SCOPE OF WORK:

TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 70 CALABOR COURT FUQUAY-VARINA, NC 27526.
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
35 LG ELECTRONICS LG360N1K-E6 MODULES
01 SOLAREDGE SE10000H-US INVERTER
35 SOLAREDGE POWER OPTIMIZER P370

GOVERNING CODES
2017 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):

SYSTEM RATING
12.60 KWDC
10.0 KWAC

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

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 BULDING 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.

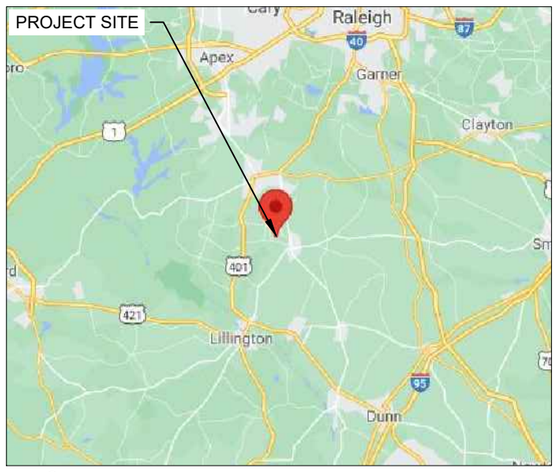
WIRING AND CONDUIT NOTES:

- 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 2015
- MEASURE THE LINE-TO-LINE AND LINE-TO-NEUTRAL VOLTAGE OF ALL SERVICE ENTRANCE CONDUCTORS PROIR TO INSTALLING ANY SOLAR EQUIPMENT. THE VOLTAGES FOR THE 240VAC RATED.

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

Signature with Seal

DATE: 08/17/2021

PROJECT NAME & ADDRESS

CHAS SCHROEDER RESIDENCE
70 CALABOR COURT
FUQUAY-VARINA, NC 27526
PH NO. (919) 698-3729
EMAIL ID: chasschroeder29@gmail.com

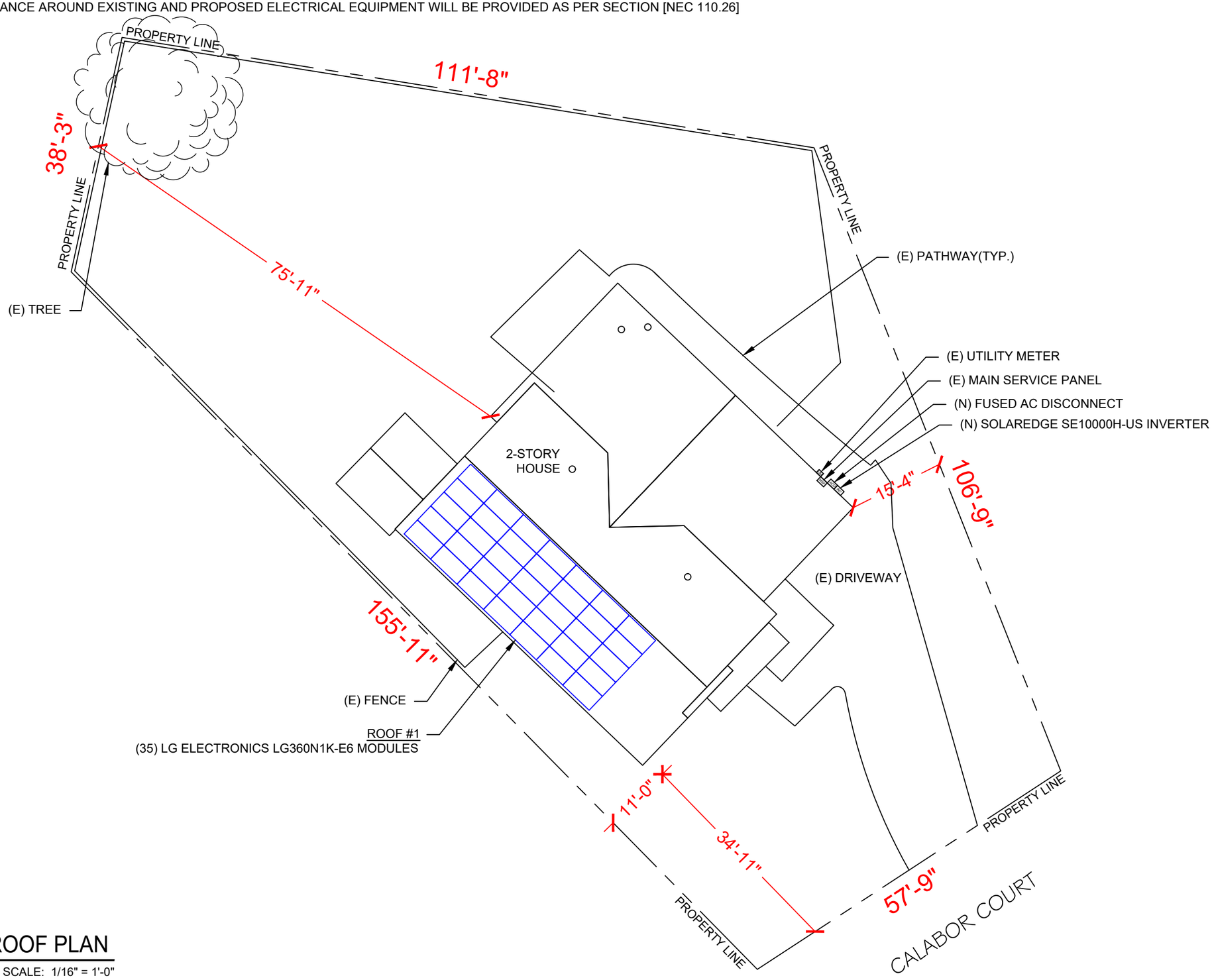
SHEET NAME
COVER PAGE

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]



1 PLOT PLAN WITH ROOF PLAN

PV-1 SCALE: 1/16" = 1'-0"

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SHEET NAME
SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE 7-10):	15 PSF
EXPOSURE CATEGORY:	B
WIND SPEED (ASCE 7-10):	115 MPH

