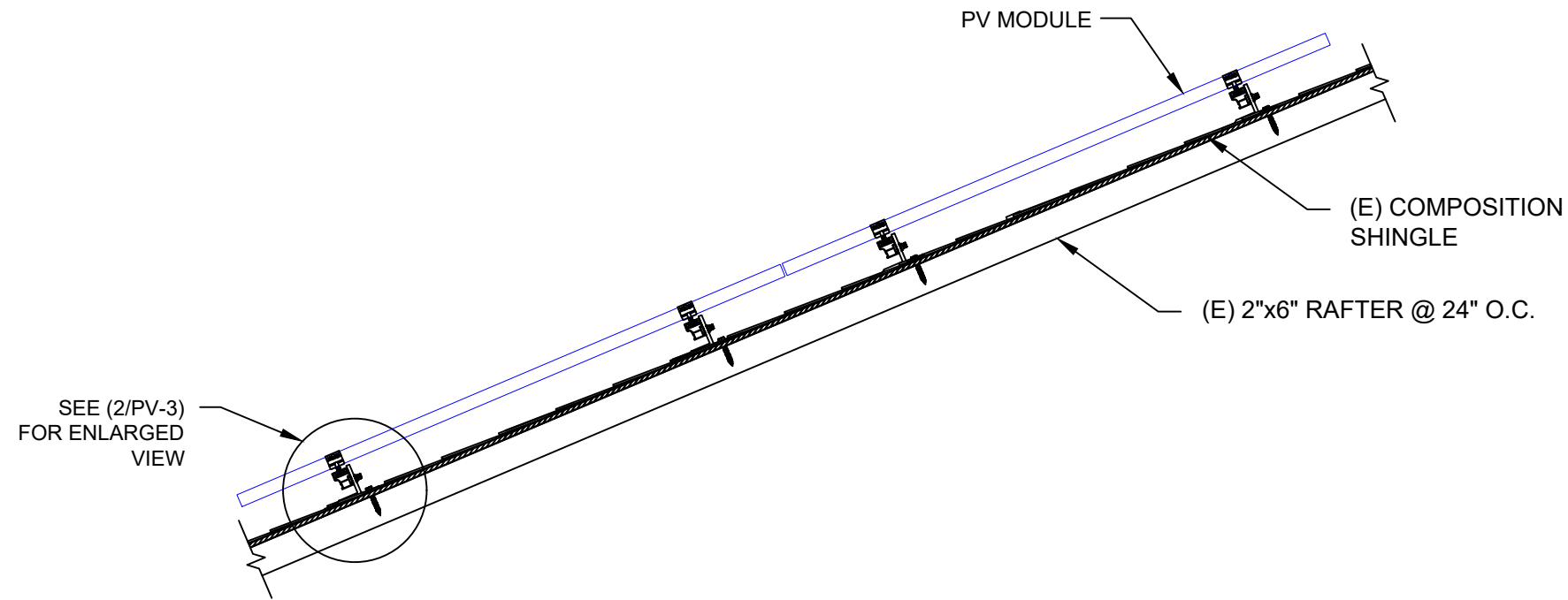
**PV-2A**



**1 ROOF PLAN WITH STRING LAYOUT & BOM**

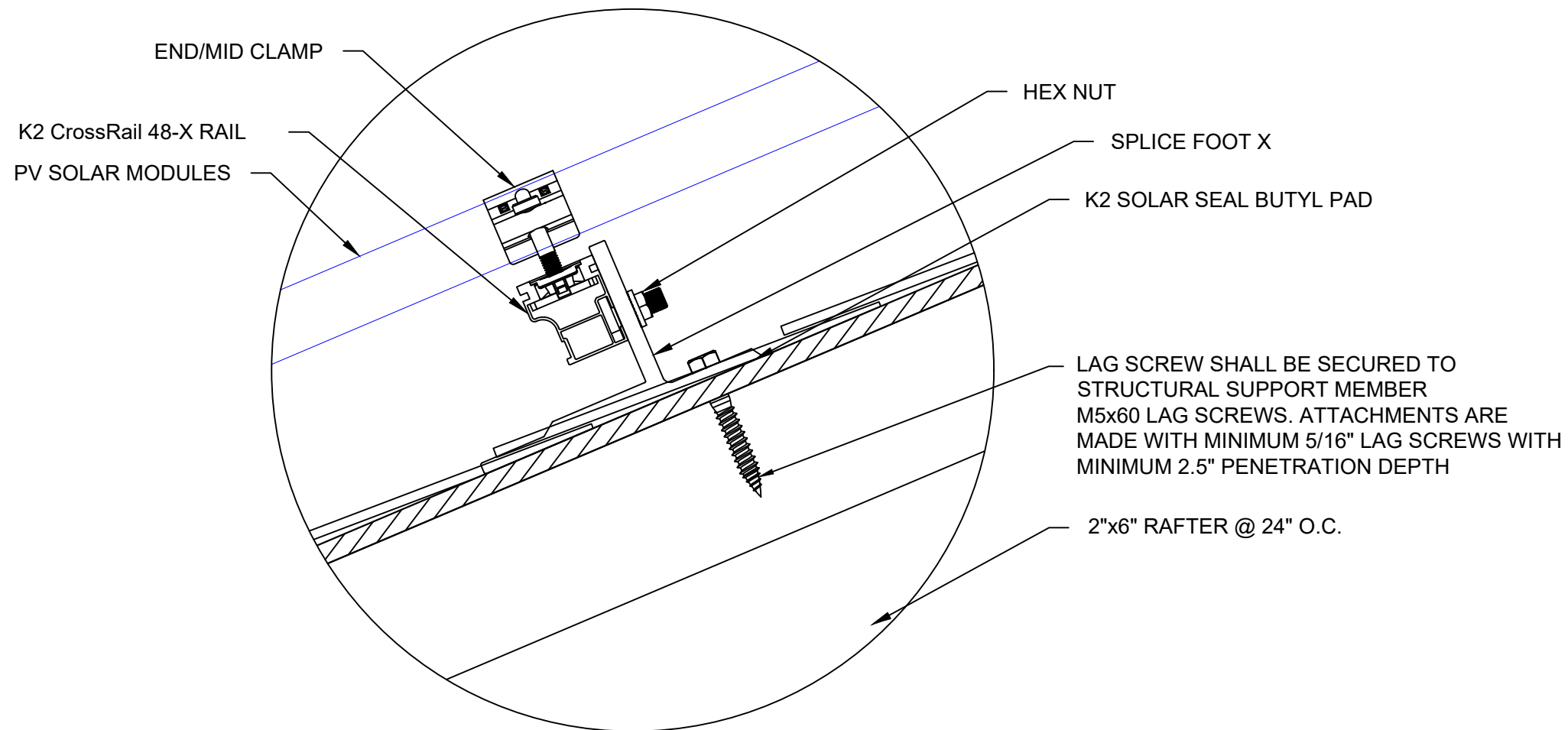
PV-2A

SCALE: 1/8" = 1'-0"



**1 ATTACHMENT DETAILS**

PV-3



**2 ENLARGED VIEW OF ATTACHMENT**

PV-3

SCALE: NTS



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SHEET NAME  
**ATTACHMENT  
 DETAILS**

