

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 SILFAB SIL-370NX MODULES
01 SOLAREEDGE SE5000H-US INVERTER
15 SOLAREEDGE POWER OPTIMIZER P370

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

5.55 KWDC

5.0 KWAC

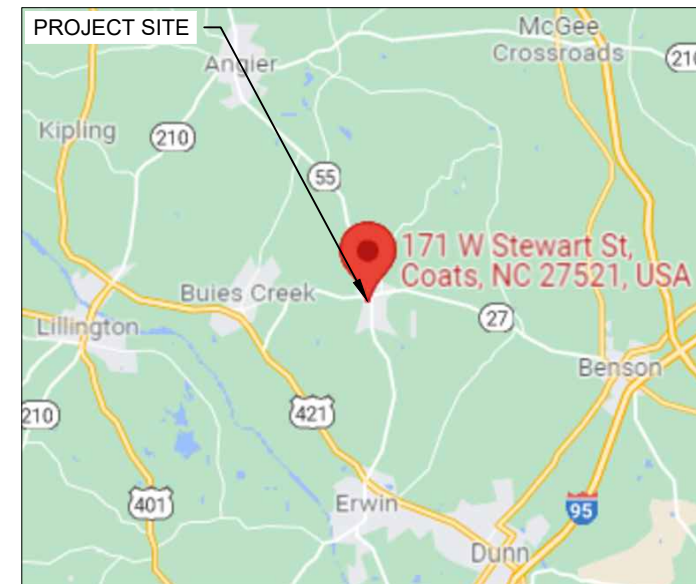
PHOTOVOLTAIC SYSTEM
 FIRE CLASSIFICATION
 LISTING IN ACCORDANCE
 WITH UL1703 STANDARD.

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

Signature with Seal

DATE: 09/15/2021

PROJECT NAME & ADDRESS

ROBERT MCEACHIN

RESIDENCE
 171 W STEWART ST
 COATS, NC 27521

PH NO. (910) 658-9005

EMAIL ID: firstpurplequeenme@yahoo.com

SHEET NAME

COVER PAGE

SHEET SIZE

ANSI B
 11" X 17"

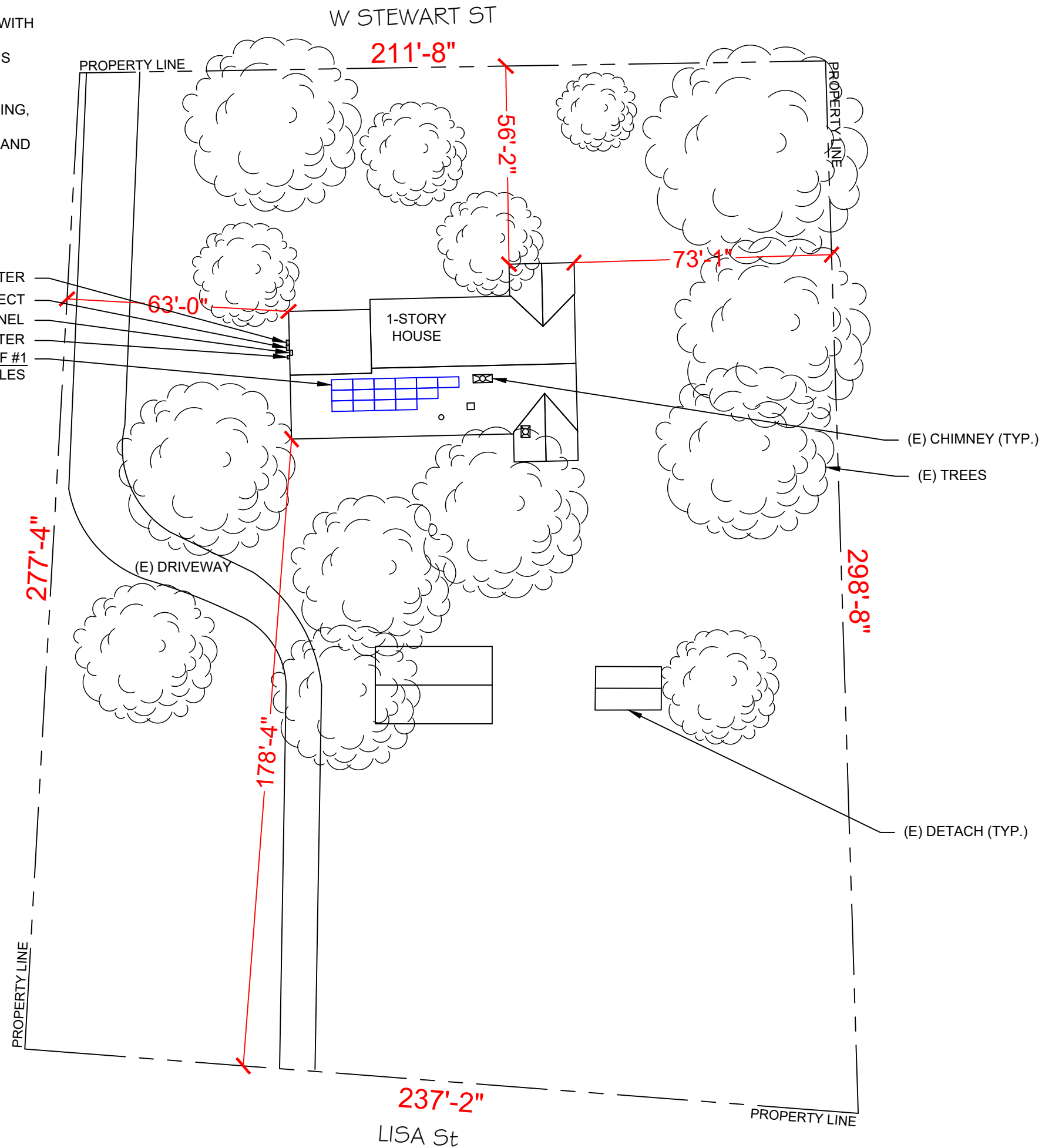
SHEET NUMBER

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]

