

SCOPE OF WORK:

TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 55 SEDGEFIELD LN SPRING LAKE, NC 28390. 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

40 SILFAB SIL-370NX MODULES
 01 SOLAREEDGE SE7600H-US INVERTER
 01 SOLAREEDGE SE5000H-US INVERTER
 40 SOLAREEDGE POWER OPTIMIZER P370

REV/DATE: 02/02/2022

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 CERTIFY 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 IRC 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 NFPA-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): HARNETT COUNTY

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
- 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

14.80 KWDC

12.6 KWAC

PHOTOVOLTAIC SYSTEM
 FIRE CLASSIFICATION
 LISTING IN ACCORDANCE
 WITH UL1703 STANDARD.

SHEET INDEX

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PV-3B	ATTACHMENT DETAIL
PV-3C	ATTACHMENT DETAIL
PV-4	ELECTRICAL LINE DIAGRAM & CALCS.
PV-4A	ELECTRICAL LINE DIAGRAM & CALCS.
PV-4B	SPECIFICATIONS & NOTES
PV-5	SIGNAGE
PV-6	PLACARD
PV-7	JOB SAFETY PLAN
PV-8+	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	02/02/2022	A

Signature with Seal

PROJECT NAME & ADDRESS

ALI BOUMELHEM
 RESIDENCE
 55 SEDGEFIELD LN
 SPRING LAKE, NC 28390
 PH NO. (919) 888-0675
 EMAIL ID: ali.boumelhem89@gmail.com

DATE: 02/02/2022

SHEET NAME

COVER PAGE

SHEET SIZE

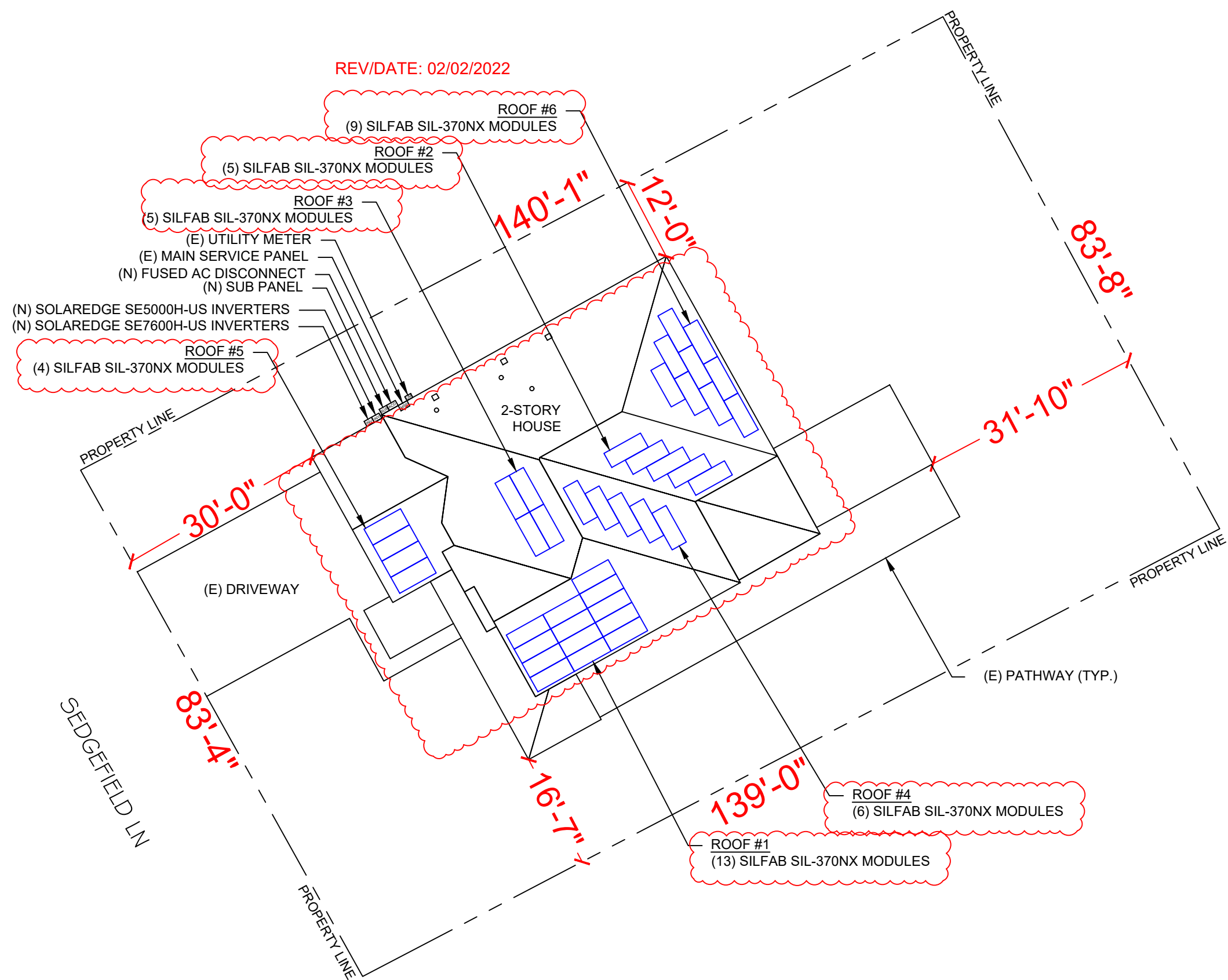
ANSI B
11" X 17"

SHEET NUMBER

PV-0

SITE NOTES

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



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SITE PLAN

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-1



1

PLOT PLAN WITH ROOF PLAN

PV-1

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

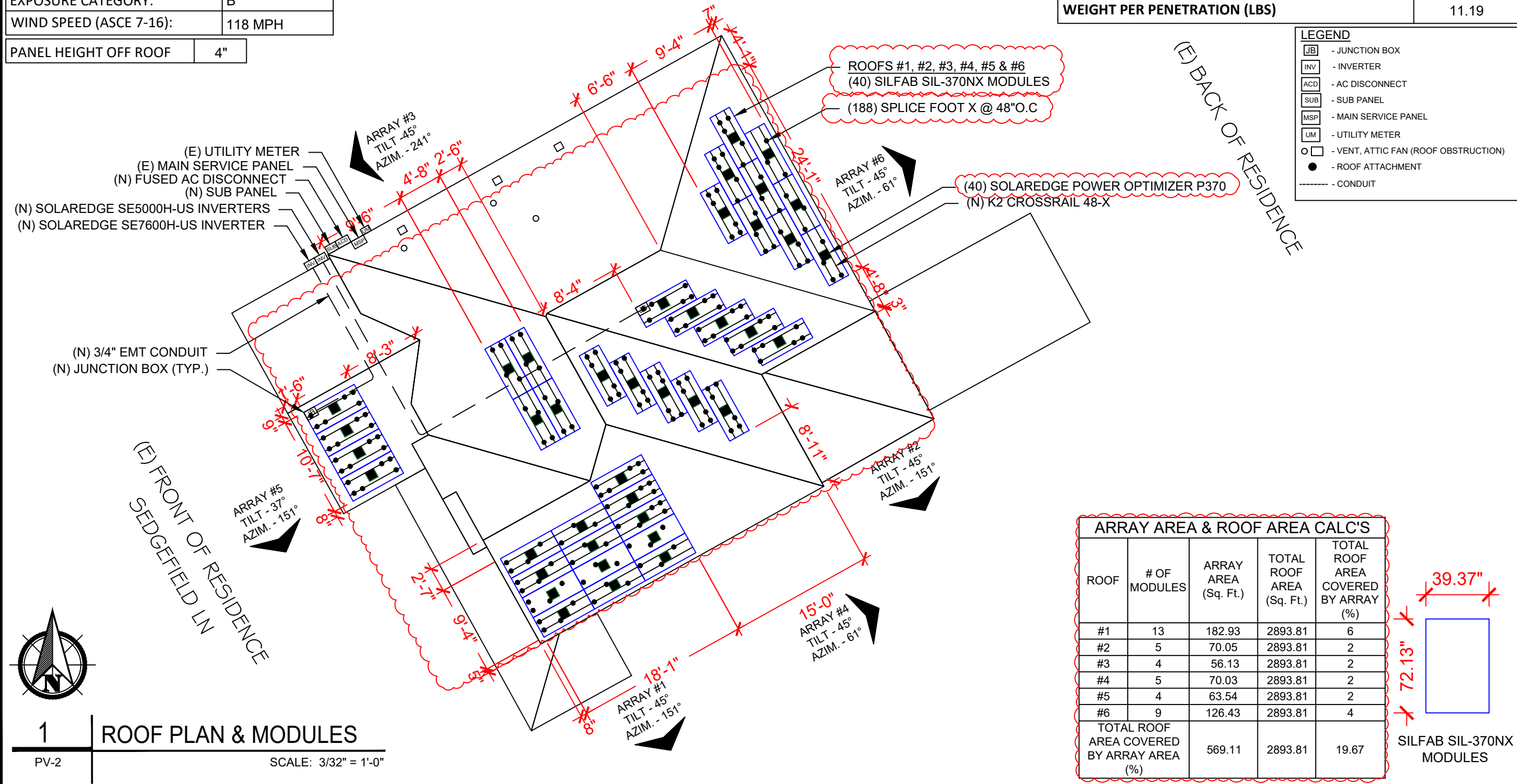
MODULE TYPE, DIMENSIONS & WEIGHT	
NUMBER OF MODULES:	40 MODULES
MODULE TYPE:	SILFAB SIL-370NX
MODULE WEIGHT:	44.0 LBS
MODULE DIMENSIONS:	72.13" X 39.37" = 19.72 SF
UNIT WEIGHT OF AREA:	2.23 PSF

ROOF DESCRIPTION					
ROOF	ROOF TILT	AZIMUTH	RAFTER SIZE	RAFTER SPACING	ROOF MATERIAL
#1	45°	151°	2"X6"	12" O.C.	COMP. SHINGLE
#2	45°	151°	2"X6"	12" O.C.	COMP. SHINGLE
#3	45°	241°	2"X6"	12" O.C.	COMP. SHINGLE
#4	45°	61°	2"X6"	12" O.C.	COMP. SHINGLE
#5	37°	151°	2"X6"	12" O.C.	COMP. SHINGLE
#6	45°	61°	2"X6"	12" O.C.	COMP. SHINGLE