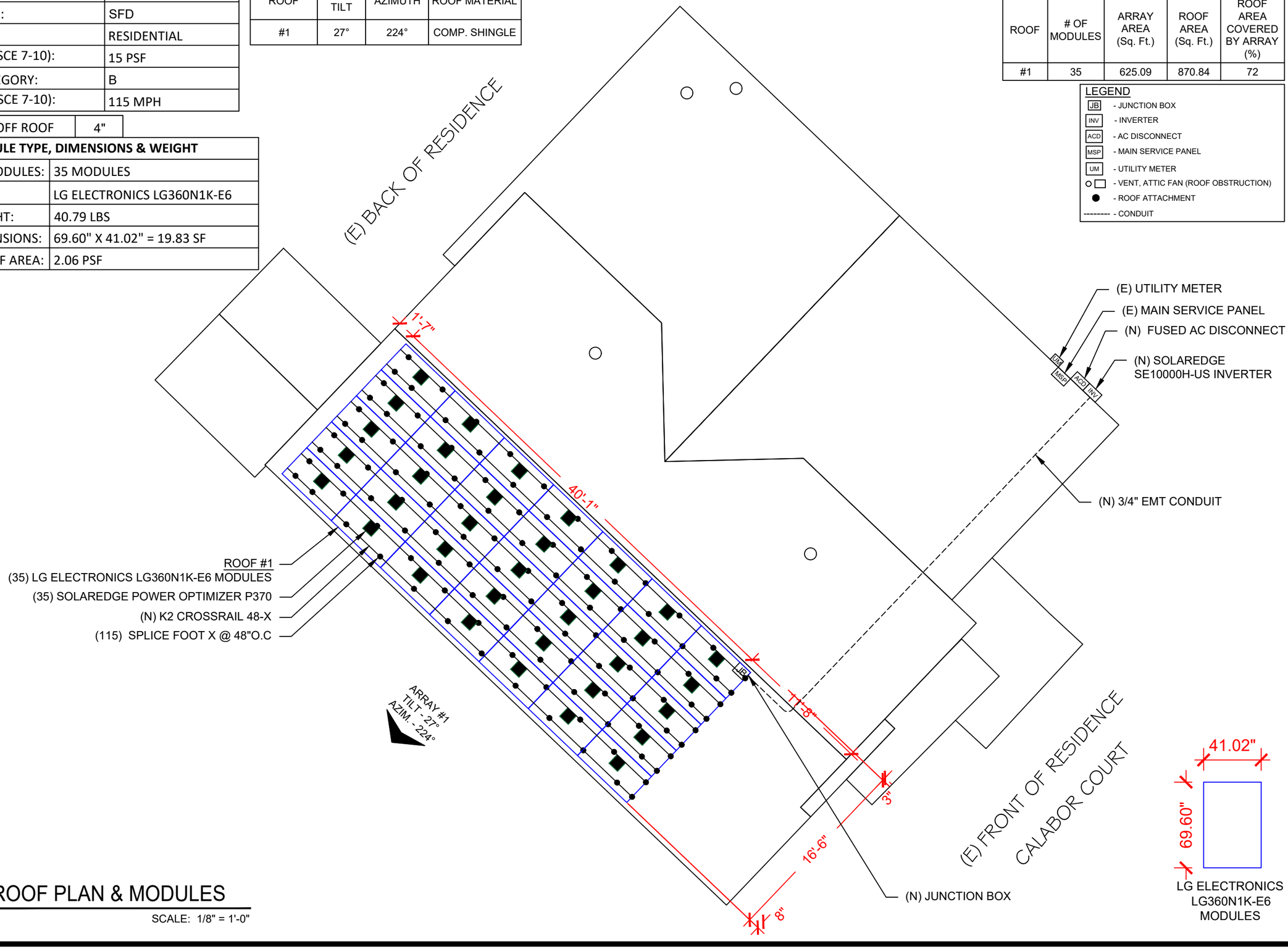
PANEL HEIGHT OFF ROOF	4"

MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	35 MODULES
MODULE TYPE:	LG ELECTRONICS LG360N1K-E6
MODULE WEIGHT:	40.79 LBS
MODULE DIMENSIONS:	69.60" X 41.02" = 19.83 SF
UNIT WEIGHT OF AREA:	2.06 PSF

ROOF DESCRIPTION			
ROOF	ROOF TILT	AZIMUTH	ROOF MATERIAL
#1	27°	224°	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	35	625.09	870.84	72

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



LG ELECTRONICS LG360N1K-E6 MODULES

1 ROOF PLAN & MODULES

PV-2 SCALE: 1/8" = 1'-0"

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70 CALABOR COURT
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EMAIL ID: chasschroeder29@gmail.com

