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 REV/DATE: 06/07/2022

15 Q CEEL Q PEAK DUO BLK ML-G10+395 MODULES

01 SOLAREDGE SE5000H-US INVERTER

15 SOLAREDGE POWER OPTIMIZER P401

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

SYSTEM RATING	
5.925 KWDC	PHOTOVOLTAIC SYSTEM FIRE CLASSIFICATION LISTING IN ACCORDANCE WITH UL1703 STANDARD.
5.0 KWAC	

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.

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

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.

SHEET INDEX

1 PV-0 HOUSE PHOTO SCALE: NTS

2 PV-0 VICINITY MAP SCALE: NTS

TITAN SOLAR POWER

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

REVISIONS

DESCRIPTION	DATE	REV
REVIISION	06/07/2022	A

Signature with Seal

APPROVED
06/13/2022
Harnett COUNTY NORTH CAROLINA

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: 06/07/2022

SHEET NAME
COVER PAGE

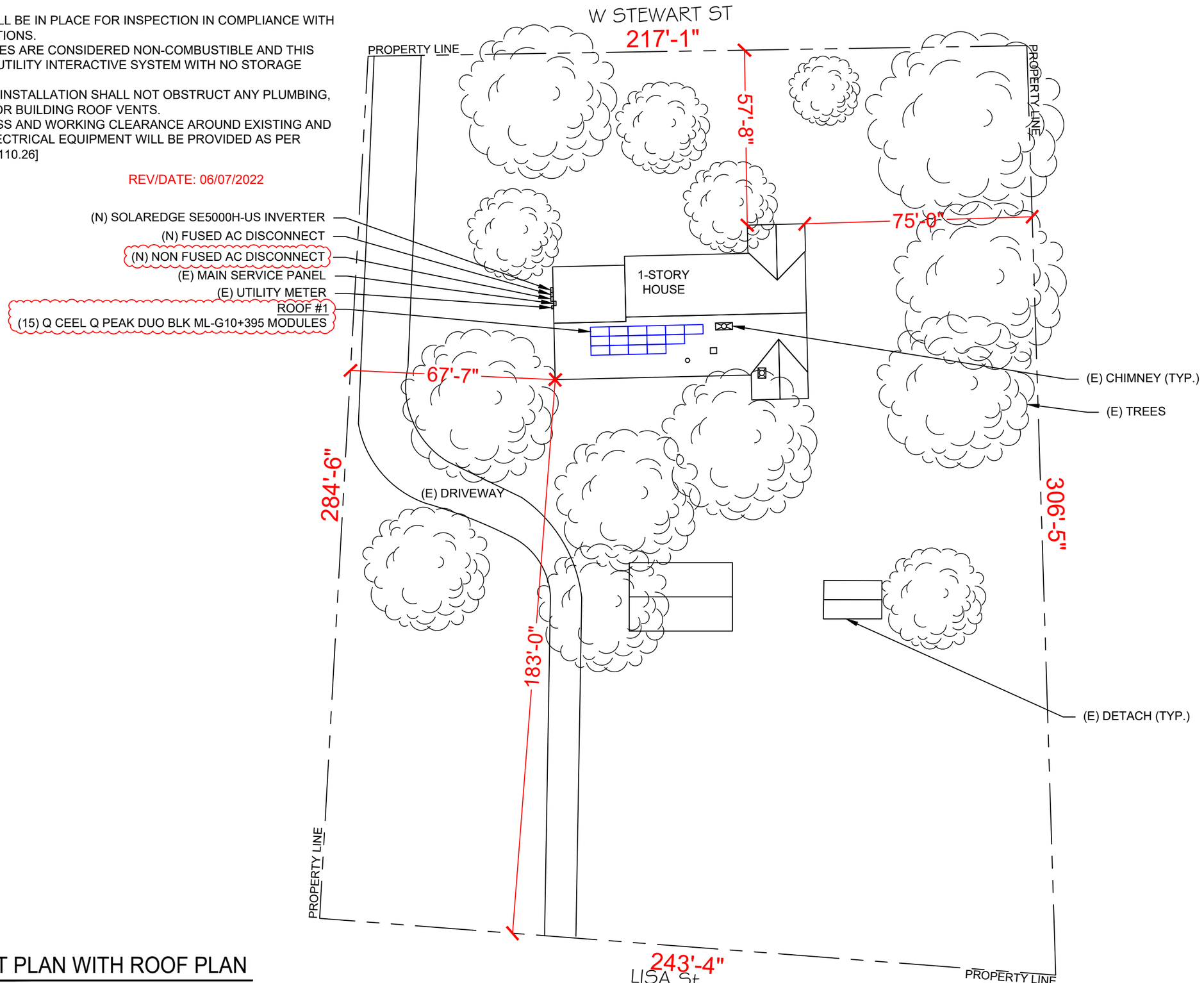
SHEET SIZE
ANSI B
11" X 17"

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]

REV/DATE: 06/07/2022



1 PLOT PLAN WITH ROOF PLAN

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

TITAN SOLAR POWER

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DATE: 06/07/2022

SHEET NAME
SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

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
TOTAL WEIGHT OF THE SYSTEM (LBS)			943.52
TOTAL ARREY AREA ON THE ROOF (SQ. FT.)			286.42
WEIGHT PER SQ. FT.(LBS)			943.52
WEIGHT PER PENETRATION (LBS)			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

