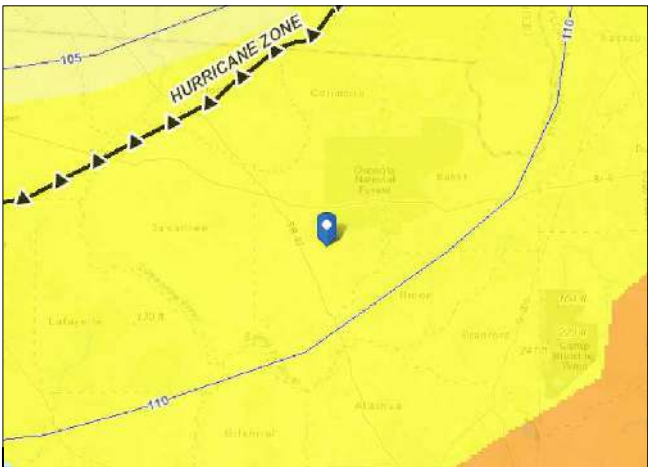
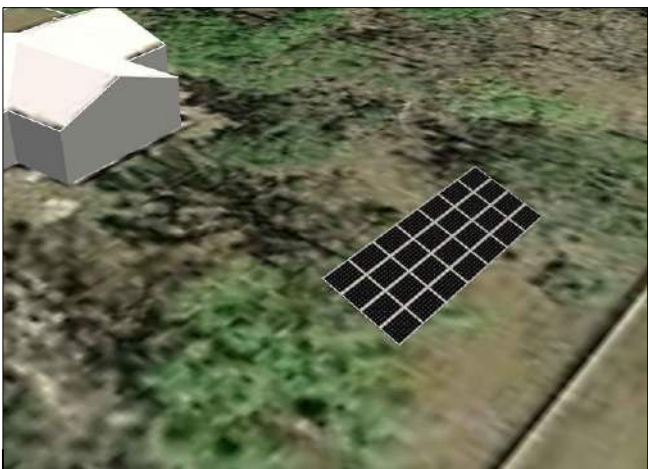




2 LOCATION MAP / WIND ZONES
N.T.S.



3 IRRADIANCE MAP
N.T.S.



4 3D RENDERING
N.T.S.



PROPERTY LINE

PROPERTY LINE



1 SITE/ROOF PLAN VIEW / BOS LOCATION
SCALE: 1' = 1/32"

R.O.W. WAY
EDGE PAVIMENT

R.O.W. WAY

SE SECLUSION
GLEN

STRING INVETER
PV DISCONNECT #2
EXISTING ELECTRIC METER

EXISTING MAIN
BUILDING

TRENCH PATH
8'-5"

TRENCH REFER
TO DETAIL 5/C-1

PV DISCONNECT #1

ARRAY-A
TILT=10°
AZIMUTH=180° (S)

166'-4"

PROPERTY LINE

DOCUMENT CONTROL				DATE	CAD	QC
ISSUED FOR PERMIT				02-10-21	AC	DM
REV	DESCRIPTION			DATE	CAD	QC
1	25 FT AWAY FROM PROPERTY LINE. LAYOUT REVISED			05-11-2021	DP	DM

ENGINEER CONTACT INFORMATION			
ENGIPARTNERS LLC			
C.A. 32661 255 GIRALDA AVE CORAL GABLES, FL 33134			
DESIGN@ENGIPARTNERS.COM			
833 - 888 - 3644			

ENGINEERING STAMP	
Digitally signed by Rafael A Gonzalez Soto Date: 2021.05.11 13:50:14 -04'00'	

CONTRACTOR CONTACT INFORMATION	
TITAN SOLAR POWER FL	
12221 N US HIGHWAY 301	
THONOTASASSA, FL 33592	
(813) 982 -9001	
#EC13008093	

CONTRACTOR LOGO	

CUSTOMER:	
JONATHAN MOSER	
PROJECT ADDRESS:	
249 SE SECLUSION GLEN LAKE CITY, FL 32025	
PARCEL NUMBER:	
10-4S-17-08305-003	

SHEET NAME:			
COVER SHEET			
PROJECT ID:		ENGINEER OF RECORD:	
TSP64089		ENG. RAFAEL A. GONZALEZ SOTO, PE	
DATE:		SHEET TITLE:	
02-09-2021		C-1	
SHEETS:		SHEET TITLE:	
1 OF 9		C-1	

PROJECT DESCRIPTION

SYSTEM CAPACITY: 9.52 KW DC / 7.6 KW AC

PV PANELS: (28) SIL-340 BY SILFAB

OPTIMIZERS: (28) P370 BY SOLAR EDGE

INVERTER: (1) SE-7600-US BY SOLAR EDGE

RACKING SYSTEM: CROSS RAIL 80 BY K2

PROJECT INFORMATION

PROJECT LATITUDE	30.15132	MIN AMBIENT TEMP	1 ° C
PROJECT LONGITUDE	-82.60546	MAX AMBIENT TEMP	35 ° C
AHJ	COLUMBIA COUNTY	WIND EXPOSURE	C
		MAX WIND SPEED	109 MPH

DRAWINGS INDEX

C-1	COVER SHEET
C-2	SAFETY PLANS
E-1	ONE LINE RISER DIAGRAM
E-2	SAFETY LABELS
S-1	STRUCTURAL PLAN
S-2	RACKING PLAN
D-1	PV MODULES DATA SHEET
D-2	SMART MONITORING DATA SHEET
D-3	INVERTER DATA SHEET

GENERAL NOTES

PER FL. STATUTE 377.705 (REVISED 7/1/2017), I RAFAEL A. GONZALEZ SOTO, P.E. 83104 AN ENGINEER LICENSED PURSUANT TO CHAPTER 471, CERTIFY THAT THE PV ELECTRICAL SYSTEM AND ELECTRICAL COMPONENTS ARE DESIGNED AND APPROVED USING THE STANDARDS CONTAINED IN THE MOST RECENT VERSION OF THE FLORIDA BUILDING CODE.