SHEET SIZE

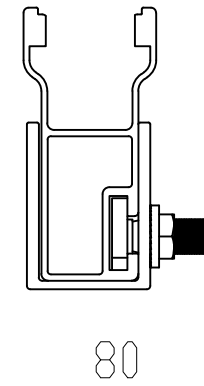
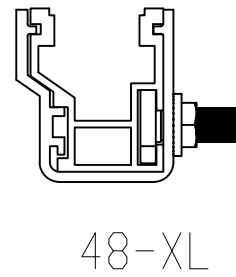
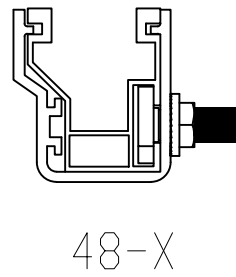
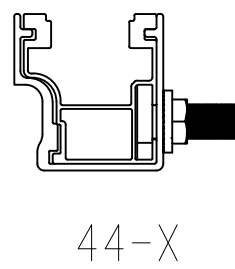
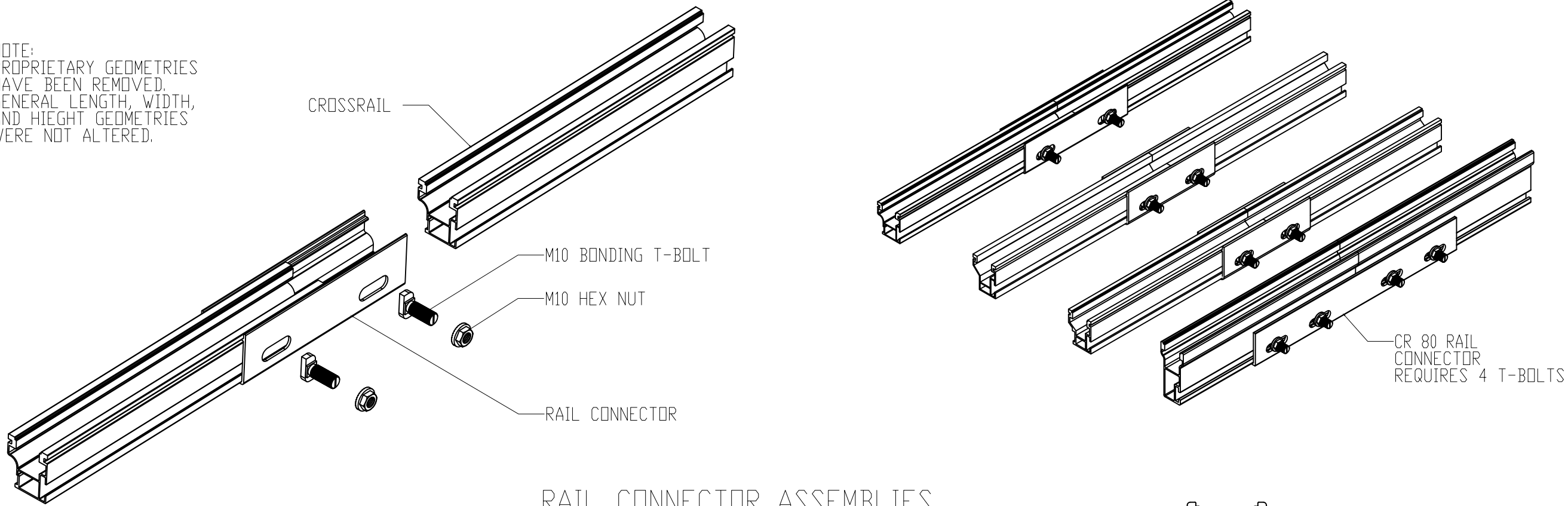
**ANSI B  
 11" X 17"**

SHEET NUMBER

**PV-3**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

NOTE:  
 PROPRIETARY GEOMETRIES  
 HAVE BEEN REMOVED.  
 GENERAL LENGTH, WIDTH,  
 AND HEIGHT GEOMETRIES  
 WERE NOT ALTERED.



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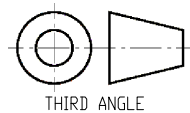
SHEET SIZE  
**ANSI B  
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SHEET NUMBER  
**PV-3A**

REVISION HISTORY

Revision	Date	Description
01		
02		
03		
04		
05		

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Everest Solar Systems, LLC.  
 a division of K2 Systems International  
 2835 La Mirada Dr Suite A  
 Vista, CA 92081  
 phone 760.301.5300



Title  
**CROSSRAIL RAIL  
 CONNECTOR ASSEMBLIES**

Name	Date
Drawn T. WIGGINS	07/29/2020
Checked R. HAGEN	08/07/2020
Approved T. WIGGINS	08/10/2020
Last Revision	

Size: B	All Dimensions are mm
Scale: 1:25	Revision: 00
Sheet 2 of 2	

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ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CONDUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	LENGTH	VOLTAGE DROP
				6 AWG	BARE COPPER																		
1	2	STRING	JUNCTION BOX	10 AWG	PV WIRE	COPPER	Open Air	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(57°C)	N/A	15.0A	18.8A	40A	28.4A	90°C	85FT	0.03%
2	1	JUNCTION BOX	INVERTER	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	2	4	19.09%	N/A	8 AWG	THWN-2, COPPER	0.96	(35°C)	1	15.0A	18.8A	40A	38.4A	90°C	35FT	0.12%
3	1	INVERTER	FUSED AC DISCONNECT	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	15.27%	30A	8 AWG	THWN-2, COPPER	0.96	(35°C)	1	21.0A	26.3A	40A	38.4A	90°C	5FT	0.16%
4	1	FUSED AC DISCONNECT	MSP	6 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	36.53%	N/A	8 AWG	THWN-2, COPPER	0.96	(35°C)	1	21.0A	26.3A	75A	72.0A	90°C	5FT	0.16%