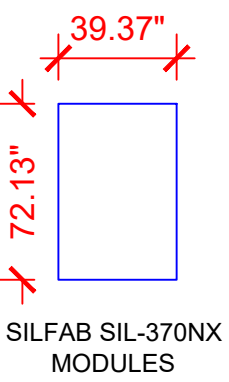
DEAD LOAD CALCULATION			
BOM	QUANTITY	LBS/UNIT	TOTAL WEIGHT(LBS)
MODULES	40	44.00	1760.00
MID CLAMP	30	0.30	9.00
END CLAMP	100	0.31	31.00
RAIL LENGTH	40	0.56	22.40
SPLICE BAR	12	0.65	7.80
K2 SPLICE FOOT X	188	1.45	272.60
TOTAL WEIGHT OF THE SYSTEM (LBS)			2102.80
TOTAL ARREY AREA ON THE ROOF (SQ. FT.)			569.11
WEIGHT PER SQ. FT.(LBS)			3.69
WEIGHT PER PENETRATION (LBS)			11.19

DESIGN SPECIFICATION	
RISK CATEGORY:	II
CONSTRUCTION:	SFD
ZONING:	RESIDENTIAL
SNOW LOAD (ASCE 7-16):	10 PSF
EXPOSURE CATEGORY:	B
WIND SPEED (ASCE 7-16):	118 MPH
PANEL HEIGHT OFF ROOF	4"

REV/DATE: 02/02/2022



ARRAY AREA & ROOF AREA CALC'S				
ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	TOTAL ROOF AREA (Sq. Ft.)	TOTAL ROOF AREA COVERED BY ARRAY (%)
#1	13	182.93	2893.81	6
#2	5	70.05	2893.81	2
#3	4	56.13	2893.81	2
#4	5	70.03	2893.81	2
#5	4	63.54	2893.81	2
#6	9	126.43	2893.81	4
TOTAL ROOF AREA COVERED BY ARRAY AREA (%)		569.11	2893.81	19.67



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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	40	SILFAB SIL-370NX
OPTIMIZER	40	SOLAREEDGE POWER OPTIMIZER P370
INVERTER	1	SOLAREEDGE SE7600H-US
INVERTER	1	SOLAREEDGE SE5000H-US
AC DISCONNECT	1	EATON FUSED AC DISCONNECT, 2 POLE, W/X FUSES, FUSED VISIBLE OPEN 100A/240V 2P NEMA 3R 10KAIC
JUNCTION BOX	2	JB-1.XL, JUNCTION BOX, NEMA 3R, UL LISTED
SUB PANEL	1	100A SUB PANEL, MLO, NEMA 3R, 240V
ATTACHMENT	188	SPLICE FOOT X
ATTACHMENT	188	K2 SOLAR SEAL BUTYL PAD
ATTACHMENT	376	M5 X 60 LAG SCREWS
ATTACHMENT	188	CAP SCREW, HEX HEAD, 5/16"-18" X 1"
RAILS	40	K2 CROSSRAIL 48-X RAIL (166")
BONDED SPLICE	12	SPLICE KIT
CLAMPS	130	MODULES CLAMPS (MID CLAMPS & END CLAMPS)
GROUNDING LUG	25	GROUNDING LUG



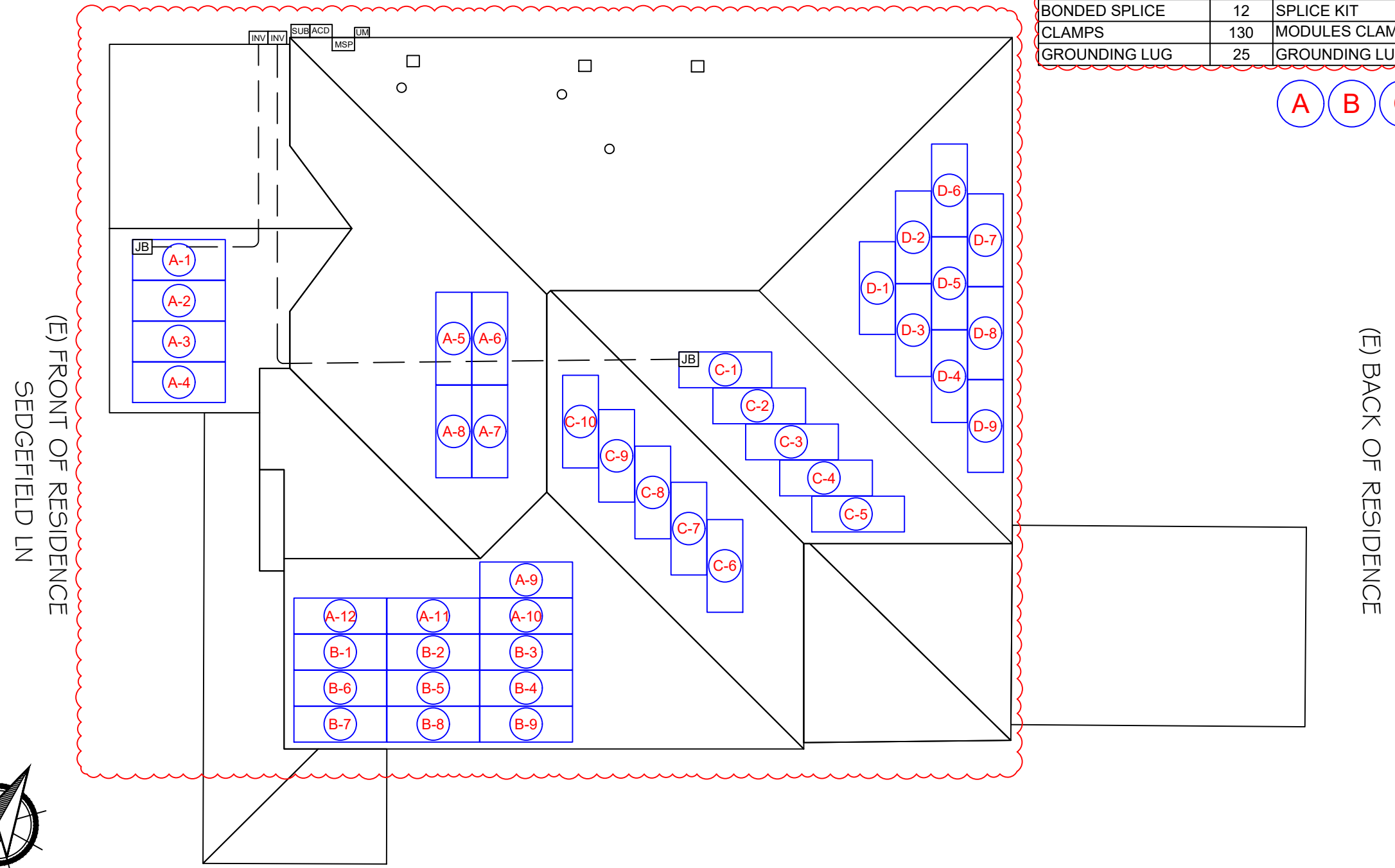
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A B C D - MODULE STRINGING



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SHEET NAME
STRING LAYOUT & BOM

SHEET SIZE

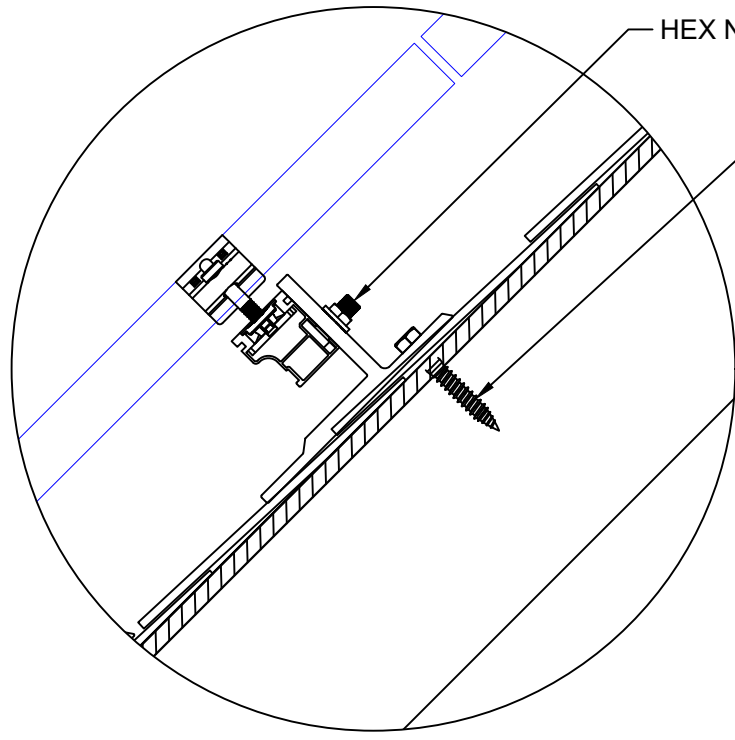
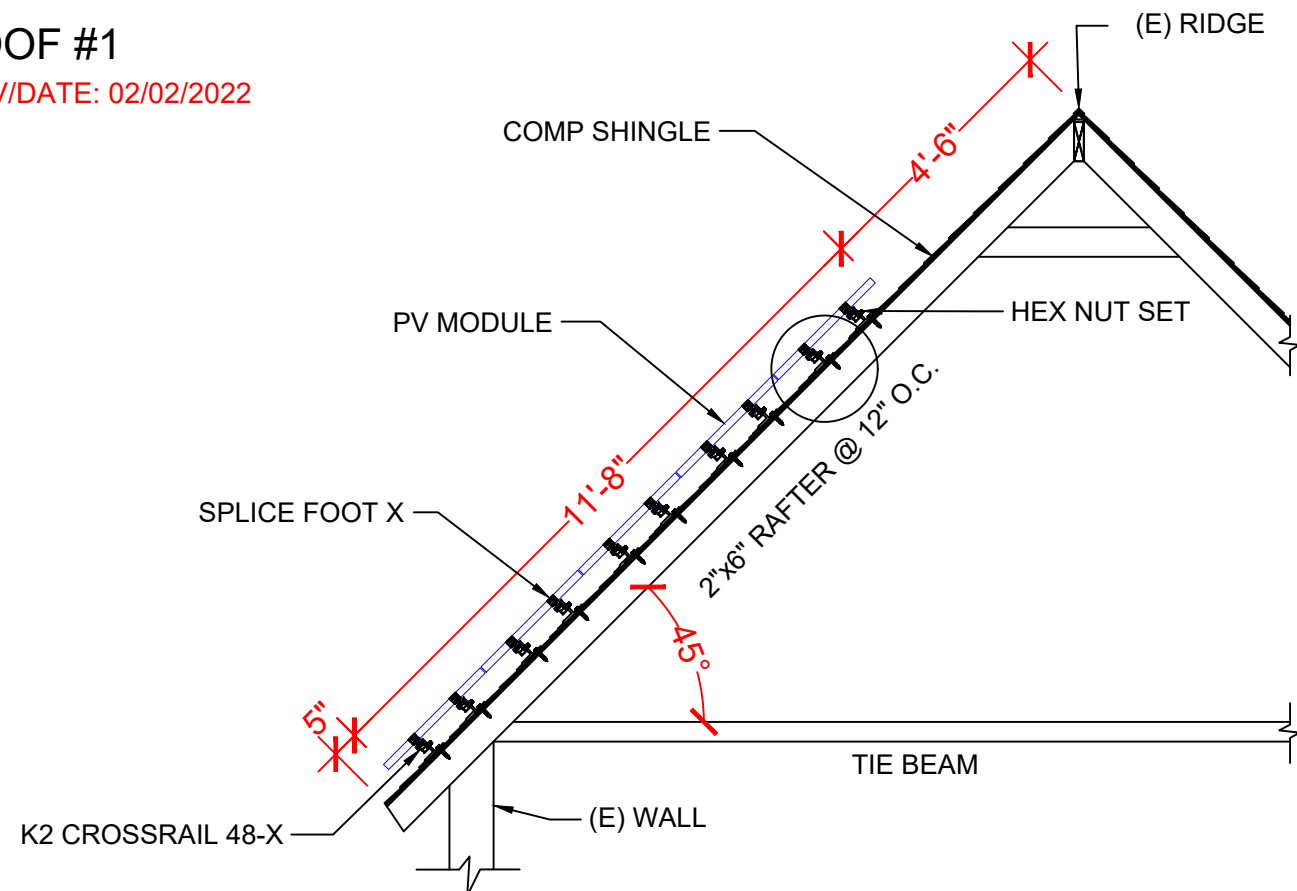
ANSI B
11" X 17"

