

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

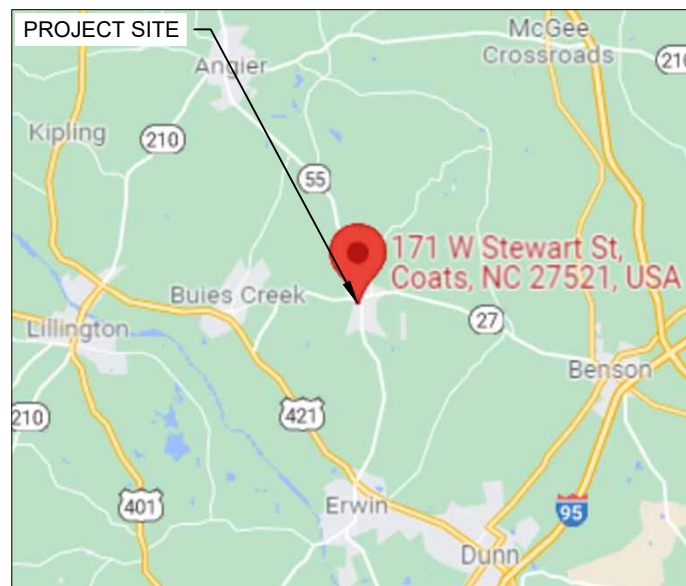
PHOTOVOLTAIC SYSTEM FIRE CLASSIFICATION LISTING IN ACCORDANCE WITH UL1703 STANDARD.

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



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

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

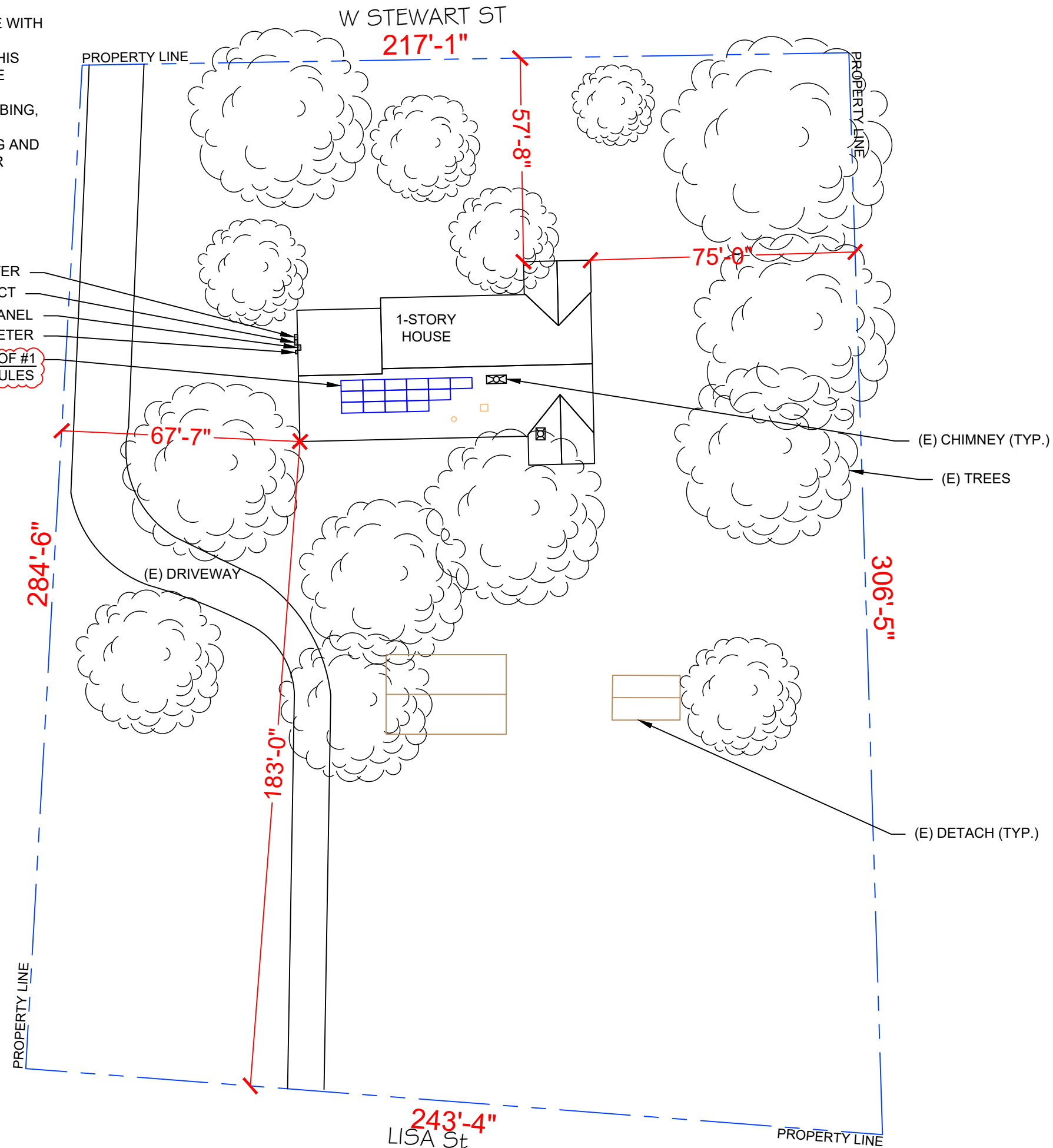
PV-0

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]

REV/DATE: 06/07/2022

- (N) SOLAREEDGE SE5000H-US INVERTER
- (N) FUSED AC DISCONNECT
- (E) MAIN SERVICE PANEL
- (E) UTILITY METER
- ROOF #1
- (15) Q CEEL Q PEAK DUO BLK ML-G10+395 MODULES