SHEET NAME
ROOF PLAN & MODULES

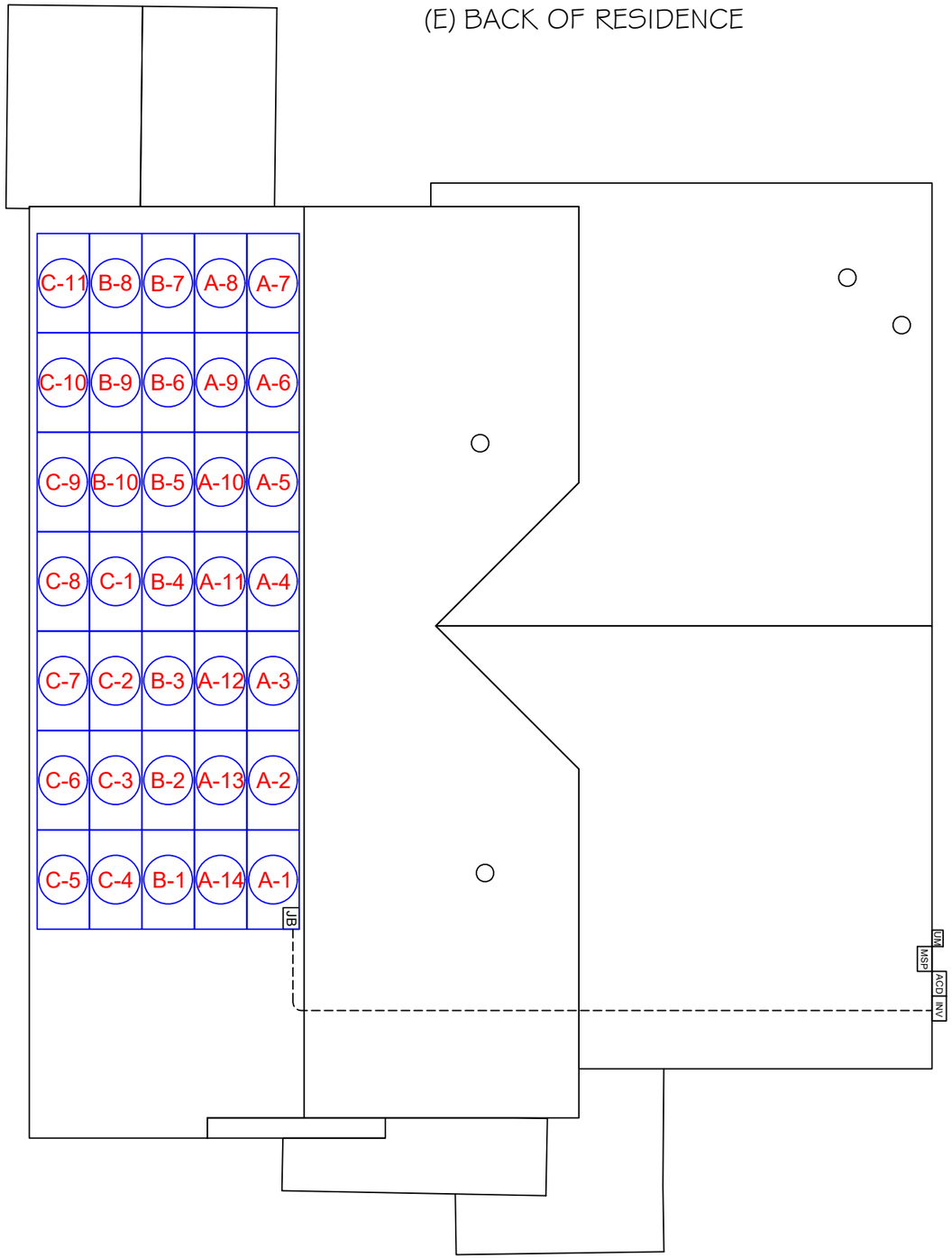
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2

BILL OF MATERIALS

EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	35	LG ELECTRONICS LG360N1K-E6
OPTIMIZER	35	SOLAREDGE POWER OPTIMIZER P370
INVERTER	1	SOLAREDGE SE10000H-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	115	SPLICE FOOT X
ATTACHMENT	115	K2 SOLAR SEAL BUTYL PAD
ATTACHMENT	230	MS X 60 LAG SCREWS
ATTACHMENT	115	T-BOLTS & HEX NUT SET
RAILS	30	K2 CROSSRAIL 48-X RAIL (166")
BONDED SPLICE	20	SPLICE KIT
CLAMPS	80	MODULES CLAMPS (MID CLAMPS & END CLAMPS)
GROUNDING LUG	5	GROUNDING LUG

A B C - MODULE STRINGING



1 ROOF PLAN WITH STRING LAYOUT & BOM

PV-2A

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

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EMAIL ID: chasschroeder29@gmail.com