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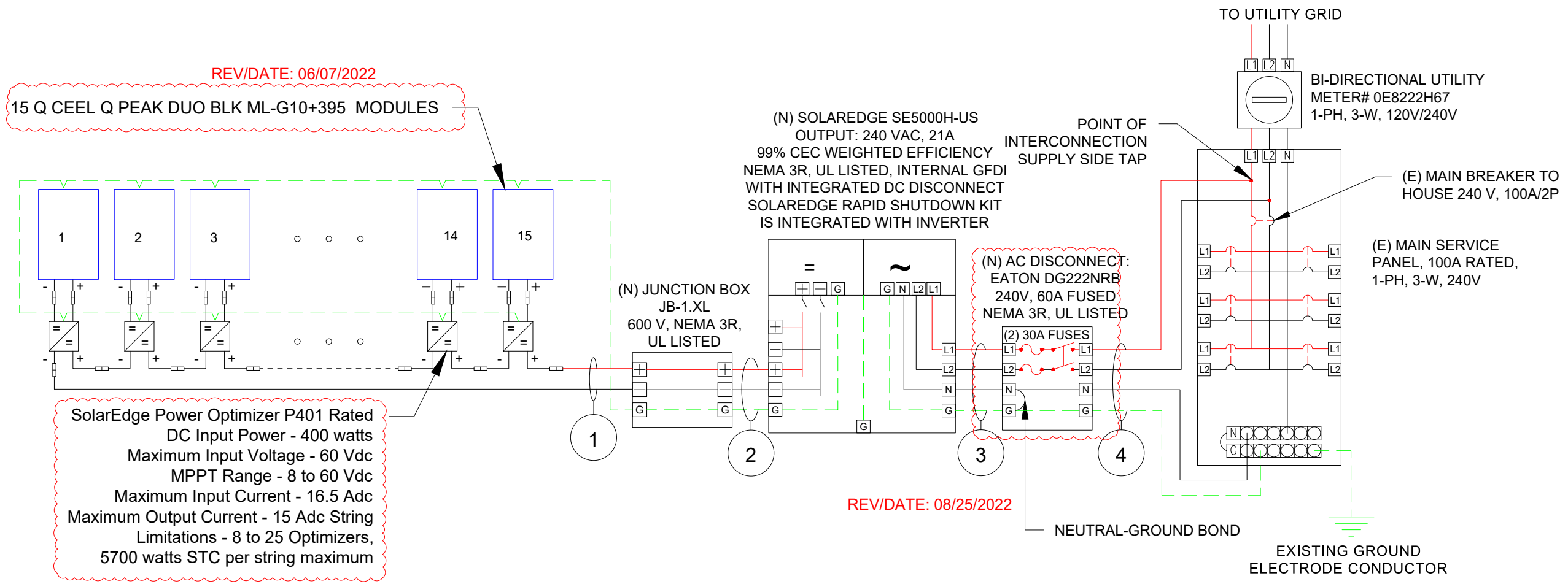
SHEET NAME  
**ELECTRICAL LINE & CALCS.**

SHEET SIZE

**ANSI B**  
 11" X 17"

SHEET NUMBER

**PV-4**



SYSTEM RATING
5.93 KWDC
5.0 KWAC

SERVICE INFO
UTILITY PROVIDER: DUKE ENERGY
MAIN SERVICE VOLTAGE: 240V
MAIN PANEL BRAND:
MAIN SERVICE PANEL: 100A
MAIN CIRCUIT BREAKER RATING: 100A
MAIN SERVICE LOCATION: WEST
SERVICE FEED SOURCE: OVERHEAD

ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CONDUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	LENGTH	VOLTAGE DROP
				6 AWG	BARE COPPER																		
1	2	STRING	JUNCTION BOX	10 AWG	PV WIRE	COPPER	Open Air	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(57°C)	N/A	15.0A	18.8A	40A	28.4A	90°C	85FT	0.03%
2	1	JUNCTION BOX	INVERTER	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	2	4	19.09%	N/A	8 AWG	THWN-2, COPPER	0.96	(35°C)	1	15.0A	18.8A	40A	38.4A	90°C	35FT	0.12%
3	1	INVERTER	FUSED AC DISCONNECT	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	15.27%	30A	8 AWG	THWN-2, COPPER	0.96	(35°C)	1	21.0A	26.3A	40A	38.4A	90°C	5FT	0.16%
4	1	FUSED AC DISCONNECT	MSP	6 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	36.53%	N/A	8 AWG	THWN-2, COPPER	0.96	(35°C)	1	21.0A	26.3A	75A	72.0A	90°C	5FT	0.16%



**TITAN SOLAR POWER**  
 210 N Sunway Dr,  
 Gilbert, AZ 85233  
 www.titansolarpower.com  
 ELECTRICAL LIC#: U.33714

REV/DATE: 08/25/2022

REVISIONS		
DESCRIPTION	DATE	REV
REVISION	06/07/2022	A
REVISION	08/25/2022	B

Signature with Seal

PROJECT NAME & ADDRESS

**ROBERT MCEACHIN**  
 RESIDENCE  
 171 W STEWART ST  
 COATS, NC 27521  
 PH NO. (910) 658-9005  
 EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

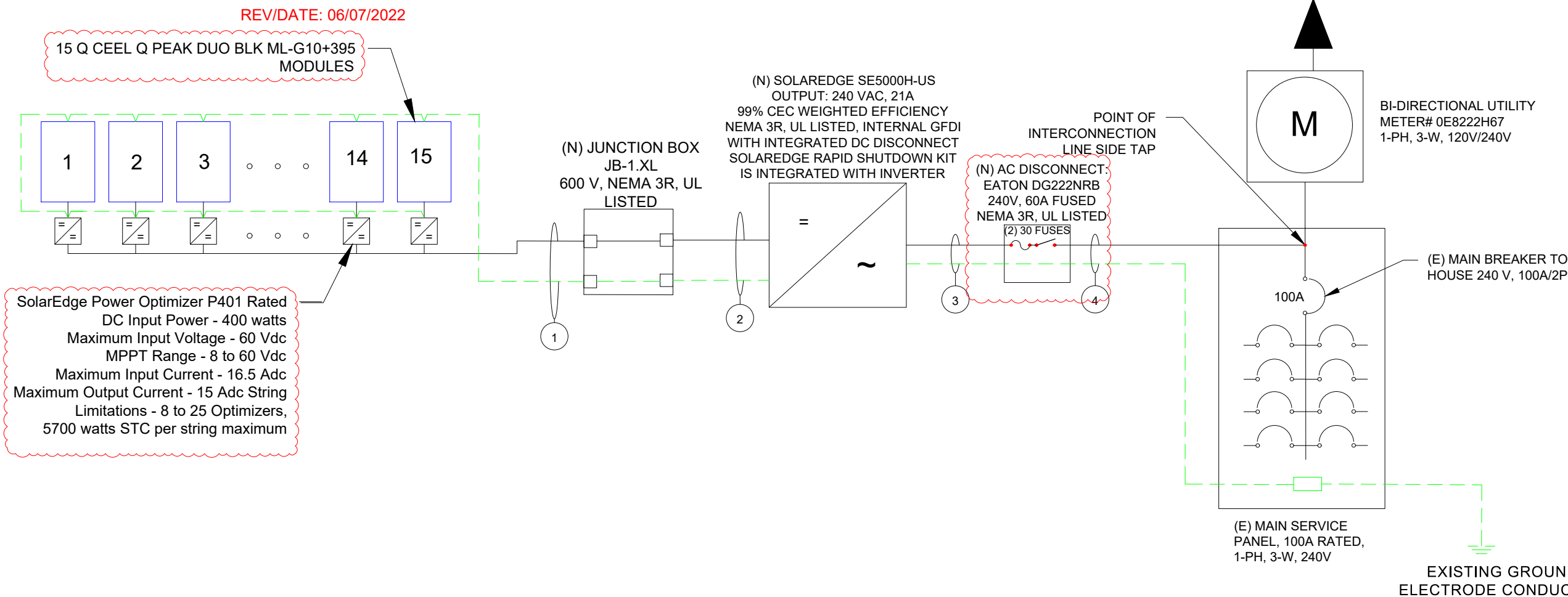
SHEET NAME  
**ELECTRICAL LINE & CALCS.**

SHEET SIZE

**ANSI B**  
 11" X 17"

SHEET NUMBER

**PV-4A**



REV/DATE: 06/07/2022

SolarEdge Power Optimizer P401 Rated  
 DC Input Power - 400 watts  
 Maximum Input Voltage - 60 Vdc  
 MPPT Range - 8 to 60 Vdc  
 Maximum Input Current - 16.5 Adc  
 Maximum Output Current - 15 Adc String  
 Limitations - 8 to 25 Optimizers,  
 5700 watts STC per string maximum