SHEET NUMBER

PV-2A

ROOF #1

REV/DATE: 02/02/2022

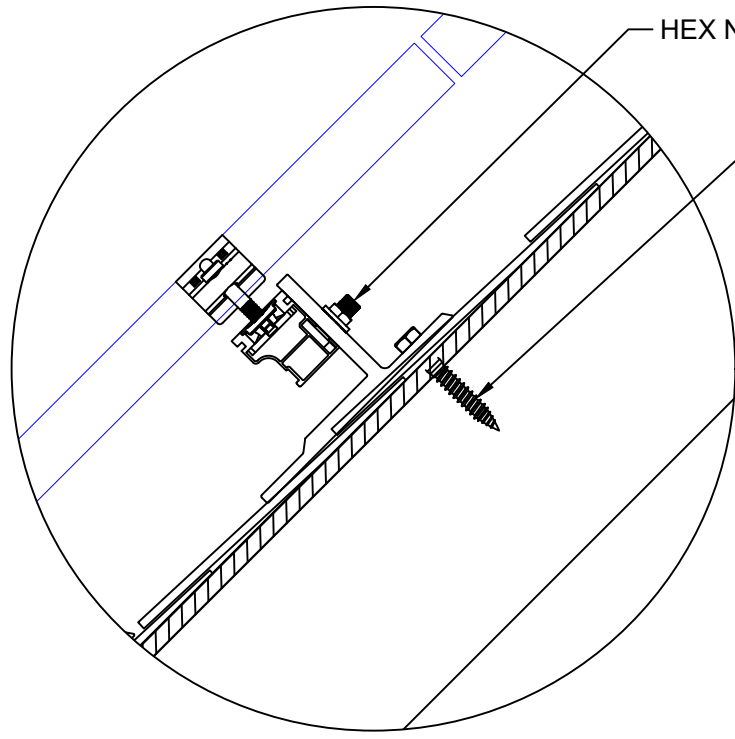
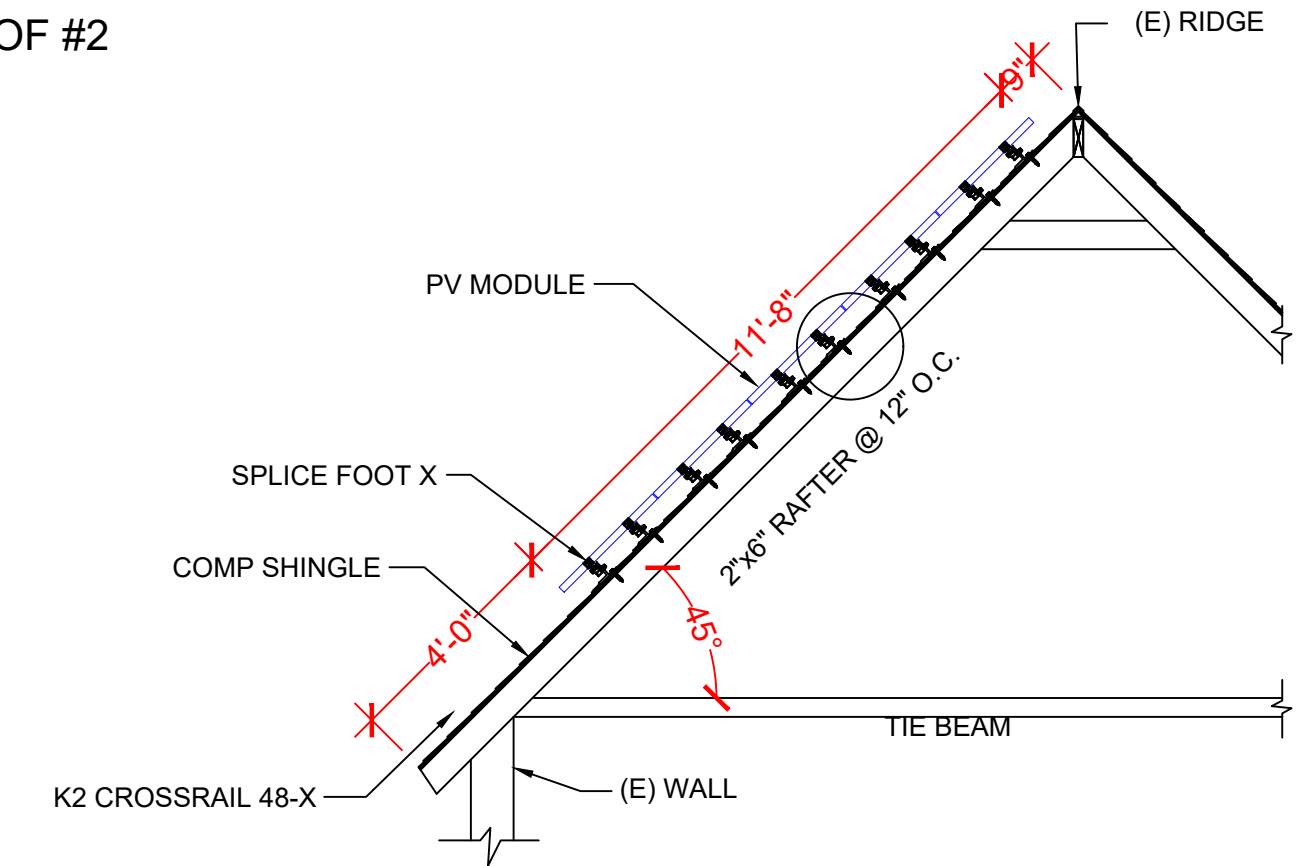


LAG SCREW SHALL BE SECURED TO STRUCTURAL SUPPORT MEMBER M5x60 LAG SCREWS. ATTACHMENTS ARE MADE WITH MINIMUM 5/16" LAG SCREWS WITH MINIMUM 2.5" PENETRATION DEPTH

1 ATTACHMENT DETAIL

PV-3 SCALE: NTS

ROOF #2



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2 ATTACHMENT DETAIL

PV-3 SCALE: NTS



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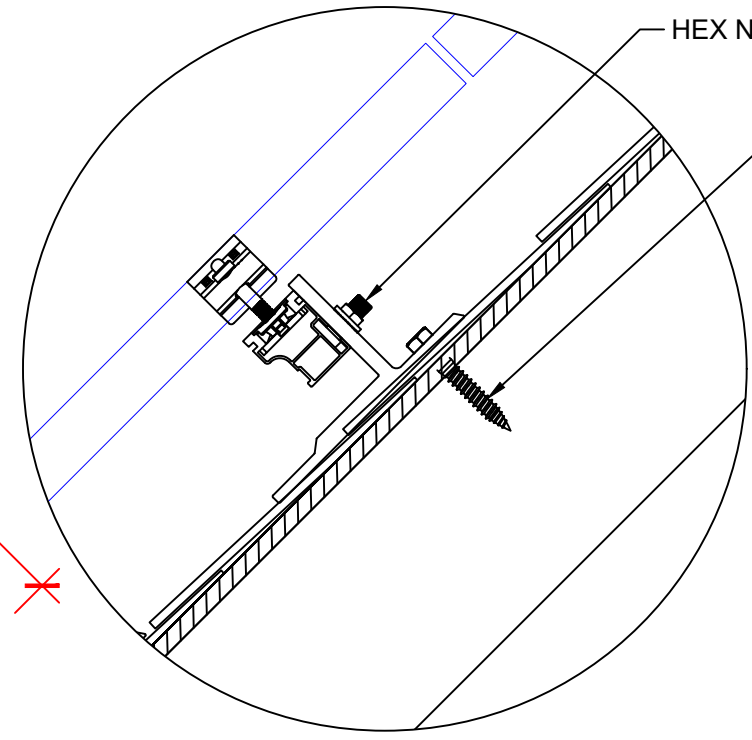
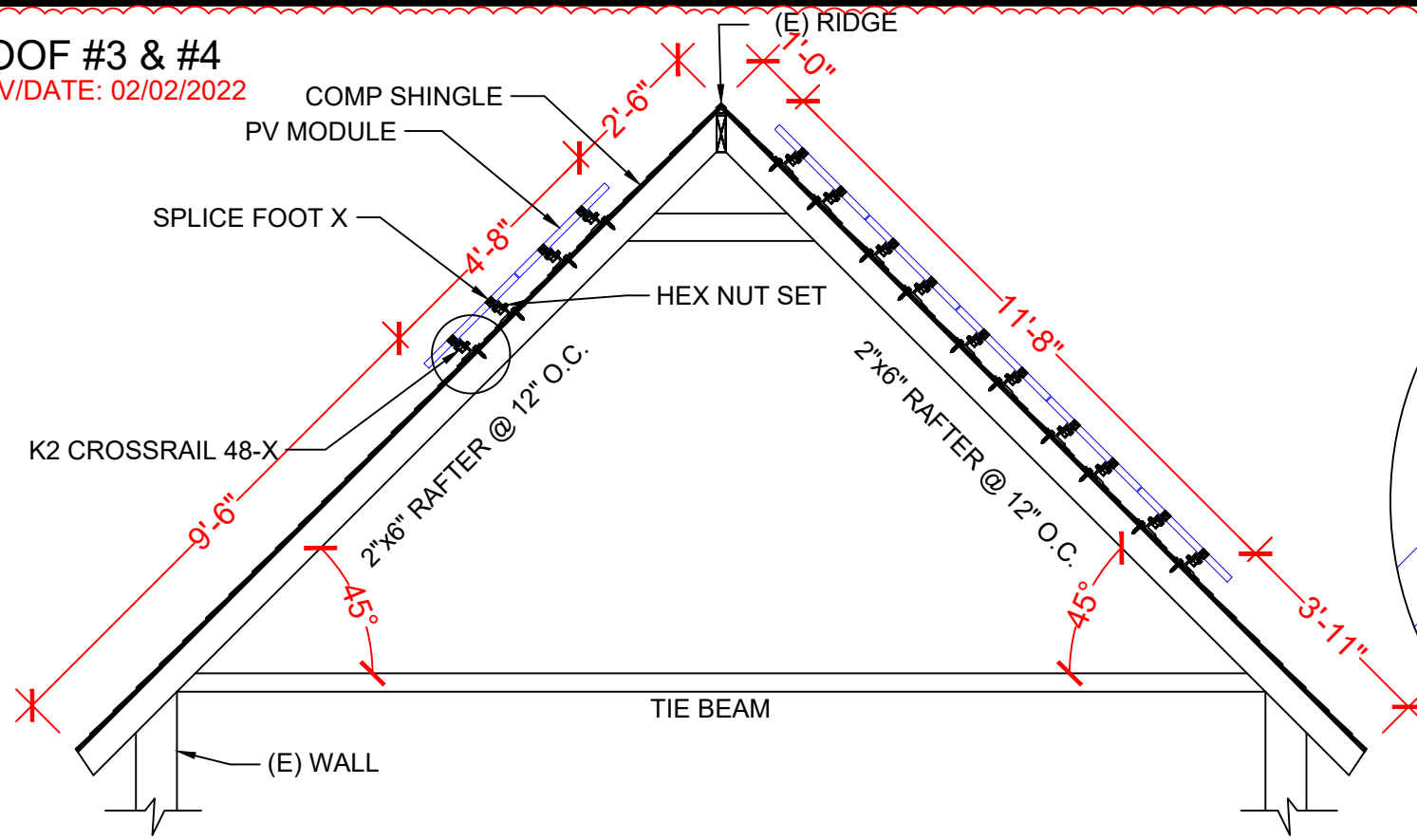
SHEET NAME
ATTACHMENT DETAILS