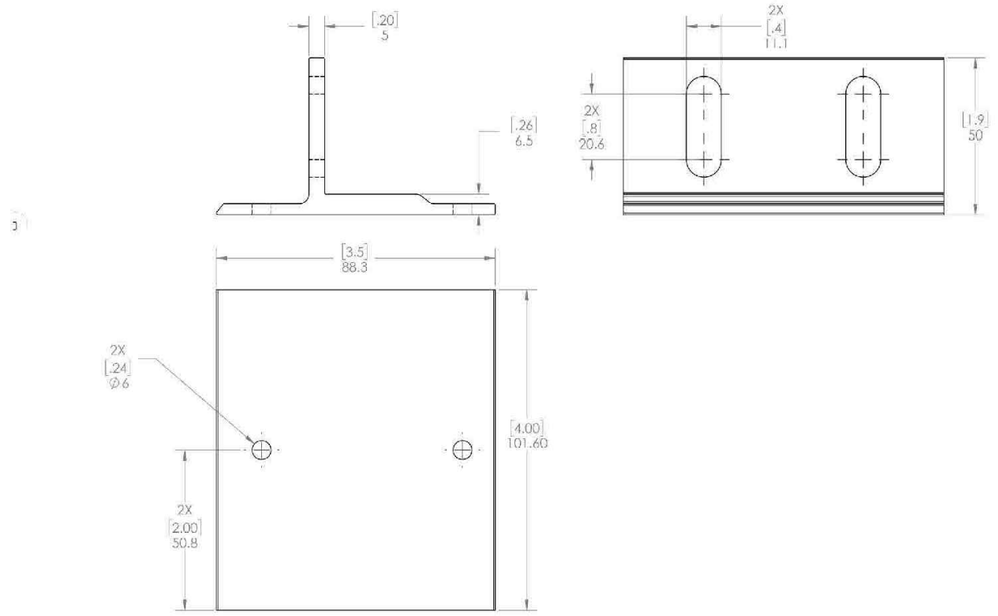
SHEET NAME
STRING
LAYOUT & BOM

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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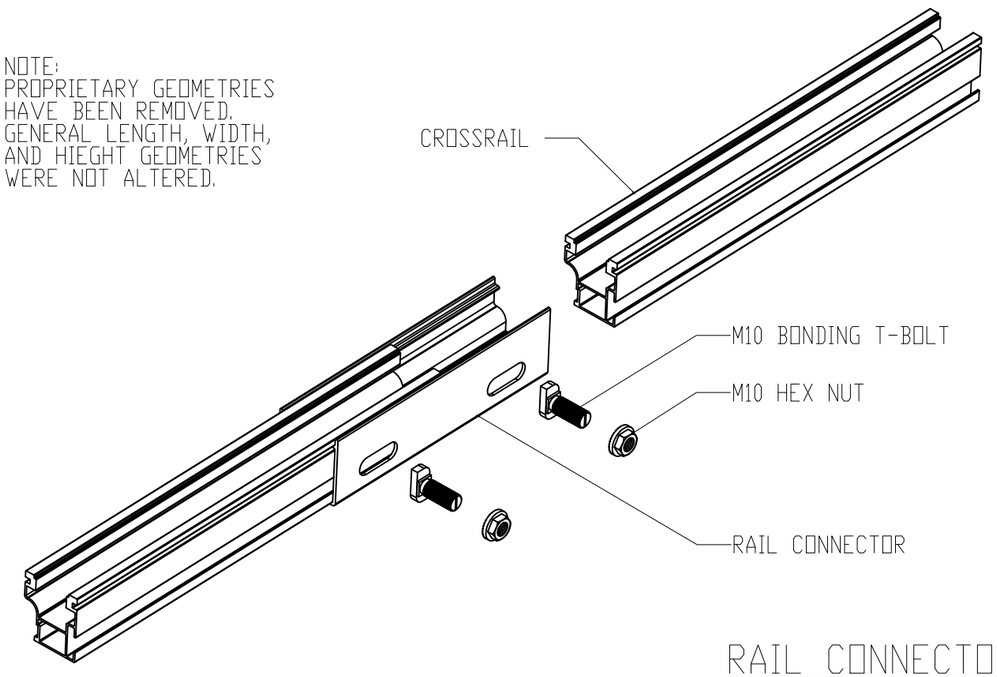
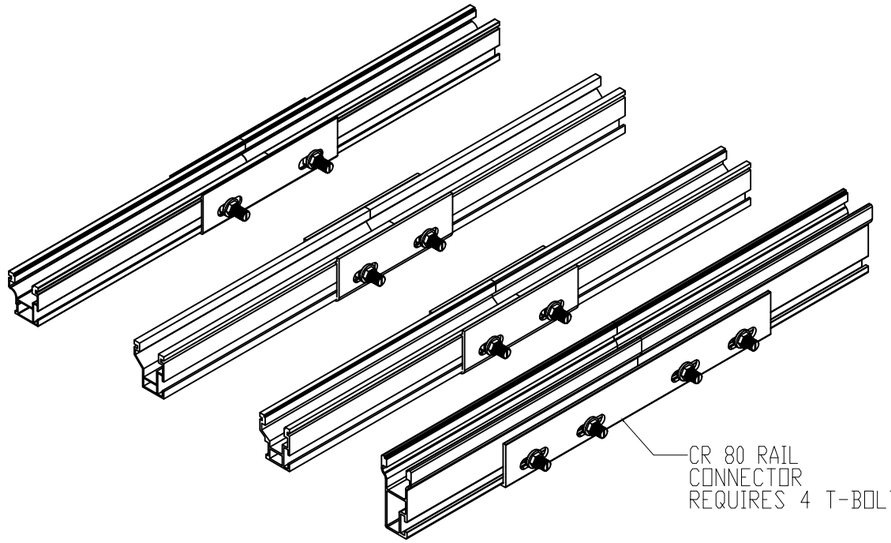
SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

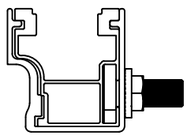
SHEET NUMBER
PV-3

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





RAIL CONNECTOR ASSEMBLIES



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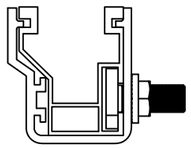

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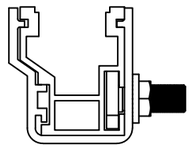

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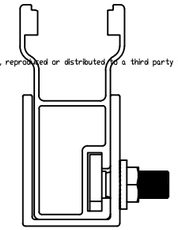

80

REVISION HISTORY

Revision	Date	Description
01		
02		
03		
04		
05		

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

TITAN SOLAR POWER

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210 N Sunway Dr,
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ELECTRICAL LIC#: U.33714

REVISIONS

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DATE: 08/17/2021

PROJECT NAME & ADDRESS

CHAS SCHROEDER RESIDENCE
70 CALABOR COURT
FUQUAY-VARINA, NC 27526
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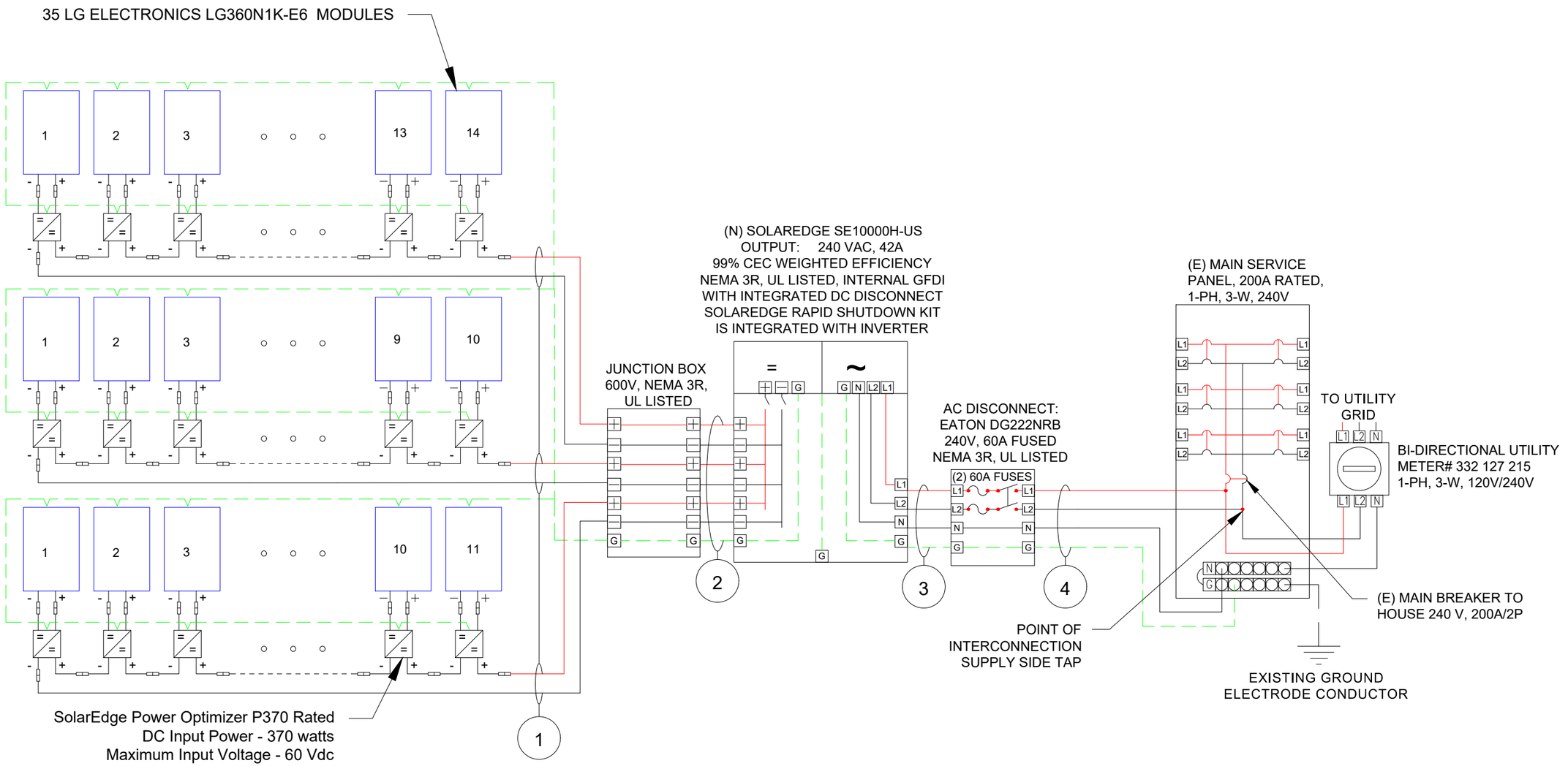
EMAIL ID: chasschroeder29@gmail.com