- (N) SOLAREEDGE SE5000H-US INVERTER
- (N) FUSED AC DISCONNECT
- (E) MAIN SERVICE PANEL
- (E) UTILITY METER
- ROOF #1
- (15) SILFAB SIL-370NX MODULES



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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"

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE 7-10):	15 PSF
EXPOSURE CATEGORY:	B
WIND SPEED (ASCE 7-10):	118 MPH

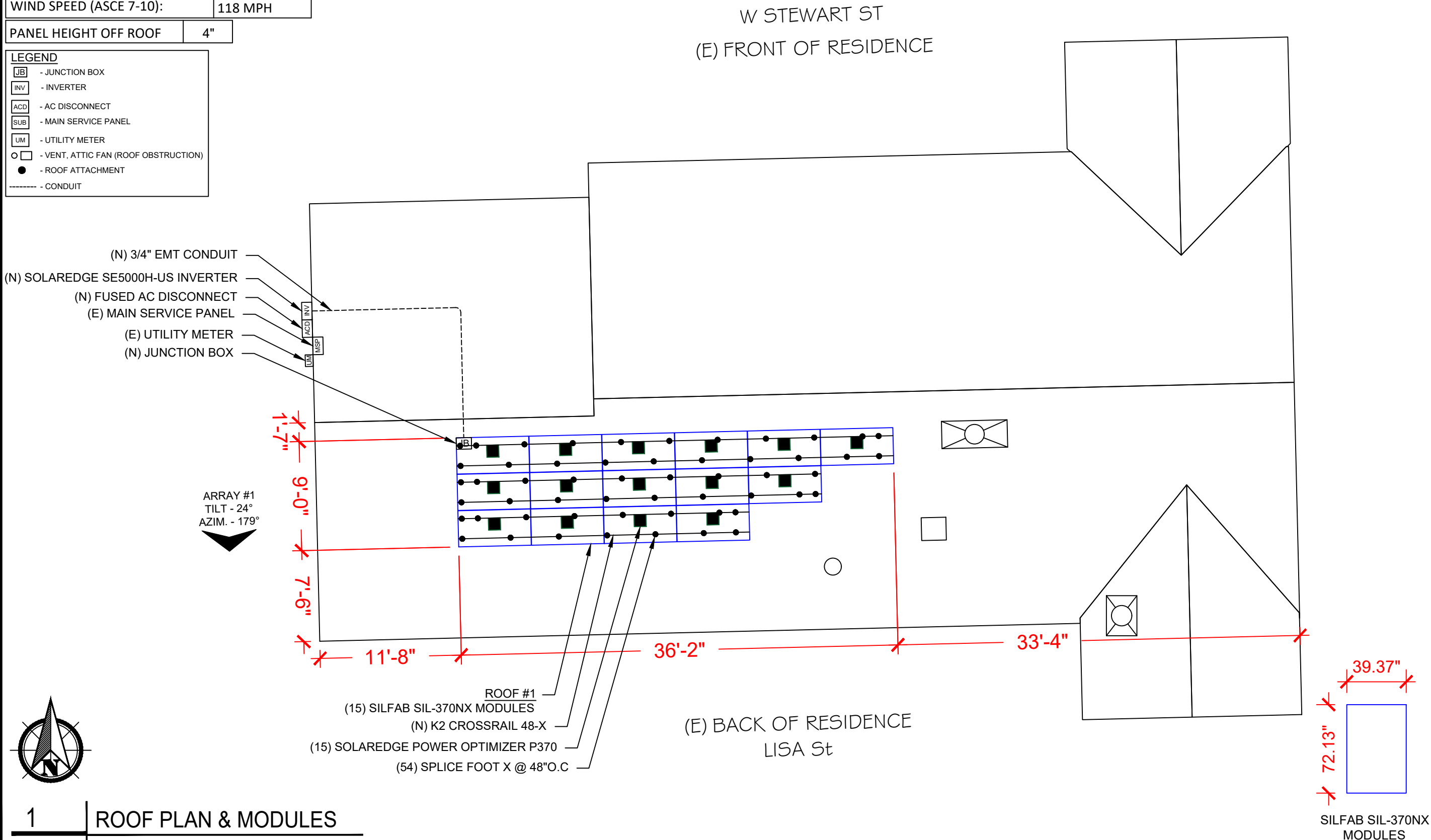
MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	15 MODULES
MODULE TYPE:	SILFAB SIL-370NX
MODULE WEIGHT:	44.0 LBS
MODULE DIMENSIONS:	72.13" X 39.37" = 19.72 SF
UNIT WEIGHT OF AREA:	2.23 PSF

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

ARRAY AREA & ROOF AREA CALC'S				
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
#1	15	272.13	1446.88	18.81

PANEL HEIGHT OFF ROOF	4"
-----------------------	----

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



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SHEET NAME	ROOF PLAN & MODULES
SHEET SIZE	ANSI B 11" X 17"
SHEET NUMBER	PV-2