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

SHEET NUMBER
PV-3

ROOF #3 & #4

REV/DATE: 02/02/2022

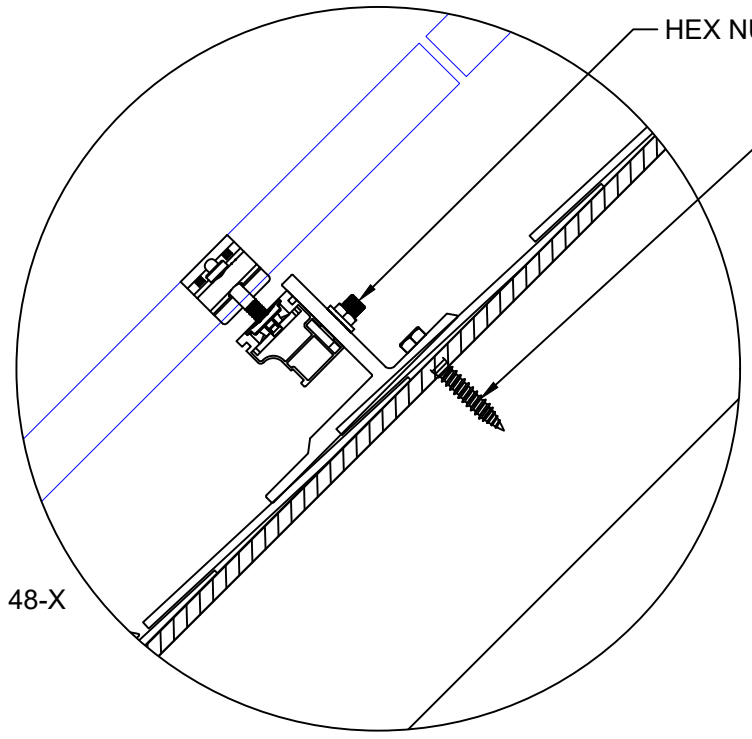
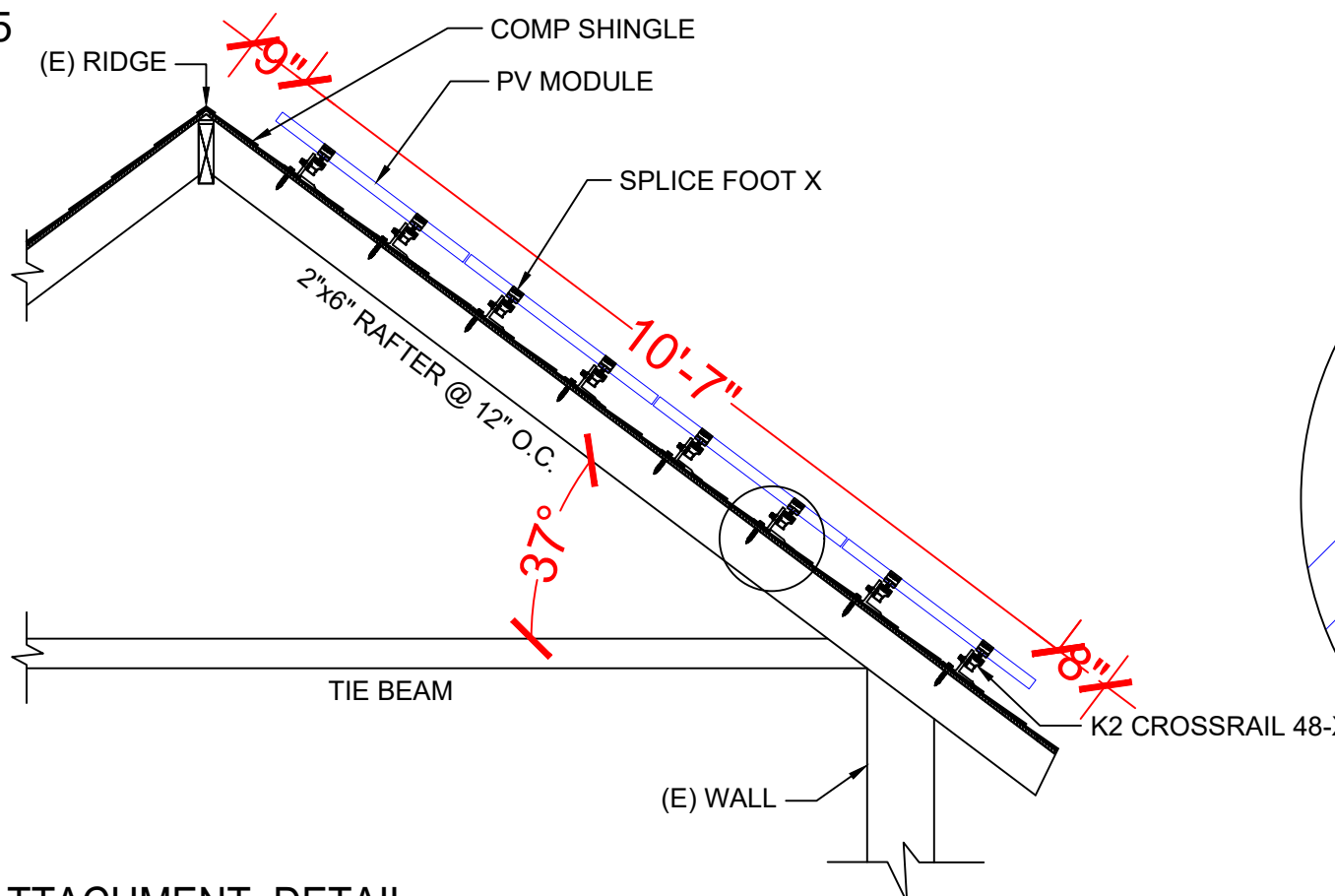


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1 ATTACHMENT DETAIL

PV-3A SCALE: NTS

ROOF #5



LAG SCREW SHALL BE SECURED TO STRUCTURAL SUPPORT MEMBER M5x60 LAG SCREWS. ATTACHMENTS ARE MADE WITH MINIMUM 5/16" LAG SCREWS WITH MINIMUM 2.5" PENETRATION DEPTH

2 ATTACHMENT DETAIL

PV-3A SCALE: NTS



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SHEET NAME
**ATTACHMENT
DETAILS**

SHEET SIZE

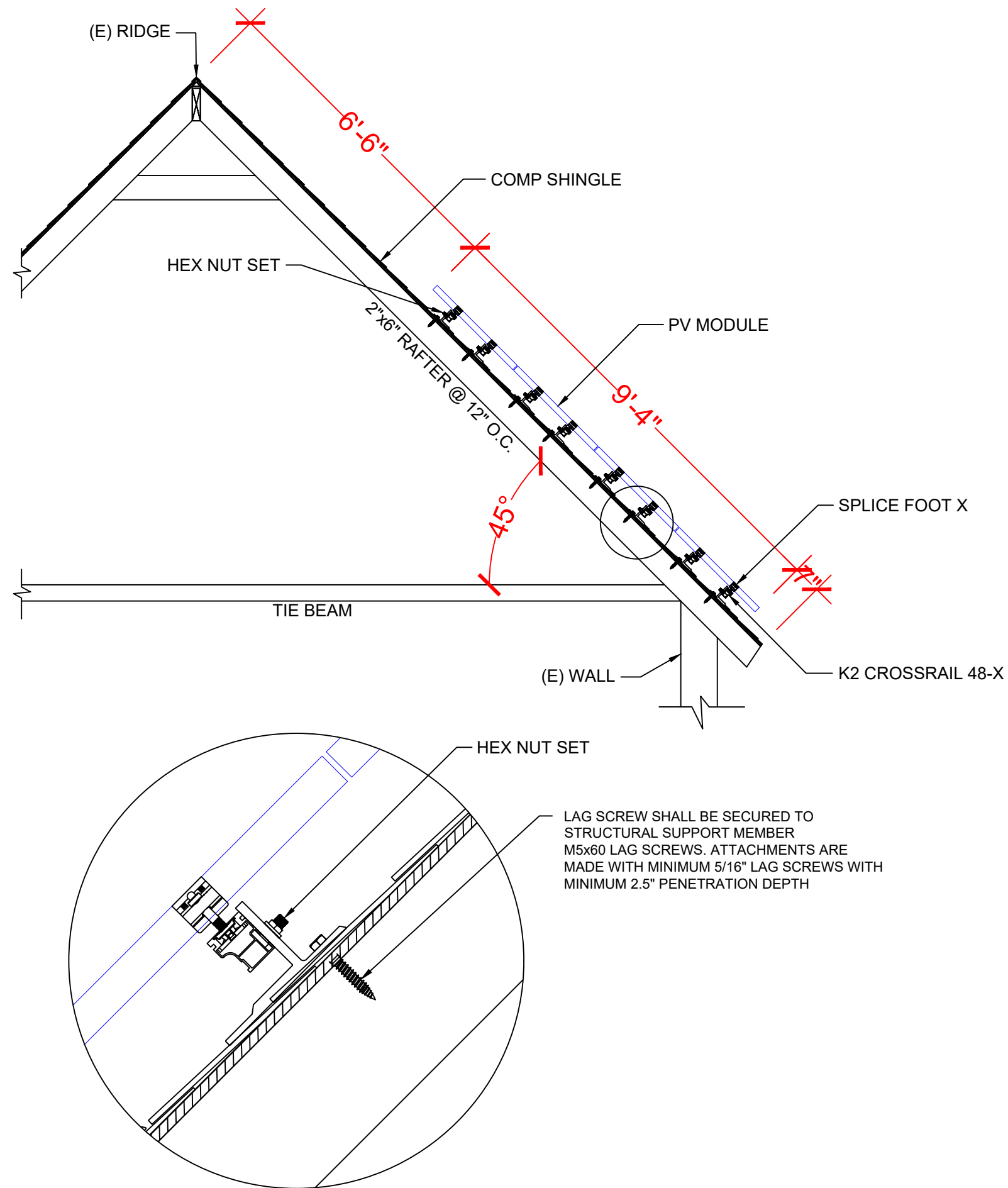
ANSI B
11" X 17"