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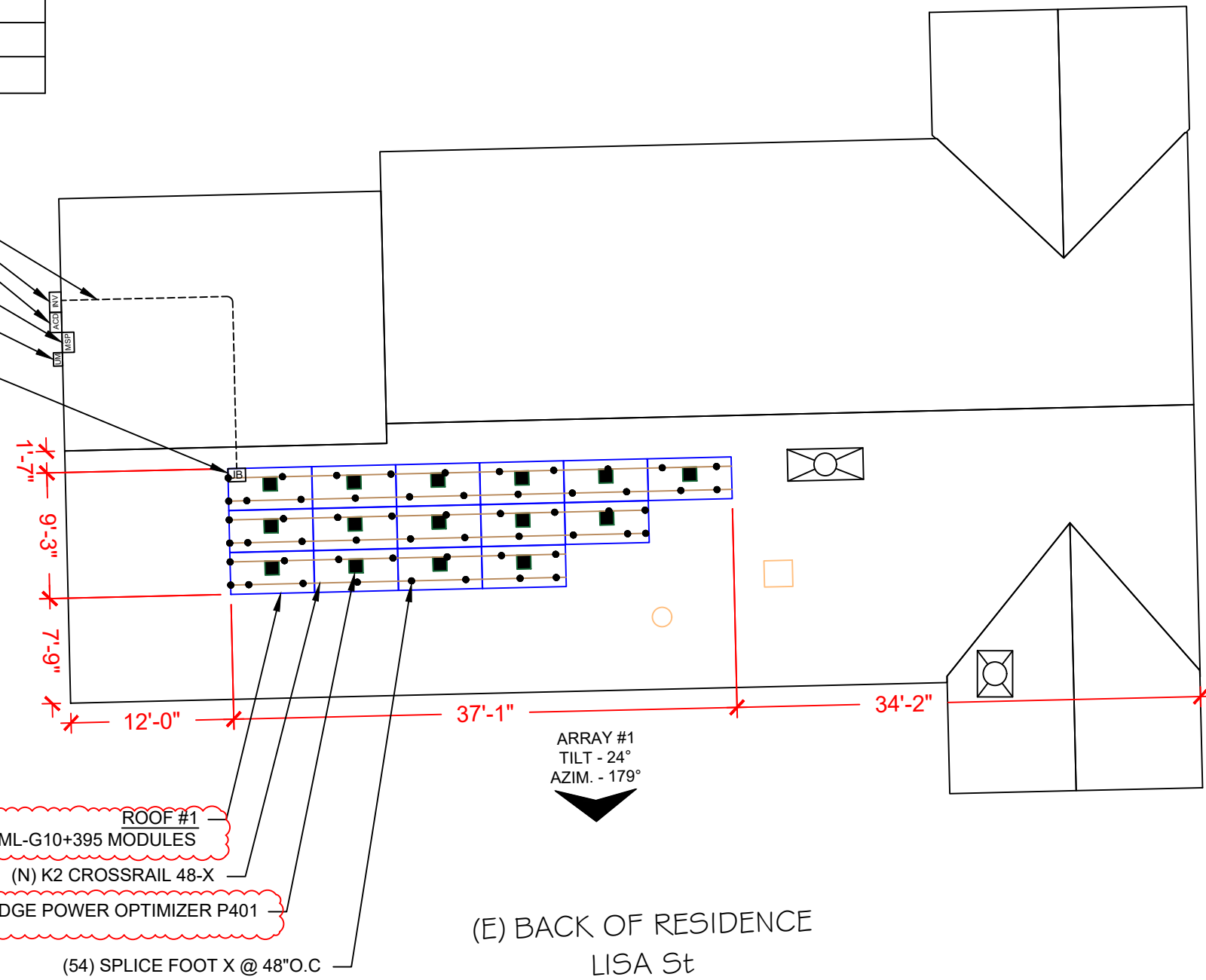
DATE: 08/25/2022
SHEET NAME ROOF PLAN & MODULES
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER PV-2

W STEWART ST
 (E) FRONT OF RESIDENCE

- (N) 3/4" EMT CONDUIT
- (N) SOLAREEDGE SE5000H-US INVERTER
- (N) FUSED AC DISCONNECT
- (E) MAIN SERVICE PANEL
- (E) UTILITY METER
- (N) JUNCTION BOX

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

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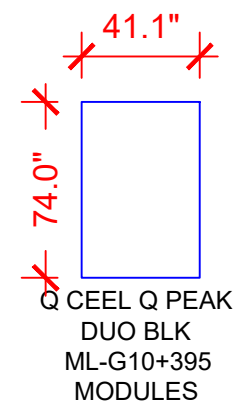