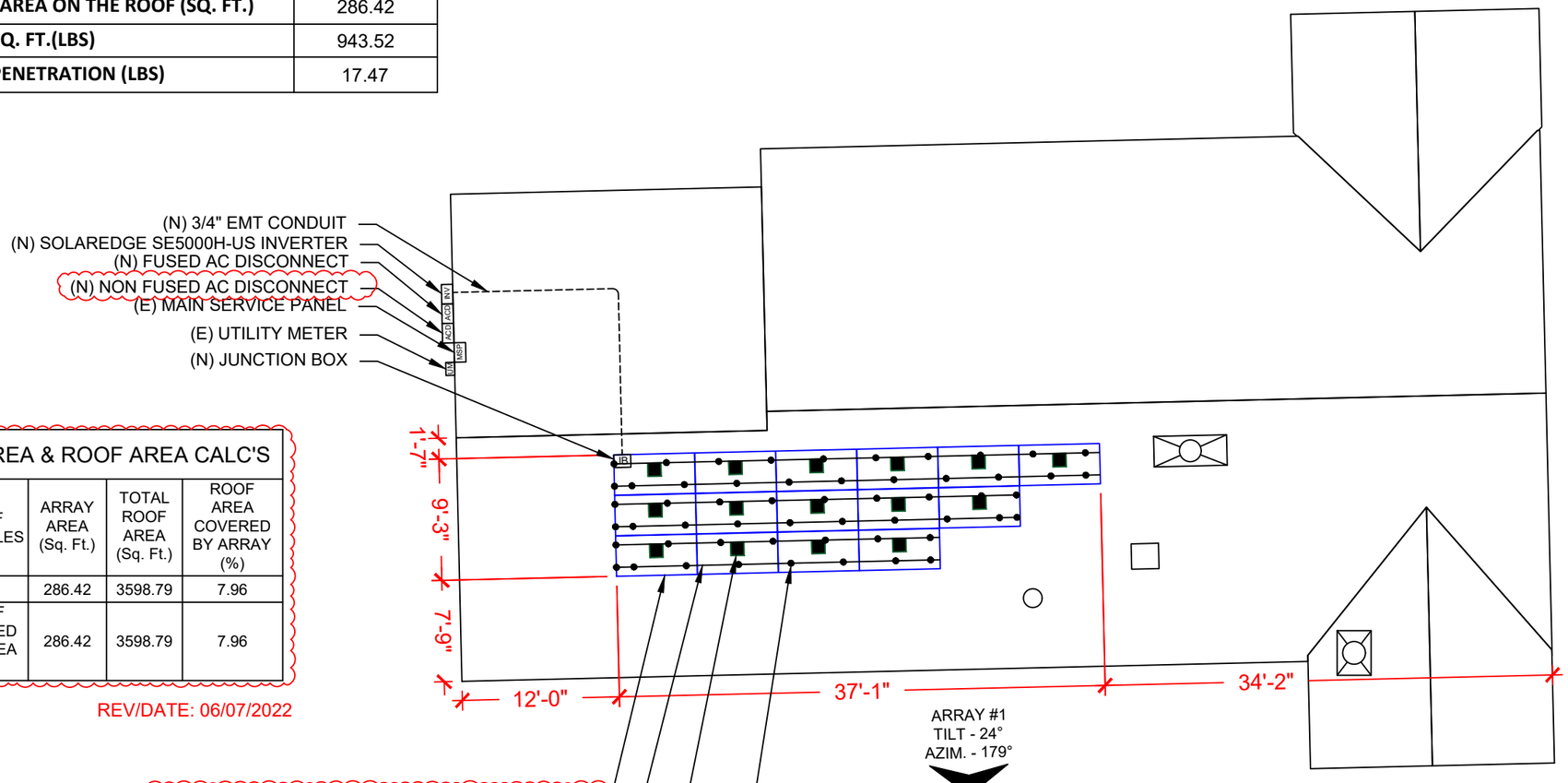
- JB - JUNCTION BOX
- INV - INVERTER
- ACD - AC DISCONNECT
- SUB - MAIN SERVICE PANEL
- UM - UTILITY METER
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- CONDUIT

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"

W STEWART ST

(E) FRONT OF RESIDENCE

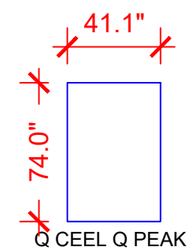


(E) BACK OF RESIDENCE

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
TOTAL ROOF AREA COVERED BY ARRAY AREA (%)		286.42	3598.79	7.96

REV/DATE: 06/07/2022



Q CEEL Q PEAK DUO BLK ML-G10+395 MODULES

1 ROOF PLAN & MODULES

PV-2 SCALE: 3/32" = 1'-0"

TITAN SOLAR POWER

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

DATE: 06/07/2022

SHEET NAME
ROOF PLAN & MODULES

SHEET SIZE
ANSI B
11" X 17"