SHEET NUMBER

PV-3A

ROOF #6

REV/DATE: 02/02/2022



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DATE: 02/02/2022

SHEET NAME
ATTACHMENT
DETAILS

SHEET SIZE

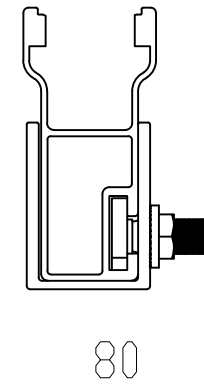
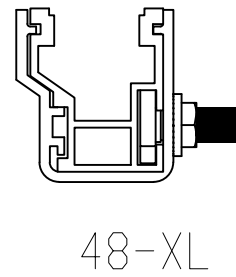
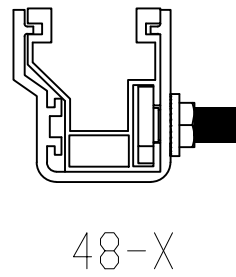
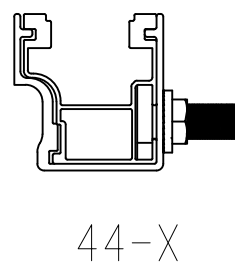
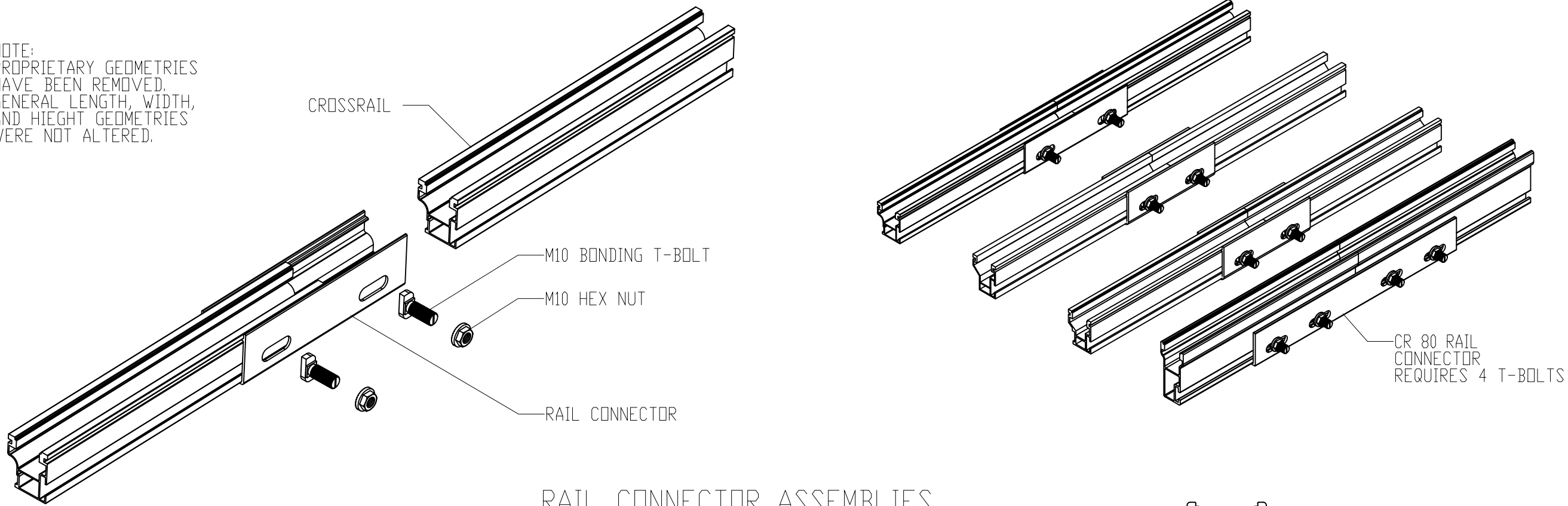
ANSI B
11" X 17"

SHEET NUMBER

PV-3B

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

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



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SHEET NAME
**ATTACHMENT
 DETAILS**

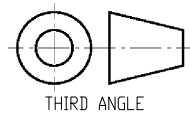
SHEET SIZE
**ANSI B
 11" X 17"**

SHEET NUMBER
PV-3C

REVISION HISTORY

Revision	Date	Description
01		
02		
03		
04		
05		

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



Title
**CROSSRAIL RAIL
 CONNECTOR ASSEMBLIES**

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

Size: B	
Scale: 1:25	Revision: 00
	Sheet 2 of 2

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ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CONDUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	LENGTH	VOLTAGE DROP
1	2	STRING	JUNCTION BOX-1	10 AWG	PV WIRE	COPPER	Open Air	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(58°C)	N/A	15.0A	18.8A	40A	28.4A	90°C	75FT	0.03%
2	2	STRING	JUNCTION BOX-2	10 AWG	PV WIRE	COPPER	Open Air	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(58°C)	N/A	15.0A	18.8A	40A	28.4A	90°C	55FT	0.02%
3	1	JUNCTION BOX-1	INVERTER-1	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	2	4	19.09%	N/A	8 AWG	THWN-2, COPPER	0.91	(36°C)	0.8	15.0A	18.8A	40A	29.1A	90°C	40FT	0.13%
4	1	JUNCTION BOX-2	INVERTER-2	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	2	4	19.09%	N/A	8 AWG	THWN-2, COPPER	0.91	(36°C)	0.8	15.0A	18.8A	40A	29.1A	90°C	70FT	0.23%
5	1	INVERTER-1	SUB PANEL	8 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	26.73%	40A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	32.0A	40.0A	55A	50.1A	90°C	5FT	0.16%
6	1	INVERTER-2	SUB PANEL	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	15.27%	30A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	21.0A	26.3A	40A	29.1A	90°C	5FT	0.16%
7	1	SUB PANEL	FUSED AC DISCONNECT	4 AWG	THWN-2	COPPER	MIN 1" Dia EMT	1	3	36.76%	80A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	53.0A	66.3A	95A	86.5A	90°C	5FT	0.12%
8	1	FUSED AC DISCONNECT	MSP	4 AWG	THWN-2	COPPER	MIN 1" Dia EMT	1	3	36.76%	N/A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	53.0A	66.3A	95A	86.5A	90°C	5FT	0.12%



TITAN SOLAR POWER

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

REVISIONS

DESCRIPTION	DATE	REV
REVISION	02/02/2022	A

Signature with Seal

PROJECT NAME & ADDRESS

ALI BOUMELHEM
RESIDENCE
55 SEDGEFIELD LN
SPRING LAKE, NC 28390
PH NO. (919) 888-0675
EMAIL ID: ali.boumelhem89@gmail.com

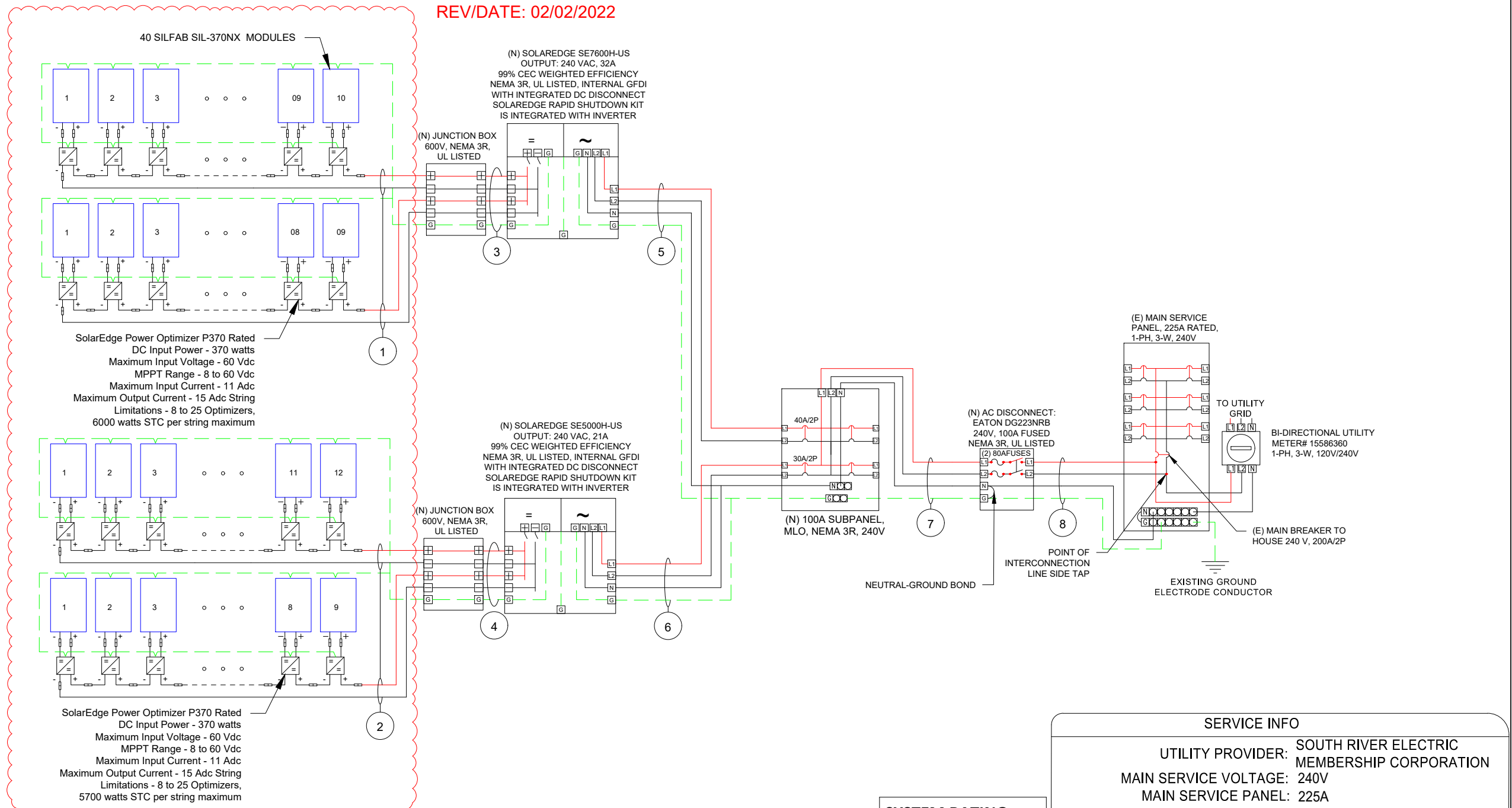
DATE: 02/02/2022

SHEET NAME
ELECTRICAL LINE & CALCS.

