FERGUSON RESIDENCE

PHOTOVOLTAIC SYSTEM 64 SYLVAN LANE CAMERON, NC 28326

SYSTEM SIZE: 10.73 kW-DC | 10.60 kW-AC MODULE: (29) SIL-370-NX-TITAN INVERTER: (1) SOLAREDGE SE7600H-US & (1) SOLAREDGESE3000H-US



- UTILITY SHALL BE NOTIFIED BEFORE ACTIVATION OF PV SYSTEM.
- 110.2 APPROVAL: ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO INITIATING CONSTRUCTION.
- CONTRACTOR SHALL REVIEW ALL MANUFACTURER INSTALLATION DOCUMENTS PRIOR TO INITIATING CONSTRUCTION.
- ALL EQUIPMENT AND ASSOCIATED CONNECTIONS OF INVERTERS. MODULES. PV SOURCE CIRCUITS BATTERY CONNECTIONS, ETC. AND ALL ASSOCIATED WIRING AND INTERCONNECTIONS SHALL BE INSTALLED ONLY BY QUALIFIED PERSONNEL (CEC 690.4(E)).
- THE CONTRACTOR OR OWNER MUST PROVIDE ROOF ACCESS (LADDER TO ROOF) FOR THE ALL REQUIRED INSPECTIONS. LADDERS MUST BE OSHA APPROVED, 13. MINIMUM TYPE I WITH A 250 LB RATING, IN GOOD CONDITION AND DESIGNED FOR ITS INTENDED USE.
- SMOKE ALARMS AND CARBON MONOXIDE ALARMS ARE REQUIRED TO BE RETROFITTED ONTO THE EXISTING DWELLING AS PER THE 2019 CRC. THESE SMOKE ELECTRICAL ALARMS ARE REQUIRED TO BE IN ALL BEDROOMS OUTSIDE EACH BEDROOM, AND AT LEAST ONE ON EACH FLOOR OF THE HOUSE. CARBON MONOXIDE ALARMS ARE REQUIRED TO BE RETROFITTED OUTSIDE EACH BEDROOM AND AT LEAST ONE ON EACH FLOOR OF THE HOUSE. THESE ALARMS MAY BE SOLELY BATTERY OPERATED IF THE PHOTOVOLTAIC PROJECT DOES NOT INVOLVE THE REMOVAL OF INTERIOR WALL AND CEILING FINISHES INSIDE THE HOME; OTHERWISE THE ALARMS MUST BE HARD WIRED AND INTERCONNECTED. (CRC R314, R315)
- SMOKE AND CARBON MONOXIDE ALARMS ARE REQUIRED PER CRC SECTIONS R314 AND 315 TO BE VERIFIED AND INSPECTED BY THE INSPECTOR IN THE FIELD.
- CONTRACTOR SHALL VERIFY THAT THE ROOF STRUCTURE WILL WITHSTAND THE ADDITIONAL LOADS.

- LAG SCREWS SHALL PENETRATE A MINIMUM 2" INTO 6. SOLID SAWN STRUCTURAL MEMBERS AND SHALL NOT EXCEED MANUFACTURER RECOMMENDATIONS FOR FASTENERS INTO ENGINEERED STRUCTURAL MEMBERS.
- AN ACCESS POINT SHALL BE PROVIDED THAT DOES NOT PLACE THE GROUND LADDER OVER OPENINGS SUCH AS WINDOWS OR DOORS ARE LOCATED AT STRONG POINTS 8 OF BUILDING CONSTRUCTION AND IN LOCATIONS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS. WIRES, OR SIGNS. (CRC R331.4.2)
- WHERE DC CONDUCTORS ARE RUN INSIDE BUILDING, 9. THEY SHALL BE CONTAINTED IN A METAL RACEWAY; THEY SHALL NOT BE INSTALLED WITHIN 10" OF THE ROOF DECKING OR SHEATHING EXCEPT WHERE COVERED BY THE PV MODULES AND EQUIPMENT. (CEC 690.31(E)(1))
- PLUMBING AND MECHANICAL VENTS THROUGH THE ROOF SHALL NOT BE COVERED BY SOLAR MODULES -NO BUILDING, PLUMBING, OR MECHANICAL VENTS TO BE 10. COVERED, OBSTRUCTED OR ROUTED AROUND SOLAR MODULES.
- ALL FIELD-INSTALLED JUNCTION, PULL, AND OUTLET 1. PV MODULE FRAMES SHALL BE BONDED TO RACKING BOXES LOCATED BEHIND MODULES SHALL BE ACCESSIBLE DIRECTLY OR BY DISPLACEMENT OF A MODULE SECURED BY REMOVABLE FASTENERS.

- WIRING MATERIALS SHALL COMPLY WITH MAXIMUM CONTINUOUS CURRENT OUTPUT AT 25°C AND MAXIMUM VOLTAGE AT 600V; WIRE SHALL BE WET RATED AT 90°C. EXPOSED PHOTOVOLTAIC SYSTEM CONDUCTORS ON THE ROOF WILL BE USE-2 OR PV TYPE WIRE.
- PHOTOVOLTAIC SYSTEM CONDUCTORS SHALL BE IDENTIFIED AND GROUPED. THE MEANS OF IDENTIFICATION SHALL BE PERMITTED BY SEPARATE COLOR-CODING, MARKING TAPE, TAGGING OR OTHER 17. WHEN APPLYING THE 120% RULE OF CEC 705.12(D)(2) APPROVED MEANS
- ALL EXTERIOR CONDUIT, FITTINGS, AND BOXES SHALL BE RAIN-TIGHT AND APPROVED FOR USE IN WET LOCATIONS. (CEC 314.15)
- WHERE CONDUCTORS ARE INSTALLED UNDERGROUND, SECTION 300.5 OF THE CEC MUST BE FOLLOWED TO ENSURE PROPER PROTECTION.

ALL METALLIC RACEWAYS AND EQUIPMENT SHALL BE BONDED AND ELECTRICALLY CONTINUOUS. (CEC 250.90, 250.96)

WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED. CONTRACTOR SHALL SIZE THEM ACCORDING TO APPLICABLE CODES.

REMOVAL OF A UTILITY-INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BUILDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PV SOURCE AND/OR OUTPUT CIRCUIT GROUNDED CONDUCTOR.

FOR GROUNDED SYSTEMS, THE PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUITS SHALL BE PROVIDED WITH A GROUND-FAULT PROTECTION DEVICE OF SYSTEM THAT DETECTS A GROUND FAULT, INDICATES THAT FAULT HAS OCCURRED, AND AUTOMATICALLY DISCONNECTS ALL CONDUCTORS OR CAUSES THE INVERTER TO AUTOMATICALLY CEASE SUPPLYING POWER TO OUTPUT CIRCUITS. (CEC 690.35(C))

FOR UNGROUNDED SYSTEMS, THE INVERTER IS EQUIPPED WITH GROUND FAULT PROTECTION AND A GFI FUSE PORT FOR GROUND FAULT INDICATION

RAIL OR BARE COPPER GEC/EGC PER THE MODULE MANUFACTURER'S LISTED INSTRUCTION SHEET.