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	3	STRING	JUNCTION BOX	10 AWG	PV WIRE	COPPER	Open Air	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(56°C)	N/A	15.0A	18.8A	40A	28.4A	90°C	80FT	0.03%
2	1	JUNCTION BOX	INVERTER	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	3	6	26.72%	N/A	8 AWG	THWN-2, COPPER	0.96	(34°C)	0.8	15.0A	18.8A	40A	38.4A	90°C	65FT	0.22%
3	1	INVERTER	FUSED AC DISCONNECT	6 AWG	THWN-2	COPPER	MIN 1.0" Dia EMT	1	3	36.53%	60A	8 AWG	THWN-2, COPPER	0.96	(34°C)	1	42.0A	52.5A	75A	72.0A	90°C	5FT	0.13%
4	1	FUSED AC DISCONNECT	MSP	6 AWG	THWN-2	COPPER	MIN 1.0" Dia EMT	1	3	36.53%	N/A	8 AWG	THWN-2, COPPER	0.96	(34°C)	1	42.0A	52.5A	75A	72.0A	90°C	5FT	0.13%



SYSTEM RATING
12.60 KWDC
10.0 KWAC

SERVICE INFO	
UTILITY PROVIDER:	DUKE ENERGY
MAIN SERVICE VOLTAGE:	240V
MAIN PANEL BRAND:	EATON
MAIN SERVICE PANEL:	200A
MAIN CIRCUIT BREAKER RATING:	200A
MAIN SERVICE LOCATION:	NORTH-EAST
SERVICE FEED SOURCE:	UNDERGROUND

1 ELECTRICAL LINE DIAGRAM

PV-4 SCALE: NTS

TITAN SOLAR POWER

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

REVISIONS

DESCRIPTION	DATE	REV

Signature with Seal

DATE: 08/17/2021

PROJECT NAME & ADDRESS

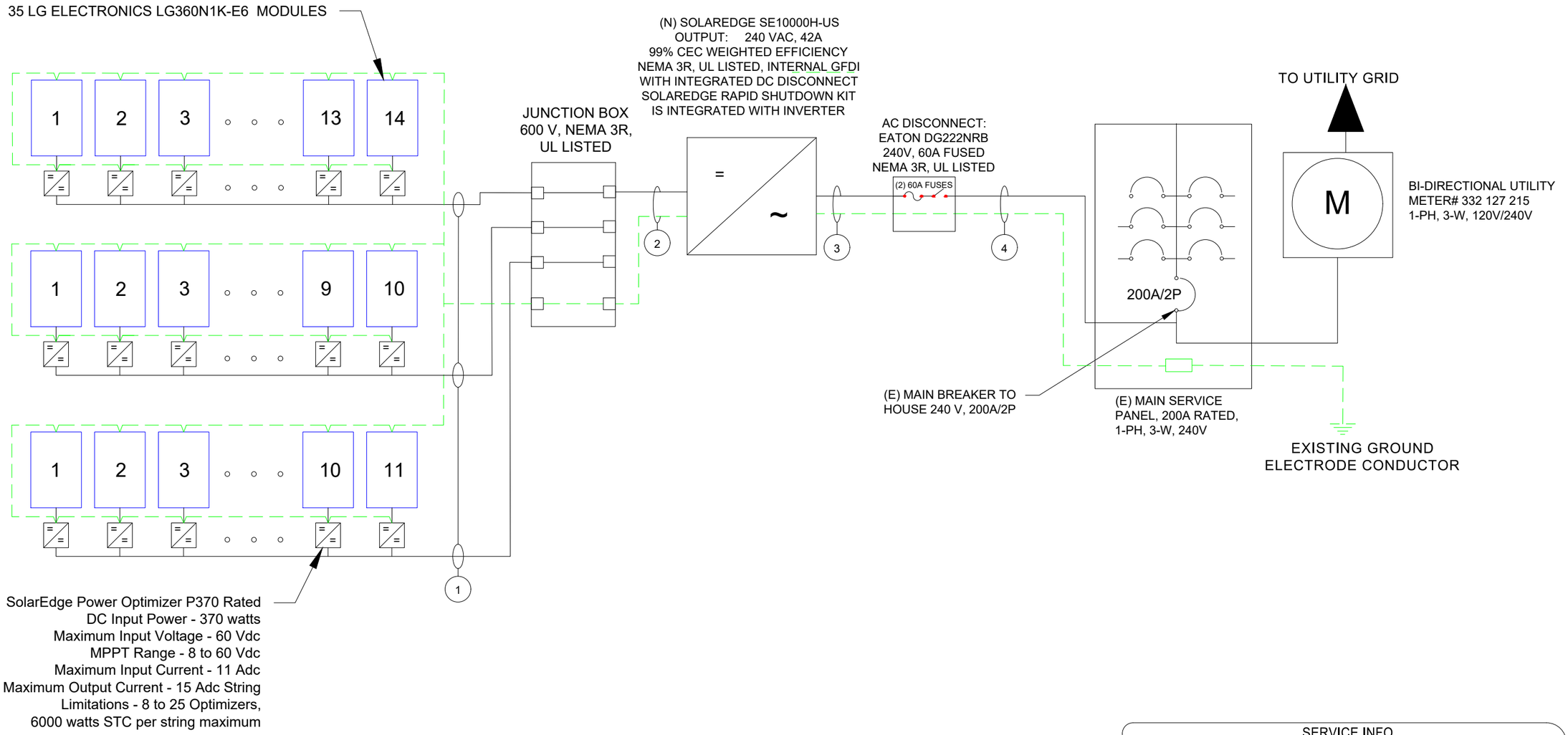
CHAS SCHROEDER RESIDENCE
70 CALABOR COURT
FUQUAY-VARINA, NC 27526
PH NO. (919) 698-3729
EMAIL ID: chasschroeder29@gmail.com