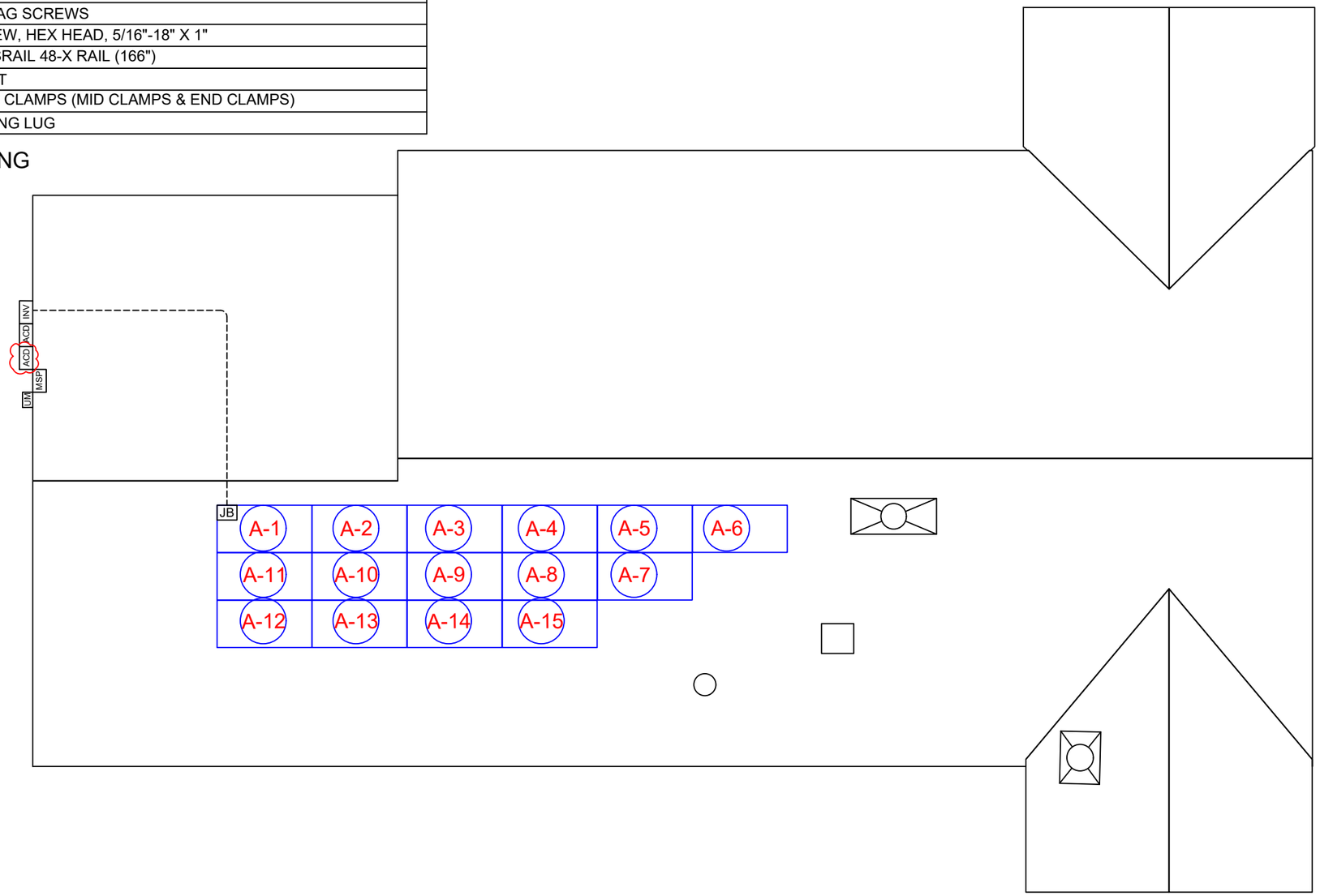
SHEET NUMBER
PV-2

BILL OF MATERIALS

EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	15	Q CEEL Q PEAK DUO BLK ML-G10+395
OPTIMIZER	15	SOLAREDGE POWER OPTIMIZER P401
INVERTER	1	SOLAREDGE SE5000H-US
AC DISCONNECT	1	EATON DG222NRB, PV SYSTEM AC DISCONNECT SWITCH FUSED, 60A W/X FUSES, 120/240V 2P NEMA 3R
AC DISCONNECT	1	EATON DG222URB PV SYSTEM AC DISCONNECT SWITCH NON FUSED VISIBLE OPEN 60A, 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

A - MODULE STRINGING



1 ROOF PLAN WITH STRING LAYOUT & BOM

PV-2A

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

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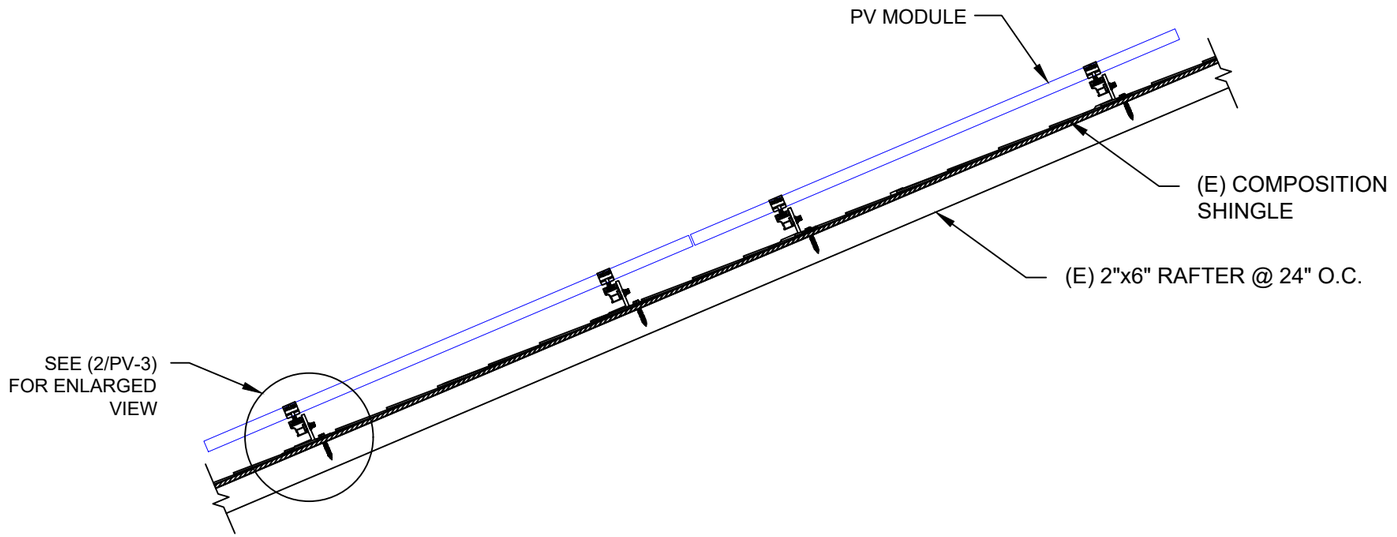
DATE: 06/07/2022