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

REV/DATE: 02/02/2022



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,
6000 watts STC per string maximum

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

SERVICE INFO	
UTILITY PROVIDER:	SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
MAIN SERVICE VOLTAGE:	240V
MAIN SERVICE PANEL:	225A
MAIN CIRCUIT BREAKER RATING:	200A
MAIN PANEL BRAND:	CUTLER-HAMMER
MAIN SERVICE LOCATION:	NORTH-WEST
SERVICE FEED SOURCE:	UNDERGROUND

SYSTEM RATING
16.28 KWDC
12.6 KWAC

ID	TYPICAL	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	CONDUCTOR			CONDUIT	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CONDUIT	CONDUIT FILL PERCENT	OCPD	EGC		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	LENGTH	VOLTAGE DROP
1	2	STRING	JUNCTION BOX-1	10 AWG	PV WIRE	COPPER	Open Air	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(58°C)	N/A	15.0A	18.8A	40A	28.4A	90°C	75FT	0.03%
2	2	STRING	JUNCTION BOX-2	10 AWG	PV WIRE	COPPER	Open Air	1	2	N/A	N/A	6 AWG	BARE COPPER	0.71	(58°C)	N/A	15.0A	18.8A	40A	28.4A	90°C	55FT	0.02%
3	1	JUNCTION BOX-1	INVERTER-1	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	2	4	19.09%	N/A	8 AWG	THWN-2, COPPER	0.91	(36°C)	0.8	15.0A	18.8A	40A	29.1A	90°C	40FT	0.13%
4	1	JUNCTION BOX-2	INVERTER-2	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	2	4	19.09%	N/A	8 AWG	THWN-2, COPPER	0.91	(36°C)	0.8	15.0A	18.8A	40A	29.1A	90°C	70FT	0.23%
5	1	INVERTER-1	SUB PANEL	8 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	26.73%	40A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	32.0A	40.0A	55A	50.1A	90°C	5FT	0.16%
6	1	INVERTER-2	SUB PANEL	10 AWG	THWN-2	COPPER	MIN 0.75" Dia EMT	1	3	15.27%	30A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	21.0A	26.3A	40A	29.1A	90°C	5FT	0.16%
7	1	SUB PANEL	FUSED AC DISCONNECT	4 AWG	THWN-2	COPPER	MIN 1" Dia EMT	1	3	36.76%	80A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	53.0A	66.3A	95A	86.5A	90°C	5FT	0.12%
8	1	FUSED AC DISCONNECT	MSP	4 AWG	THWN-2	COPPER	MIN 1" Dia EMT	1	3	36.76%	N/A	8 AWG	THWN-2, COPPER	0.91	(36°C)	1	53.0A	66.3A	95A	86.5A	90°C	5FT	0.12%



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

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PROJECT NAME & ADDRESS

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 PH NO. (919) 888-0675
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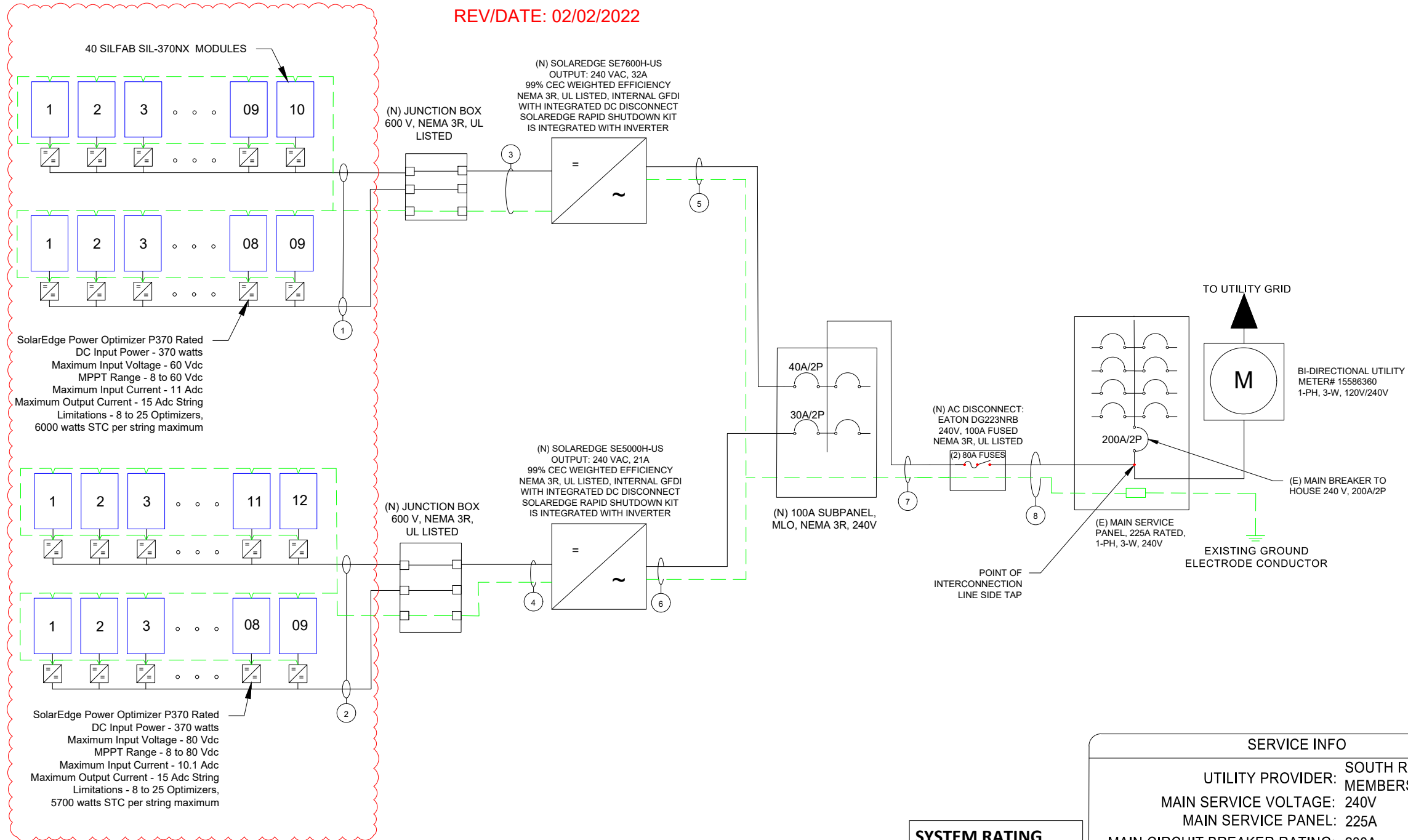
DATE: 02/02/2022

SHEET NAME
ELECTRICAL LINE & CALCS.

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4A

REV/DATE: 02/02/2022



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,
 6000 watts STC per string maximum

SolarEdge Power Optimizer P370 Rated
 DC Input Power - 370 watts
 Maximum Input Voltage - 80 Vdc
 MPPT Range - 8 to 80 Vdc
 Maximum Input Current - 10.1 Adc
 Maximum Output Current - 15 Adc String
 Limitations - 8 to 25 Optimizers,
 5700 watts STC per string maximum

SYSTEM RATING
16.28 KWDC
12.6 KWAC

SERVICE INFO	
UTILITY PROVIDER:	SOUTH RIVER ELECTRIC MEMBERSHIP CORPORATION
MAIN SERVICE VOLTAGE:	240V
MAIN SERVICE PANEL:	225A
MAIN CIRCUIT BREAKER RATING:	200A
MAIN PANEL BRAND:	CUTLER-HAMMER
MAIN SERVICE LOCATION:	NORTH-WEST
SERVICE FEED SOURCE:	UNDERGROUND

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL	SILFAB SIL-370NX
VMP	37.2 V
IMP	10.0 A
VOC	44.8 V
ISC	10.6 A
TEMP. COEFF. VOC	-0.28%/°C
PTC RATING	340.3 W
MODULE DIMENSION	72.13"(L) x 39.37"(W)
PANEL WATTAGE	370W

INVERTER SPECIFICATION #1	
MANUFACTURER / MODEL	SOLAREEDGE SE7600H-US
NOMINAL AC POWER	7600 W
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	32 A

INVERTER SPECIFICATION #2	
MANUFACTURER / MODEL	SOLAREEDGE SE5000H-US
NOMINAL AC POWER	5000 W
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	21 A

POWER OPTIMIZER (SOLAREEDGE 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	-10°C
AMBIENT TEMP (HIGH TEMP 2%)	36°C
CONDUIT HEIGHT	7/8"
ROOF TOP TEMP	90°C
CONDUCTOR TEMPERATURE RATE	58°C
MODULE TEMPERATURE COEFFICIENT OF VOC	-0.28%/°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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RESIDENCE
 55 SEDGEFIELD LN
 SPRING LAKE, NC 28390
 PH NO. (919) 888-0675
 EMAIL ID: ali.boumelhem89@gmail.com

DATE: 02/02/2022

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 57.00A

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

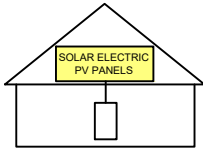
DUAL POWER SOURCE
 SECOND SOURCE US
 PHOTOVOLTAIC

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: 20 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

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

9

PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH

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

10

SERVICE EQUIPMENT

SECTIONNEUR PRINCIPALE

SERVICIO DE DESCONEXION

LABEL LOCATION:
 AC DISCONNECT
 2017 NEC 230.66



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PROJECT NAME & ADDRESS

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 RESIDENCE
 55 SEDGEFIELD LN
 SPRING LAKE, NC 28390
 PH NO. (919) 888-0675
 EMAIL ID: ali.boumelhem89@gmail.com

DATE: 02/02/2022

SHEET NAME
 SIGNAGE

SHEET SIZE
 ANSI B
 11" X 17"