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	3	STRING	JUNCTION BOX	10 AWG	PV WIRE	COPPER	Open Air	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(56°C)	N/A	15.0A	18.8A	40A	28.4A	90°C	80FT	0.03%
2	1	JUNCTION BOX	INVERTER	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	3	6	26.72%	N/A	8 AWG	THWN-2, COPPER	0.96	(34°C)	0.8	15.0A	18.8A	40A	38.4A	90°C	65FT	0.22%
3	1	INVERTER	FUSED AC DISCONNECT	6 AWG	THWN-2	COPPER	MIN 1.0" Dia EMT	1	3	36.53%	60A	8 AWG	THWN-2, COPPER	0.96	(34°C)	1	42.0A	52.5A	75A	72.0A	90°C	5FT	0.13%
4	1	FUSED AC DISCONNECT	MSP	6 AWG	THWN-2	COPPER	MIN 1.0" Dia EMT	1	3	36.53%	N/A	8 AWG	THWN-2, COPPER	0.96	(34°C)	1	42.0A	52.5A	75A	72.0A	90°C	5FT	0.13%



1 ELECTRICAL LINE DIAGRAM
PV-4A SCALE: NTS

SYSTEM RATING
12.60 KWDC
10.0 KWAC

SERVICE INFO	
UTILITY PROVIDER:	DUKE ENERGY
MAIN SERVICE VOLTAGE:	240V
MAIN PANEL BRAND:	EATON
MAIN SERVICE PANEL:	200A
MAIN CIRCUIT BREAKER RATING:	200A
MAIN SERVICE LOCATION:	NORTH-EAST
SERVICE FEED SOURCE:	UNDERGROUND

TITAN SOLAR POWER

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: 08/17/2021

PROJECT NAME & ADDRESS

CHAS SCHROEDER
RESIDENCE
70 CALABOR COURT
FUQUAY-VARINA, NC 27526
PH NO. (919) 698-3729
EMAIL ID: chasschroeder29@gmail.com

SHEET NAME
ELECTRICAL LINE & CALCS.

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4A

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL	LG ELECTRONICS LG360N1K-E6
VMP	34.3 V
IMP	10.51 A
VOC	41.0 V
ISC	11.03 A
TEMP. COEFF. VOC	-0.26%/°C
PTC RATING	334.5 W
MODULE DIMENSION	69.60"(L) x 41.02"(W)
PANEL WATTAGE	360W

INVERTER SPECIFICATION	
MANUFACTURER / MODEL	SOLAREDGE SE10000H-US
NOMINAL AC POWER	10000 W
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	42 A

POWER OPTIMIZER (SOLAREDGE P370)	
MAXIMUM INPUT POWER	370 W
MAXIMUM INPUT VOLTAGE	60 VDC
MAXIMUM INPUT ISC	11 ADC
MAXIMUM OUTPUT CURRENT	15 ADC
WEIGHTED EFFICIENCY	98.80%

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-12°C
AMBIENT TEMP (HIGH TEMP 2%)	34°C
CONDUIT HEIGHT	0.5"
ROOF TOP TEMP	90°C
CONDUCTOR TEMPERATURE RATE	56°C
MODULE TEMPERATURE COEFFICIENT OF VOC	-0.24%/°C

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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EMAIL ID: chasschroeder29@gmail.com

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:
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	42A
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

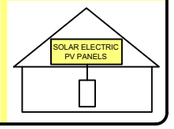
WARNING: DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

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

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)

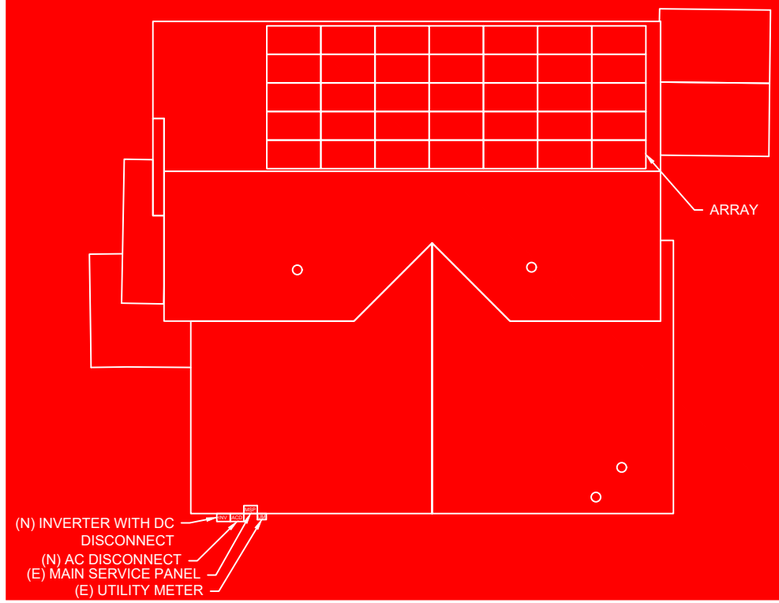
8

RATED MAXIMUM POWER-POINT CURRENT (Imp)	27	A
RATED MAXIMUM POWER-POINT VOLTAGE (Vmp)	400	V
MAXIMUM SYSTEM VOLTAGE (VOC)	480	V
MAXIMUM CIRCUIT CURRENT (Isc)	45	A

LABEL LOCATION:
INVERTER
(PER CODE: NEC 690.53)

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)