SHEET NAME
STRING LAYOUT & BOM

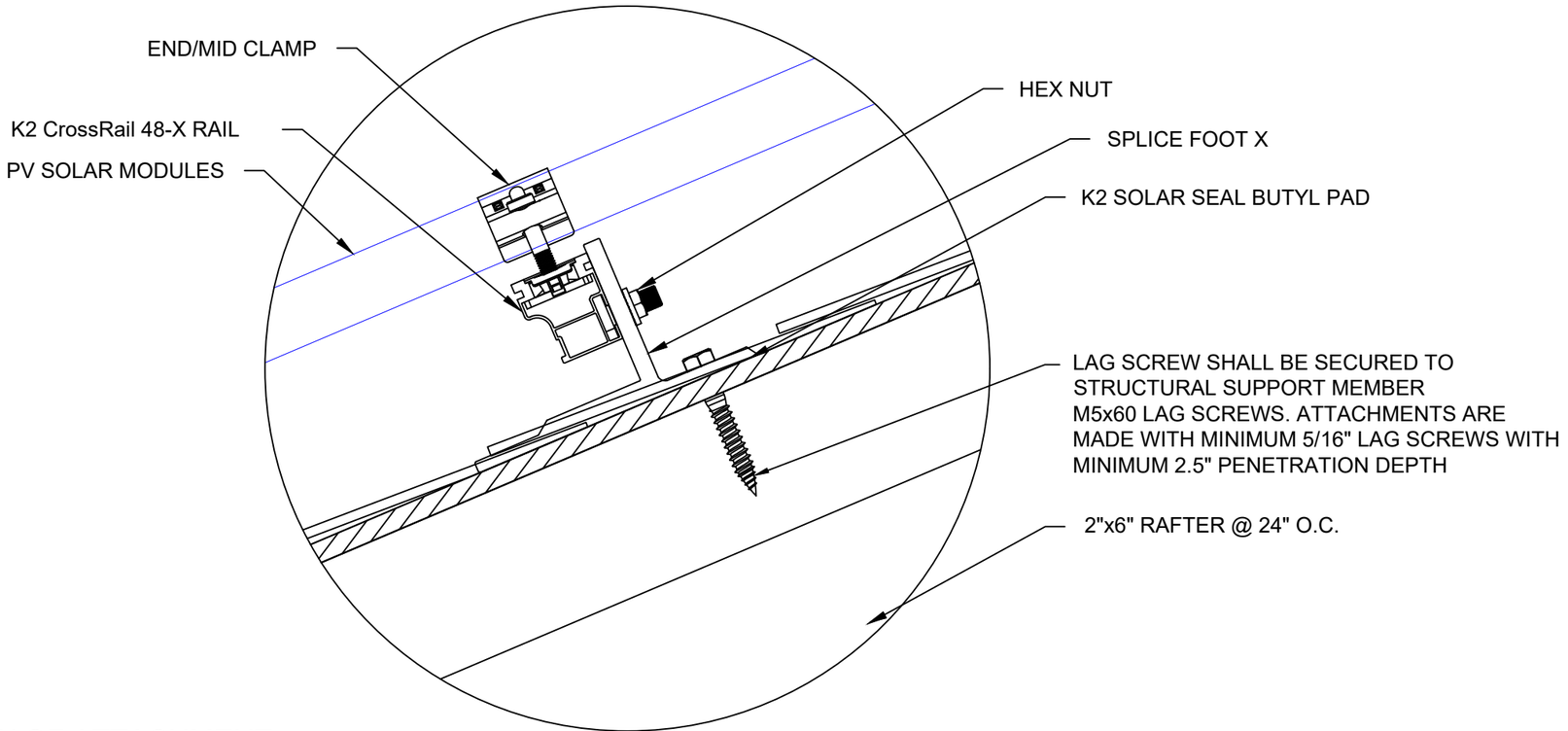
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2A



1 ATTACHMENT DETAILS

PV-3



2 ENLARGED VIEW OF ATTACHMENT

PV-3

SCALE: NTS

TITAN SOLAR POWER

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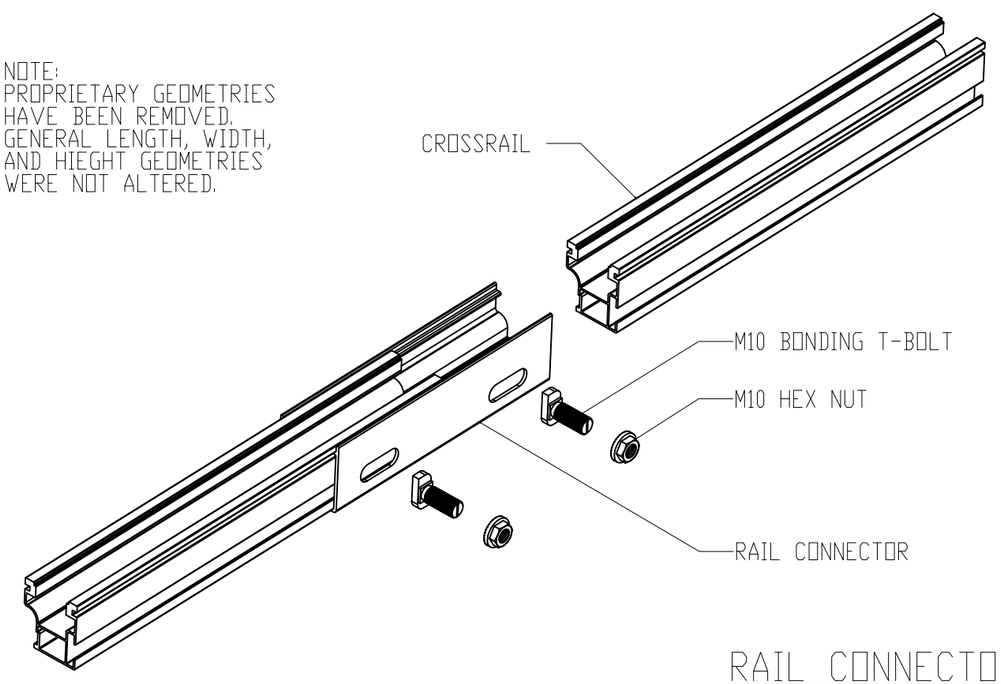
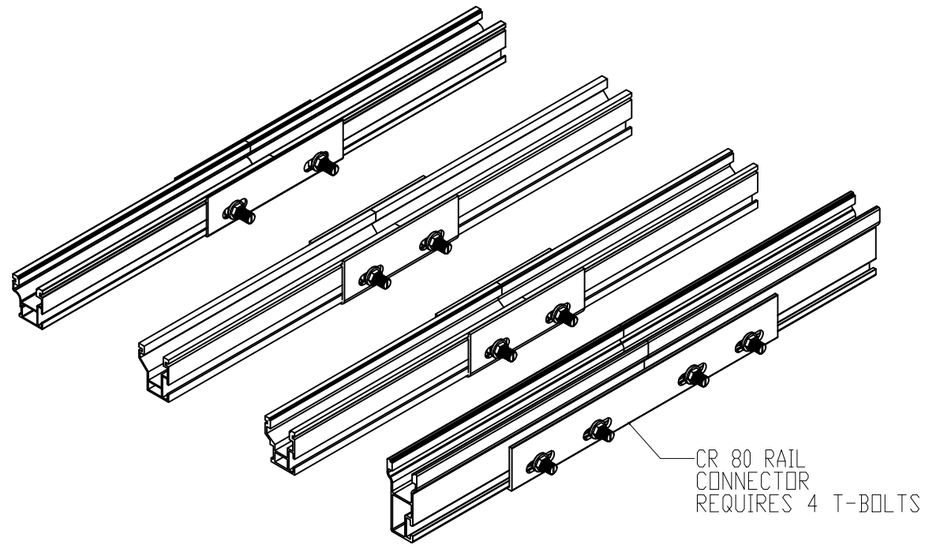
SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