ROOF #1
 (15) Q CEEL Q PEAK DUO BLK ML-G10+395 MODULES

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

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

(E) BACK OF RESIDENCE
 LISA St



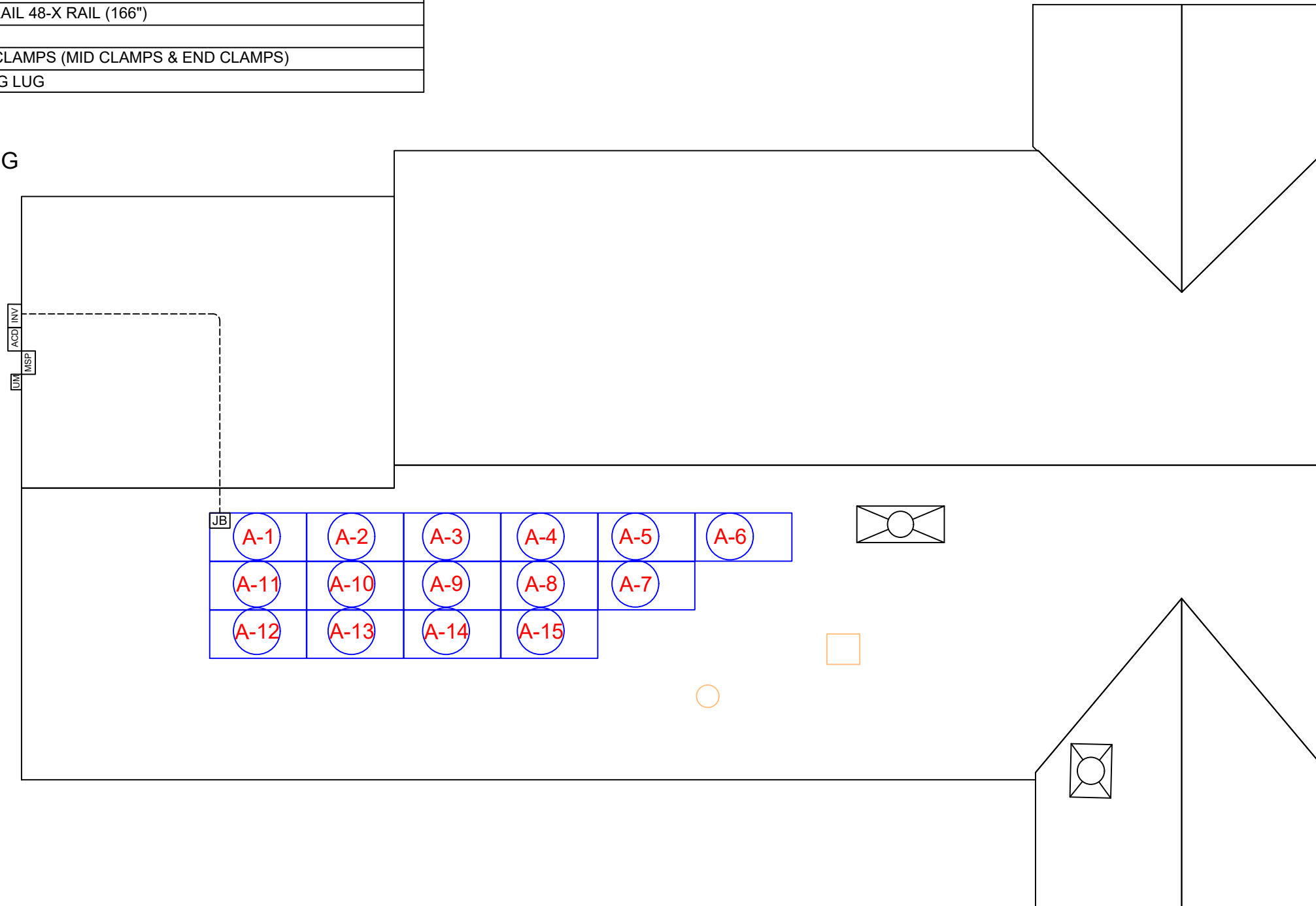
BILL OF MATERIALS

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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SHEET NAME
STRING LAYOUT & BOM