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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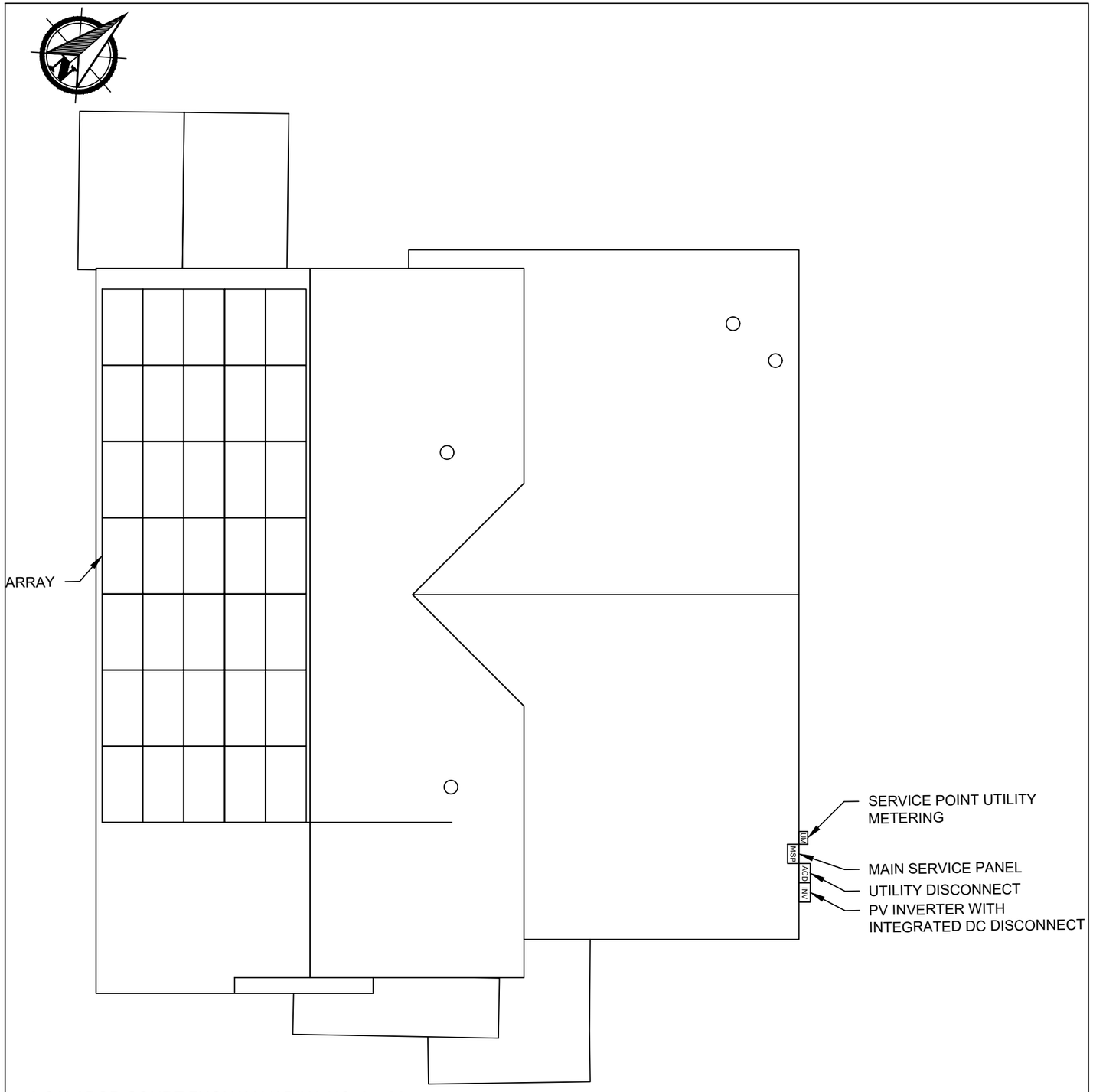
FUQUAY-VARINA, NC 27526
PH NO. (919) 698-3729
EMAIL ID: chasschroeder29@gmail.com

SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-5

JOB SAFETY PLAN



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

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EMAIL ID: chasschroeder29@gmail.com

SHEET NAME
JOB SAFETY PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

LG NeON®H Black

LG360N1K-E6

120

360W

The LG NeON® H is one of the most powerful and versatile modules on the market today. The cells are designed to appear all-black at a distance, and the performance warranty guarantees 87.2% of labeled power output at 25 years.

25 YEAR PRODUCT • PERFORMANCE • LABOR WARRANTY

c UL us

Features

Enhanced Performance Warranty

LG NeON® H Black has an enhanced performance warranty. After 25 years, LG NeON® H Black is guaranteed at least 87.2% of initial performance.

25-Year Limited Product Warranty

The NeON® H Black is covered by a 25-year limited product warranty.

Solid Performance on Hot Days

LG NeON® H Black performs well on hot days due to its low temperature coefficient.

Roof Aesthetics

LG NeON® H Black has been designed with aesthetics in mind using thinner wires that appear all black at a distance.

When you go solar, ask for the brand you can trust: LG Solar

About LG Electronics USA, Inc.

LG Electronics is a global leader in electronic products in the clean energy markets by offering solar PV panels and energy storage systems. The company first embarked on a solar energy source research program in 1985, supported by LG Group's vast experience in the semi-conductor, LCD, chemistry and materials industries. In 2010, LG Solar successfully released its first MonoX®-series to the market, which is now available in 32 countries. The NeON® (previous MonoX® NeON), NeON®2, NeON®2 BiFacial won the "Intersolar AWARD" in 2013, 2015 and 2016, which demonstrates LG's leadership and innovation in the solar industry.

LG Life's Good

LG NeON®H Black

LG360N1K-E6

General Data

Cell Properties (Material/Type)	Monocrystalline/N-type
Cell Maker	LG
Cell Configuration	120 Cells (6 x 20)
Number of Busbars	9 EA
Module Dimensions (L x W x H)	1,768mm x 1,042mm x 40 mm
Weight	18.5 kg
Glass (Material)	Tempered Glass with AR coating
Backsheet (Color)	Black
Frame (Material)	Anodized Aluminium
Junction Box (Protection Degree)	IP 68 with 3 Bypass Diodes
Cables (Length)	1,200mm x 2EA
Connector (Type/Maker)	MC 4/MC

Certifications and Warranty

Certifications	IEC 61215-1/-1-1/-2 : 2016, IEC 61730-1/2 : 2016, UL 61730-1 : 2017, UL 61730-2 : 2017
	ISO 9001, ISO 14001, ISO 50001
	OHSAS 18001
Salt Mist Corrosion Test	IEC 61701:2011 Severity 6
Ammonia Corrosion Test	IEC 62716:2013
Module Fire Performance	Type 2 (UL 61730)
Fire Rating	Class C (UL 790)
Solar Module Product Warranty	25 Year Limited
Solar Module Output Warranty	Linear Warranty*