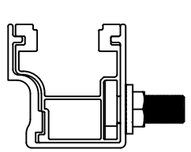
SHEET NUMBER
PV-3

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





RAIL CONNECTOR ASSEMBLIES



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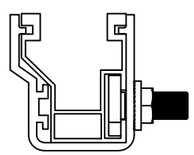

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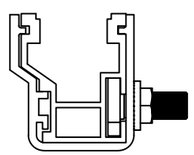
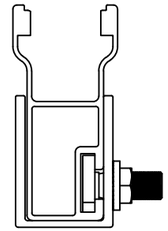


48-XL



80

REVISION HISTORY

Revision	Date	Description
01		
02		
03		
04		
05		

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THIRD ANGLE

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

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

Title: CROSSRAIL RAIL CONNECTOR ASSEMBLIES

Size: B

All Dimensions are mm

Scale: 1:25 | Revision: 00 | Sheet 2 of 2

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TITAN SOLAR POWER
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ELECTRICAL LIC#: U.33714

REVISIONS

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DATE: 06/07/2022

SHEET NAME
ATTACHMENT DETAILS

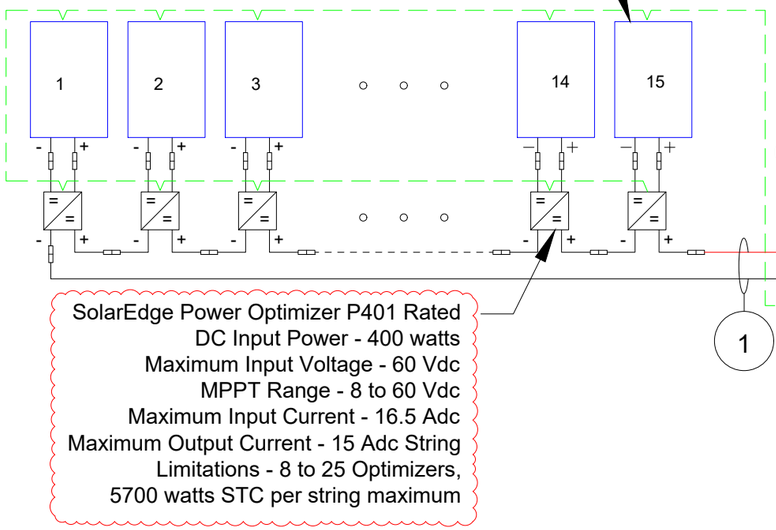
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3A

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
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	NON FUSED AC DISCONNECT	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	15.27%	N/A	8 AWG	THWN-2, COPPER	0.96	(35°C)	1	21.0A	26.3A	40A	38.4A	90°C	5FT	0.16%
4	1	NON FUSED AC DISCONNECT	FUSED AC DISCONNECT	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	15.27%	60A	8 AWG	THWN-2, COPPER	0.96	(3°C)	1	21.0A	26.3A	40A	38.4A	90°C	5FT	0.16%
5	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%

REV/DATE: 06/07/2022

15 Q CEEL Q PEAK DUO BLK ML-G10+395 MODULES



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

(N) SOLAREDGE SE5000H-US
OUTPUT: 240 VAC, 21A
99% CEC WEIGHTED EFFICIENCY
NEMA 3R, UL LISTED, INTERNAL GFDI
WITH INTEGRATED DC DISCONNECT
SOLAREDGE RAPID SHUTDOWN KIT
IS INTEGRATED WITH INVERTER

(N) JUNCTION BOX
JB-1.XL
600 V, NEMA 3R,
UL LISTED

(N) AC DISCONNECT:
EATON DG222URB
240V, 60A NON FUSED
NEMA 3R, UL LISTED

(N) AC DISCONNECT:
EATON DG222NRB
240V, 60A FUSED
NEMA 3R, UL LISTED
(2) 60A FUSES

TO UTILITY GRID

BI-DIRECTIONAL UTILITY
METER# 0E8222H67
1-PH, 3-W, 120V/240V

POINT OF
INTERCONNECTION
SUPPLY SIDE TAP

(E) MAIN BREAKER TO
HOUSE 240 V, 100A/2P

(E) MAIN SERVICE
PANEL, 100A RATED,
1-PH, 3-W, 240V

NEUTRAL-GROUND BOND

EXISTING GROUND
ELECTRODE CONDUCTOR

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

1 ELECTRICAL LINE DIAGRAM
PV-4 SCALE: NTS

TITAN SOLAR POWER

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

REVISIONS		
DESCRIPTION	DATE	REV
REVIISION	06/07/2022	A

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: 06/07/2022

SHEET NAME
ELECTRICAL LINE & CALCS.