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

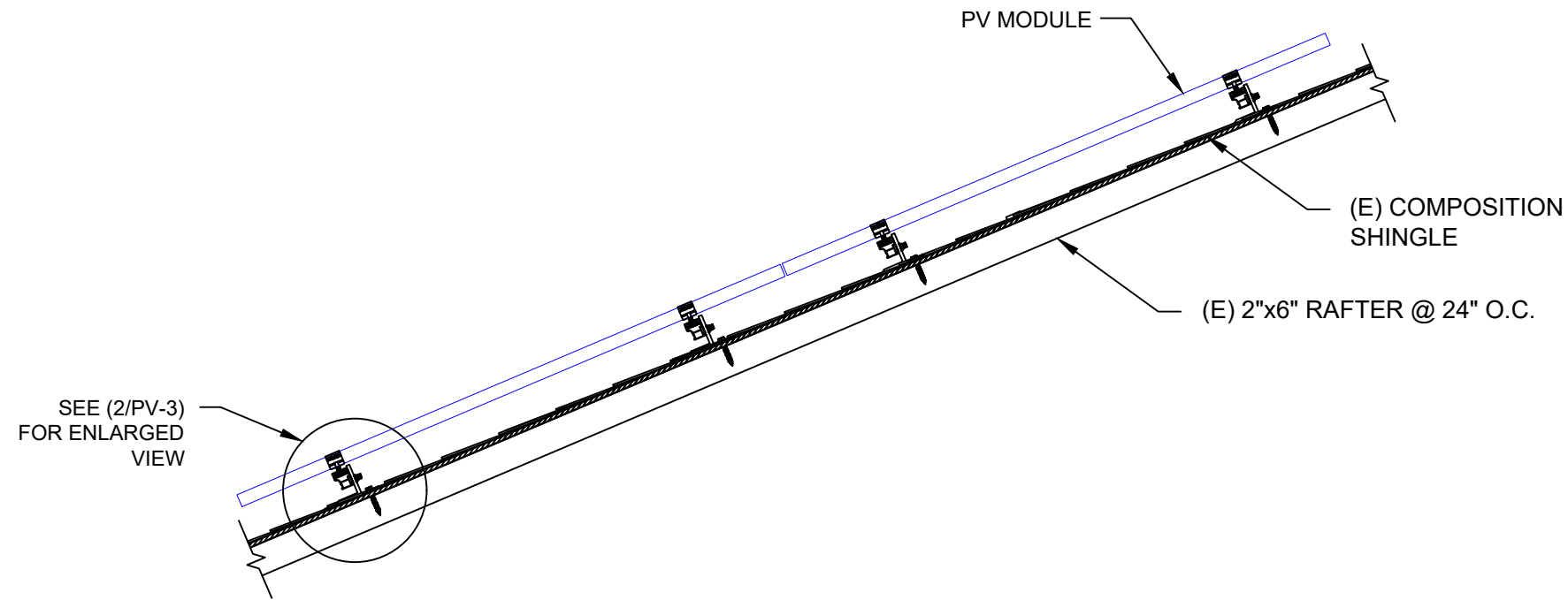
PV-2A



1 ROOF PLAN WITH STRING LAYOUT & BOM

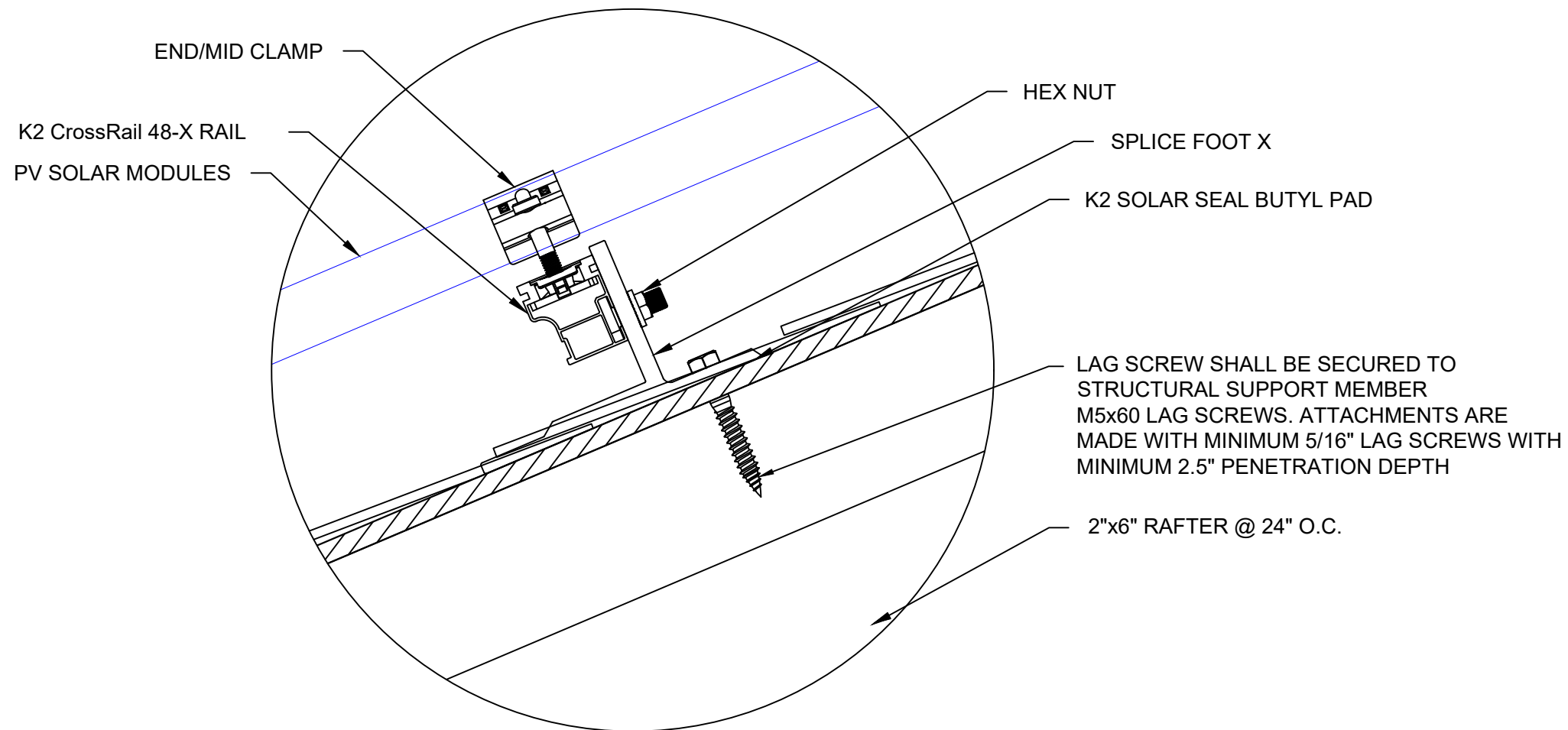
PV-2A

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

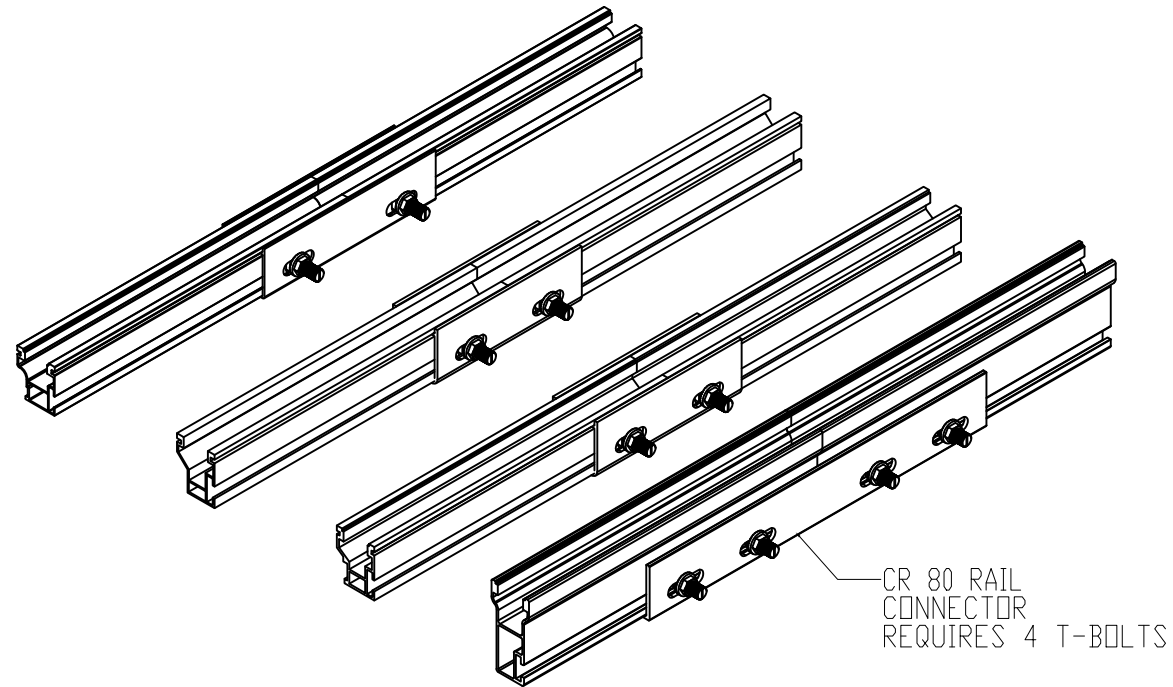
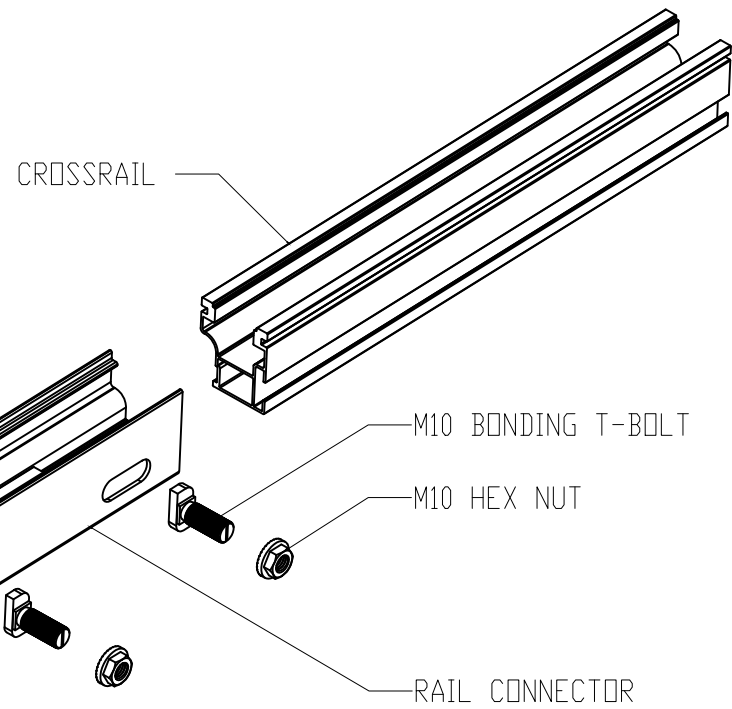
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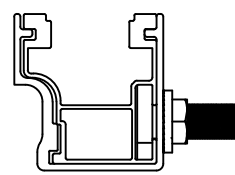
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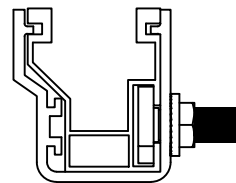
NOTE:
 PROPRIETARY GEOMETRIES
 HAVE BEEN REMOVED.
 GENERAL LENGTH, WIDTH,
 AND HEIGHT GEOMETRIES
 WERE NOT ALTERED.