12. PV MODULE RACKING RAIL SHALL BE BONDED TO BARE COPPER G.E.C VIA WEEB LUG, ILSCO GBL-4DBT LAY-IN LUG, OR EQUIVALENT LISTED LUG.

- THE PHOTOVOLTAIC INVERTER WILL BE LISTED AS UL 1741 COMPLIANT.
- RACKING AND BONDING SYSTEM TO BE UL2703 RATED
- ANY REQUIRED GROUNDING ELECTRODE CONDUCTOR WILL BE CONTINUOUS. EXCEPT FOR SPLICES OR JOINTS AT BUSBARS WITHIN LISTED EQUIPMENT. (CEC 250.64(C) WHEN BACKFED BREAKER IS THE METHOD OF UTILITY INTERCONNECTION, THE BREAKERS SHALL NOT READ

"LINE AND LOAD".

- THE SOLAR BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUS FROM THE MAIN BREAKER.
- THE WORKING CLEARANCE AROUND THE EXISTING ELECTRICAL EQUIPMENT AS WELL AS THE NEW ELECTRICAL EQUIPMENT WILL BE MAINTAINED II ACCORDANCE WITH CEC 110.26(A)

GOVERNING CODES

ALL MATERIALS, EQUIPMENT, INSTALLATION AND WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

- 2020 NATIONAL ELECTRIC CODE
- 2015 INTERNATIONAL BUILDING CODE
- 2015 INTERNATIONAL RESIDENTIAL CODE
- 2015 INTERNATIONAL PLUMBING CODE
- 2015 INTERNATIONAL FIRE CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- IEEE STANDARD 929
- OSHA 29 CFR 1910.269
- WHERE APPLICABLE, RULES OF THE PUBLIC UTILITIES COMMISSION REGARDING SAFETY AND RELIABILITY
- THE AUTHORITY HAVING JURISDICTION
- MANUFACTURERS' LISTINGS AND INSTALLATION INSTRUCTIONS
- ANY OTHER LOCAL AMENDMENTS

SHEET INDEX:

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PLACARD

FERGUSON, CLYDE

64 SYLVAN LANE CAMERON, NC 28326 (919)721-6599

LICENSE # U.33714



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COVER PAGE

JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

REV #1: REV #2: REV #3:

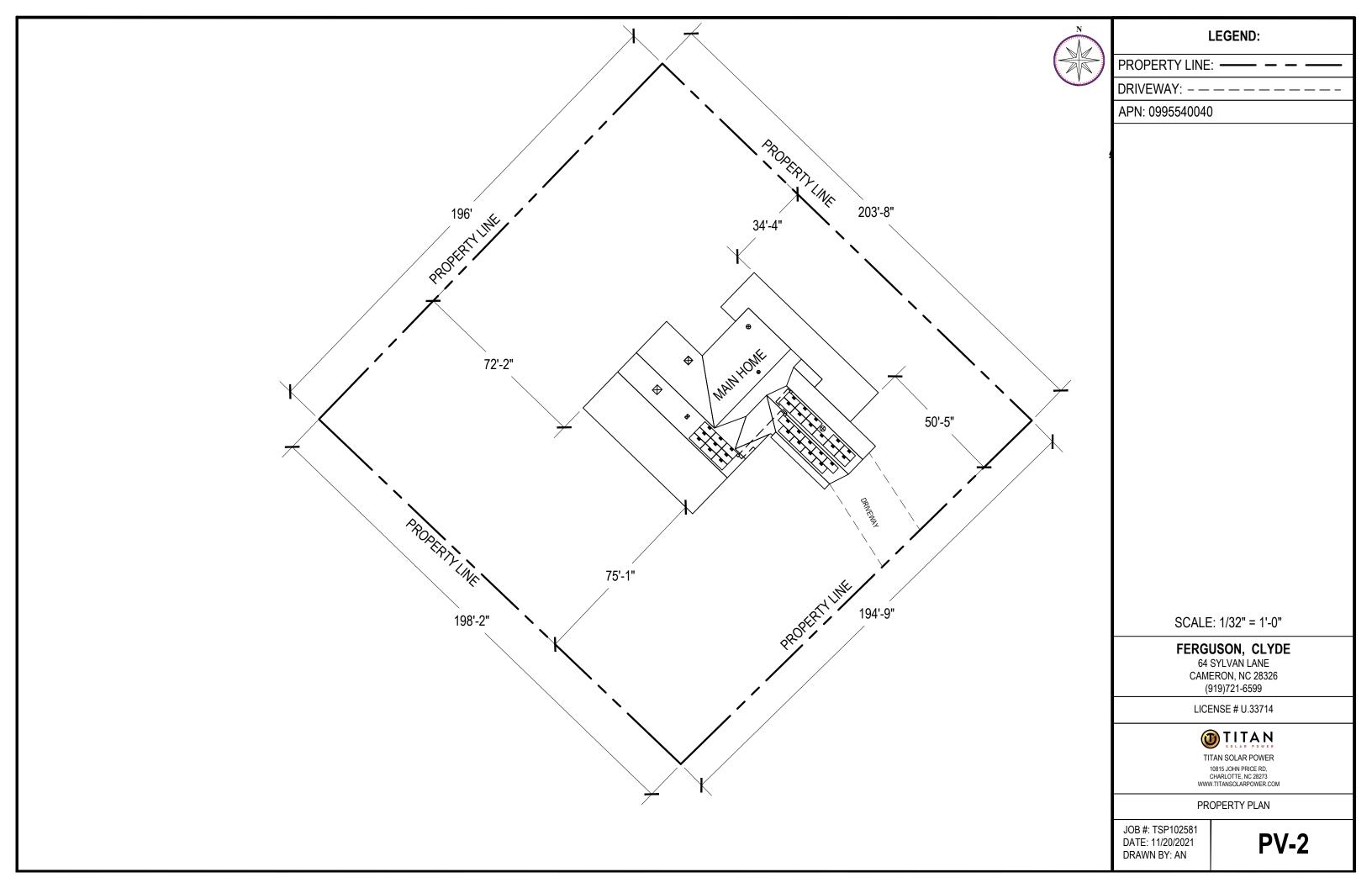
PV-1

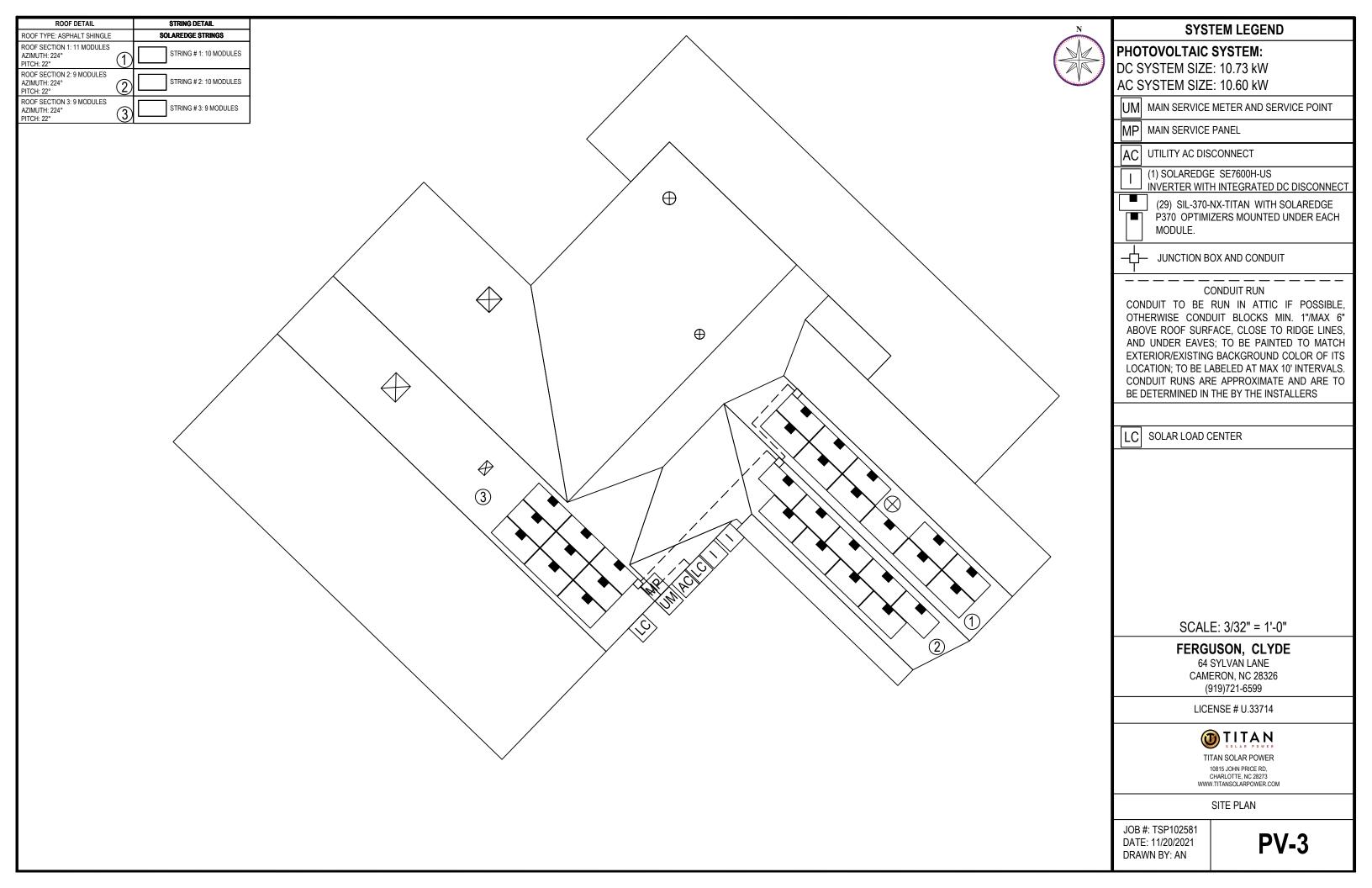


64 Sylvan Ln, Cameron,

NC 28326, USA

VICINITY MAP





ROOF DETAIL	STRING DETAIL
ROOF TYPE: ASPHALT SHINGLE	SOLAREDGE STRINGS
ROOF SECTION 1: 11 MODULES AZIMUTH: 224° PITCH: 22°	STRING # 1: 10 MODULES
ROOF SECTION 2: 9 MODULES AZIMUTH: 224° PITCH: 22°	STRING # 2: 10 MODULES
ROOF SECTION 3: 9 MODULES AZIMUTH: 224° PITCH: 22°	STRING # 3: 9 MODULES

ATTACHMENT DETAIL

TOP VIEW

FRONT VIEW

THE FUTURE OF SOLAR ATTACHMENTS
4800 METALMASTER WAY - MCHENRY, IL 60050

NTS

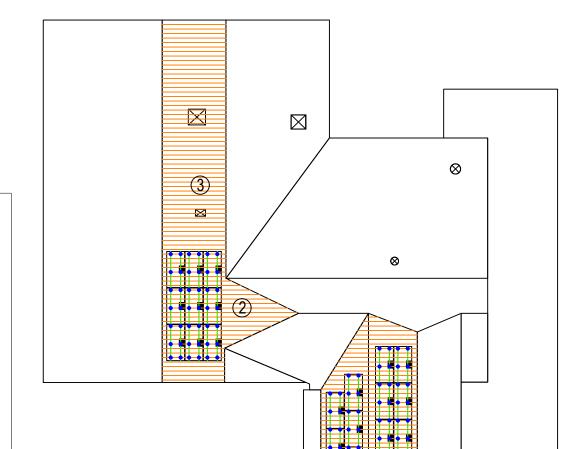
FOR CLARITY THIS DRAWING IS NOT TO SCALE.
CONTACT THE MANUFACTURER FOR RECOMMENDED LAYOUTS, SPACING AND ADDITIONAL DETAILS.
INSTALLATION MUST BE COMPLETED WITH THE MANUFACTURERS WRITTEN SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
THESE DRAWINGS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

CONNECTIONS

INTERNATIONAL







WIND UPLIFT AT ATTACHMENT POINTS IS PROVIDED WITH THE ENGINEERING LETTER. SUPPORT LOCATIONS HAVE BEEN OPTIMIZED TO WITHSTAND UPLIFT

STRUCTURAL ATTACHMENT MODULE ASPHALT SHINGLE 9"OC: METAL RIB **ELEVATION DETAIL**

RIGHT VIEW

Z-BRACKET

MODULE MECHANICAL SPECIFICATIONS					
DESIGN WIND SPEED	131 MPH				
DESIGN SNOW LOAD	10 PSF				
# OF STORIES	2				
ROOF PITCH	22°				
TOTAL ARRAY AREA (SQ. FT)	574.20				
TOTAL ROOF AREA (SQ. FT)	5764				
ARRAY SQ. FT / TOTAL ROOF SQ. FT	9.96%				

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

SYSTEM LEGEND

PHOTOVOLTAIC SYSTEM: DC SYSTEM SIZE: 10.73 kW AC SYSTEM SIZE: 10.60 kW

RACKING NOTE:- 2" LAG EMBEDMENT

ROOF ATTACHMENT POINT

ROOF FRAMING (RAFTER/TRUSS)