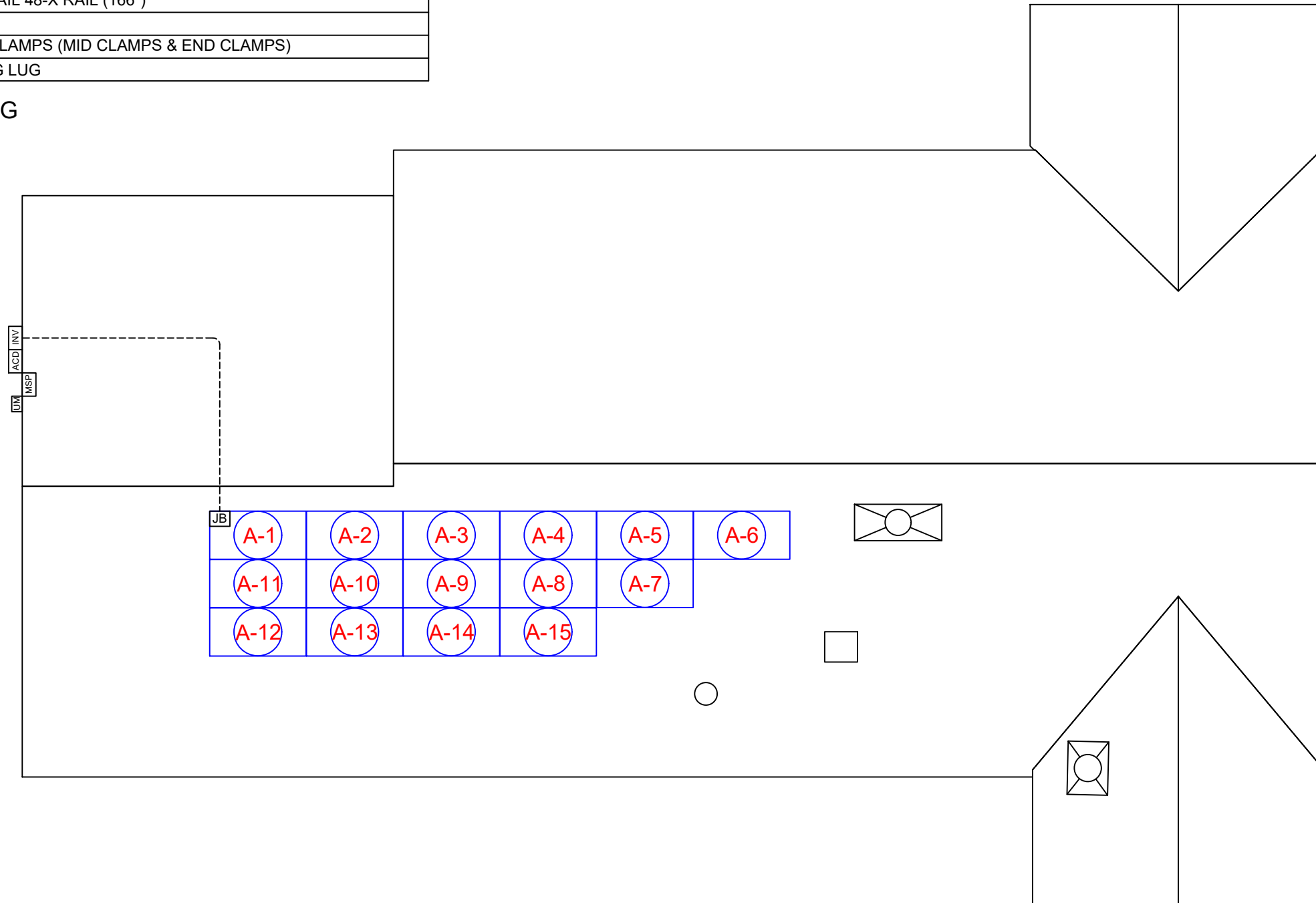


BILL OF MATERIALS

EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	15	SILFAB SIL-370NX
OPTIMIZER	15	SOLAREEDGE POWER OPTIMIZER P370
INVERTER	1	SOLAREEDGE 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

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

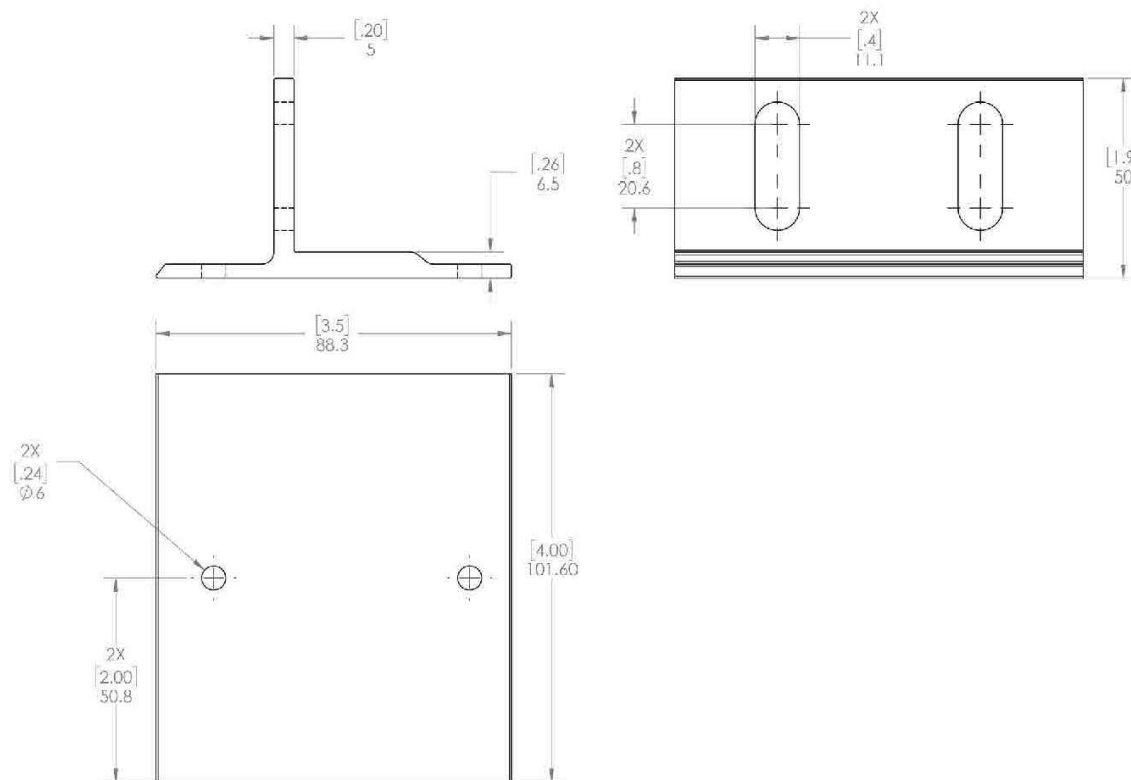
PV-2A



We support PV systems
Formerly Everest Solar Systems



Units: [in] mm



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SHEET NAME
ATTACHMENT
DETAILS