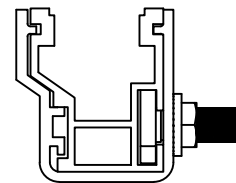
RAIL CONNECTOR ASSEMBLIES



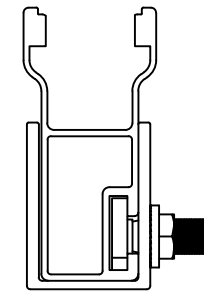
44-X



48-X



48-XL



80



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**ATTACHMENT
 DETAILS**

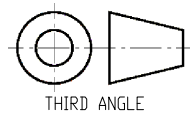
SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-3A

REVISION HISTORY

Revision	Date	Description
01		
02		
03		
04		
05		

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Everest Solar Systems, LLC.
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 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	
Scale: 1:25	Revision: 00
	All Dimensions are mm 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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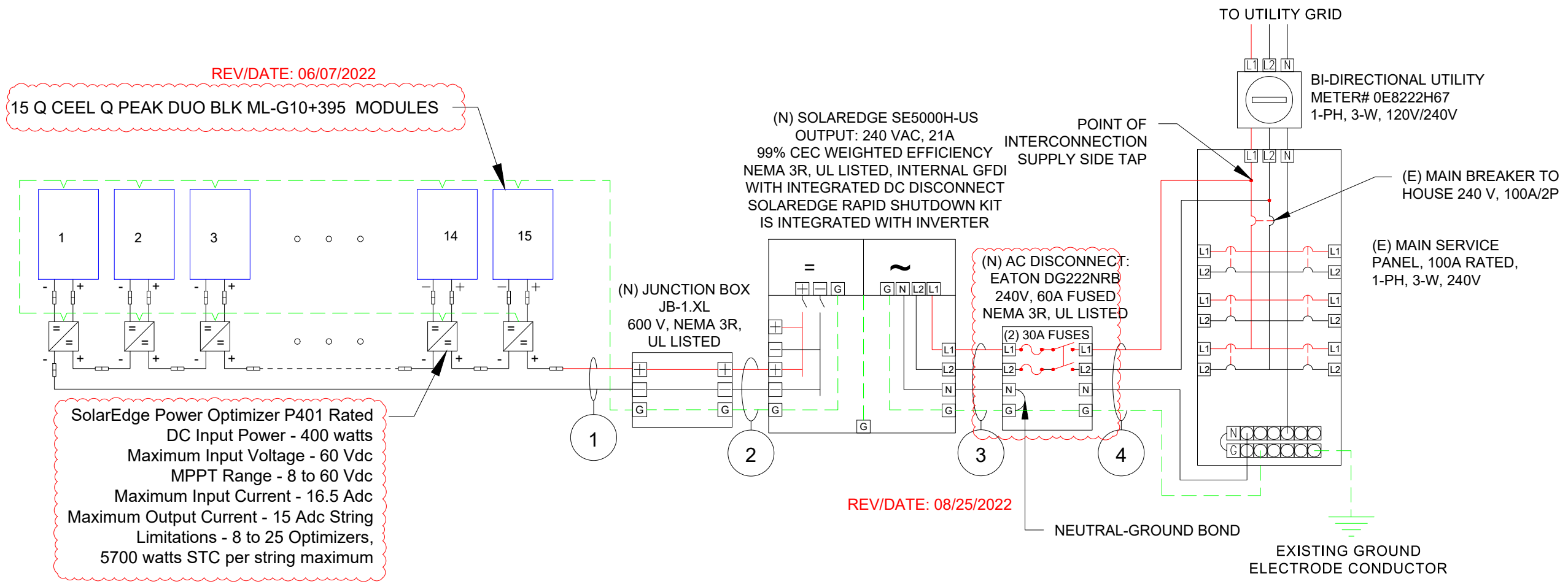
SHEET NAME
ELECTRICAL LINE & CALCS.