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

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
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	NON FUSED AC DISCONNECT	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	15.27%	N/A	8 AWG	THWN-2, COPPER	0.96	(35°C)	1	21.0A	26.3A	40A	38.4A	90°C	5FT	0.16%
4	1	NON FUSED AC DISCONNECT	FUSED AC DISCONNECT	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	15.27%	60A	8 AWG	THWN-2, COPPER	0.96	(3°C)	1	21.0A	26.3A	40A	38.4A	90°C	5FT	0.16%
5	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%

REV/DATE: 06/07/2022

15 Q CEEL Q PEAK DUO BLK ML-G10+395 MODULES

1 2 3 . . . 14 15

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

(N) JUNCTION BOX
JB-1.XL
600 V, NEMA 3R, UL LISTED

(N) SOLAREDGE SE5000H-US
OUTPUT: 240 VAC, 21A
99% CEC WEIGHTED EFFICIENCY
NEMA 3R, UL LISTED, INTERNAL GFDI
WITH INTEGRATED DC DISCONNECT
SOLAREDGE RAPID SHUTDOWN KIT
IS INTEGRATED WITH INVERTER

(N) AC DISCONNECT:
EATON DG222URB
240V, 60A NON FUSED
NEMA 3R, UL LISTED

(N) AC DISCONNECT:
EATON DG222NRB
240V, 60A FUSED
NEMA 3R, UL LISTED
(2) 60 FUSES

1 2 3 4 5

This disconnect shall be rated as service equipment

TO UTILITY GRID

M

BI-DIRECTIONAL UTILITY
METER# 0E8222H67
1-PH, 3-W, 120V/240V

POINT OF INTERCONNECTION LINE SIDE TAP

100A

(E) MAIN BREAKER TO HOUSE 240 V, 100A/2P

(E) MAIN SERVICE PANEL, 100A RATED, 1-PH, 3-W, 240V

EXISTING GROUND ELECTRODE CONDUCTOR

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

1 ELECTRICAL LINE DIAGRAM
PV-4A
SCALE: NTS

TITAN SOLAR POWER

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

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DATE: 06/07/2022

SHEET NAME
ELECTRICAL LINE & CALCS.

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4A

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	SOLAREDGE SE5000H-US
NOMINAL AC POWER	5000 W
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	21 A

POWER OPTIMIZER (SOLAREDGE 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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DATE: 06/07/2022

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

WARINING 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

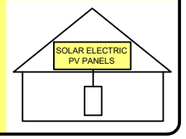
DUAL POWER SOURCE
SECOND SOURCE US
PHOTOVOLTAIC

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 DESCONEXION

LABEL LOCATION:
AC DISCONNECT
2017 NEC 230.66

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.

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

DATE: 06/07/2022

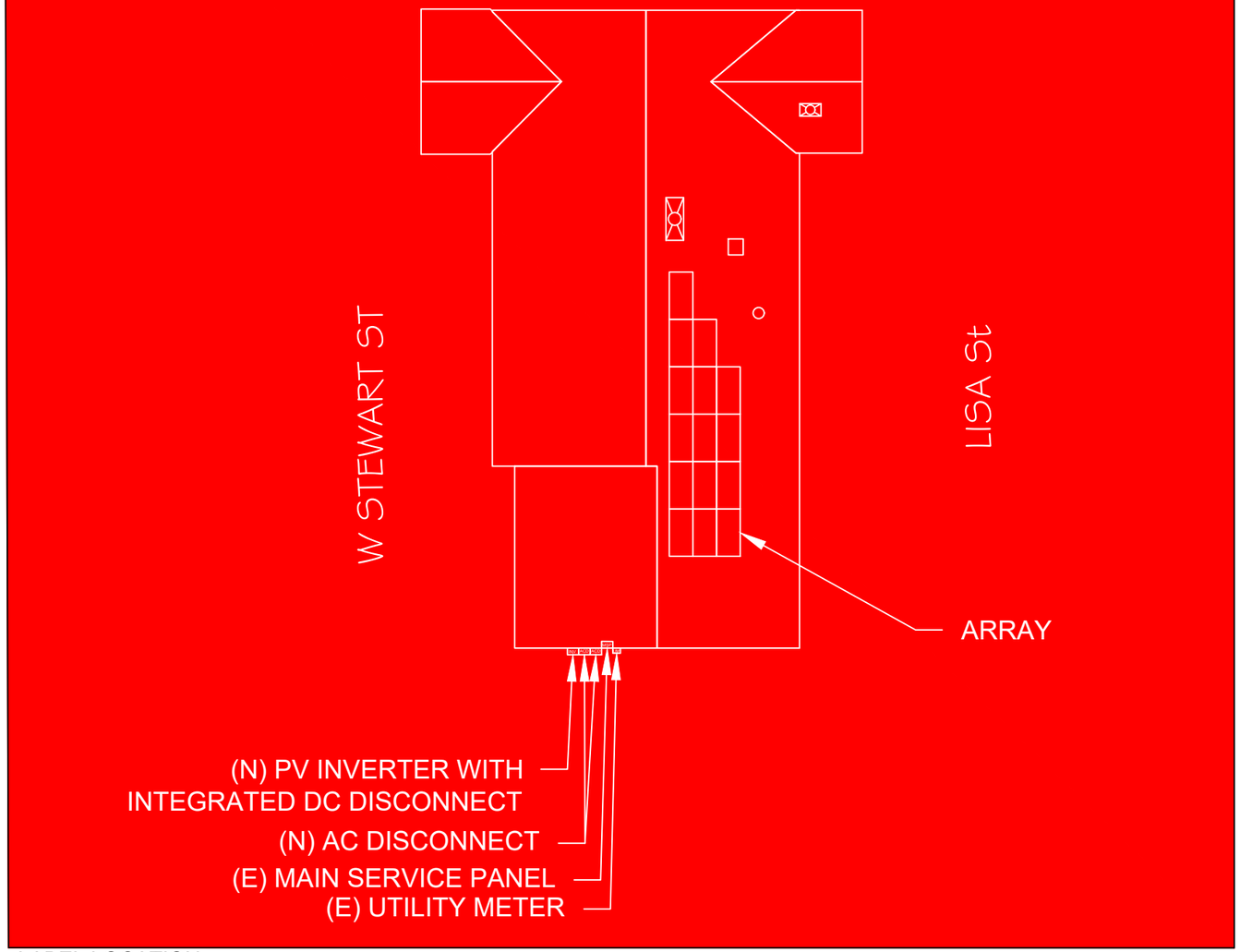
SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-5

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)

REV/DATE: 06/07/2022

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EMAIL ID: firstpurplequeenme@yahoo.com