SHEET NUMBER
 PV-5

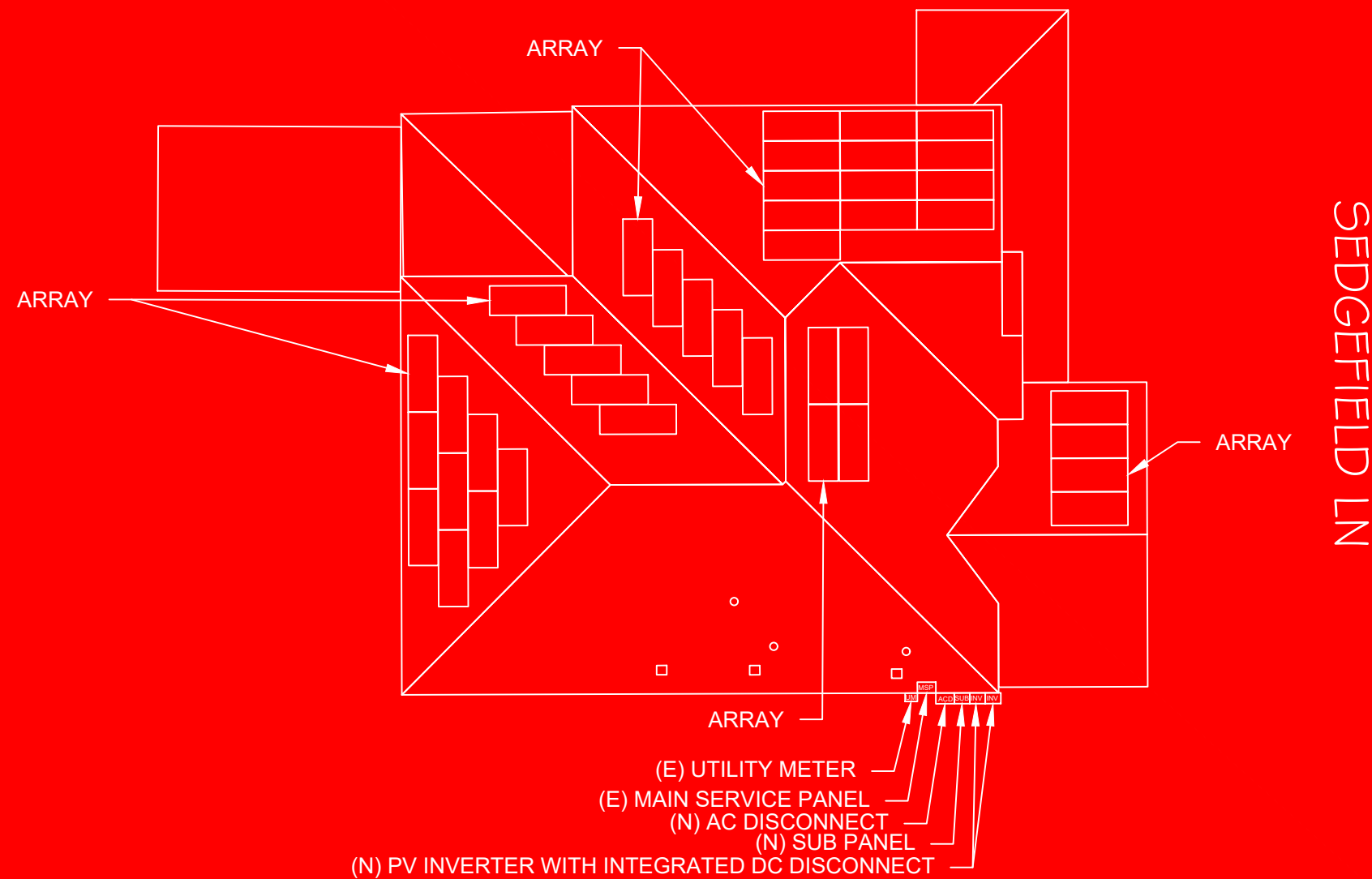
ADHESIVE FASTENED SIGNS:

- 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



SEDGFIELD LN

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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PH NO. (919) 888-0675
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DATE: 02/02/2022

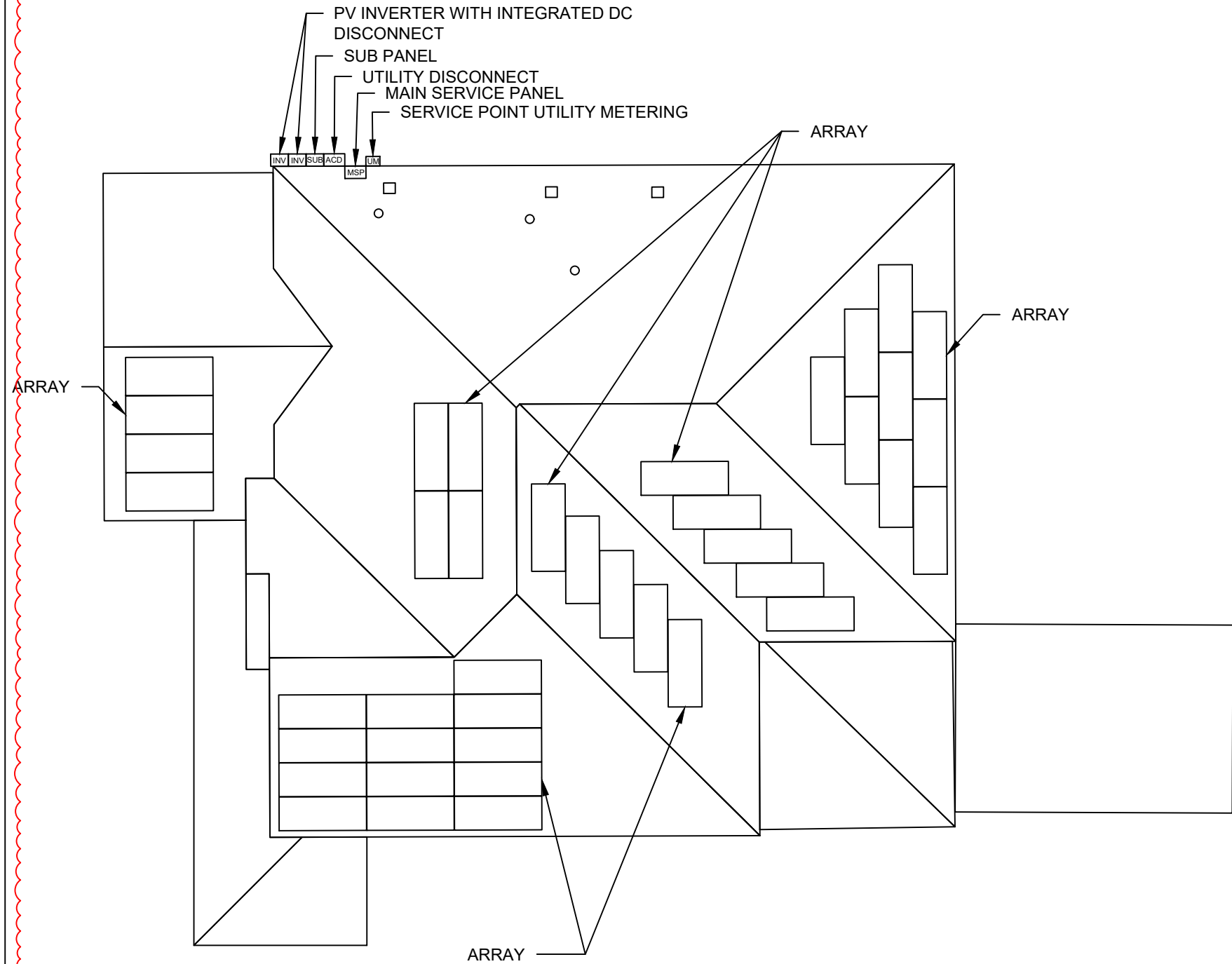
SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

REV/DATE: 02/02/2022

JOB SAFETY PLAN



55 SEDGEFIELD LN SPRING LAKE, NC 28390

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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PROJECT NAME & ADDRESS

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RESIDENCE
 55 SEDGEFIELD LN
 SPRING LAKE, NC 28390
 PH NO. (919) 888-0675
 EMAIL ID: ali.boumelhem89@gmail.com

DATE: 02/02/2022

SHEET NAME
JOB SAFETY PLAN

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

SHEET NUMBER
PV-7



TITAN SOLAR PANEL

HIGH EFFICIENCY PREMIUM MONO-PERC PV MODULE



CHUBB
* Chubb provides error and omission insurance to Silfab Solar Inc.

SIL-370 NX
POWERED BY
SILFAB SOLAR



INDUSTRY LEADING WARRANTY

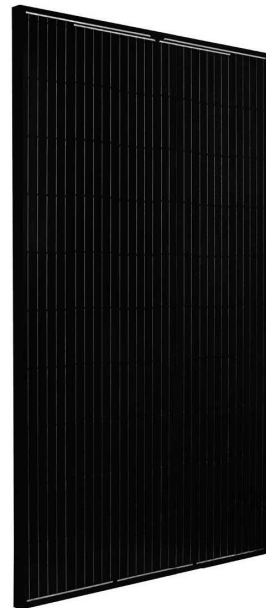
The Titan Solar Panel is manufactured by Silfab Solar and includes an industry leading 25-year product workmanship and 30-year performance warranty.

MAXIMUM ENERGY OUTPUT

Leveraging over 35+ years of worldwide experience in the solar industry, Silfab is dedicated to superior manufacturing processes and innovations such as Bifacial and Back Contact technologies, to ensure our partners, such as Titan Solar have the latest in solar innovation.

NORTH AMERICAN QUALITY

Silfab is the leading automated solar module manufacturer in North America. Utilizing premium quality materials and strict quality control management to deliver the highest efficiency, premium quality PV modules.



BAA / ARRA COMPLIANT

These panels are designed and manufactured to meet Buy American Act Compliance. The US State Department, US Military and FAA have all utilized Silfab panels in their solar installations.

LIGHT AND DURABLE

Engineered to accommodate high wind load conditions for test loads validated up to 4000Pa uplift. The light-weight frame is exclusively designed for wide-ranging racking compatibility and durability.

QUALITY MATTERS

Total automation ensures strict quality controls during the entire manufacturing process at ISO certified facilities.

DOMESTIC SUPPORT / SERVICES

Our 500+ North American team is ready to help Titan Solar win the hearts and minds of customers, providing customer service and product delivery that is direct, efficient and local.

AESTHETICALLY PLEASING

All black sleek design, ideal for high-profile residential or commercial applications.

PID RESISTANT

PID Resistant due to advanced cell technology and material selection. In accordance to IEC 62804-1.