SHEET SIZE

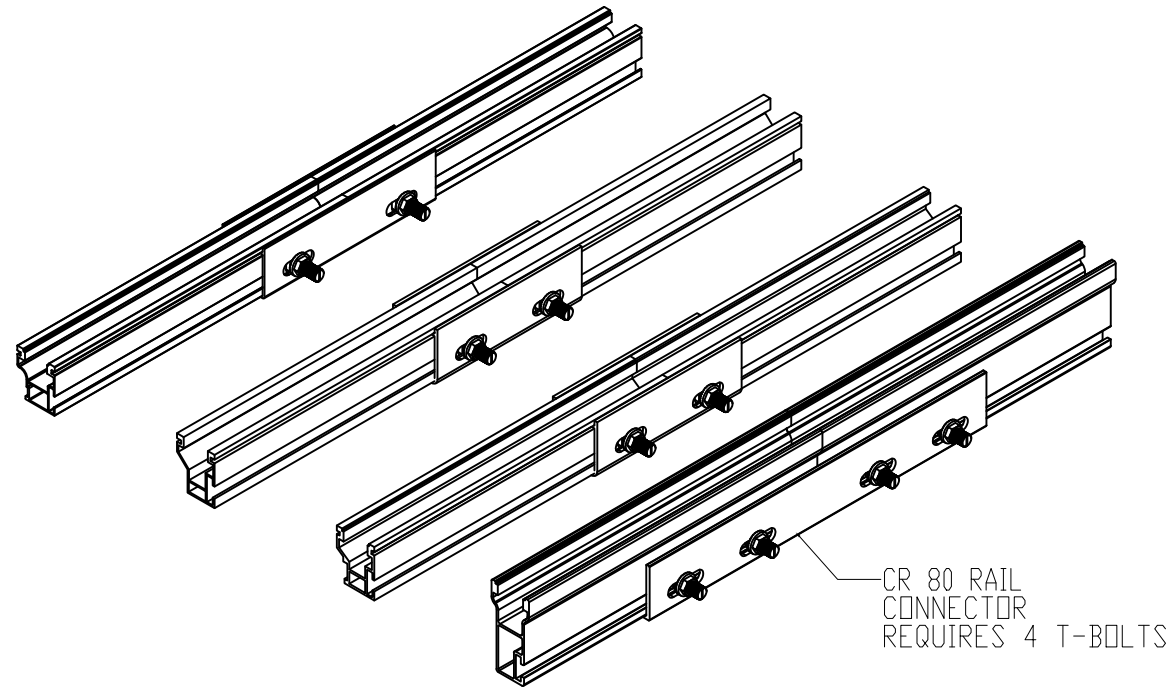
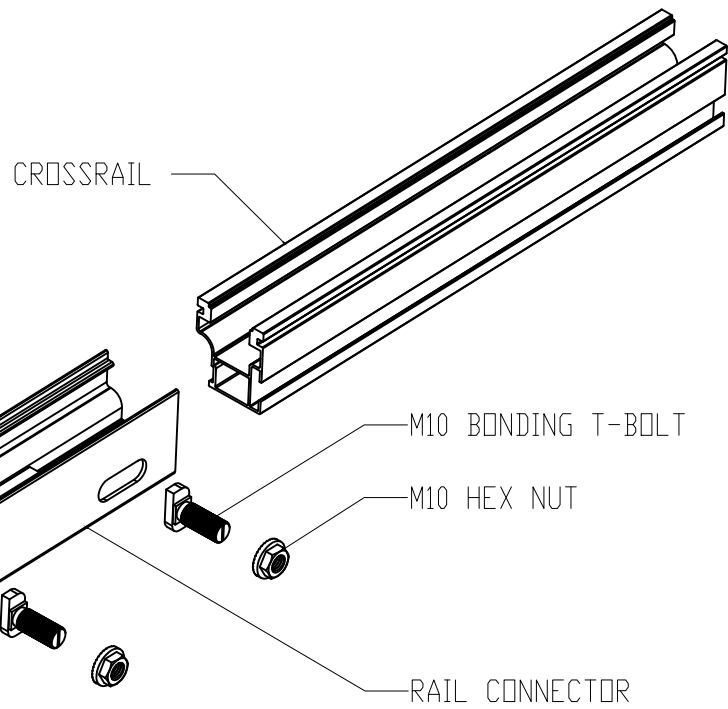
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11" X 17"

SHEET NUMBER

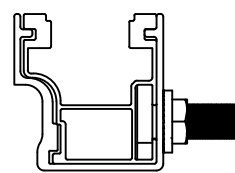
PV-3

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

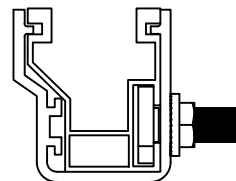
NOTE:
 PROPRIETARY GEOMETRIES
 HAVE BEEN REMOVED.
 GENERAL LENGTH, WIDTH,
 AND HEIGHT GEOMETRIES
 WERE NOT ALTERED.