APPLICABLE CODES: 2020 FLORIDA BUILDING CODE 7TH EDITION, ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES, NEW ELECTRICAL CODE, NFPA 70 AND NEC 2017.

ALL WIND DESIGN CRITERIA AND PARAMETERS ARE FOR HIP AND GABLE RESIDENTIAL ROOFS, CONSIDERING FROM A 7° TO A MAXIMUM 27° (2/12 TO A MAXIMUM 6/12 PITCH ROOF IN SCHEDULE. ALL RESIDENTIAL ROOFS SHALL NOT EXCEED 30'-0" MEAN ROOF HEIGHT. ROOF SEALANTS SHALL CONFORM TO ASTM C920 AND ASTM 6511, AND IT IS RESPONSIBILITY OF THE CONTRACTOR TO PILOT FILL ALL HOLES.

CONTRACTOR SHALL ENSURE ALL ROOF PENETRATIONS TO BE INSTALLED AND SEALED PER 2020 FLORIDA BUILDING CODE 7TH EDITION OR LOCAL GOVERNING CODE.

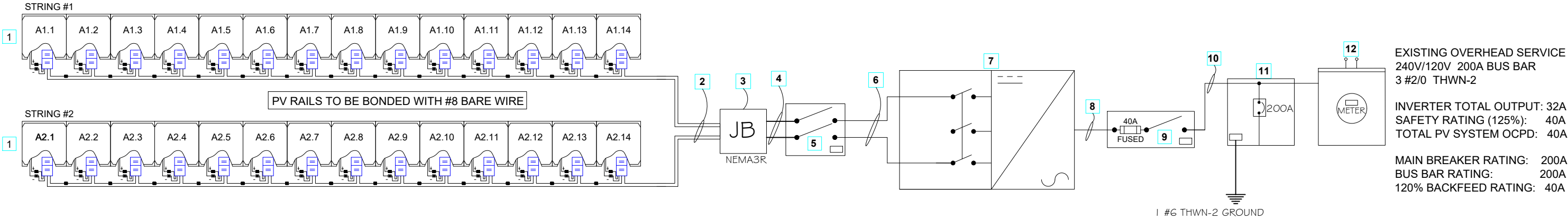
ALL WIRING METHODS AND INSTALLATION PRACTICES SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) 2017, LOCAL STATE CODES, AND OTHER APPLICABLE LOCAL CODES. MEANS SHALL BE PROVIDED TO DISCONNECT ALL CURRENT CARRYING CONDUCTORS OF THE PHOTOVOLTAIC POWER SOURCE FROM ALL OTHER CONDUCTORS IN THE BUILDING. CONNECTORS TO BE TORQUED PER DEVICE LISTING, OR MANUFACTURERS RECOMMENDATIONS. NON-CURRENT CARRYING METAL PARTS SHALL BE CHECKED FOR PROPER GROUNDING.

REQUIRED SAFETY SIGNS AND LABELS SHALL BE PERMANENTLY ATTACHED BY ADHESIVE, OR OTHER MECHANICAL MEANS, LABELS SHALL COMPLY WITH ARTICLE 690 VI OF THE NEC 2017 OR OTHER APPLICABLE STATE AND LOCAL CODES. SEE LABELS AND MARKING PAGE FOR MORE INFORMATION.

RACKING ROOF MOUNT SYSTEM SHALL BE INSTALLED FOLLOWING MANUFACTURERS INSTRUCTION SPEC'S, INCLUDING ALL GROUNDING WEEB CLIPS, GROUND LUGS, AND RAIL SPLICE KITS FOR ELECTRICAL CONTINUITY.

MECAWIND TOOL IS BASED ON THE C&C WIND LOADS FOR ENCLOSED BUILDINGS. DESIGN WIND PRESSURES ARE CALCULATED USING ASCE 7-16 EQUATION 30.6-1. ALL NOTES IN FIGURES ASCE 7-16 30.4-1 AND 30.4-2(A,B AND /67C) HAVE BEEN INCORPORATED. MEAN ROOF HEIGHT MUST BE LESS THAN 60 FEET.

	WIRE SIZES, QUANTITY & TYPE			RACEWAY SIZE, TYPE, LOCATION & INFO.			WIRE AMPACITY CALCULATIONS						ADDITIONAL INFORMATION				
WIRE TAG	CONDUCTOR QTY. SIZE & TYPE	NEUTRAL QTY. SIZE & TYPE	GROUND QTY. SIZE & TYPE	RACEWAY SIZE & TYPE	RACEWAY LOCATION	RACEWAY HEIGHT ABOVE ROOF	OUTPUT CURRENT	125% OF OUTPUT CURRRENT	MIN OCPD	WIRE DE-RATED CALCULATION				DIST.	VOLTAGE	VOLTAGE DROP %	CONDUIT FILL %
										WIRE RATING	AMBIENT TEMP	# OF COND.	FINAL AMPACITY				
DC (BEFORE JB)	(2) #10 AWG PV WIRE	N/A	(1) #8 AWG BARE COPPER	NOT APPLICABLE	UNDER ARRAY	1/2" TO 3-1/2"	15A	18.8A	20A	40A X 0.76 X 1 = 30.4 A				10 FT.	350V	0.11%	6.4%
DC (AFTER JB)	(4) #6 AWG THWN-2	N/A	(1) #8 AWG THWN-2	3/4" EMT CONDUIT	ABOVE ROOF	1/2" TO 3-1/2"	15A	18.8A	20A	40A X 0.76 X 0.8 = 24.3 A				96.5 FT.	240V	0.21%	8.1%
AC (INVERTER TO METER)	(2) #8 AWG THWN-2	(1)#8AWG THWN-2	(1) #8 AWG THWN-2	1" PVC CONDUIT	EXTERIOR WALL	"N/A"	32A	40A	40A	55A X 0.76 X 1 = 41.8 A				20 FT.	240V	1.58%	7.7%



EXISTING OVERHEAD SERVICE
240V/120V 200A BUS BAR
3 #2/0 THWN-2

INVERTER TOTAL OUTPUT: 32A
SAFETY RATING (125%): 40A
TOTAL PV SYSTEM OCPD: 40A

MAIN BREAKER RATING: 200A
BUS BAR RATING: 200A
120% BACKFEED RATING: 40A

1 ONE LINE RISER DIAGRAM

N.T.S.