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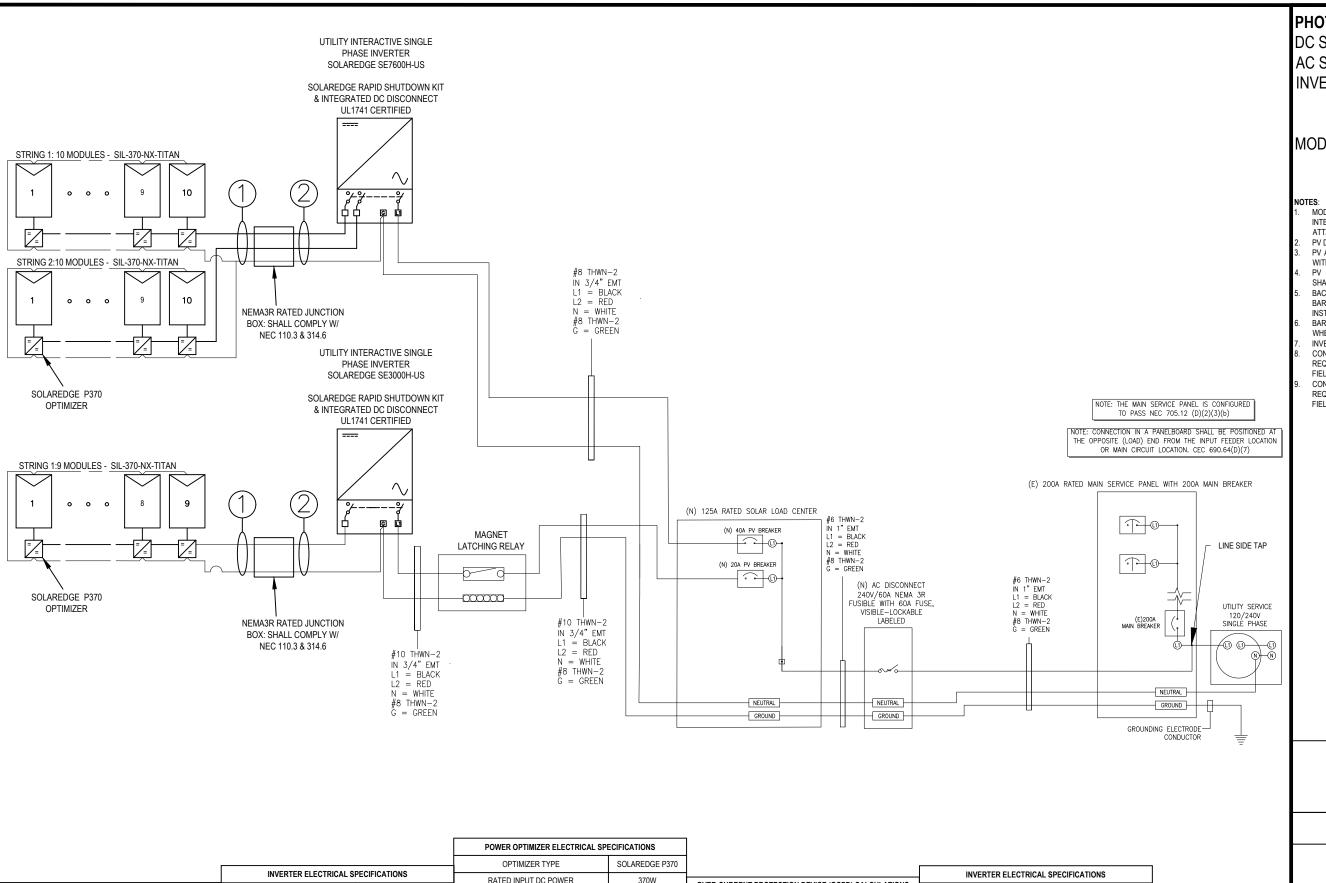


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ROOF PLAN

JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

PV-3.1



PHOTOVOLTAIC SYSTEM:

DC SYSTEM SIZE: 10.730 kW AC SYSTEM SIZE: 10.600 kW

INVERTER: (1) SOLAREDGE SE7600H-US

&

(1) SOLAREDGE SE3000H-US

MODULE: (29) SIL-370-NX-TITAN

- MODULES ARE BONDED TO RAIL USING UL 2703 RATED BONDING SYSTEM -INTEGRATED BONDING MID-CLAMPS + DIRECT-BURIAL LAY-IN-LUGS; SEE ATTACHED FOR SPECIFICATIONS IF APPLICABLE
- PV DC SYSTEM IS UNGROUNDED
- PV ARRAY WILL HAVE A GROUNDING ELECTRODE SYSTEM IN COMPLIANCE WITH CEC 250.58 AND 690.47(A)
- PV SOURCE, OUTPUT, AND INVERTER INPUT CIRCUIT WIRING METHODS SHALL COMPLY WITH CEC 690.1(G)
- BACKFED PV BREAKER WILL BE INSTALLED AT OPPOSITE END OF THE BUS BAR FROM THE MAIN BREAKER. A PERMANENT WARNING LABEL TO BE INSTALLED PER SYSTEM SIGNAGE, PAGE
- BARE COPPER IS TRANSITIONED TO THWN-2 VIA IRREVERSIBLE CRIMP; WHEN PRESENT, THE GEC TO BE CONTINUOUS
- INVERTER(S) TO BE COMPLIANT WITH UL 1741 SUPPLEMENT A
- CONDUIT ÀND CONDUCTOR SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS
- CONDUIT AND CONDUCTOR SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UPSIZING AS REQUIRED BY FIELD CONDITIONS.

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1-LINE DIAGRAM & CALCULATIONS

JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

PV-4

				POWER OPTIMIZER ELECTRICAL SPECIFICATIONS					
				OPTIMIZER TYPE	SOLAREDGE P370				
	INVERTER ELECTRICAL SPECIFICATIONS		RATED INPUT DC POWER 370W				INVERTER ELECTRICAL SPECIFICATIONS		
PV MODULE ELECTRICAL S	SPECIFICATIONS	INVERTER TYPE SOLAREDGE SE7600H-US				OVER-CURRENT PROTECTION DEVICE (OCPD) CALCULATIONS		INVERTER TYPE	SOLAREDGE SE3000H-US
MODULE TYPE	SILFAB SIL-370-NX-TITAN	MAX INPUT DC VOLTAGE	480V	MAXIMUM INPUT VOLTAGE (V _{OC})	60V		SOLAREDGE	MAX INPUT DC VOLTAGE	480V
		WAX IN OT BO VOLTAGE	4001	MAXIMUM SHORT CIRCUIT CURRENT (I _{SC}) 11A		INVERTER TYPE	7600H-US &	WAX IN OT BU VOLTAGE	4007
POWER MAX (P _{MAX})	370W	MAX INPUT CURRENT	20A	MAXIMUM DC INPUT CURRENT	13.75A		SOLAREDGE 3000H-US	MAX INPUT CURRENT	20A
OPEN CIRCUIT VOLTAGE (V _{OC})	44.8V	NOMINAL DC INPUT VOLTAGE	400V	MAXIMUM OUTPUT CURRENT	15A	# OF INVERTERS	1 & 1	NOMINAL DC INPUT VOLTAGE	380V
SHORT CIRCUIT CURRENT (Isc)	10.6A	MAXIMUM OUTPUT POWER	7600W	WAXIWOW OUTFUT CORRENT	15A	# OF INVERTIENS	1 & 1	MAXIMUM OUTPUT POWER	3000W
0.10111 0.110011 00111.12111 (150)	10.0.1		700011	MAXIMUM OUTPUT VOLTAGE	60V	MAX CONTINUOUS OUTPUT CURRENT	32A & 12.5A		000011
MAX POWER-POINT VOLTAGE (V _{MP})	37.2V	NOMINAL AC OUTPUT VOLTAGE	240V	MINIMUM STRING LENGTH	8	(# OF INVERTERS) X (MAX CONT. OUTPUT CURRENT) X 125% <=		NOMINAL AC OUTPUT VOLTAGE	240V
MAX POWER-POINT CURRENT (I _{MP})	10.0A	MAXIMUM CONT. OUTPUT CURRENT	32A		5700M (C000M MITH			MAXIMUM CONT. OUTPUT CURRENT	12.5A
SERIES FUSE RATING	20A	CEC EFFICIENCY	99%	MAXIMUM POWER PER STRING	5700W (6000W WITH SE7600- SE11400)	(1 x 44.5A x 1.25)= 55.6A <= 60	A, OK	CEC EFFICIENCY	99%

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWICH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY



LABEL 1

AT RAPID SHUTDOWN SYSTEM [NEC 690.56(C)(1)(A)].

RAPID SHUTDOWN **SWITCH FOR SOLAR PV SYSTEM**

LABEL 6

AT RAPID SHUTDOWN DISCONNECT SWITCH [NEC 690.56(C)(3)].

PHOTOVOLTAIC SYSTEM **EQUIPPED WITH RAPID** SHUTDOWN

LABEL 11

AT RAPID SHUTDOWN SWITCH [NEC 690.56(C)]. LETTERS AT LEAST 3/8 INCH: WHITE ON RED BACKGROUND; REFLECTIVE [IFC 605.11.1.1]

! WARNING!

ELECTRIC SHOCK HAZARD

O TERMINALS ON THE LINE AND LOAD SIDES MAY O BE ENERGIZED IN THE OPEN POSITION. DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPLOSED TO SUNLIGHT

LABEL 2

AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT [NEC 690.15]

! WARNING!

DUAL POWER SOURCES. SECOND SOURCE IS PV SYSTEM

LABEL 7

AT POINT OF INTERCONNECTION; LABEL, SUCH AS LABEL 7 OR LABEL 8 MUST IDENTIFY PHOTOVOLTAIC SYSTEM [NEC 705.12(B)(4)]

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL 12

AT EXPOSED RACEWAYS, CABLE TRAYS, AND OTHER WIRING METHODS: SPACED AT MAXIMUM 10 FT SECTION OR WHERE SEPARATED BY ENCLOSURES. WALLS. PARTITIONS. CEILINGS. OR FLOORS.

[NEC 690.31(G)]

LETTERS AT LEAST 3/8 INCH; WHITE ON RED BACKGROUND; REFLECTIVE [IFC 605.11.1.1]

! WARNING!

TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

LABEL 3

AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT [NEC 690.13 AND 690.15]

! CAUTION!

PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LABEL 8

AT EACH AC DISCONNECTING MEANS [NEC 690.13(B)]

! WARNING!

CONNECTION - DO NOT RELOCATE THIS OVERCURRENT DEVISE

OVERCURRENT DEVICE [NEC 705.12(B)(2)(3)(B)]

PHOTOVOLTAIC

OPERATING CURRENT: 44.5 A AC

AT DISCONNECTING MEANS [NEC 690.54]

PHOTOVOLTAIC lo DC DISCONNECT

LABEL 10

AT EACH DC DISCONNECTING MEANS [NEC 690.13(B)]

#03-359 LOCAL CODES

WARNING 🕸 THIS SERVICE METER

IS ALSO SERVED BY A

PHOTOVOLTAIC SYSTEM

LABELS ARE NOT DRAWN TO SCALE

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ELECTRICAL LABELS

JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

PV-5

UTILITY 0 AC DISCONNECT

LABEL 13

POWER SOURCE OUTPUT

BI-DIRECTIONAL METER

20 A DC

LABEL 14

MAXIMUM CIRCUIT CURRENT:

THE CHARGE CONTROLLER

OR DC-TO-DC CONVERTER

LABEL 4

10

LABEL 9

AT UTILITY METER

[NEC 690.56(B)]

[NEC 690.53]

MAX RATED OUTPUT CURRENT OF

AT EACH DC DISCONNECTING MEANS

AT POINT OF INTERCONNECTION

AC DISCONNECT

OPERATING VOLTAGE: 240 V AC

LABEL 5

0

AT POINT OF INTERCONNECTION, MARKED

0

NATIONAL ELECTRICAL CODE, INTERNATIONAL FIRE CODE 605.11, OSHA STANDARD 1910.145, ANSI Z535 1.2 MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. 1.3 LABELS TO BE OF SUFFICIENT DURABILITY TO

0

WITHSTAND THE ENVIRONMENT INVOLVED. 1.4 LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8"

1.1 LABELING REQUIREMENTS BASED ON THE 2017

AND PERMANENTLY AFFIXED. 1.5 ALERTING WORDS TO BE COLOR CODED. "DANGER" WILL HAVE RED BACKGROUND; "WARNING" WILL HAVE ORANGE BACKGROUND: "CAUTION" WILL HAVE YELLOW BACKGROUND, [ANSI Z535]

ALL SIGNAGE MUST BE PERMANENTLY ATTACHED AND BE WEATHER RESISTANT/SUNLIGHT RESISTANT AND CANNOT

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS IF

WHERE THE PV SYSTEMS ARE REMOTELY LOCATED FROM EACH OTHER, A DIRECTORY IN ACCORDANCE

WITH 705.10 SHALL BE PROVIDED AT EACH PV SYSTEM

PV SYSTEM EQUIPMENT AND DISCONNECTING MEANS

SHALL NOT BE INSTALLED IN BATHROOMS

BE HAND-WRITTEN PER NEC 110.21(B)