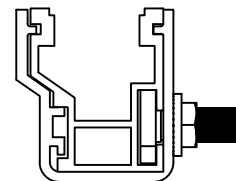
RAIL CONNECTOR ASSEMBLIES



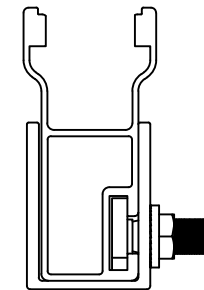
44-X



48-X



48-XL



80



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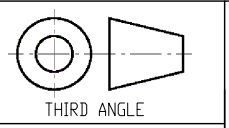
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REVISION HISTORY		
Revision	Date	Description
01		
02		
03		
04		
05		

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

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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
				6 AWG	PV WIRE	COPPER						BARE COPPER	6 AWG	THWN-2, COPPER	0.71								
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%	60A	8 AWG	THWN-2, COPPER	0.96	(3°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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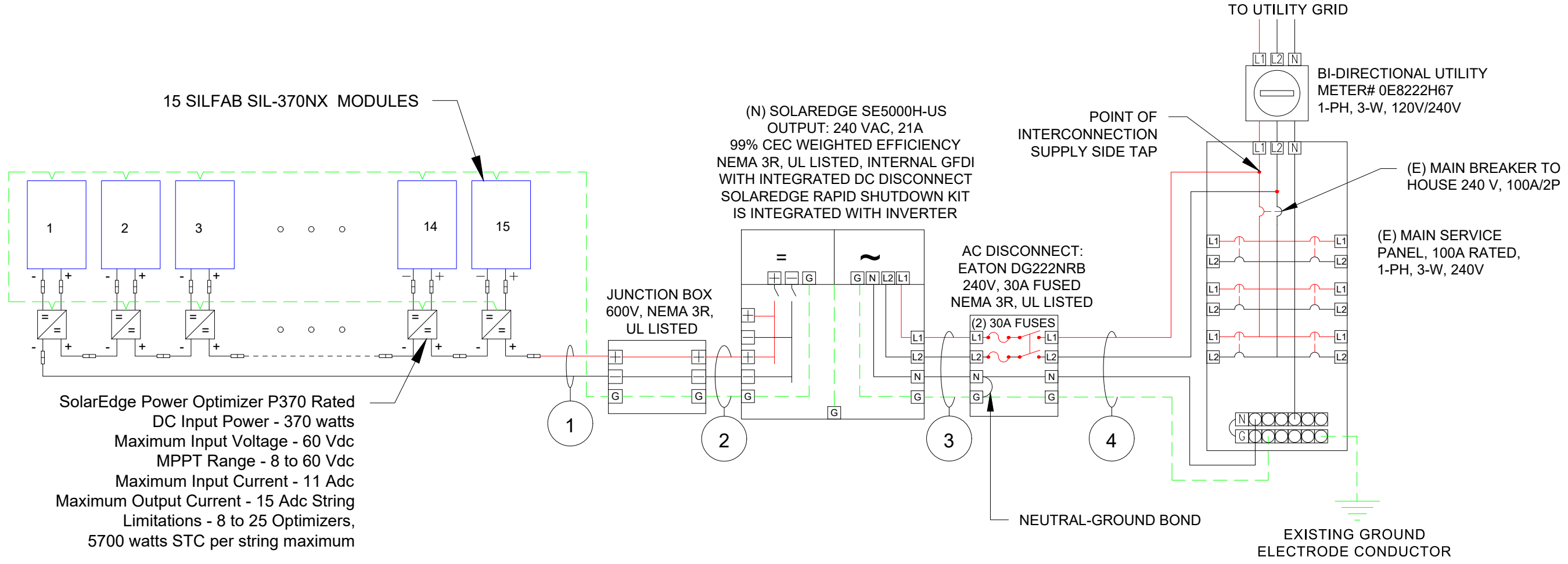
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SHEET NAME
ELECTRICAL LINE & CALCS.

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

SHEET NUMBER
PV-4



SolarEdge Power Optimizer P370 Rated
 DC Input Power - 370 watts
 Maximum Input Voltage - 60 Vdc
 MPPT Range - 8 to 60 Vdc
 Maximum Input Current - 11 Adc
 Maximum Output Current - 15 Adc String
 Limitations - 8 to 25 Optimizers,
 5700 watts STC per string maximum

SYSTEM RATING
5.55 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	0.71						(57°C)											
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%	60A	8 AWG	THWN-2, COPPER	0.96	(3°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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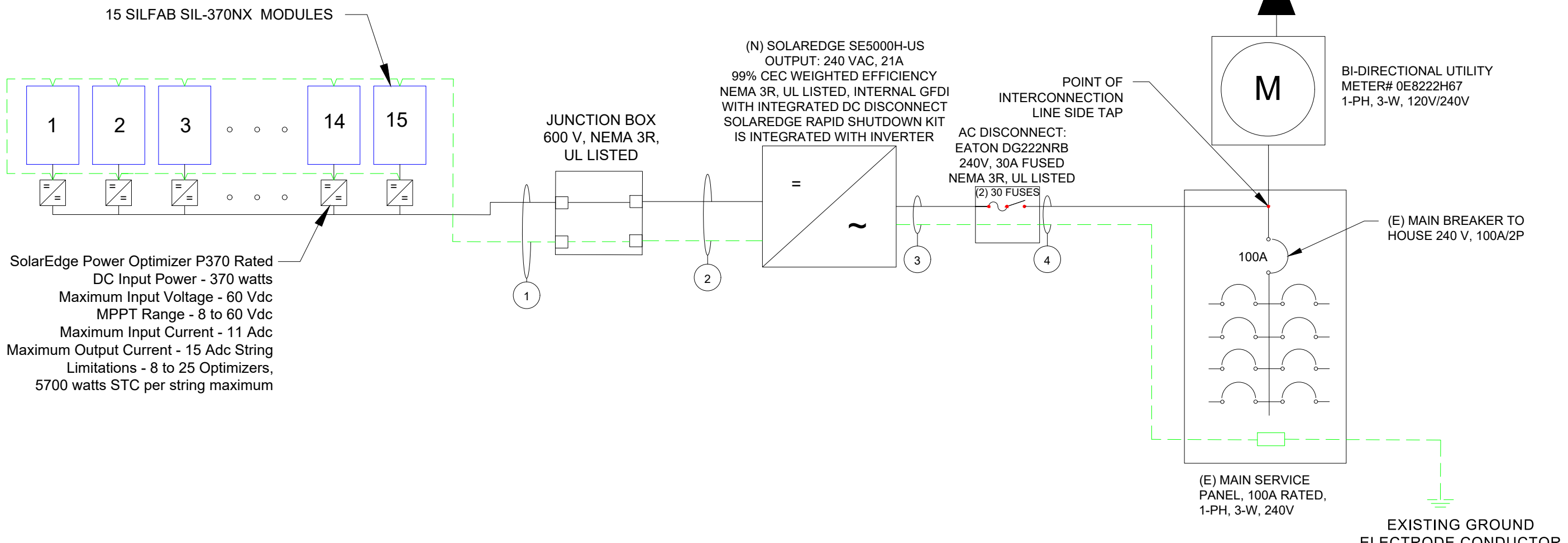
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SHEET NAME
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SHEET SIZE
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11" X 17"**