*Improved: 1st year 98%, from 2-24th year: -0.45%/year down, 87.2% at year 25

Temperature Characteristics

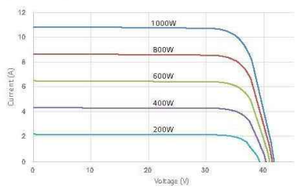
NMOT*	[°C]	42 ± 3
Pmax	[%/°C]	-0.33
Voc	[%/°C]	-0.26
Isc	[%/°C]	0.04

*NMOT (Nominal Module Operating Temperature): Irradiance 800 W/m², Ambient temperature 20°C, Wind speed 1 m/s, Spectrum AM 1.5

Electrical Properties (NMOT)

Model		LG360N1K-E6
Maximum Power (Pmax)	[W]	269
MPP Voltage (Vmpp)	[V]	31.9
MPP Current (Impp)	[A]	8.42
Open Circuit Voltage (Voc)	[V]	38.2
Short Circuit Current (Isc)	[A]	8.89

I-V Curves



Electrical Properties (STC*)

Model		LG360N1K-E6
Maximum Power (Pmax)	[W]	360
MPP Voltage (Vmpp)	[V]	34.3
MPP Current (Impp)	[A]	10.51
Open Circuit Voltage (Voc ± 5%)	[V]	41.0
Short Circuit Current (Isc ± 5%)	[A]	11.03
Module Efficiency	[%]	19.5
Power Tolerance	[%]	0 ~ +3

*STC (Standard Test Condition): Irradiance 1000 W/m², cell temperature 25°C, AM 1.5
Measurement Tolerence of Pmax: ± 3%

Operating Conditions

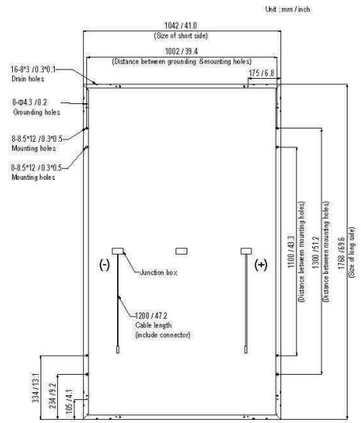
Operating Temperature	[°C]	-40 ~ +85
Maximum System Voltage	[V]	1,000 (UL/IEC)
Maximum Series Fuse Rating	[A]	20
Mechanical Test Load* (Front)	[Pa/psf]	5,400
Mechanical Test Load* (Rear)	[Pa/psf]	4,000

*Based on IEC 61215-2 : 2016 (Test Load = Design Load x Safety Factor (1.5))
Mechanical Test Loads 6,000Pa/5,400Pa based on IEC 61215:2005

Packaging Configuration

Number of Modules per Pallet	[EA]	25
Number of Modules per 40" Container	[EA]	650
Number of Modules per 53" Container	[EA]	850
Packaging Box Dimensions (L x W x H)	[mm]	1,790 x 1,120 x 1,213
Packaging Box Dimensions (L x W x H)	[in]	70.5 x 44.1 x 47.8
Packaging Box Gross Weight	[kg]	510
Packaging Box Gross Weight	[lb]	1,124

Dimensions (mm/inch)



LG Life's Good

LG Electronics USA, Inc.
Solar Business Division
2000 Millbrook Drive
Lincolnshire, IL 60069

www.lg-solar.com

Product specifications are subject to change without notice.
LG360N1K-E6.pdf
050721

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SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

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 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)

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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	
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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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[3]							
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			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] 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

RoHS

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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

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/ 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 SOLAREDGE INVERTER)							
Maximum Output Current	15						Adc
Maximum Output Voltage	60				85		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 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][6]		Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400	8		10	18	
	P405 / P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50[7]	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000[8]	12750[9]	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

CE RoHS

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: 08/17/2021

PROJECT NAME & ADDRESS

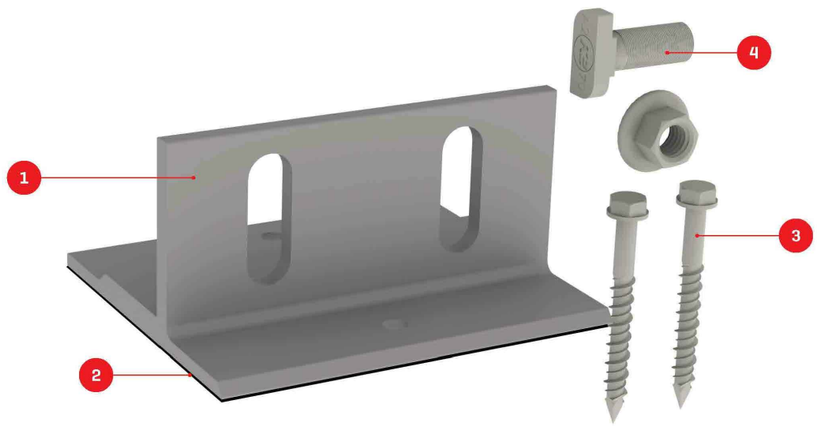
CHAS SCHROEDER RESIDENCE
70 CALABOR COURT
FUQUAY-VARINA, NC 27526
PH NO. (919) 698-3729
EMAIL ID: chasschroeder29@gmail.com

SHEET NAME
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

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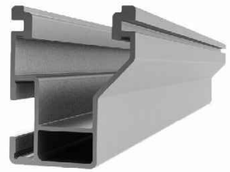
SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-10

We support PV systems
Formerly Everest Solar Systems

CROSSRAIL 48-X



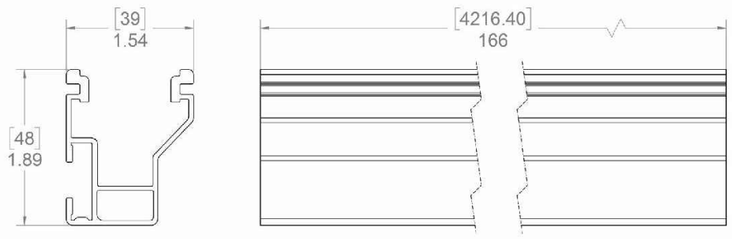
Mechanical Properties

	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
ANSI B
11" X 17"

SHEET NUMBER
PV-11