LEGEND:

1	(28) SIL-340 BY SILFAB - REFER TO D-1 SHEET	2	4 #10 PV WIRE 1 #8 BARE WIRE GROUND 3/4" EMT CONDUIT	3	NEMA3R JUNCTION BOX
4	4 #10 THWN-2 1 #8 THWN-2 GROUND 3/4" EMT CONDUIT	5	PV SYSTEM DISCONNECT	6	4 #6 THWN-2 1 #8 THWN-2 GROUND 1" PVC SCH-80 CONDUIT
7	SE7600H-US BY SOLAREEDGE REFER TO D-3 SHEET	8	2 #8 L1,L2 THWN-2 1#8 THWN-2 NEUTRAL 1 #8 THWN-2 GROUND 3/4" EMT CONDUIT	9	PV SYSTEM DISCONNECT
10	2 #8 L1,L2 THWN-2 1#8 THWN-2 NEUTRAL 3/4" EMT CONDUIT	11	PV INTERCONNECTION POINT	12	UTILITY ELECTRICAL SERVICE

DOCUMENT CONTROL				DATE	CAD	QC	ENGINEER CONTACT INFORMATION		ENGINEERING STAMP		CONTRACTOR CONTACT INFORMATION		CONTRACTOR LOGO		CUSTOMER:		SHEET NAME:							
ISSUED FOR PERMIT				02-10-21	AC	DM	ENGIPARTNERS LLC C.A. 32661 255 GIRALDA AVE CORAL GABLES, FL 33134 DESIGN@ENGIPARTNERS.COM 833 - 888 - 3644		 Digitally signed by Rafael A Gonzalez Soto Date: 2021.05.11 13:50:31 -04'00'		TITAN SOLAR POWER FL 12221 N US HIGHWAY 301 THONOTASASSA, FL 33592 (813) 982 -9001 #EC13008093				JONATHAN MOSER		ONE LINE RISER DIAGRAM							
REV				DESCRIPTION											DATE						CAD	QC	PROJECT ADDRESS:	
																							249 SE SECLUSION GLEN LAKE CITY, FL 32025	
																							PARCEL NUMBER:	
																							10-4S-17-08305-003	
																PROJECT ID:		ENGINEER OF RECORD:		SHEET TITLE:				
																TSP64089		ENG. RAFAEL A. GONZALEZ SOTO, PE		E-1				
																DATE:		SHEETS:		3 OF 9				
																02-09-2021								

**WARNING**

ELECTRICAL SHOCK HAZARD

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

LABEL LOCATION:
AC DISCONNECT,
POINT OF INTERCONNECTION
PER CODE: NEC 690.13 (B)

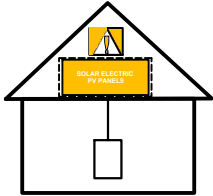
**WARNING**

TURN OFF PHOTVOLTAIC
AC DISCONNECT PRIOR TO
WORKING INSIDE PANEL

LABEL LOCATION:
AC DISCONNECT, MAIN PANEL
PER CODE: NEC 110.27 (C)
OSHA 1910.145(f)(7)

SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN
SWITCH TO THE "OFF"
POSITION, TO
SHUTDOWN CONDUCTORS
OUTSIDE THE ARRAY.
CONDUCTORS WITHIN
ARRAY REMAIN
ENERGIZED IN SUNLIGHT



LABEL LOCATION:
AC DISCONNECT, MAIN PANEL
PER CODE: NEC 690.56(C)(3)

PHOTOVOLTAIC
SYSTEM EQUIPPED
WITH RAPID SYSTEM
SHUTDOWN

LABEL LOCATION:
AC DISCONNECT
POINT OF INTERCONNECTION
PER CODE: NEC 690.56(C)

INVERTER #1

NOMINAL OPERATING AC VOLTAGE

240 V

NOMINAL OPERATING AC FREQUENCY

60 HZ

MAXIMUM AC POWER

7.6 KW

MAXIMUM AC CURRENT

32 AMPS

MAX OVERCURRENT DEVICE RATING
FOR AC MODULE PROTECTION

N/A

LABEL LOCATION:
INVERTER
PER CODE: NEC 690.52

MAXIMUM VOLTAGE

480 VDC

MAXIMUM CIRCUIT CURRENT

20 A

MAX RATED OUTPUT CURRENT OF
THE CHARGE CONTROLLER OR DC-TO-DC
CONVERTER
(IF INSTALLED)

15 A

LABEL LOCATION:
INVERTER
PER CODE: NEC 690.53

PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT:

32 A

NOMINAL OPERATING AC VOLTAGE:

240V

LABEL LOCATION:
AC DISCONNECT
PER CODE: NEC 690.54

MAIN PHOTOVOLTAIC
SYSTEM DISCONNECT

LABEL LOCATION:
AC DISCONNECT
PER CODE: NEC 690.13 (B)

WARNING: PHOTOVOLTAIC
POWER SOURCE

LABEL LOCATION:
MAIN SERVICES DISCONNECT, DC CONDUIT
PER CODE: NEC 690.31 (G) (3)

**WARNING**

DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION:
POINT OF
INTERCONNECTION
PER CODE: NEC 705.12 (B)(3)

**WARNING**

POWER SOURCE OUTPUT CONNECTION. DO NOT
RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
POINT OF
INTERCONNECTION
PER CODE: NEC
705.12(B)(2)(3)(b)

**CAUTION**

PHOTOVOLTAIC SYSTEM CIRCUIT IS SUPPLY SIDE

LABEL LOCATION:
MAIN SERVICE PANEL
PER CODE: NEC 690.45(B)(5)