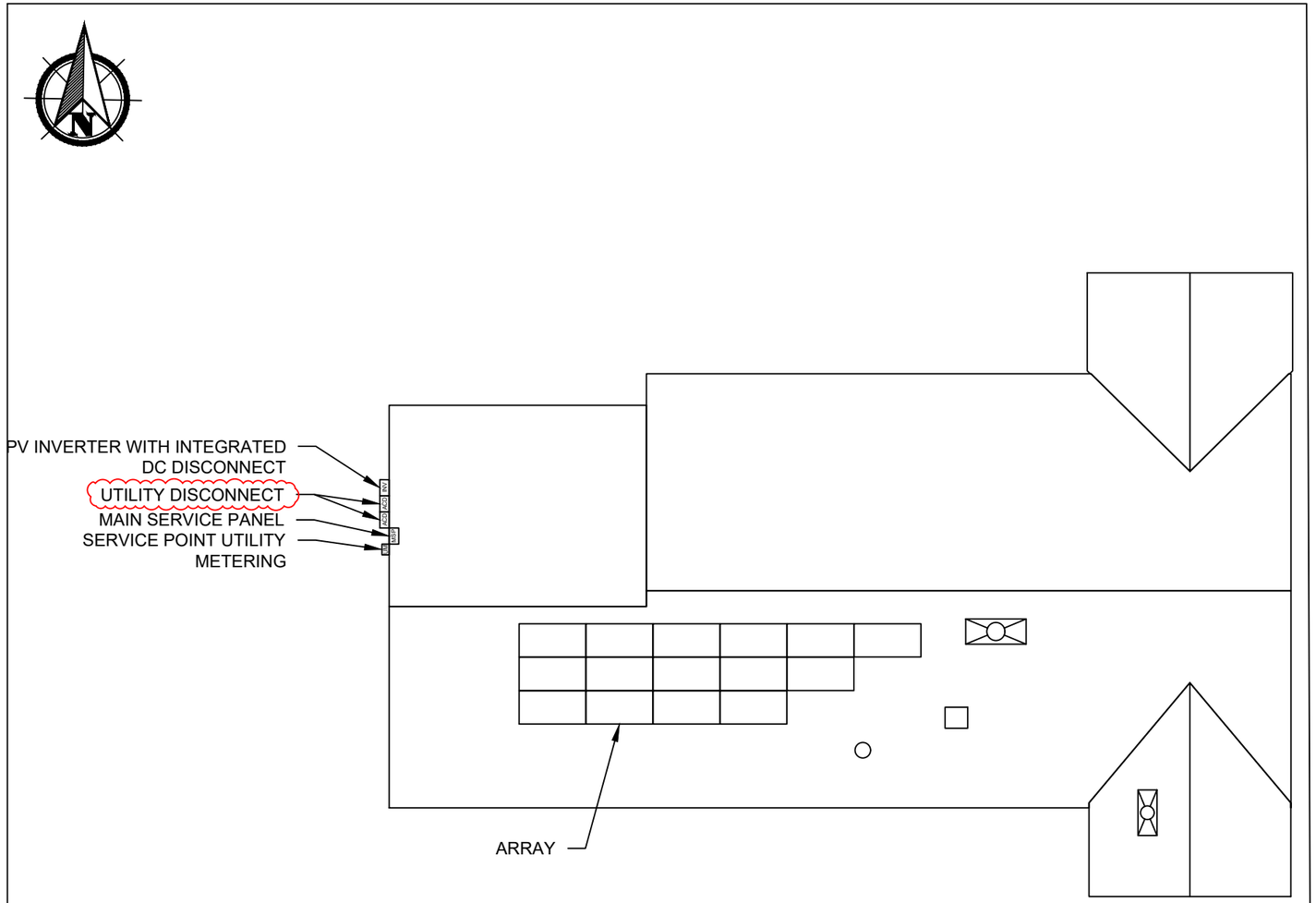
DATE: 06/07/2022

SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

JOB SAFETY PLAN



REV/DATE: 06/07/2022

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 ?
INTIAL YES OR NO

PRINT NAME	INITIAL	YES	NO

TITAN SOLAR POWER

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COATS, NC 27521
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EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 06/07/2022

SHEET NAME
JOB SAFETY PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

TITAN SOLAR PANEL

25 YR Warranty Product & Performance

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2021

Q CELLS Yield Security

BREAKING THE 20% EFFICIENCY BARRIER

Q.ANTUM 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 Technology1, Hot-Spot Protect and Traceable Quality Tra.Q™.

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 warranty2.

INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.

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

Q CELLS

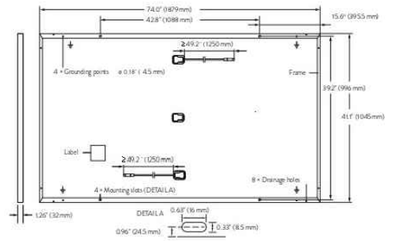
Q PEAK DUO BLK ML-G10+

395-400 *ENDURING HIGH PERFORMANCE*

THE IDEAL SOLUTION FOR:
Rooftop arrays on residential buildings

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.ANTUM 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	4 mm² Solar cable; (+) ≥ 49.2 in (1250 mm), (−) ≥ 49.2 in (1250 mm)
CONNECTOR	Stäubli MC4; IP68

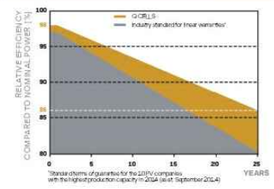


ELECTRICAL CHARACTERISTICS

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

¹Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25±2°C, AM 1.5 according to IEC 60904-3 • ²800 W/m², NMOT, spectrum AM 1.5

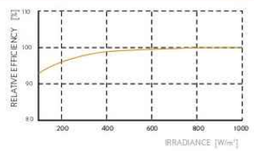
Q CELLS PERFORMANCE WARRANTY



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/m²)

TEMPERATURE COEFFICIENTS							
TEMPERATURE COEFFICIENT OF I_{SC}	α	[%/K]	+0.04	TEMPERATURE COEFFICIENT OF V_{OC}	β	[%/K]	−0.27
TEMPERATURE COEFFICIENT OF P_{MPP}	γ	[%/K]	−0.34	NOMINAL MODULE OPERATING TEMPERATURE	NMOT	[°F]	109±5.4 (43±3°C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{SYS}	[V]	1000 (IEC) / 1000 (UL)	PV module classification		Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 61730		TYPE 2
Max. Design Load, Push / Pull[3]	[lbs/ft²]	75 (3600 Pa) / 55 (2660 Pa)	Permitted Module Temperature on Continuous Duty		−40°F up to +185°F (−40°C up to +85°C)
Max. Test Load, Push / Pull[3]	[lbs/ft²]	113 (5400 Pa) / 84 (4000 Pa)			

[3] 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.