**SYSTEM RATING**  
 5.93 KWDC  
 5.0 KWAC

**SERVICE INFO**  
 UTILITY PROVIDER: DUKE ENERGY  
 MAIN SERVICE VOLTAGE: 240V  
 MAIN PANEL BRAND:  
 MAIN SERVICE PANEL: 100A  
 MAIN CIRCUIT BREAKER RATING: 100A  
 MAIN SERVICE LOCATION: WEST  
 SERVICE FEED SOURCE: OVERHEAD



**SOLAR MODULE SPECIFICATIONS**

MANUFACTURER / MODEL	Q.PEAK DUO BLK ML-G-10+395
VMP	36.88 V
IMP	10.71 A
VOC	45.27 V
ISC	11.10 A
TEMP. COEFF. VOC	-0.27%/ K
PTC RATING	371.73 W
MODULE DIMENSION	73.97"(L) x 41.14"(W)
PANEL WATTAGE	395W

**INVERTER SPECIFICATION**

MANUFACTURER / MODEL	SOLAREEDGE SE5000H-US
NOMINAL AC POWER	5000 W
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	21 A

**POWER OPTIMIZER (SOLAREEDGE P401)**

MAXIMUM INPUT POWER	400 W
MAXIMUM INPUT VOLTAGE	60 VDC
MAXIMUM INPUT ISC	11.75 ADC
MAXIMUM OUTPUT CURRENT	15 ADC
WEIGHTED EFFICIENCY	98.80%

REV/DATE: 06/07/2022

**AMBIENT TEMPERATURE SPECS**

RECORD LOW TEMP	-10°C
AMBIENT TEMP (HIGH TEMP 2%)	35°C
CONDUIT HEIGHT	0.75"
ROOF TOP TEMP	90°C
CONDUCTOR TEMPERATURE RATE	57°C
MODULE TEMPERATURE COEFFICIENT OF VOC	-0.27%/K

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
0.80	4-6
0.70	7-9
0.50	10-20



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**ROBERT MCEACHIN**  
RESIDENCE  
171 W STEWART ST  
COATS, NC 27521  
PH NO. (910) 658-9005  
EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

SHEET NAME  
**SPECIFICATIONS & NOTES**

SHEET SIZE

**ANSI B  
11" X 17"**

SHEET NUMBER

**PV-4B**

1

**! WARNING**

**ELECTRIC SHOCK HAZARD**

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

LABEL LOCATION:  
 MAIN SERVICE PANEL/AC DISCONNECT/INVERTER/  
 AC COMBINER  
 2017 NEC 690.13(B)

2

**WARNING PHOTOVOLTAIC POWER SOURCE**

LABEL LOCATION:  
 DC CONDUIT  
 EVERY 10' AND ON CONDUIT BODIES WHEN  
 EXPOSED  
 2017 NEC 690.31(G)(D)(3)

3

**PHOTOVOLTAIC AC DISCONNECT**

RATED AC OUTPUT CURRENT 21.0A

NOMINAL OPERATING AC VOLTAGE 240 VAC

LABEL LOCATION:  
 MAIN SERVICE PANEL/AC DISCONNECT  
 2017 NEC 690.13(B)

4

**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

LABEL LOCATION:  
 INVERTER  
 AT OR WITHIN 3' OF THE DC COMBINER  
 SWITCH  
 2017 NEC 690.56(C)(3)

5

**! CAUTION**

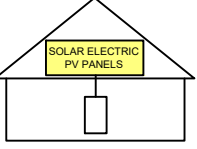
DUAL POWER SOURCE  
 SECOND SOURCE US  
 PHOTOVOLTAIC

LABEL LOCATION:  
 MAIN SERVICE PANEL/AC DISCONNECT/AC COMBINER/  
 REVENUE METER  
 2017 NEC 705.12(B)(3)

6

**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 PANEL  
 IF MSD IS OUTSIDE PLACE IT THERE / IF  
 MSD IS INSIDE PLACE ON THE AC DISCONNECT  
 2017 NEC 690.56(C)(1)(a)

7

MAXIMUM VOLTAGE: 480 VDC

MAXIMUM CIRCUIT CURRENT: 13.5 ADC

MAX. RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC-CONVERTER (IF INSTALLED) 30 ADC

LABEL LOCATION:  
 INVERTER  
 2017 NEC 690.53

8

**PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH**

LABEL LOCATION:  
 AC DISCONNECT  
 2017 NEC 690.56(C)(3)

9

**SERVICE EQUIPMENT**

**SECTIONNEUR PRINCIPALE**

**SERVICIO DE DESCONEJION**

LABEL LOCATION:  
 AC DISCONNECT  
 2017 NEC 230.66



TITAN SOLAR POWER

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 COATS, NC 27521  
 PH NO. (910) 658-9005  
 EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

SHEET NAME  
**SIGNAGE**

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

SHEET NUMBER  
**PV-5**

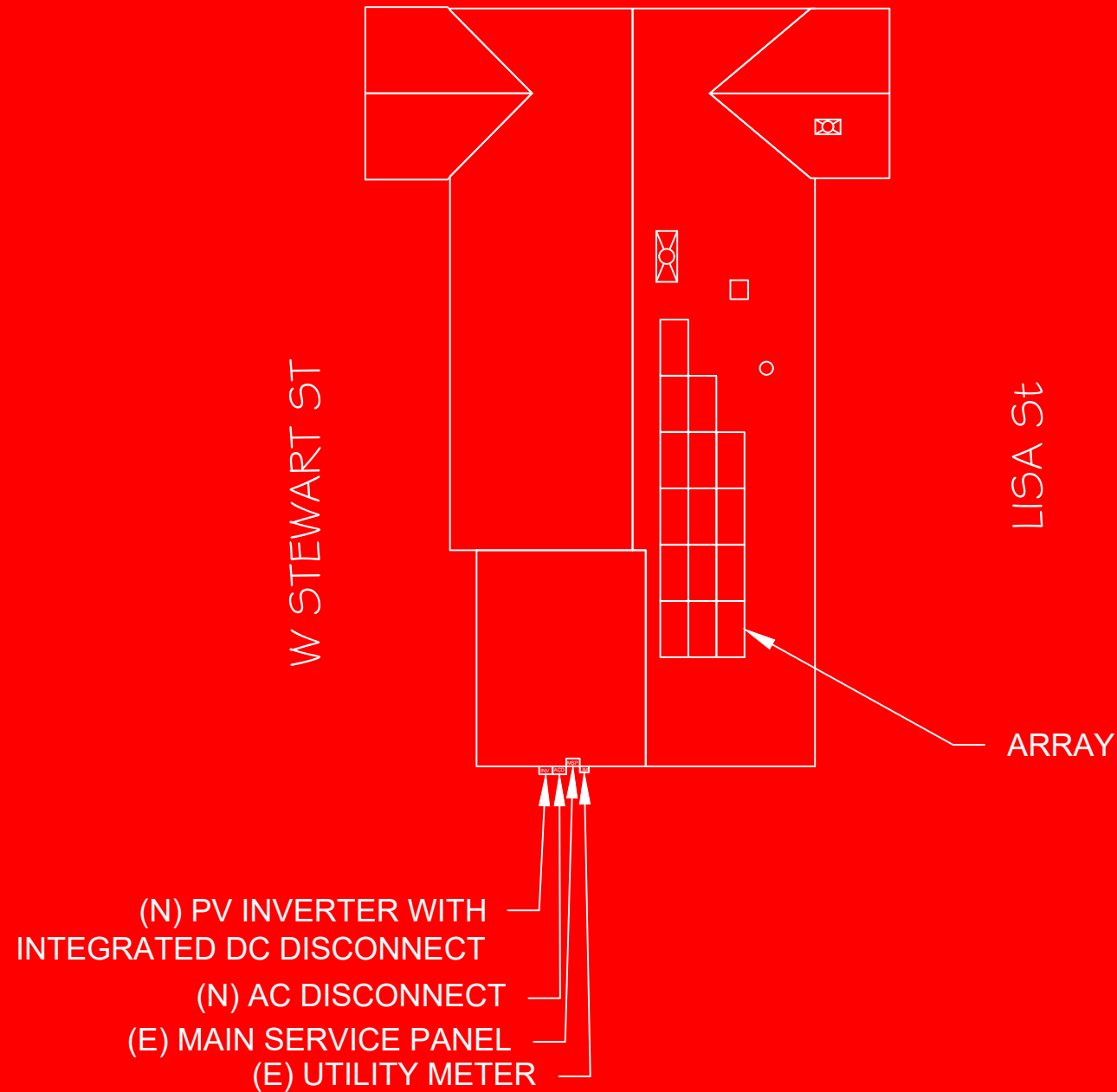
ADHESIVE FASTENED SIGNS:

- ANSI Z535.4-2011 PRODUCT SAFETY SIGNS AND LABELS, PROVIDES GUIDELINES FOR SUITABLE FONT SIZES, WORDS, COLORS, SYMBOLS, AND LOCATION REQUIREMENTS FOR LABELS. NEC 110.21(B)(1)
- THE LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. NEC 110.21(B)(3)
- ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT.



# CAUTION

**POWER TO THIS BUILDING IS SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN**



**LABEL LOCATION:**  
 EACH SERVICE EQUIPMENT LOCATION AND AT THE LOCATION(S) OF THE SYSTEM DISCONNECT(S)  
 FOR ALL ELECTRIC POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED  
 (PER CODE: NEC 705.10)



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DATE: 08/25/2022

SHEET NAME  
**SIGNAGE**

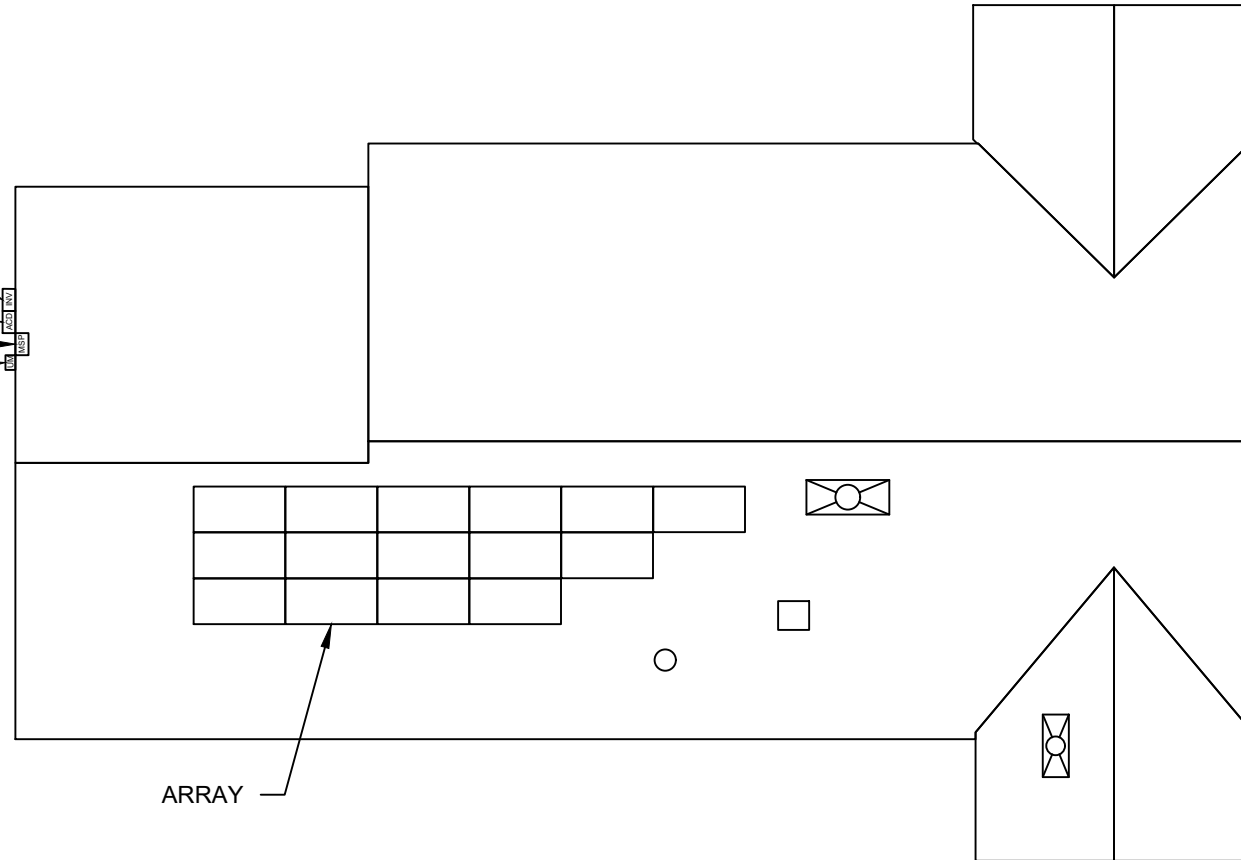
SHEET SIZE  
**ANSI B  
 11" X 17"**

SHEET NUMBER  
**PV-6**

# JOB SAFETY PLAN



PV INVERTER WITH INTEGRATED DC DISCONNECT  
 UTILITY DISCONNECT  
 MAIN SERVICE PANEL  
 SERVICE POINT UTILITY METERING



171 W STEWART ST COATS, NC 27521

**LOCATION OF NEAREST URGENT CARE FACILITY :**

NAME :  
 ADDRESS :  
 PHONE NUMBER :

**NOTES :**

- INSTALLER SHALL DRAW IN DESIGNED SAFETY AREA AROUND HOME.
- INSTALLER SHALL UPDATE NAME, ADDRESS, AND PHONE NUMBER OF NEAREST URGENT CARE FACILITY RELATIVE TO THE JOB SITE BEFORE STARTING WORK.