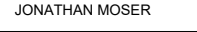
DO NOT DISCONNECT
UNDER LOAD

LABEL LOCATION:
POINT OF
INTERCONNECTION
PER CODE:
NEC 690.33(E)(2) & NEC
690.15 (C)

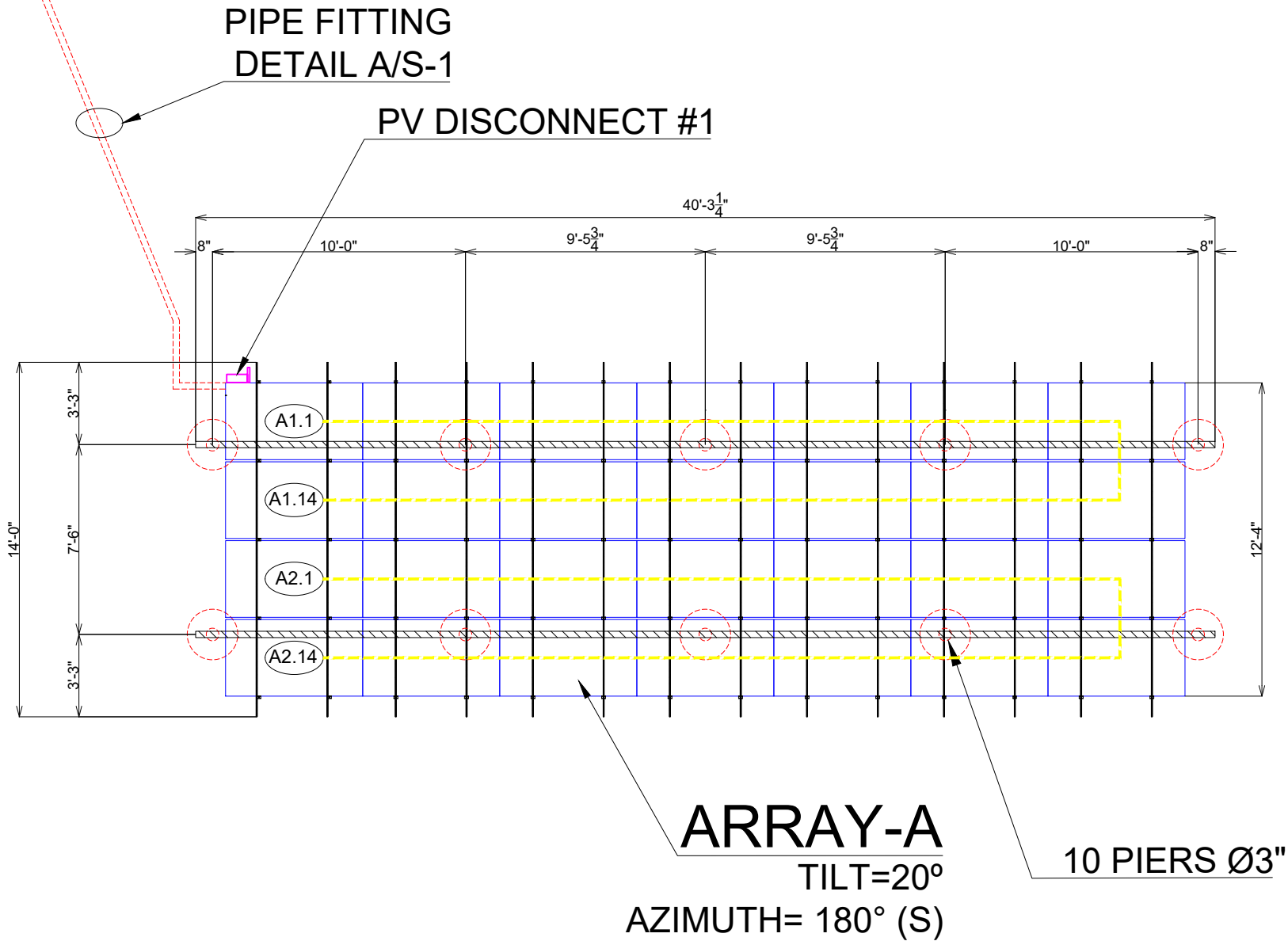
CAUTION: SOLAR ELECTRIC
SYSTEM CONNECTED

LABEL LOCATION: POINT OF INTERCONNECTION
PER CODE: NEC 690.15, NEC 690.13(B)

1 PV SAFETY LABELS DATA
N.T.S.

DOCUMENT CONTROL				DATE	CAD	QC	ENGINEER CONTACT INFORMATION				ENGINEERING STAMP		CONTRACTOR CONTACT INFORMATION		CONTRACTOR LOGO		CUSTOMER: JONATHAN MOSER		SHEET NAME: SAFETY LABELS			
ISSUED FOR PERMIT				02-10-21	AC	DM	ENGIPARTNERS LLC C.A. 32661 255 GIRALDA AVE CORAL GABLES, FL 33134 DESIGN@ENGIPARTNERS.COM 833 - 888 - 3644				 Digitally signed by Rafael A Gonzalez Soto Date: 2021.05.11 13:50:40 -04'00'		TITAN SOLAR POWER FL 12221 N US HIGHWAY 301 THONOTASASSA, FL 33592 (813) 982 -9001 #EC13008093				PROJECT ADDRESS: 249 SE SECLUSION GLEN LAKE CITY, FL 32025					
REV	DESCRIPTION			DATE	CAD	QC																
																	PROJECT ID: TSP64089		ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE DATE: 02-09-2021		SHEET TITLE: E-2 SHEETS: 4 OF 9	