SHEET NUMBER
PV-4A



SolarEdge Power Optimizer P370 Rated
DC Input Power - 370 watts
Maximum Input Voltage - 60 Vdc
MPPT Range - 8 to 60 Vdc
Maximum Input Current - 11 Adc
Maximum Output Current - 15 Adc String
Limitations - 8 to 25 Optimizers,
5700 watts STC per string maximum

SYSTEM RATING
5.55 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

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

LABEL LOCATION:
 COMBINER BOX/ EMT ENCLOSURES/
 AC DISCONNECT/ MAIN SERVICE PANEL
 (PER CODE: NEC 2017, 690.13(B))

2

WARNING
PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
 CONDUIT, RACEWAY, ENCLOSURES,
 COMBINER BOX & AC DISCONNECT
 (PER CODE: NEC2017, 690.31(G)(3)(4))

3

PHOTOVOLTAIC
AC DISCONNECT

LABEL LOCATION:
 AC DISCONNECT/ BREAKER/
 POINTS OF CONNECTION
 (PER CODE: NEC2017, 690.13(B))

4

PHOTOVOLTAIC AC DISCONNECT
 RATED AC OUTPUT CURRENT **21A**
 NOMINAL OPERATING AC VOLTAGE **240V**

LABEL LOCATION:
 AC DISCONNECT
 (PER CODE: NEC2017, 690.53)

5

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION:
 RAPID SHUTDOWN (AC DISCONNECT)
 (PER CODE: NEC 690.58 (C)(3))

6

WARNING: DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

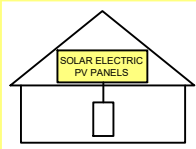
LABEL LOCATION:
 POINT OF INTERCONNECTION
 (PER CODE: NEC 2017, 705.12(B))

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.

7

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN
 TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY