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

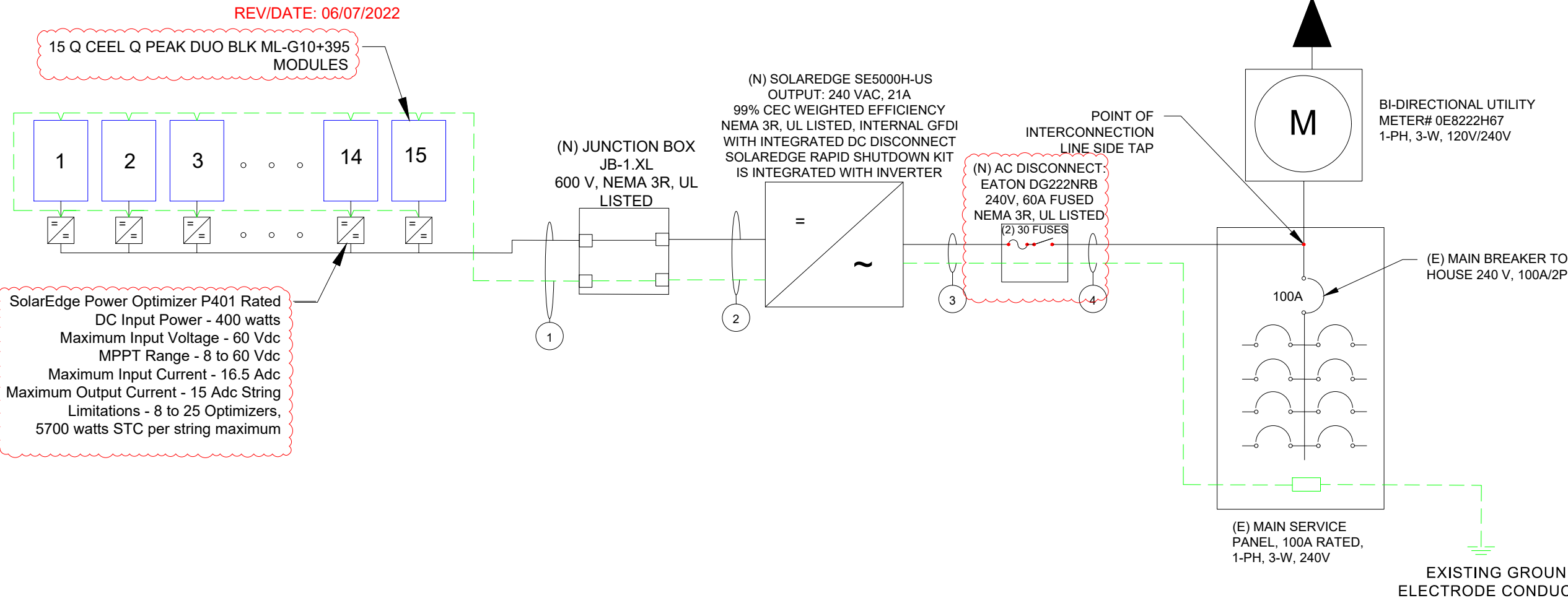
ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CONDUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	LENGTH	VOLTAGE DROP
				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

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DESCRIPTION	DATE	REV
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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

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

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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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

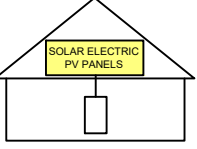
DUAL POWER SOURCE
 SECOND SOURCE US
 PHOTOVOLTAIC

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 DESCONEXION

LABEL LOCATION:
 AC DISCONNECT
 2017 NEC 230.66



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 EMAIL ID: firstpurplequeenme@yahoo.com

DATE: 08/25/2022

SHEET NAME
SIGNAGE

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

SHEET NUMBER
PV-5

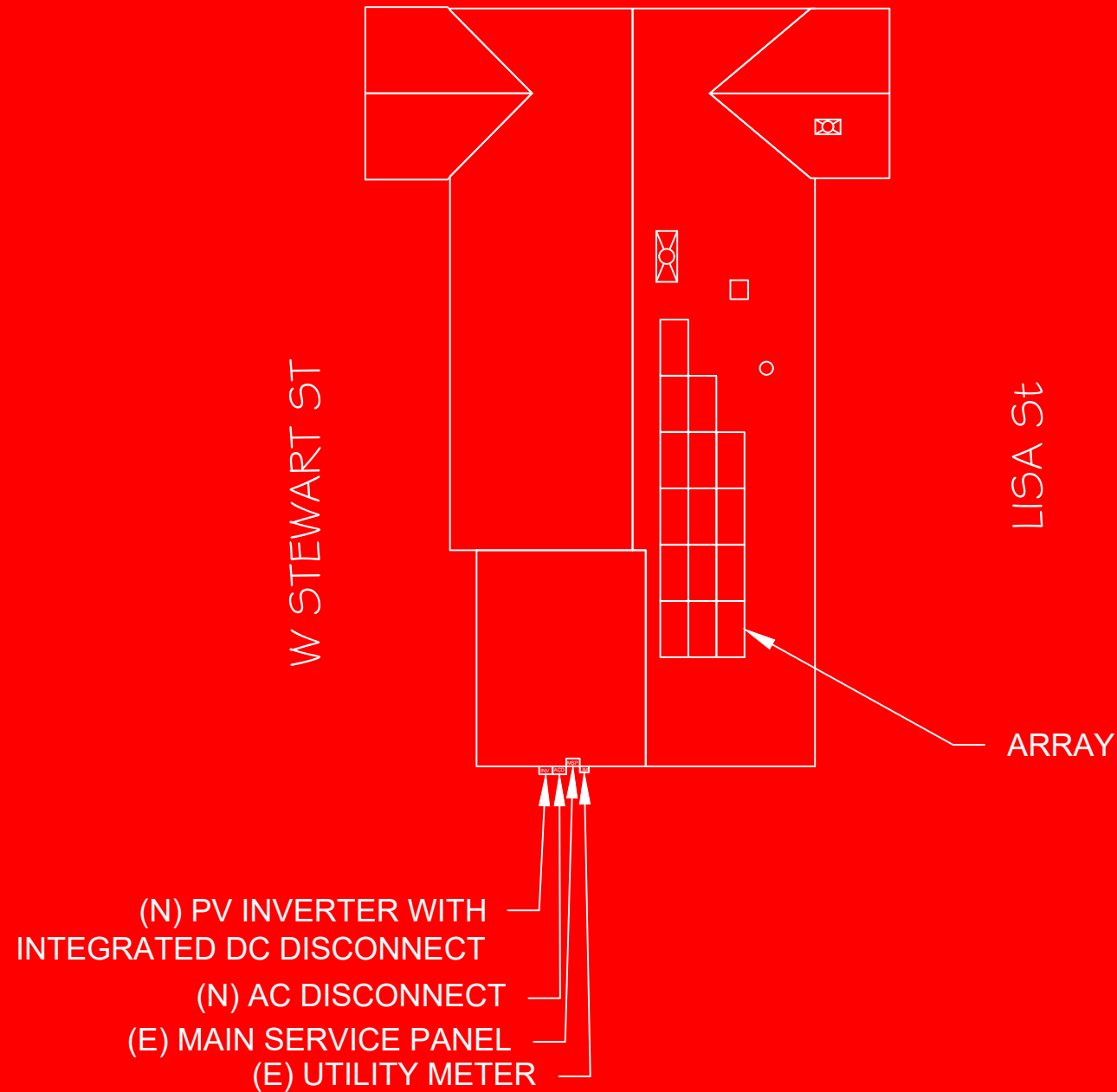
ADHESIVE FASTENED SIGNS:

- 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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SHEET NAME
SIGNAGE

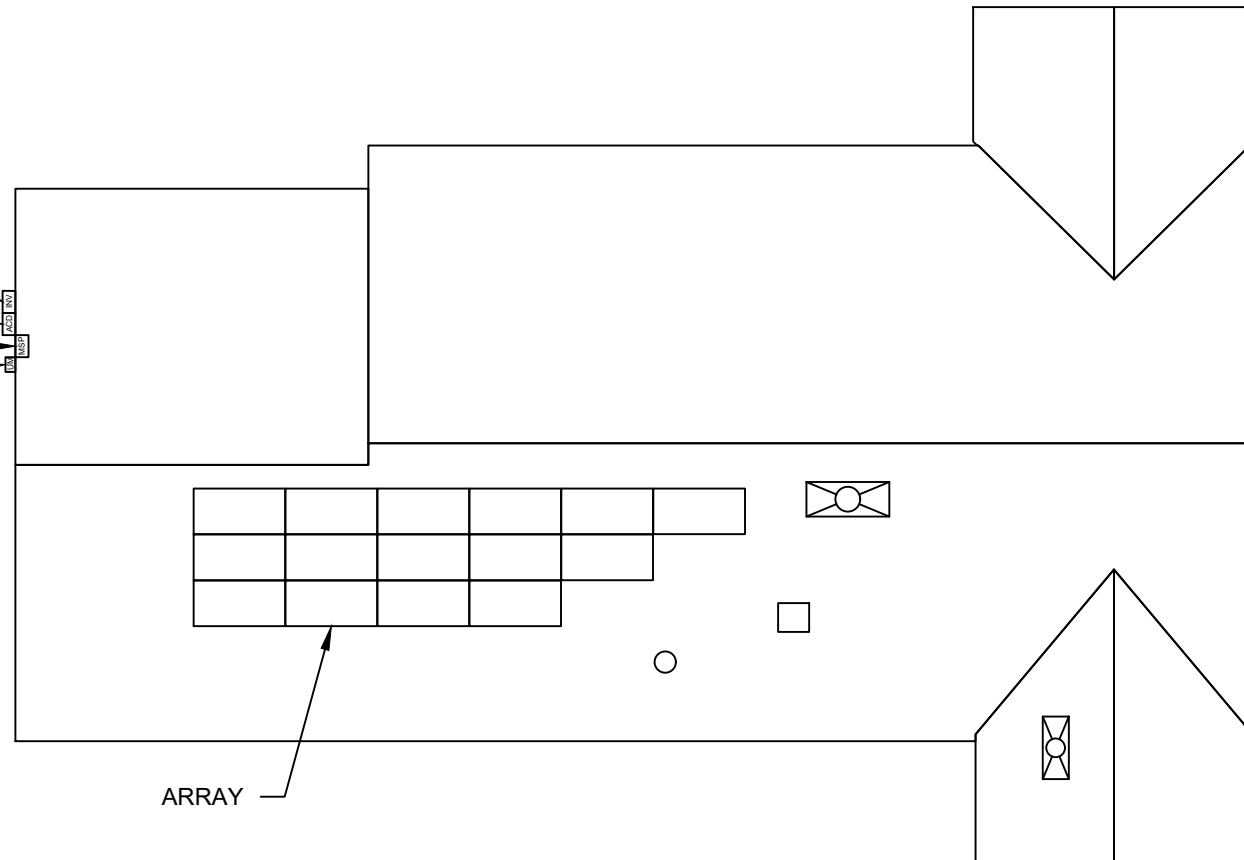
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

JOB SAFETY PLAN



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



ARRAY

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 Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q².

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

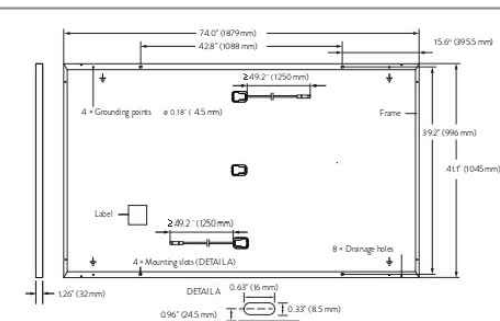
A RELIABLE INVESTMENT
Inclusive 25-year product warranty and 25-year linear performance warranty².

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.

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 ₂ 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	4mm ² Solar cable; (+) ≥ 49.2 in (1250 mm), (-) ≥ 49.2 in (1250 mm)
CONNECTOR	Stäubli MC4; IP68

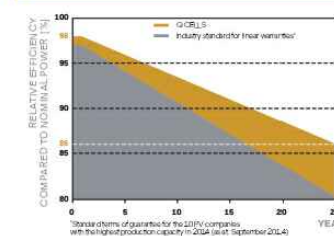


ELECTRICAL CHARACTERISTICS

POWER CLASS		385	390	395	400	405
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)						
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						
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

¹ Measurement tolerances P_{MPP} ±3%; I_{SC}, V_{OC} ±5% at STC: 1000W/m², 25±2°C, AM 1.5 according to IEC 60904-3 • 800 W/m², NMOT, spectrum AM 1.5

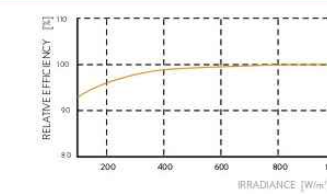
Q CELLS PERFORMANCE WARRANTY



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	[ADC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull ¹	[lbs/ft ²]	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 ¹	[lbs/ft ²]	113 (5400Pa)/84 (4000Pa)		