WEIGHTED AVERAGE
WORST CASE MODULE: ZONE 1: 0%
ZONE 3: 100%
47.01 (1) = 47.01psf



1 STRUCTURAL PLAN & PV MODULES LAYOUT
N.T.S.

DESIGN WIND PRESSURE
CALCULATIONS FOR SOLAR
MODULES INSTALLED ON GROUND

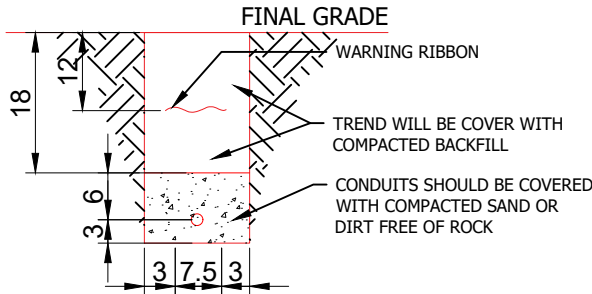
ARRAY DETAILS			
FBC VERSION	2017	RISK CATEGORY	I
CONFIG	4x7	EXPOSURE CATEGORY	C
MODS / PIERS	3	N-S SPACING	7'- 6"
PIERS	10	PIPE CANTILEVER	0'- 6"
SOUTH PIERS	5 (2'-6")	ULTIMATE WIND SPEED	110mph
NORTH PIERS	5 (4'-6")	TOTAL PIPE LENGTH	65'-10"
DIAGONAL PIPES	YES	GROUND SNOW LOAD	0 psf
TOTAL RAILS	14		
RAIL CANTILEVER	1'-6"		
RAIL TYPE	CROSS RAIL 80		

SUBSTRUCTURE		FOUNDATION	
TILT ANGLE	20°	SOIL CLASS	4
PIPE SIZE	3"	HOLE DIAMETER	1'-8"
E-W PIER SPACING	7'- 9"	TYPE	CONCRETE
DIAGONAL BRACING	YES	MIN HOLE DEPTH	5'-0"
TOTAL FOUNDATIONS	10		
SOUTH CLEARANCE	1'- 11"		
NORTH CLEARANCE	5'- 1"		

REACTION FORCES		
SHEAR	MOMENT	UPLIFT
2,709 lbs	0 ft-lbs	-2,753 lbs

LEGEND & SYMBOLS

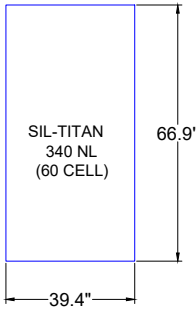
- OBS ROOF OBSTRUCTIONS
- XX.X ARRAY #
MODULE #
STRING #
- PV MODULES
- RAIL



A PIPE FITTING DETAIL
N.T.S.

UL 1703 CERTIFIED
PORTRAIT MAX. SURFACE LOAD: 83.54 psf
LANDSCAPE MAX. SURFACE LOAD: 50.13 psf
APPLIED WIND LOAD : 47.01 psf

NOTES:
-INSTALL MID CLAMPS BETWEEN
MODULES AND ENDS CLAMPS AT THE
END OF EACH ROW OF MODULES.
-ALUMINUM RAILS SHOULD ALWAYS BE
SUPPORTED BY MORE THAN ONE
FOOTING ON BOTH SIDES OF THE
SPLICE.



2 SOLAR MODULE
N.T.S.

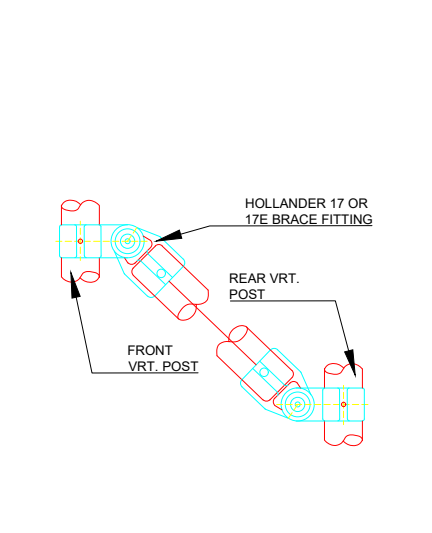
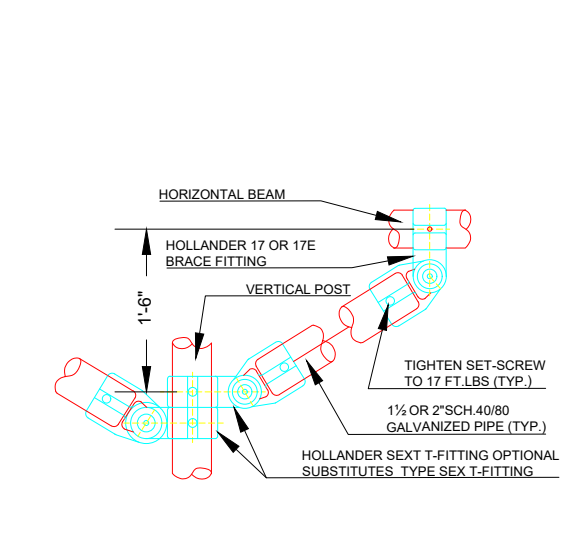
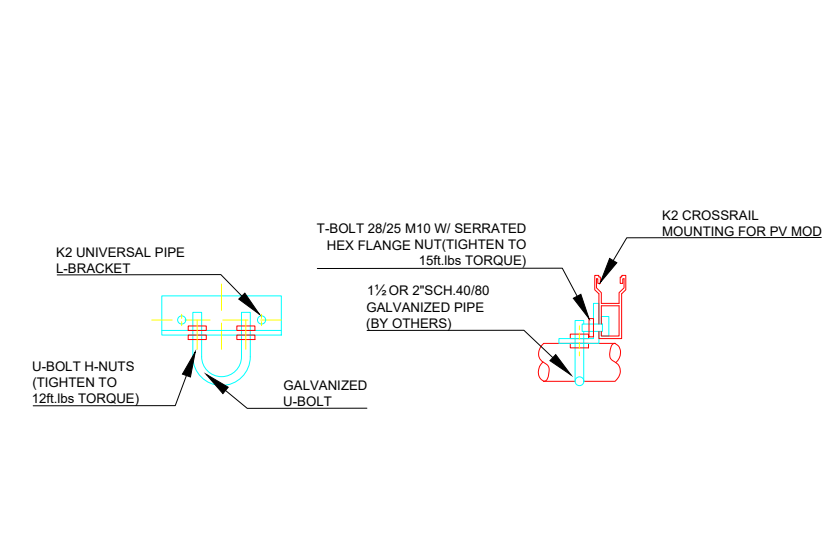
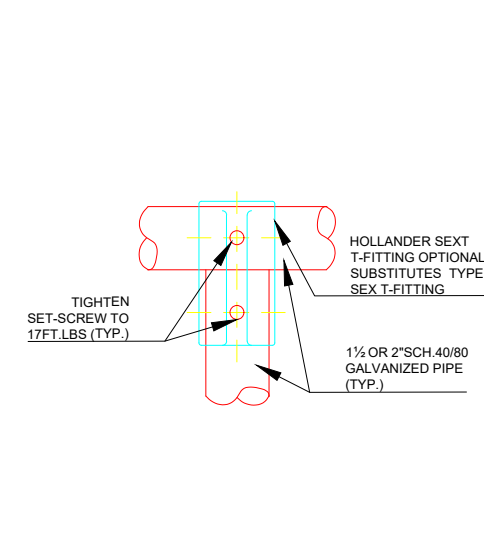
DOCUMENT CONTROL				ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
ISSUED FOR PERMIT				DATE	CAD	QC	ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
02-10-21				AC	DM	ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
REV				DESCRIPTION				DATE				CAD				QC				ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
02-10-2021				AC	DM	ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
PROJECT CHANGED TO GROUND MOUNT. LAYOUT REVISED.				02-10-2021				AC				DM				ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