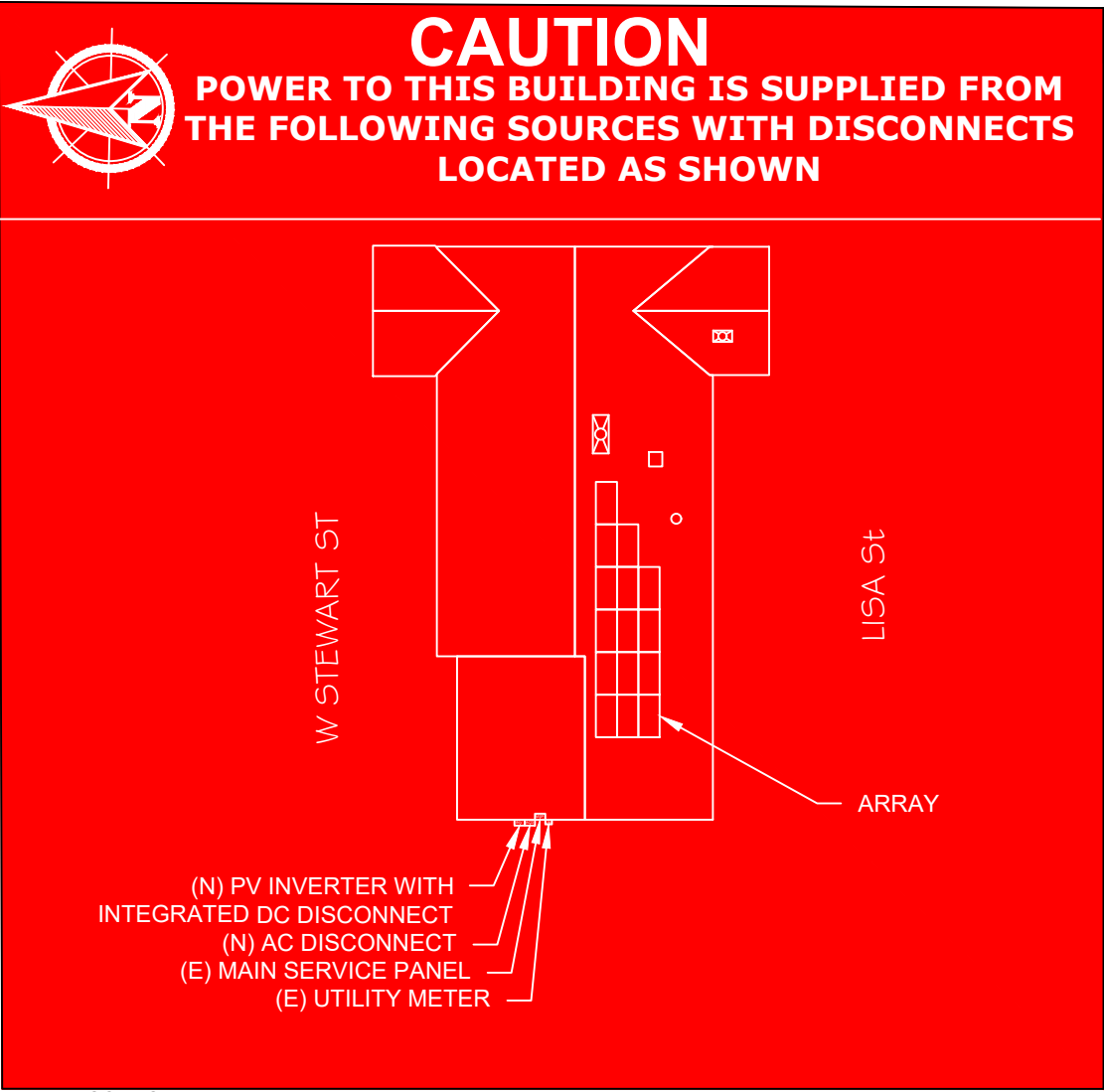


LABEL LOCATION:
 RAPID SHUTDOWN (AC DISCONNECT)
 (PER CODE: NEC 690.56 (C)(1))

8

RATED MAXIMUM POWER-POINT CURRENT (Imp) 13.5 A
RATED MAXIMUM POWER-POINT VOLTAGE (Vmp) 380 V
MAXIMUM SYSTEM VOLTAGE (VOC) 480 V
MAXIMUM CIRCUIT CURRENT (Isc) 15 A

LABEL LOCATION:
 INVERTER
 (PER CODE: NEC 690.53)



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)



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

REVISIONS		
DESCRIPTION	DATE	REV

Signature with Seal
 DATE: 09/15/2021

PROJECT NAME & ADDRESS

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

SHEET NAME
SIGNAGE

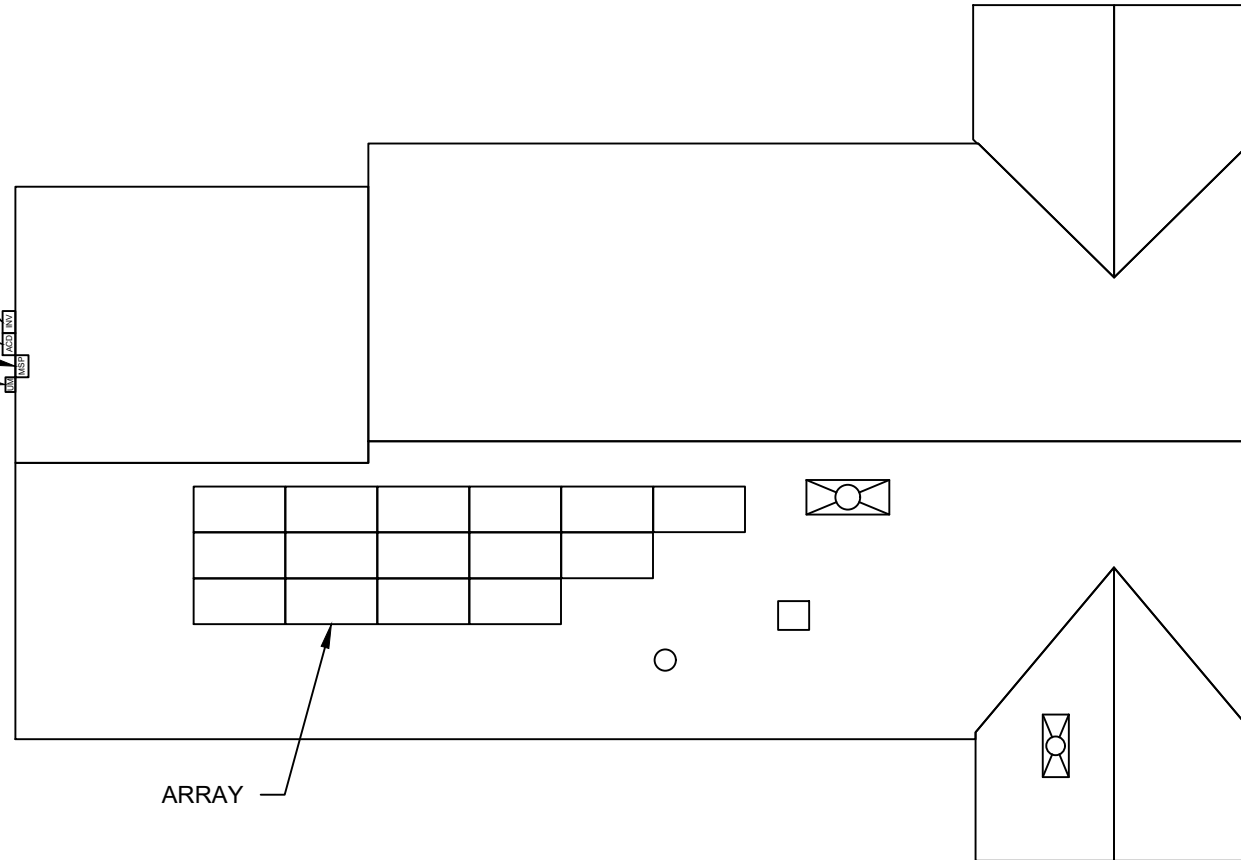
SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-5

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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SHEET NAME
JOB SAFETY PLAN

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

SHEET NUMBER
PV-6

Single Phase Inverter with HD-Wave Technology

for North America

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



INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 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 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

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-XXXXXX4							
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

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

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 Data, ANSI C12.20	Optional ¹⁾						
Inverter Commissioning	with the SetApp mobile application using built-in Wi-Fi Access Point for local connection						
Rapid Shutdown - NEC 2014 and 2017 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			
Cooling	Natural Convection						
Operating Temperature Range	-40 to +140 / -40 to +60 ⁴⁾						°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)						