PERSON COVERED BY THIS JOB SAFETY PLAN INJURED AT WORK TODAY ?  
 INITIAL YES OR NO

PRINT NAME	INITIAL	YES	NO



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 COATS, NC 27521  
 PH NO. (910) 658-9005  
 EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

SHEET NAME  
**JOB SAFETY PLAN**

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

SHEET NUMBER  
**PV-7**





# TITAN SOLAR PANEL



## Q PEAK DUO BLK ML-G10+ 395-400

ENDURING HIGH PERFORMANCE

THE IDEAL SOLUTION FOR:  
Rooftop arrays on residential buildings

**BREAKING THE 20% EFFICIENCY BARRIER**  
QANTUM DUO Z Technology with zero gap cell layout boosts module efficiency up to 20.9%.

**INDUSTRY'S MOST THOROUGH TESTING**  
Q CELLS is the first solar module manufacturer to pass the most comprehensive quality programme in the industry.  
The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

**ENDURING HIGH PERFORMANCE**  
Long-term yield security with Anti LID Technology, Anti PID Technology<sup>1</sup>, Hot-Spot Protect and Traceable Quality Tra.Q<sup>2</sup>.

**EXTREME WEATHER RATING**  
High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

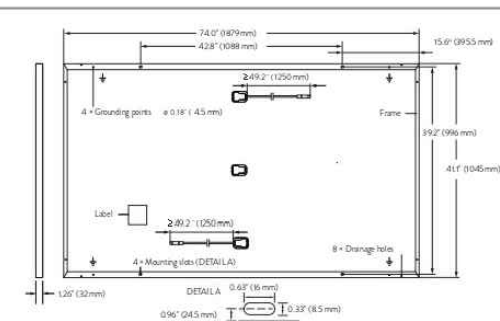
**A RELIABLE INVESTMENT**  
Inclusive 25-year product warranty and 25-year linear performance warranty<sup>2</sup>.

**INNOVATIVE ALL-WEATHER TECHNOLOGY**  
Optimal yields, whatever the weather with excellent low-light and temperature behavior.

<sup>1</sup> APT test conditions according to IEC / TS 62804-1:2015, method A (-1500 V, 96 h)  
<sup>2</sup> See data sheet on rear for further information.

### MECHANICAL SPECIFICATION

FORMAT	74.0 in × 41.1 in × 1.26 in (including frame) (1879 mm × 1045 mm × 32 mm)
WEIGHT	48.5 lbs (22.0 kg)
FRONT COVER	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
BACK COVER	Composite film
FRAME	Black anodized aluminum
CELL	6 × 22 monocrystalline Q <sub>ANTUM</sub> solar half cells
JUNCTION BOX	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), IP67, with bypass diodes
CABLE	4mm <sup>2</sup> Solar cable; (+) ≥ 49.2 in (1250 mm), (-) ≥ 49.2 in (1250 mm)
CONNECTOR	Stäubli MC4; IP68

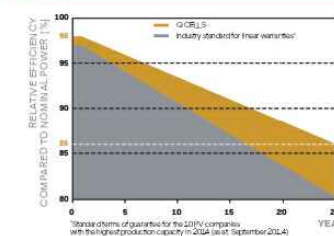


### ELECTRICAL CHARACTERISTICS

POWER CLASS		385	390	395	400	405
<b>MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC</b> <sup>1</sup> (POWER TOLERANCE +5 W / -0 W)						
POWER AT MPP	P <sub>MPP</sub> [W]	385	390	395	400	405
SHORT CIRCUIT CURRENT	I <sub>SC</sub> [A]	11.04	11.07	11.10	11.14	11.17
OPEN CIRCUIT VOLTAGE	V <sub>OC</sub> [V]	45.19	45.23	45.27	45.30	45.34
CURRENT AT MPP	I <sub>MPP</sub> [A]	10.59	10.65	10.71	10.77	10.83
VOLTAGE AT MPP	V <sub>MPP</sub> [V]	36.36	36.62	36.88	37.13	37.39
<b>EFFICIENCY</b>	η [%]	≥19.6	≥19.9	≥20.1	≥20.4	≥20.6
<b>MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT</b> <sup>2</sup>						
POWER AT MPP	P <sub>MPP</sub> [W]	288.8	292.6	296.3	300.1	303.8
SHORT CIRCUIT CURRENT	I <sub>SC</sub> [A]	8.90	8.92	8.95	8.97	9.00
OPEN CIRCUIT VOLTAGE	V <sub>OC</sub> [V]	42.62	42.65	42.69	42.72	42.76
CURRENT AT MPP	I <sub>MPP</sub> [A]	8.35	8.41	8.46	8.51	8.57
VOLTAGE AT MPP	V <sub>MPP</sub> [V]	34.59	34.81	35.03	35.25	35.46

<sup>1</sup> Measurement tolerances P<sub>MPP</sub> ±3%; I<sub>SC</sub>; V<sub>OC</sub> ±5% at STC: 1000W/m<sup>2</sup>, 25±2°C, AM 1.5 according to IEC 60904-3 • 800 W/m<sup>2</sup>, NMOT, spectrum AM 1.5

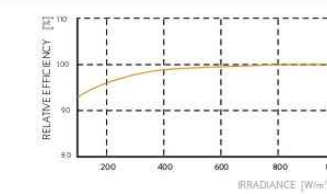
### Q CELLS PERFORMANCE WARRANTY



At least 98 % of nominal power during first year. Thereafter max. 0.5 % degradation per year. At least 93.5 % of nominal power up to 10 years. At least 86 % of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organisation of your respective country.

### PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m<sup>2</sup>)

### TEMPERATURE COEFFICIENTS

TEMPERATURE COEFFICIENT OF I <sub>SC</sub>	α	[%/K]	+0.04	TEMPERATURE COEFFICIENT OF V <sub>OC</sub>	β	[%/K]	-0.27
TEMPERATURE COEFFICIENT OF P <sub>MPP</sub>	γ	[%/K]	-0.34	NOMINAL MODULE OPERATING TEMPERATURE	NMOT	[°F]	109 ± 5.4 (43 ± 3 °C)

### PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V <sub>sys</sub>	[V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[ADC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull <sup>1</sup>	[lbs/ft <sup>2</sup> ]	75 (3600Pa)/55 (2660Pa)	Permitted Module Temperature on Continuous Duty	-40°F up to +185°F (-40°C up to +85°C)
Max. Test Load, Push / Pull <sup>1</sup>	[lbs/ft <sup>2</sup> ]	113 (5400Pa)/84 (4000Pa)		

<sup>1</sup> See Installation Manual

### QUALIFICATIONS AND CERTIFICATES

UL 61730, CE-compliant, Quality Controlled PV - TÜV Rheinland, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells), QCPV Certification ongoing.



### PACKAGING INFORMATION

Horizontal packaging	76.4 in 1940 mm	43.3 in 1100 mm	48.0 in 1220 mm	1656 lbs 751 kg	24 pallets	24 pallets	32 modules
----------------------	--------------------	--------------------	--------------------	--------------------	------------	------------	------------

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.