	CrossRail 80 Material: aluminum Finish: mill
	CrossRail Mid Clamp UL2703+ Set 30-47 mm, 48-50 mm Material: stainless steel Finish: silver, dark
	CrossRail End Clamp Set 30-50mm Material: stainless steel Finnish: silver, dark

	Hollaender No. 70 External Coupling Material: aluminum
	Aluminum Hollaender SEXT Extended Barrel Tee OR Hollaender 5EX Material: aluminum
	Aluminum Hollaender 17 Adj. Elbow Material: aluminum
	Aluminum End Clamp Set Material: stainless steel Finish: silver, black Hardware: stainless steel
	Optional: End Cap for CR80 Material: glass fiber reinforced polamide
	Optional: External Omega Cable Clip Material: polyamide, black
	Optional: HEY Clip SunRunner Cable Clip SS, S6404 Material: stainless steel

NON UL LISTED COMPONENTS	
	K 2 Pipe L Bracket Kit Material: stainless steel, galvanized steel
	JF3 MiniRail Screw w/ EPDM 6x32 Material: stainless steel
	1/2 in Serrated Flange Nut and T-Bolt 28/15 M10 Material: stainless steel

DOCUMENT CONTROL		DATE	CAD	QC
ISSUED FOR PERMIT		02-10-21	AC	DM
REV	DESCRIPTION	DATE	CAD	QC
1	PROJECT CHANGED TO GROUND MOUNT. LAYOUT REVISED.	02-10-2021	AC	DM

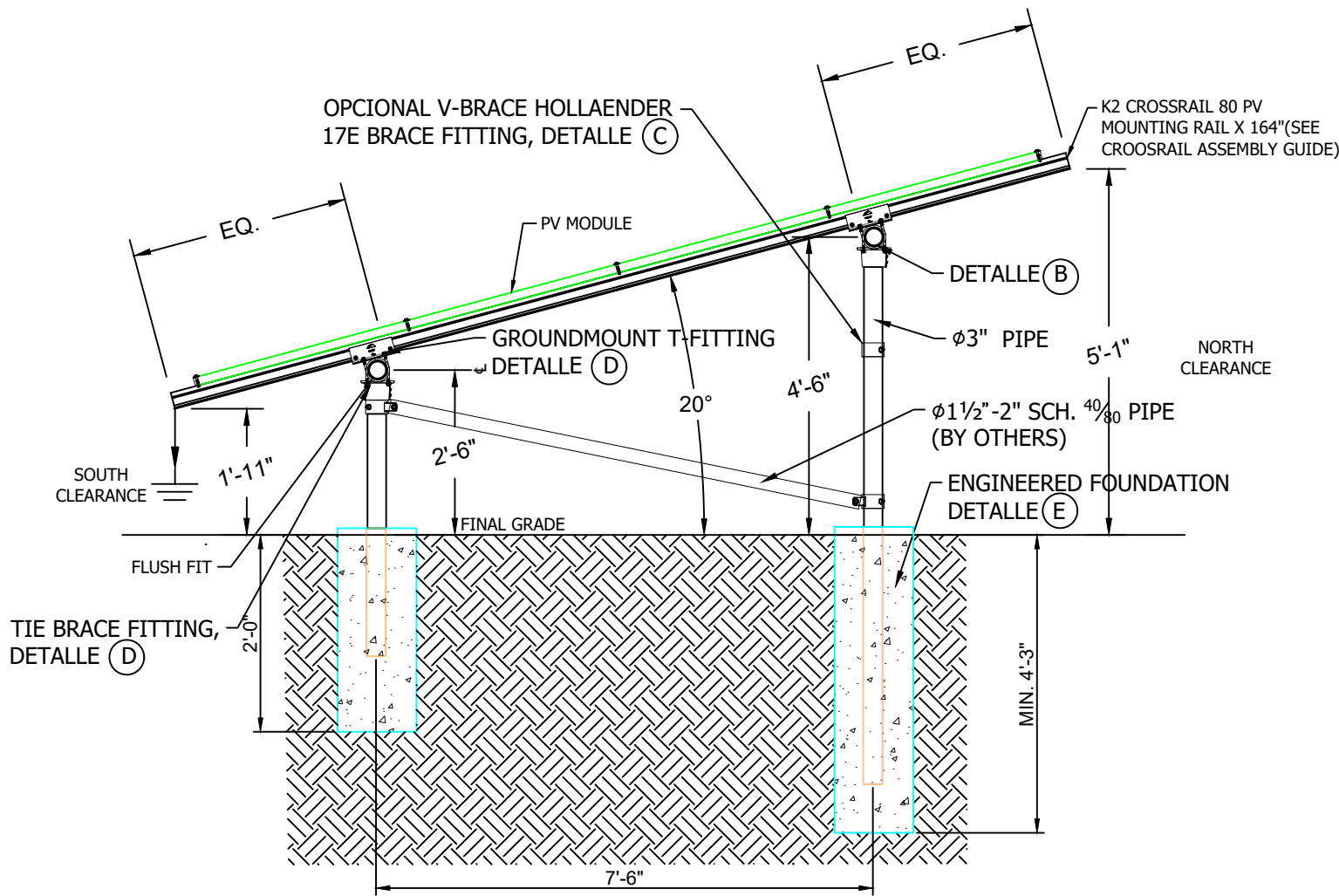
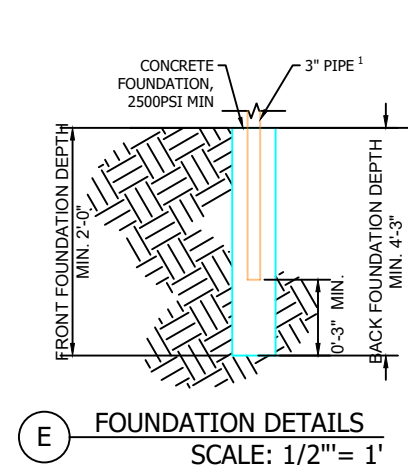