¹⁾ Revenue grade inverter P/N: SExxxxH-US000BNC4

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>



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SHEET NAME

**EQUIPMENT
SPECIFICATION**

SHEET SIZE

**ANSI B
11" X 17"**

SHEET NUMBER

PV-8A

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / 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

P320 / P340 / P370 / P400 / P405 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	P505 (for higher current modules)		
INPUT								
Rated Input DC Power ¹⁾	320	340	370	400	405	505	W	
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125 ²⁾	87 ²⁾	Vdc	
MPPT Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105	12.5 - 87	Vdc	
Maximum Short Circuit Current (Isc)	11			10.1		14	Adc	
Maximum DC Input Current	13.75			12.5		17.5	Adc	
Maximum Efficiency	99.5						%	
Weighted Efficiency	98.8					98.6	%	
Overvoltage Category	II							
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREGE INVERTER)								
Maximum Output Current	15						Adc	
Maximum Output Voltage	60			85			Vdc	
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR SOLAREGE INVERTER OFF)								
Safety Output Voltage per Power Optimizer	1 ± 0.1						Vdc	
STANDARD COMPLIANCE								
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3							
Safety	IEC62109-1 (class II safety), UL1741							
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 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	845 / 1.9	1064 / 2.3		gr / lb	
Input Connector	Single or dual MC4 ³⁾							
Input Wire Length	0.16 / 0.52							m / ft
Output Wire Type / Connector	Double Insulated / MC4							
Output Wire Length	0.9 / 2.95					1.2 / 3.9	m / ft	
Operating Temperature Range ⁴⁾	-40 - +85 / -40 - +185							°C / °F
Protection Rating	IP68 / NEMA6P							
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⁾ 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.

PV System Design Using a SolarEdge Inverter ⁵⁾	Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400 P405 / P505	8	10	18	
Maximum String Length (Power Optimizers)		6	8	14	
Maximum Power per String	5700 (6000 with SE7600-US - SE11400-US)	5250	6000 ⁶⁾	12750 ⁶⁾	W
Parallel Strings of Different Lengths or Orientations	Yes				

⁵⁾ For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
⁶⁾ It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string.
⁷⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement.
⁸⁾ For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W.
⁹⁾ For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W.



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EQUIPMENT
SPECIFICATION

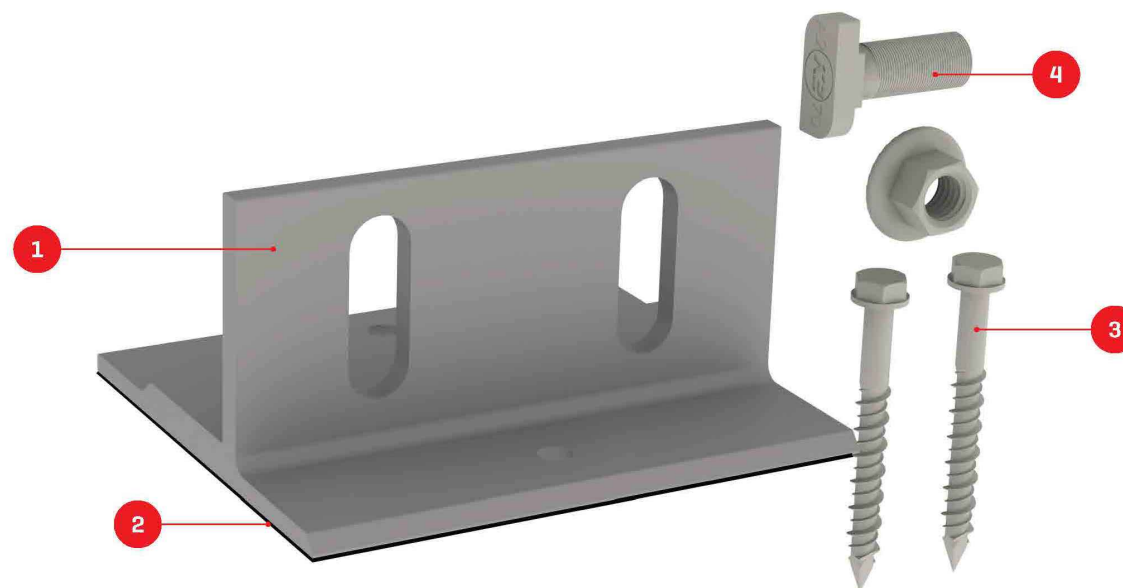
SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-9

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

k2-systems.com



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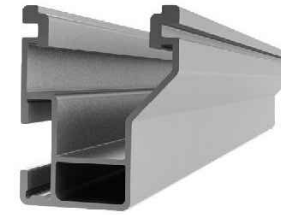
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-10

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Formerly Everest Solar Systems



CROSSRAIL 48-X



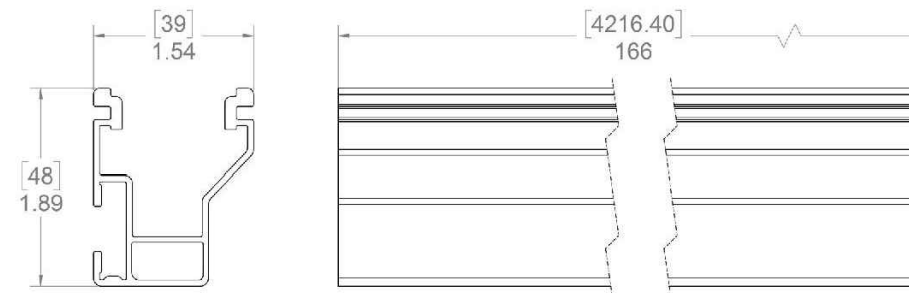
Mechanical Properties

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 NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
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SHEET NUMBER
PV-11