Electrical Specifications		SIL-370 NX mono PERC	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	370	266
Maximum power voltage (Vpmax)	V	37.2	33.7
Maximum power current (Ipmax)	A	10.0	7.9
Open circuit voltage (Voc)	V	44.8	40.7
Short circuit current (Isc)	A	10.6	8.3
Module efficiency	%	20.2	18.2
Maximum system voltage (VDC)	V	1000	
Series fuse rating	A	20	
Power Tolerance	Wp	+/-3%	

Measurement conditions: STC 1000 W/m² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m² • AM 1.5 • Measurement uncertainty ≤ 3%
• Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by +/-3%.

Temperature Ratings		SIL-370 NX mono PERC	
Temperature Coefficient Isc		0.064 %/°C	
Temperature Coefficient Voc		-0.28 %/°C	
Temperature Coefficient Pmax		-0.36 %/°C	
NOCT (± 2°C)		46 °C	
Operating temperature		-40/+85 °C	

Mechanical Properties and Components		SIL-370 NX mono PERC	
Module weight		44±0.4 lbs	
Dimensions (H x L x D)		72.13 in x 39.4 in x 1.5 in	
Maximum surface load (wind/snow)*		83.5/112.8 lb/ft ²	
Hail impact resistance		ø 1 in at 51.6 mph	
Cells		66 - Si mono-PERC - 5 busbar, 62.25 x 62.25 in	
Glass		0.126 in high transmittance, tempered, DSM anti-reflective coating	
Cables and connectors (refer to installation manual)		47.2 in, ø 0.22 in, MC4 from Staubli	
Backsheet		High durability, superior hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet	
Frame		Anodized Aluminum (Black)	
Bypass diodes		3 diodes-30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)	
Junction Box		UL 3730 Certified, IEC 62790 Certified, IP67 rated	

Warranties		SIL-370 NX mono PERC	
Module product workmanship warranty		25 years**	
Linear power performance guarantee		30 years	
		≥ 97.1% end 1 st year	≥ 91.6% end 12 th year
		≥ 85.1% end 25 th year	≥ 82.6% end 30 th year

Certifications		SIL-370 NX mono PERC	
Product		ULC ORD C1703, UL1703, CEC listed***, UL 61215-1/-1-1/-2, UL 61730-1/-2, IEC 61215-1/-1-1/-2***, IEC 61730-1/-2***, CSA C22.2#61730-1/-2, IEC 62716 Ammonia Corrosion; IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 2 ISO9001:2015	

Factory	
All states except California	California
Modules Per Pallet: 26	Modules Per Pallet: 26
Pallets Per Truck: 34	Pallets Per Truck: 32
Modules Per Truck: 884	Modules Per Truck: 832

*▲ Warning: Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.

**12 year extendable to 25 years subject to registration and conditions outlined under "Warranty" at www.silfabsolar.com.

***Certification and CEC listing in progress.

PAN files generated from 3rd party performance data are available for download at: www.silfabsolar.com/downloads.



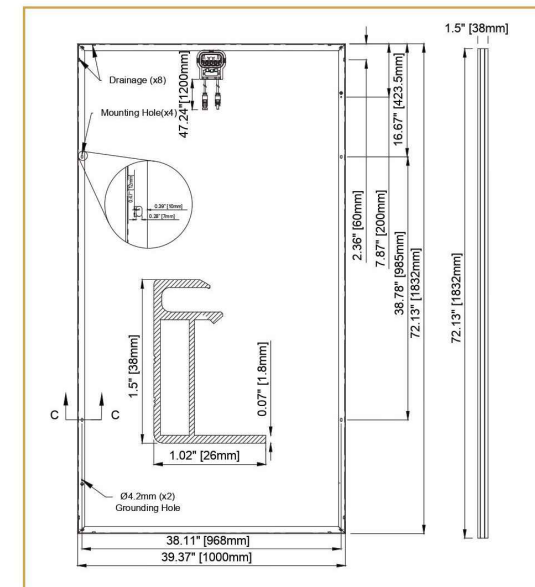
Titan Solar Power
525 W Baseline Rd
Mesa, AZ 85210
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EMAIL ID: ali.boumelhem89@gmail.com

DATE: 02/02/2022

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-8

Single Phase Inverter with HD-Wave Technology for North America

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



INVERTERS

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-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	600k Ω Sensitivity								
Maximum Inverter Efficiency	99						99.2	%	
CEC Weighted Efficiency	99							99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W	

(1) For other regional settings please contact SolarEdge support.
 (2) A higher current source may be used; the inverter will limit its input current to the values stated.



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 EMAIL ID: ali.boumelhem89@gmail.com

DATE: 02/02/2022

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE

**ANSI B
 11" X 17"**

SHEET NUMBER

PV-9

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

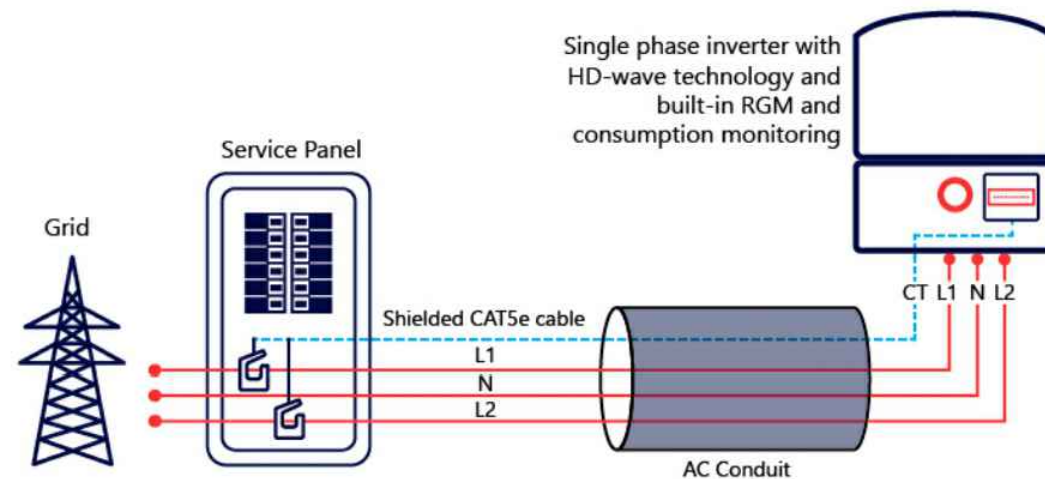
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
ADDITIONAL FEATURES							
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)						
Revenue Grade Metering, ANSI C12.20	Optional ⁽³⁾						
Consumption metering							
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection						
Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020, 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect						
STANDARD COMPLIANCE							
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07						
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)						
Emissions	FCC Part 15 Class B						
INSTALLATION SPECIFICATIONS							
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG			1" Maximum / 14-4 AWG			
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG			1" Maximum / 1-3 strings / 14-6 AWG			
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174			21.3 x 14.6 x 7.3 / 540 x 370 x 185			
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: SExxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxH-US000BN4. For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20, 20 units per box.
(4) Full power up to at least 50°C / 122°F; for power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills



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PH NO. (919) 888-0675
EMAIL ID: ali.boumelhem89@gmail.com

DATE: 02/02/2022

SHEET NAME
EQUIPMENT
SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-9A

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			15				Adc
Maximum Output Voltage	60			85		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			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 P405 / P505	8	10	18	
Maximum String Length (Power Optimizers)		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.



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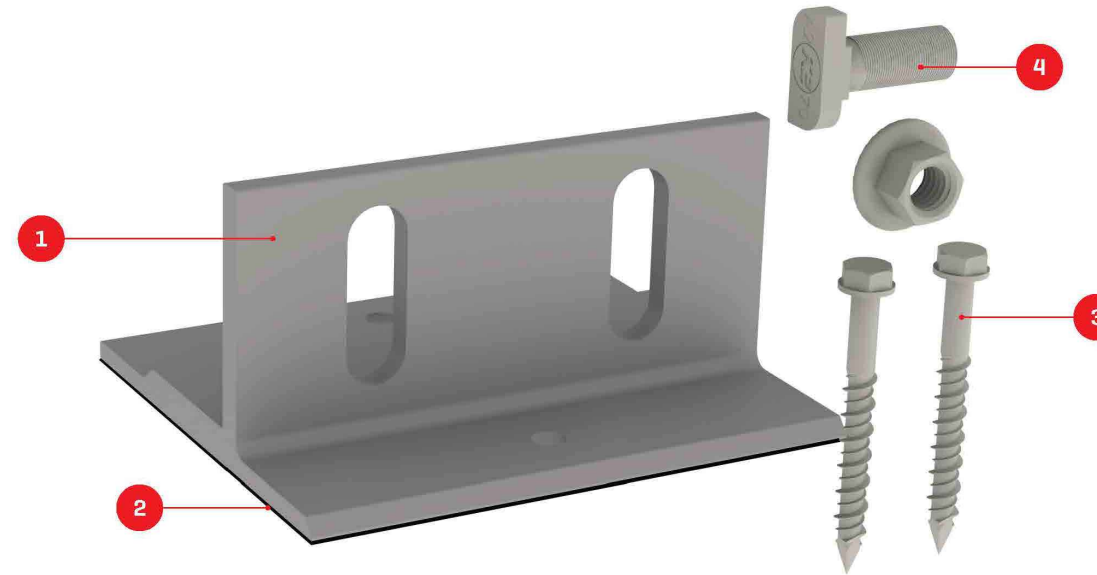
DATE: 02/02/2022

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-10

We support PV systems
Formerly Everest Solar Systems



Splice Foot X

TECHNICAL SHEET

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

Technical Data

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

k2-systems.com



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**EQUIPMENT
SPECIFICATION**

SHEET SIZE

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11" X 17"**

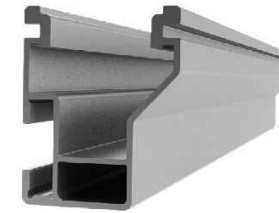
SHEET NUMBER

PV-11

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CROSSRAIL 48-X



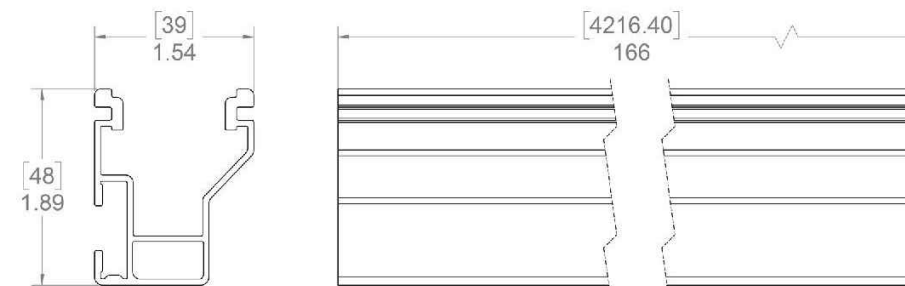
Mechanical Properties

	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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**ANSI B
11" X 17"**

SHEET NUMBER
PV-12

A. System Specifications and Ratings

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

Table 1: Typical Wire Size, Torque Loads and Ratings

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

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

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

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