Specifications subject to technical changes © Q CELLS Q PEAK DUO BLK ML-G10+ 385-405_2021-05_Rev01_NA

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

TITAN SOLAR PANEL
525 W Baseline Rd., Mesa, AZ, 85210
TEL: 855.SAY.SOLAR
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REV/DATE: 06/07/2022

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EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 06/07/2022

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-8

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

12-25 YEAR WARRANTY

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	600kΩ 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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210 N Sunway Dr,
Gilbert, AZ 85233
www.titansolarpower.com
ELECTRICAL LIC#: U.33714

REVISIONS

DESCRIPTION	DATE	REV
REVIISION	06/07/2022	A

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: 06/07/2022

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

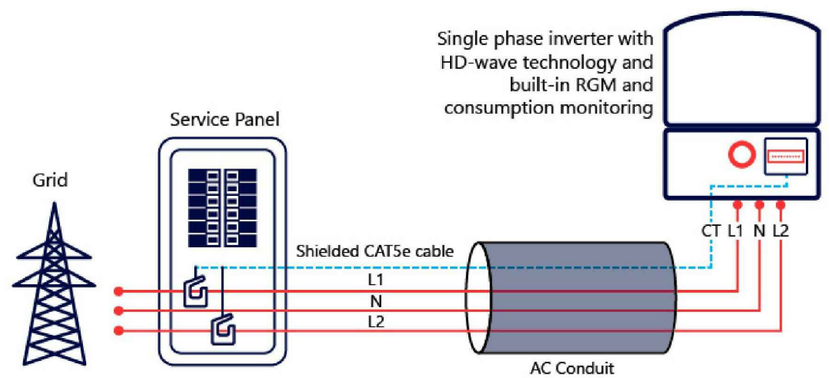
MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Metering, ANSI C12.20	Optional[3]							
Consumption metering								
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



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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

solaredge

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)	
INPUT						
Rated Input DC Power(1)	370	400		485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	60	80	60	125(2)	83(2)	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					
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)						
Maximum Output Current	15					Adc
Maximum Output Voltage	60			80		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE 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					
Safety	IEC62109-1 (class II safety), UL1741, NEC/PVRSS					
Material	UL94 V-0 , UV Resistant					
RoHS	Yes					
INSTALLATION SPECIFICATIONS						
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(3)			MC4(3)	MC4(3)	
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(4)	-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-xxxL.xxx
(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/se-temperature-derating-note-na.pdf

PV System Design Using a SolarEdge Inverter(6)(7)		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	8		10	18	
	P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50	
Maximum Power per String		5700(8) (6000 with SE7600-US - SE11400-US)	5250(8)	6000(9)	12750(10)	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
(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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Intertek RoHS

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PH NO. (910) 658-9005
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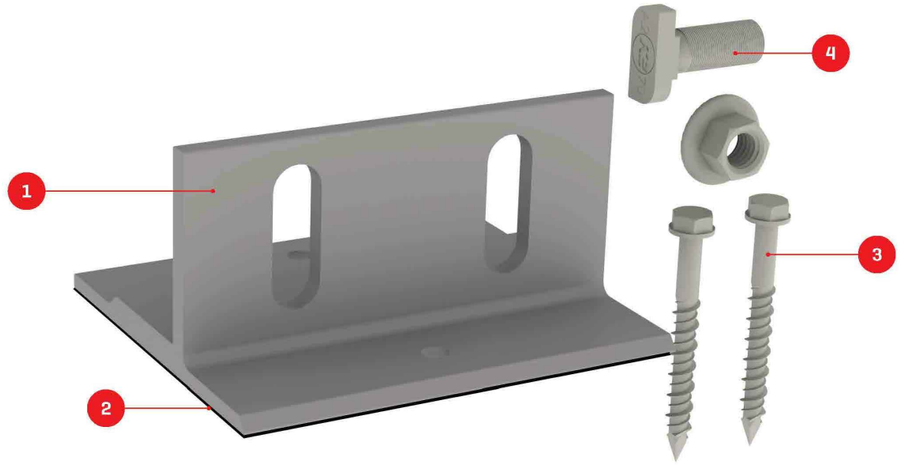
DATE: 06/07/2022

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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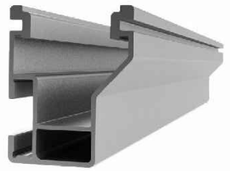
CROSSRAIL 48-X



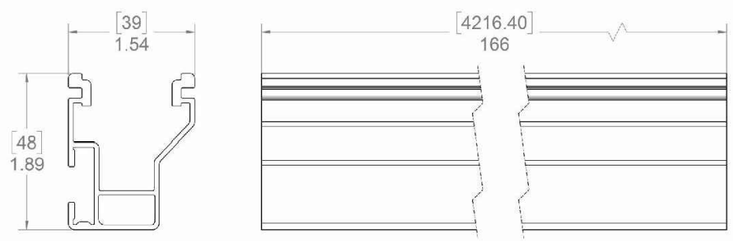
Mechanical Properties

	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^3 (3.245 cm^3)
Sy	0.1510 in^3 (2.474 cm^3)
A (X-Section)	0.4650 in^2 (2.999 cm^2)

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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SHEET SIZE
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11" X 17"

SHEET NUMBER
PV-12

EZ⚡SOLAR
making solar simple.

JB-1.XL
Specification Sheet
PV Junction Box for Composition/Asphalt Shingle Roofs

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 bock	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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