400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA  
TEL: +1 949 748 5996  
EMAIL: sales@q-cells.com



525 W Baseline Rd., Mesa, AZ, 85210  
TEL: 855.SAY.SOLAR  
EMAIL: info@titansolarpower.com



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DATE: 08/25/2022

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-8

REV/DATE: 06/07/2022

# Single Phase Inverter with HD-Wave Technology

for North America

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

12-25  
YEAR  
WARRANTY



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



## 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								
<b>OUTPUT</b>									
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 <sup>(1)</sup>							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								
<b>INPUT</b>									
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							Vdc	
Maximum Input Current @240V <sup>(2)</sup>	8.5	10.5	13.5	16.5	20	27	30.5	Adc	
Maximum Input Current @208V <sup>(2)</sup>	-	9	-	13.5	-	-	27	Adc	
Max. Input Short Circuit Current	45							Adc	
Reverse-Polarity Protection	Yes								
Ground-Fault Isolation Detection	600ka 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



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EMAIL ID: firstpurplequeen@yahoo.com

DATE: 08/25/2022

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-9



# / Single Phase Inverter with HD-Wave Technology for North America

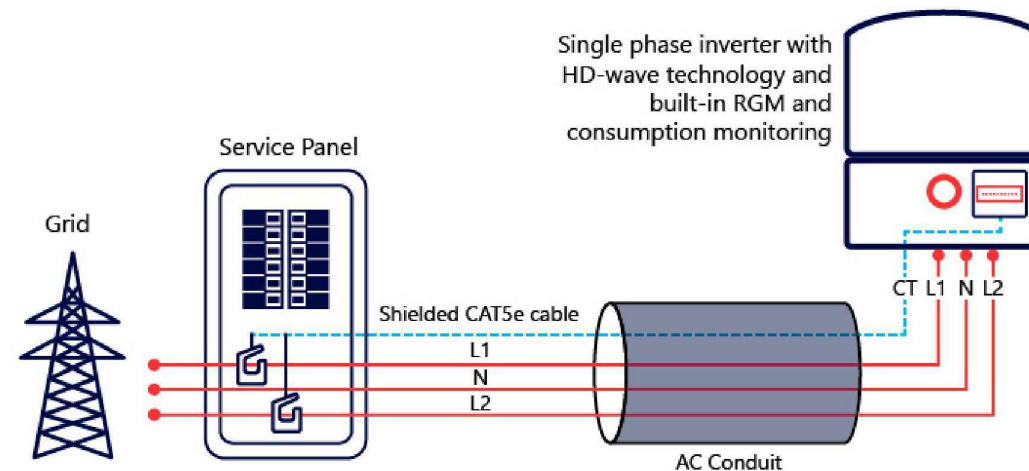
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/  
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
<b>ADDITIONAL FEATURES</b>							
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)						
Revenue Grade Metering, ANSI C12.20	Optional <sup>(3)</sup>						
Consumption metering	Optional <sup>(3)</sup>						
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						
<b>STANDARD COMPLIANCE</b>							
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						
<b>INSTALLATION SPECIFICATIONS</b>							
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			
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6			
Noise	< 25			< 50			
Cooling	Natural Convection						
Operating Temperature Range	-40 to +140 / -40 to +60 <sup>(4)</sup>						
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-US000BN14. 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



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[www.titansolarpower.com](http://www.titansolarpower.com)

ELECTRICAL LIC#: U.33714

### REVISIONS

DESCRIPTION	DATE	REV
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REVISION	08/25/2022	B

Signature with Seal

### PROJECT NAME & ADDRESS

ROBERT MCEACHIN  
RESIDENCE  
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COATS, NC 27521  
PH NO. (910) 658-9005  
EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE

ANSI B  
11" X 17"

SHEET NUMBER

PV-9A

# Power Optimizer

For North America

P370 / P400 / P401 / P485 / P505



POWER OPTIMIZER

## PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com



## Power Optimizer For North America

P370 / P400 / P401 / P485 / P505

Optimizer model (typical module compatibility)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96- cell modules)	P401 (for high power 60 and 72 cell modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
<b>INPUT</b>						
Rated Input DC Power <sup>(1)</sup>	370	400		485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	60	80	60	125 <sup>(2)</sup>	83 <sup>(2)</sup>	Vdc
MPPT Operating Range	8 - 60	8 - 80	8-60	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11	10.1	11.75	11	14	Adc
Maximum DC Input Current	13.75	12.5	14.65	12.5	17.5	
Maximum Efficiency				99.5		%
Weighted Efficiency				98.8		%
Overvoltage Category				II		
<b>OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)</b>						
Maximum Output Current				15		Adc
Maximum Output Voltage	60			80		Vdc
<b>OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)</b>						
Safety Output Voltage per Power Optimizer				1 ± 0.1		Vdc
<b>STANDARD COMPLIANCE</b>						
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3					
Safety	IEC62109-1 (class II safety), UL1741, NEC/PVRSS					
Material	UL94 V-0, UV Resistant					
RoHS	Yes					
<b>INSTALLATION SPECIFICATIONS</b>						
Maximum Allowed System Voltage	1000					Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters					
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	630 / 1.4	750 / 1.7	655 / 1.5	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4 <sup>(3)</sup>			MC4 <sup>(3)</sup>	MC4 <sup>(3)</sup>	
Input Wire Length				0.16 / 0.5		m / ft
Output Wire Type / Connector	Double Insulated / MC4					
Output Wire Length				1.2 / 3.9		m / ft
Operating Temperature Range <sup>(4)</sup>	-40 to +85 / -40 to +185					°C / °F
Protection Rating	IP68 / Type6B					
Relative Humidity	0 - 100					%

(1) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed  
 (2) NEC 2017 requires max input voltage be not more than 80V  
 (3) For other connector types please contact SolarEdge  
 (4) Longer inputs wire lengths are available for use. For 0.9m input wire length order P401-xxxLxxx  
 (5) For ambient temperature above +85°C / +185°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details: <https://www.solaredge.com/sites/default/files/temperature-derating-note-na.pdf>

PV System Design Using a SolarEdge Inverter <sup>(6)(7)</sup>	Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P370, P400, P401 P485, P505	8 6	10 8	18 14	
Maximum String Length (Power Optimizers)	25		25	50	
Maximum Power per String	5700 <sup>(8)</sup> (6000 with SE7600-US - SE11400-US)	5250 <sup>(9)</sup>	6000 <sup>(9)</sup>	12750 <sup>(10)</sup>	W
Parallel Strings of Different Lengths or Orientations	Yes				

(6) For detailed string sizing information refer to: [http://www.solaredge.com/sites/default/files/string\\_sizing\\_na.pdf](http://www.solaredge.com/sites/default/files/string_sizing_na.pdf)  
 (7) It is not allowed to mix P485/P505 with P370/P400/P401 in one string  
 (8) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement  
 (9) For 208V grid: it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W  
 (10) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