¹ 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



Specifications subject to technical changes © Q CELLS © PEAK DUO BLK ML-G10+ 385-405 2021-05 Rev01_NA



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EMAIL ID: firstpurplequeen@yahoo.com

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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								
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	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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SHEET NAME
EQUIPMENT
SPECIFICATION

SHEET SIZE

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11" X 17"

SHEET NUMBER

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

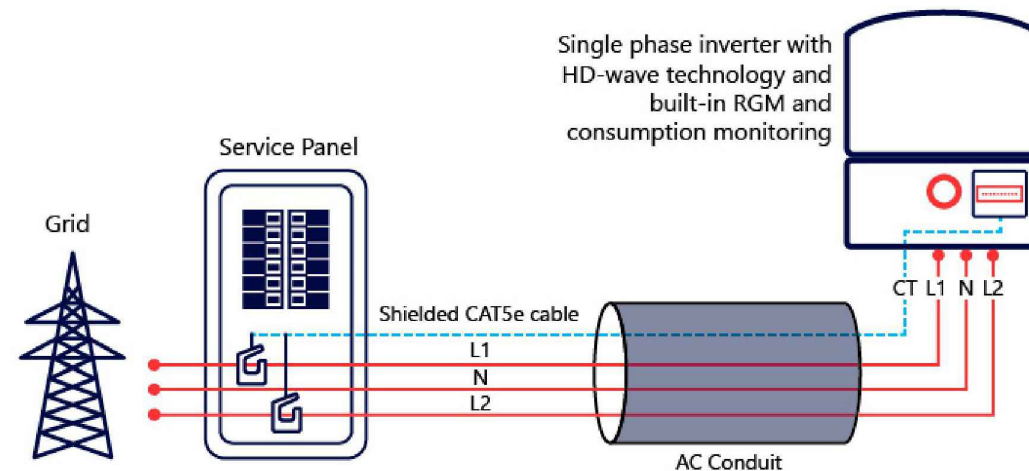
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

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	Optional ⁽³⁾						
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			
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 ⁽⁴⁾						
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



TITAN SOLAR POWER

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www.titansolarpower.com

ELECTRICAL LIC#: U.33714

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
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)	
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 SOLAREEDGE INVERTER)						
Maximum Output Current				15		Adc
Maximum Output Voltage	60			80		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE 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-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 ⁽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 P485, P505	8 6	10 8	18 14	
Maximum String Length (Power Optimizers)		25	25	50	
Maximum Power per String		5700 ⁽⁸⁾ (6000 with SE7600-US - SE11400-US)	5250 ⁽⁹⁾	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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EQUIPMENT
SPECIFICATION

SHEET SIZE

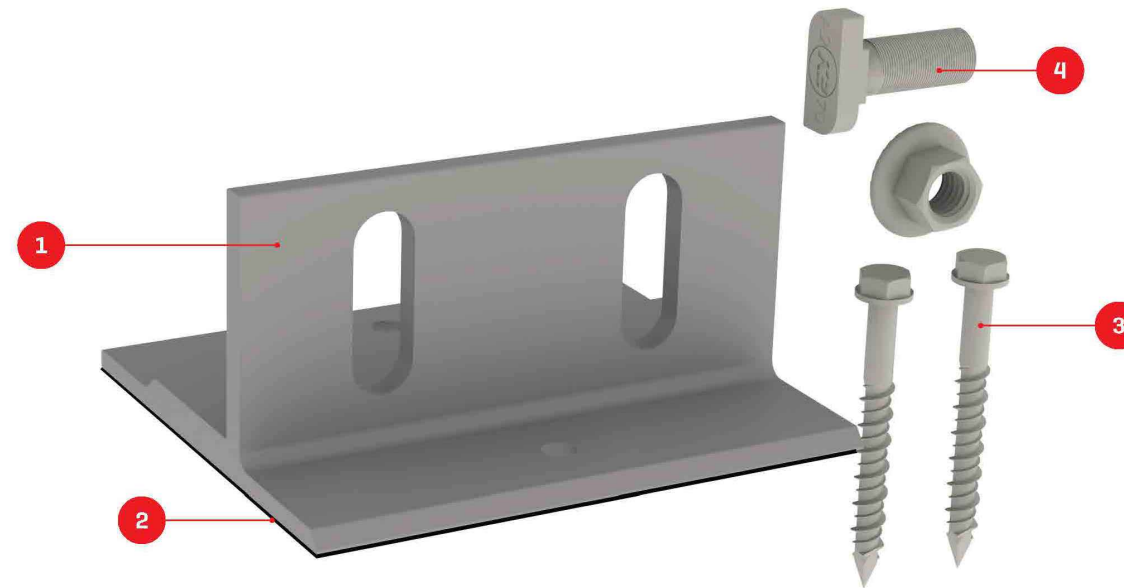
ANSI B
11" X 17"

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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SHEET NAME
EQUIPMENT SPECIFICATION

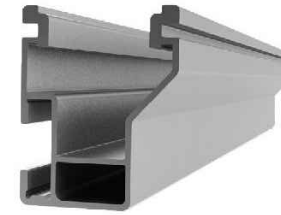
SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
PV-11

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CROSSRAIL 48-X



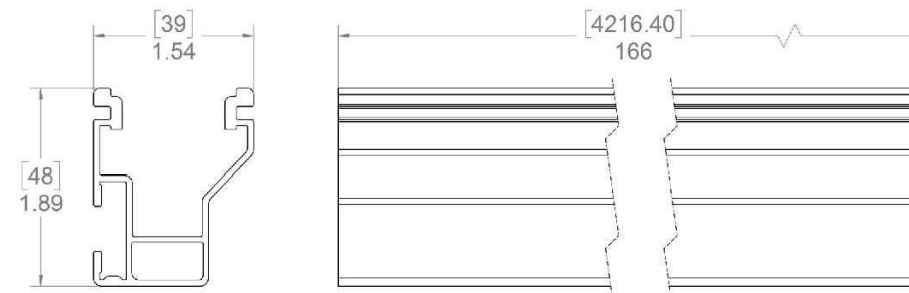
Mechanical Properties

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 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
**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	(mm ²)	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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