A GROUND MOUNT T-FITTING
SCALE: 3"=1'

B K2 1.5" PIPE L-BRACKET
SCALE: 3"=1'

C OPTIONAL V-BRACE (TYP. EACH POST)
SCALE: 3"=1'

D TIE BRACE CONNECTIONS
SCALE: 3"=1'



PV SYSTEM SIDE SECTION
SCALE: 3/4"=1'

DOCUMENT CONTROL				DATE		CAD		QC		ENGINEER CONTACT INFORMATION				ENGINEERING STAMP		CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO		CUSTOMER:		SHEET NAME:			
ISSUED FOR PERMIT				02-10-21		AC		DM		ENGIPARTNERS LLC						TITAN SOLAR POWER FL						JONATHAN MOSER		RACKING PLAN			
REV				DESCRIPTION		DATE		CAD		QC		12221 N US HIGHWAY 301				PROJECT ADDRESS:											
				PROJECT CHANGED TO GROUND MOUNT. LAYOUT REVISED.				02-10-2021		AC		DM				THONOTASASSA, FL 33592						249 SE SECLUSION GLEN LAKE CITY, FL 32025					
												(813) 982 -9001				PARCEL NUMBER: 10-4S-17-08305-003											
												#EC13008093															
																		PROJECT ID: TSP64089				ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE		SHEET TITLE: S-2			
																				DATE: 02-09-2021		SHEETS: 6 OF 9					



TITAN

SOLAR PANEL

60 Cell Monocrystalline PV Module



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

SIL-340 NL
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 100% made in North America.



BAA / ARRA COMPLIANT

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 PRODUCTION

Silfab Solar manufactures PV modules in two automated locations within North America. 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-340 NL mono PERC	
Test Conditions		STC	NOCT
Module Power (Pmax)	Wp	340	241
Maximum power voltage (Vpmax)	V	33.7	30.4
Maximum power current (Ipmax)	A	10.1	7.9
Open circuit voltage (Voc)	V	40.9	37.1
Short circuit current (Isc)	A	10.5	8.3
Module efficiency	%	20.0	17.7
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 module from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by ±1-3%.

Temperature Ratings		SIL-340 NL mono PERC	
Temperature Coefficient Isc		0.064 %/°C	
Temperature Coefficient Voc		-0.28 %/°C	
Temperature Coefficient Pmax		-0.36 %/°C	
NOCT (± 2 °C)		45 °C	
Operating temperature		-40/+85 °C	

Mechanical Properties and Components		SIL-340 NL mono PERC	
Module weight		41 ±0.4 lbs	
Dimensions (H x L x D)		66.9 in x 39.4 in x 1.5 in	
Maximum surface load (wind/snow)*		83.5/12.9 lb/ft ²	
Hail impact resistance		1 in at 51.6 mph	
Cells		60 - Si mono PERC - 5 busbar, 6.25 x 6.25 inch	
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-340 NL mono PERC	
Module product workmanship warranty		25 years**	
Linear power performance guarantee		30 years	
		≥ 97.1% end 1 st year	≥ 91.6% end 17 th year
		≥ 85.1% end 25 th year	≥ 82.6% end 30 th year

Certifications		SIL-340 NL 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 62715 Ammonia Corrosion, IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 2	
Factory		ISO 9001:2015	

Modules Per Pallet: 26
Pallets Per Tractor: 26
Modules Per Tractor: 936

*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.silfab.com.

***September 2020 expected completion date.

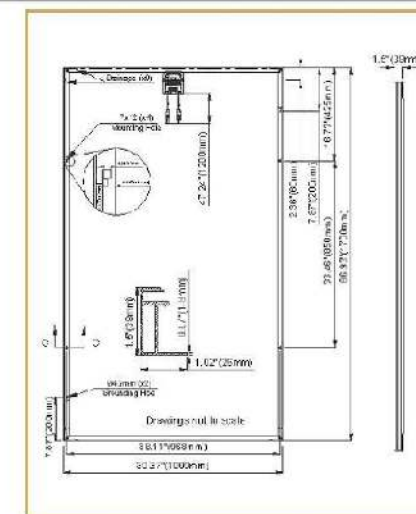
PAN files generated from 3rd party performance data are available for download at: www.silfab.com



Titan Solar Power
525 W Baseline Rd
Mesa, AZ 85210
Tel: 655-SAY-SOLAR
Titansolarpower.com
info@titansolarpower.com

Silfab Solar Inc.
240 Courtney Park Drive East
Mississauga, ON L3T 2Y8 Canada
Tel: +1 905-253-2501 | Fax: +1 905-696-0267
info@silfab.com | www.silfab.com

Silfab Solar Inc.
800 Cornwall Ave
Bellingham, WA 98225 USA
Tel: +1 360-569-4733



Silfab-SIL-340-NL-20200820 - No reproduction or any kind of use is allowed. Data and information is subject to modifications without notice. © Silfab, 2020.