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REV/DATE: 06/07/2022



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DATE: 08/25/2022

SHEET NAME  
EQUIPMENT  
SPECIFICATION

SHEET SIZE

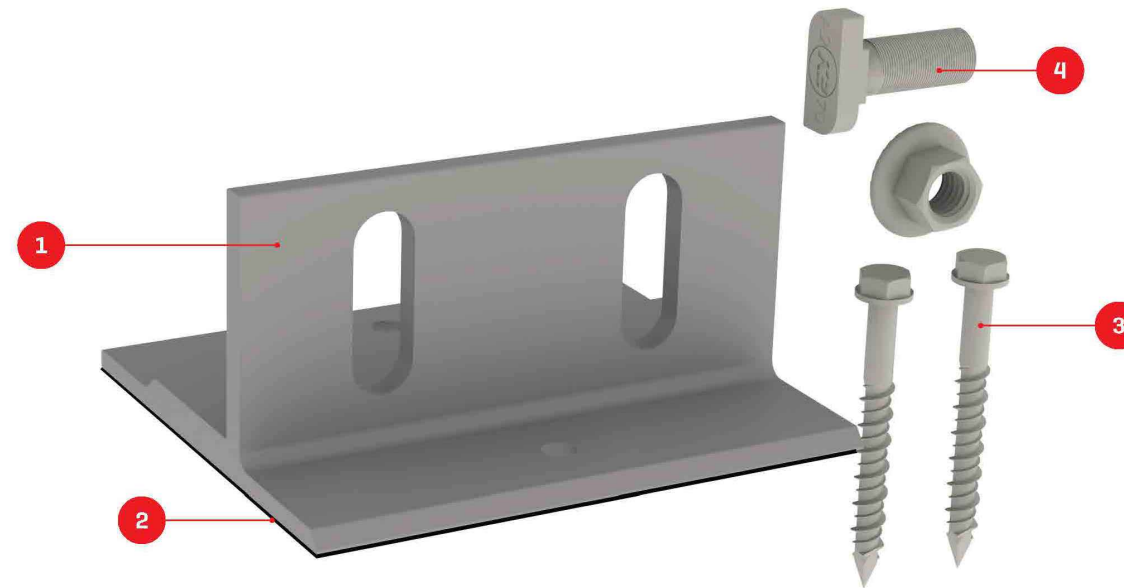
ANSI B  
11" X 17"

SHEET NUMBER

PV-10



We support PV systems  
Formerly Everest Solar Systems



# Splice Foot X

## TECHNICAL SHEET

Item Number	Description	Part Number
1	Splice Foot X	4000113   Splice Foot X Kit, Mill
2	K2 Solar Seal Butyl Pad	
3	M5 x 60 lag screws	
4	T-Bolt & Hex Nut Set	

### Technical Data

Splice Foot X	
Roof Type	Composition shingle
Material	Aluminum with stainless steel hardware
Finish	Mill
Roof Connection	M5 x 60 lag screws
Code Compliance	UL 2703
Compatibility	CrossRail 44-X, 48-X, 48-XL, 80

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DATE: 08/25/2022

SHEET NAME  
**EQUIPMENT  
SPECIFICATION**

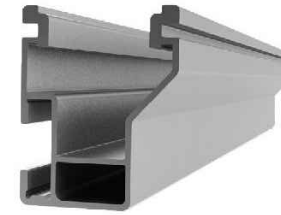
SHEET SIZE  
**ANSI B  
11" X 17"**

SHEET NUMBER  
**PV-11**

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# CROSSRAIL 48-X



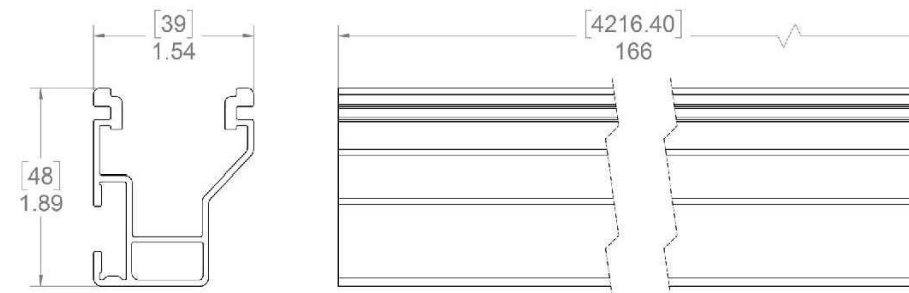
## Mechanical Properties

CrossRail 48-X	
Material	6000 Series Aluminum
Ultimate Tensile Strength	37.7 ksi [260 MPa]
Yield Strength	34.8 ksi [240 MPa]
Weight	0.56 lbs/ft [0.833 kg/m]
Finish	Mill or Dark Anodized

## Sectional Properties

CrossRail 48-X	
Sx	0.1980 in <sup>3</sup> [3.245 cm <sup>3</sup> ]
Sy	0.1510 in <sup>3</sup> [2.474 cm <sup>3</sup> ]
A [X-Section]	0.4650 in <sup>2</sup> [2.999 cm <sup>2</sup> ]

Units: [mm] in



Notes:

- ▶ Structural values and span charts determined in accordance with Aluminum Design Manual and ASCE 7-16
- ▶ UL2703 Listed System for Fire and Bonding



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EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

SHEET NAME  
**EQUIPMENT SPECIFICATION**

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

SHEET NUMBER  
**PV-12**

## A. System Specifications and Ratings

- Maximum Voltage: 1,000 Volts
- Maximum Current: 120 Amps
- Allowable Wire: 14 AWG – 6 AWG
- Spacing: Please maintain a spacing of at least ½” between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.
- Enclosure Rating: Type 3R
- Roof Slope Range: 2.5 – 12:12
- Max Side Wall Fitting Size: 1”
- Max Floor Pass-Through Fitting Size: 1”
- Ambient Operating Conditions: (-35°C) - (+75°C)
- Compliance:
  - JB-1.XL: UL1741
  - Approved wire connectors: must conform to UL1741
- System Marking: **Interek Symbol and File #5019942**
- Periodic Re-inspections: If re-inspections yield loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replaced immediately.

**Table 1: Typical Wire Size, Torque Loads and Ratings**

	1 Conductor	2 Conductor	Torque				
			Type	NM	Inch Lbs	Voltage	Current
ABB ZS6 terminal block	10-24 awg	16-24 awg	Sol/Str	0.5-0.7	6.2-8.85	600V	30 amp
ABB ZS10 terminal block	6-24 awg	12-20 awg	Sol/Str	1.0-1.6	8.85-14.16	600V	40 amp
ABB ZS16 terminal block	4-24 awg	10-20 awg	Sol/Str	1.6-2.4	14.6-21.24	600V	60 amp
ABB M6/8 terminal block	8-22 awg		Sol/Str	.08-1	8.85	600V	50 amp
Ideal 452 Red WING-NUT Wire Connector	8-18 awg		Sol/Str			600V	
Ideal 451 Yellow WING-NUT Wire Connector	10-18 awg		Sol/Str			600V	
Ideal, In-Sure Push-In Connector Part #39	10-14 awg		Sol/Str			600V	
WAGO, 221-612	10-14 awg		Sol/Str			600V	
International Hydraulics 2S2/0	10-14 awg		Sol/Str	4	35		
	8 awg		Sol/Str	4.5	40		
Brumall 4-5,3	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
Blackburn LL414	4-14 awg		Sol/Str				

**Table 2: Minimum wire-bending space for conductors through a wall opposite terminals in mm (inches)**

Wire size, AWG or		Wires per terminal (pole)			
		1	2	3	4 or More
kcmil	(mm2)	mm (inch)	mm (inch)	mm (inch)	mm (inch)
14-10	(2.1-5.3)	Not specified	-	-	-
8	(8.4)	38.1 (1-1/2)	-	-	-
6	(13.3)	50.8 (2)	-	-	-



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SHEET NAME  
**EQUIPMENT SPECIFICATION**

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

SHEET NUMBER  
**PV-13**