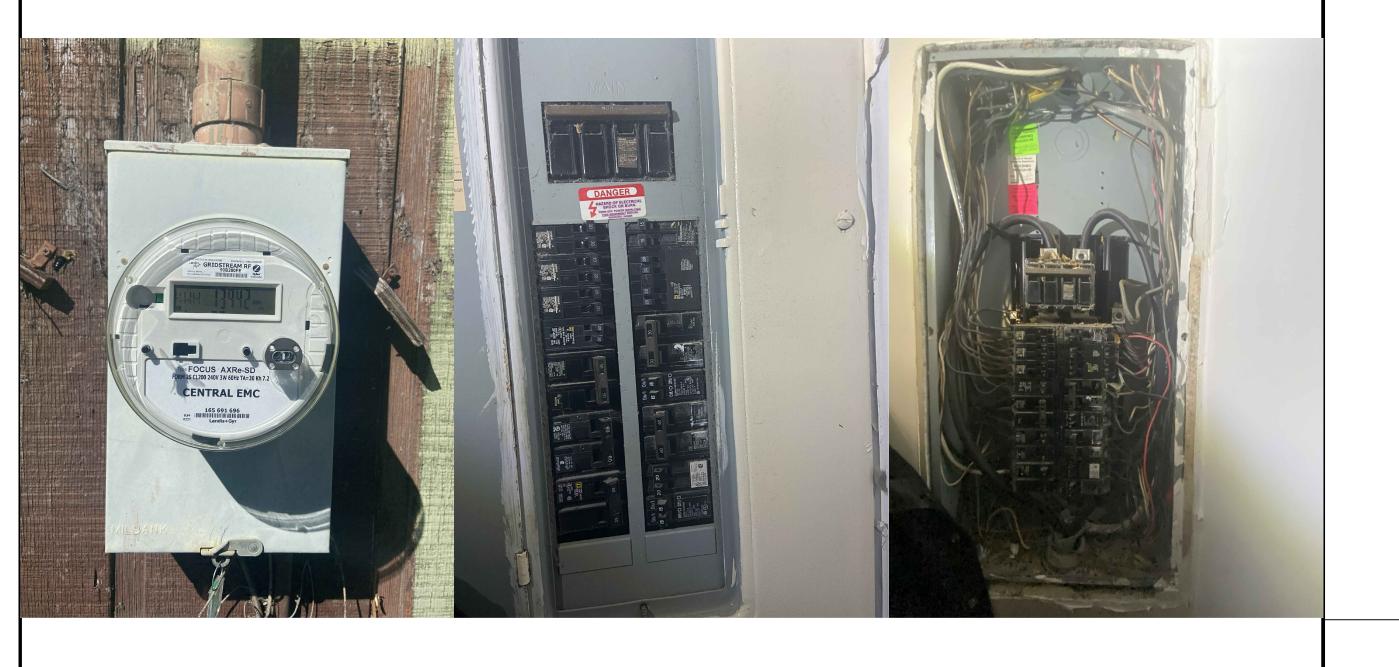
NOT IN THE SAME LOCATION

DISCONNECTING MEANS.

[NEC 690.4(D),(E)]

LABELING NOTES

[NEC 690.56(B)]



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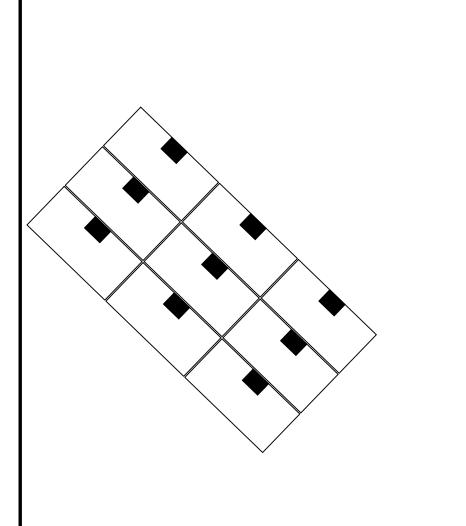
TITAN SOLAR POWER

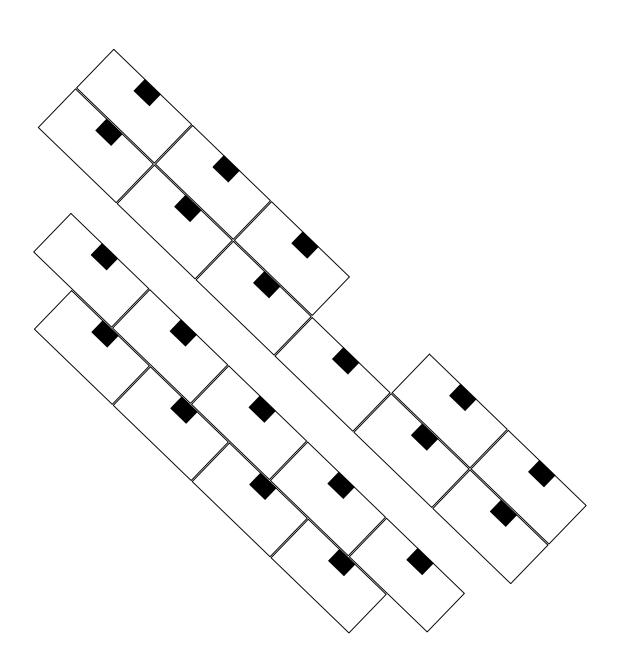
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ELECTRICAL PHOTOS

JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

PV-6





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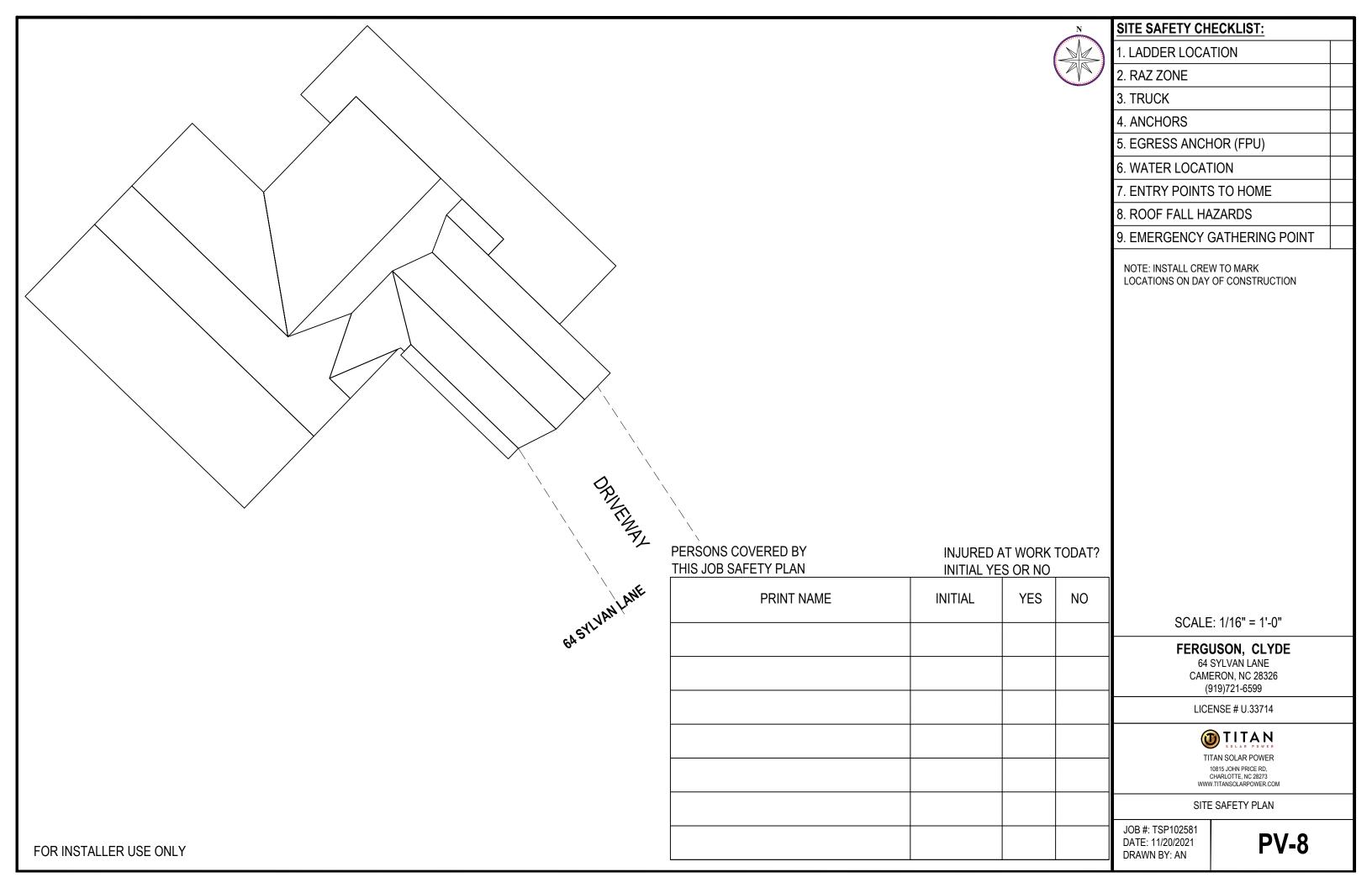
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OPTIMIZER MAP

JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

PV-7



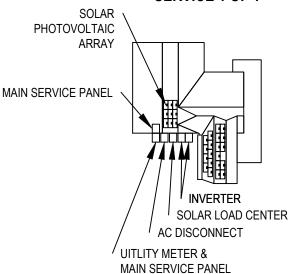


CAUTION



POWER TO THIS BUILDING IS SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN

SERVICE 1 OF 1





64 SYLVAN LANE, CAMERON, NC 28326







CHUBB.















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.



III 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.

III 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.

III QUALITY MATTERS

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

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

Electrical Specifications		SIL-370 N	IX 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)	Α	10.6	8.3		
Module efficiency	%	20.2	18.2		
Maximum system voltage (VDC)	V	1	1000		
Series fuse rating	А		20		
Power Tolerance	Wp	+/-3%			

urrement conditions: STC 1000 W/m2 + AM 1.5 + Temperature 25 °C + NOCT 800 W/m² + AM 1.5 + Measurement uncertainty \leq 3' simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by \pm 5% and power by \pm 7-3%.

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**				
	30 years				
Linear power performance guarantee	≥ 97.1% end 1st year ≥ 91.6% end 12th year ≥ 85.1% end 25th year ≥ 82.6% end 30th year				
Certifications SIL-370 NX mone PERC					

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 Certifed, UL Fire Rating: Type 2 ISO9001:2015

Factory

All states except California

Modules Per Pallet: 26 Pallets Per Truck: 34 Modules Per Truck: 884

California Modules Per Pallet: 26 Pallets Per Truck: 32 Modules Per Truck: 832

*A Warning. Read the Safety and Installation Manual for

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

 $\ensuremath{^{***}\text{Certification}}$ and CEC listing in progress.

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

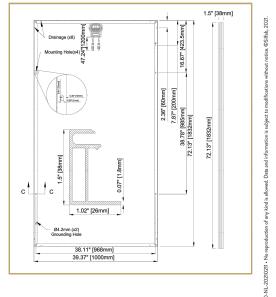


Titan Solar Power 525 W Baseline Rd Mesa, AZ 85210 Tel 855 SAY-SOLAR Titansolarpower.com info@titansolarpowe



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MODULES DATASHEET

JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

PV-9.1

Single Phase Inverter with HD-Wave Technology

for North America

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





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

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 MinNomMax. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage MinNomMax. (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	А
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	А
Power Factor			1	, Adjustable - 0.85 to	0.85			
GFDI Threshold				1				А
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				Vd
Nominal DC Input Voltage		3	180			400		Vd
Maximum Input Current @240V ⁽²⁾	8.5	10.5	13.5	16.5	20	27	30.5	Ad
Maximum Input Current @208V ⁽²⁾	-	9	-	13.5	-	-	27	Ad
Max. Input Short Circuit Current				45	·			Ad
Reverse-Polarity Protection				Yes				
Ground-Fault Isolation Detection		600kΩ Sensitivity						
Maximum Inverter Efficiency	99			Ġ	9.2			%
CEC Weighted Efficiency		99 @ 240V 99 98.5 @ 208V						%
Nighttime Power Consumption				< 2.5				W

(1) For other regional settings please contact SolarEdge support

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INVERTER DATASHEET

JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

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⁽¹⁾ For other regional settings please contact solar edge support

(2) A higher current source may be used; the inverter will limit its input current to the values stated

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P485 / P505





PV power optimization at the module-level

- Specifically designed to work with SolarEdge
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial
- Flexible system design for maximum space utilization

- Fast installation with a single bolt
- / Next generation maintenance with modulelevel monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety



/ Power Optimizer For North America

P320 / P340 / P370 / P400 / P405 / P485 / 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 high- voltage modules)	P485 (for high- voltage modules)	P505 (for higher current modules)	
INPUT								
Rated Input DC Power ⁽¹⁾	320	340	370	400	405	485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	4	8	60	80	125 [©]	2)	83(2)	Vdc
MPPT Operating Range	8 -	48	8 - 60	8 - 80	12.5 -	105	12.5 - 83	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			<u> </u>	98.8			98.6	%
Overvoltage Category				II				
OUTPUT DURING OPERA	TION (POWER	ROPTIMIZER	CONNECTED	TO OPERATIN	NG SOLAREDGE	INVERTER)		
Maximum Output Current				15				Adc
Maximum Output Voltage		(50			85		Vdc
Safety Output Voltage per Power Optimizer STANDARD COMPLIANCE	<u> </u>	1 ± 0.1					Vdc	
EMC			ECC Part15 C	lass B, IEC61000-6-2	P JEC61000-6-3			
Safety	IEC62109-1 (class II safety), UL1741							
Material	UL94 V-0 , UV Resistant							
RoHS	Yes							
INSTALLATION SPECIFICA	ATIONS							
Maximum Allowed System Voltage				1000				Vdc
Compatible inverters			All SolarEdge S	ingle Phase and Thre	ee Phase inverters			
Dimensions (W x L x H)	129 >	x 153 x 27.5 / 5.1 x 6		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			MC4 ⁽³⁾			Single or dual MC4 ⁽³⁾⁽⁴⁾	MC4 ⁽³⁾	
Input Wire Length				0.16 / 0.52				m/ft
Output Wire Type / Connector]	Double Insulated / M	IC4			
Output Wire Length	0.9 /	2.95	1.2 / 3.9	1.2 / 3.9	1.2 / 3	3.9	1.2 / 3.9	m/ft
Operating Temperature Range ⁽⁵⁾				-40 - +85 / -40 - +1	85			°C / °F
Protection Rating	IP68 / NEMA6P							
Relative Humidity	0 - 100					%		

[®] 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
[®] NEC 2017 requires max input voltage be not more than 80V

⁶⁸ For other connector types please contact SolarEdge
⁶⁸ For dual version for parallel connection of two modules use the P485. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer
⁶⁸ For ambient temperature above +65°C/ +185°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

PV System De: a SolarEdge Ir		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length	P320, P340, P370, P400	3	3	10	18	
(Power Optimizers)	P405, P485, P505	(5	8	14	
Maximum String Length (Power Optimizers)		25		25	50(8)	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400- US) 5250		6000 ⁽⁹⁾	12750 ⁽¹⁰⁾	W
Parallel Strings of Different Leng or Orientations	ths	Yes				

For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
 It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400 in one string
 A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
 For 208V grid: it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W
 For 208V grid: it is allowed to install up to 17,550W per string when the maximum power difference between each string is 2,000W

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OPTIMIZER DATASHEET

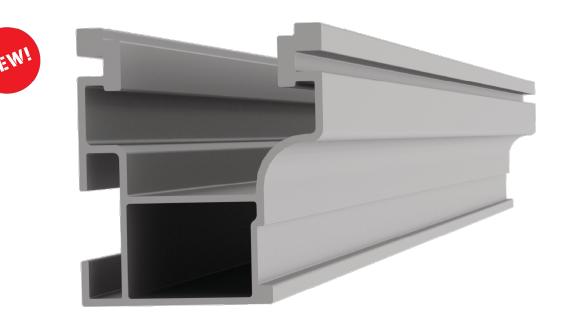
JOB #: TSP102581 DATE: 11/20/2021 DRAWN BY: AN

PV-9.3

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Mounting systems for solar technology





NEW PRODUCT

CrossRail 44-X

- Optimized rail profile
- ▶ One rail for all markets
- ▶ Built-in wire management
- ▶ Maintains same structural integrity as 48-X
- ▶ Tested up to 200 mph winds
- ▶ Tested up to 100 PSF snow loads









Part Number	Description
4000019	CrossRail 44-X 166'', Mill
4000020	CrossRail 44-X 166'', Dark
4000021	CrossRail 44-X 180", Mill
4000022	CrossRail 44-X 180", Dark
4000051	RailConn Set, CR 44-X, Mill
4000052	RailConn Set, CR 44-X, Dark
4000067	End Cap, Black, CR 44-X



www.everest-solarsystems.com

 $Cross Rail\ 44-X\ Product\ Sheet\ US01\ |\ 0520\cdot Subject\ to\ change\cdot Product\ illustrations\ are\ exemplary\ and\ may\ differ\ from\ the\ original.$

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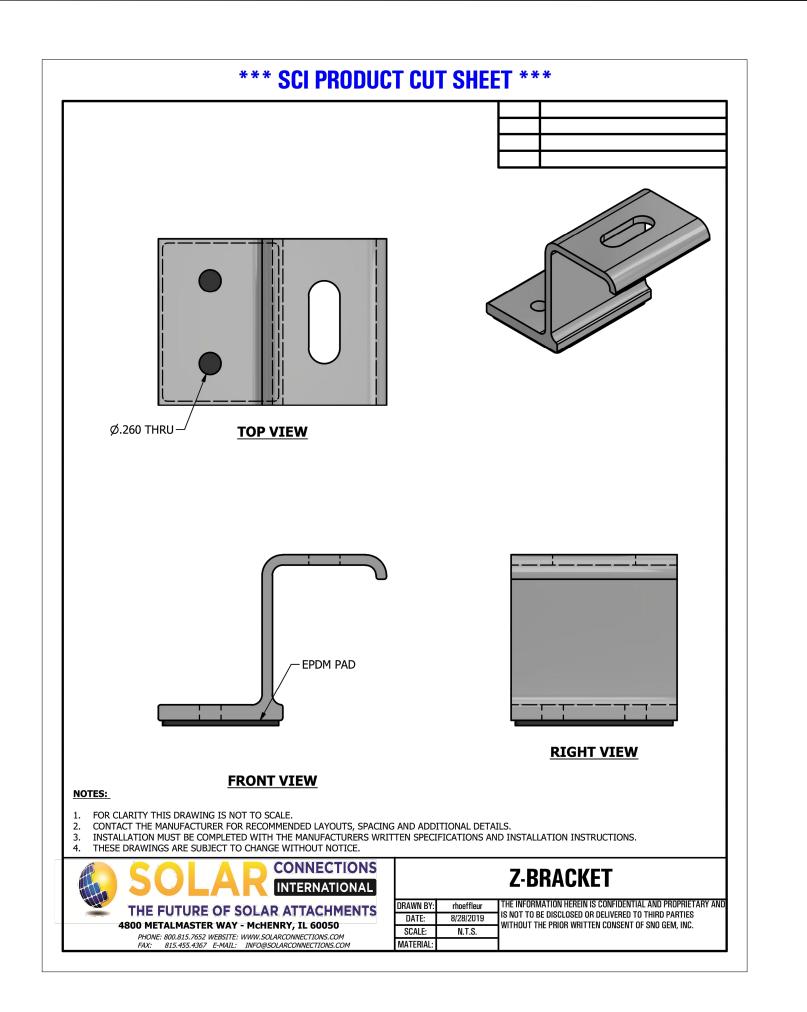


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RACKING DATASHEET

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MOUNTING DATASHEET

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