DOCUMENT CONTROL				DATE		CAD	QC	ENGINEER CONTACT INFORMATION				ENGINEERING STAMP		CONTRACTOR CONTACT INFORMATION		CONTRACTOR LOGO		CUSTOMER:		SHEET NAME:	
ISSUED FOR PERMIT				02-10-21		AC	DM	ENGINEPARTNERS LLC				Digitally signed by Rafael A. Gonzalez Soto		TITAN SOLAR POWER FL		TITAN SOLAR POWER		JONATHAN MOSER		PV MODULES DATASHEET	
REV				DATE		CAD	QC	C.A. 32661				255 GIRALDA AVE		12221 N US HIGHWAY 301				PROJECT ADDRESS:		PROJECT ID:	
								CORAL GABLES, FL 33134				Date: 2021.05.11		THONOTASSA, FL 33592				249 SE SECLUSION GLEN		ENGINEER OF RECORD:	
								DESIGN@ENGINEPARTNERS.COM				13:51:08 -04'00'		(813) 982 -9001				LAKE CITY, FL 32025		ENG. RAFAEL A. GONZALEZ SOTO, PE	
								833 - 888 - 3644						#EC13008093				PARCEL NUMBER:		TSP64089	
																		10-4S-17-08305-003		DATE:	
																				02-09-2021	
																				SHEET TITLE:	
																				D-1	
																				SHEETS:	
																				7 OF 9	

Power Optimizer

For North America

P320 / P340 / **P370** / P400 / P401 / P405 / P485 / P505



POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com

solaredge

Power Optimizer

For North America

P320 / P340 / **P370** / P400 / P401 / 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)	P401 (for high-power 60 and 72-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 (V _{oc} at lowest temperature)	48		60	80	60	125 ⁽²⁾	83 ⁽²⁾	V _{dc}	
MPPT Operating Range	8 - 48		8 - 60	8 - 80	8-60	12.5 - 105	12.5 - 83	V _{dc}	
Maximum Short Circuit Current (I _{sc})		11		10.1	11.75	11	14	A _{cc}	
Maximum DC Input Current		13.75		12.5	11.65	12.5	17.5	A _{cc}	
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				A _{cc}	
Maximum Output Voltage				60		85		V _{dc}	
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)									
Safety Output Voltage per Power Optimizer				1 ± 0.1				V _{dc}	
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				V _{dc}	
Compatible inverters				All SolarEdge Single Phase and Three Phase inverters					
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3			mm / in	
Weight (including cables)	630 / 1.4	750 / 1.7	655 / 1.5	845 / 1.9	1064 / 2.3			gr / lb	
Input Connector				MC4 ⁽³⁾	Single or dual MC4 ⁽³⁾			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 dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals.
(5) For ambient temperature above +85°C / +185°F power derating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

PV System Design Using a SolarEdge Inverter ⁽⁶⁾⁽⁷⁾		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400, P401 P405, P485, P505	8		10	18	
Maximum String Length (Power Optimizers)		6	25	8	14	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	25	50 ⁽⁸⁾	12750 ⁽⁹⁾
Parallel Strings of Different Lengths or Orientations		Yes				W

- (6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(7) It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400/P401 in one string.
(8) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement.
(9) For 208V grid, it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W.
(10) For 277/480V grid, it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W.

© SolarEdge Technologies Ltd. All rights reserved. SOLAREDGE, the SolarEdge logo, OPTIMIZED BY SOLAREDGE are trademarks or registered trademarks of SolarEdge Technologies, Inc. All other trademarks mentioned herein are trademarks of their respective owners. Date: 04/2020/02/ENG/NA/NA. Subject to change without notice.



DOCUMENT CONTROL				ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:			
ISSUED FOR PERMIT				02-10-21				AC DM				TITAN SOLAR POWER FL				JONATHAN MOSER				PROJECT ADDRESS:				SMART MONITORING DATASHEET			
REV DESCRIPTION				DATE				CAD QC				2221 N US HIGHWAY 301				249 SE SECLUSION GLEN LAKE CITY, FL 32025				PROJECT ID:				PROJECT ID:			
																				PARCEL NUMBER:				TSP64089			
																								ENGINEER OF RECORD:			
																								ENG. RAFAEL A. GONZALEZ SOTO, PE			
																								DATE:			
																								02-09-2021			
																								SHEET TITLE:			
																								D-2			
																								SHEETS:			
																								8 OF 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



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 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solaredge.com



Single Phase Inverter with HD-Wave Technology for North America

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

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 ⁽¹⁾							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380							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

DOCUMENT CONTROL				ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:			
ISSUED FOR PERMIT				02-10-21				AC/DM				TITAN SOLAR POWER FL				TITAN SOLAR POWER				JONATHAN MOSER				INVERTER DATASHEET			
REV				DATE				DATE				THONOTASASSA, FL 33592								249 SE SECLUSION GLEN LAKE CITY, FL 32025				PROJECT ID:			
												(813) 982 -9001								PARCEL NUMBER:				TSP64089			
												#EC13008093								10-4S-17-08305-003				ENGINEER OF RECORD:			
																								ENG. RAFAEL A. GONZALEZ SOTO, PE			
																								DATE:			
																								02-09-2021			
																								SHEET TITLE:			
																								D-3			
																								SHEETS:			
																								9 OF 9			