

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



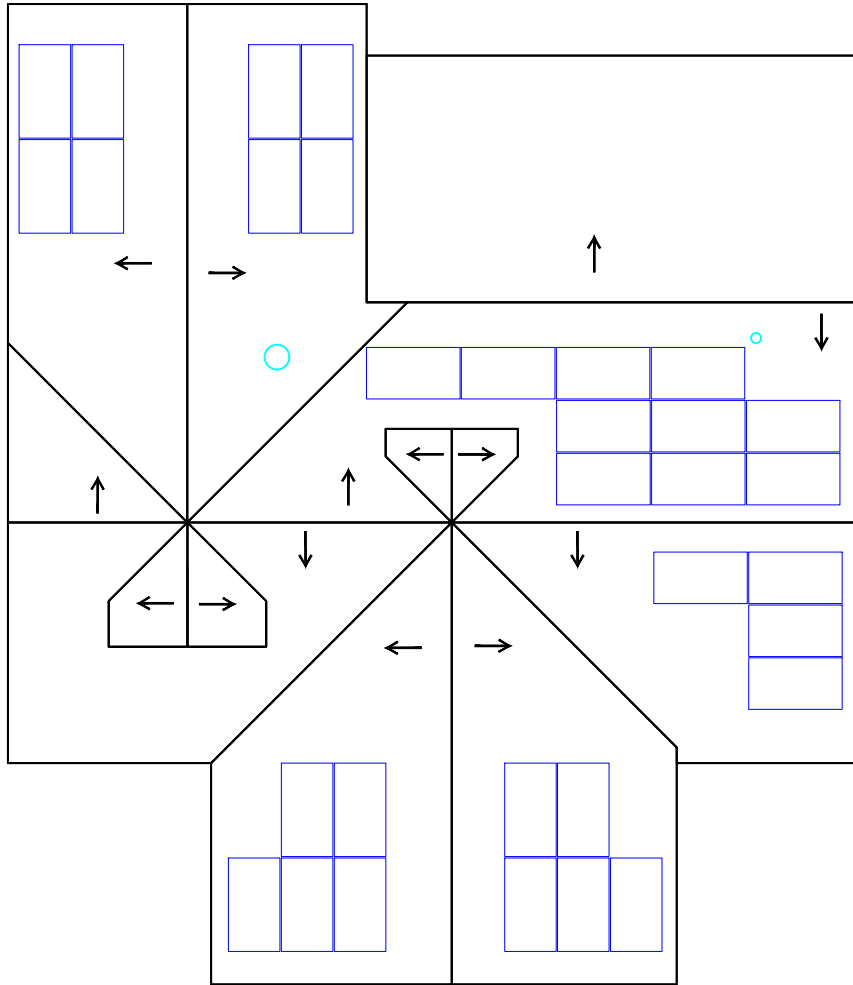
3 IRRADIANCE MAP  
N.T.S.



4 3D RENDERING  
N.T.S.



PV DISCONNECT  
EXISTING ELECTRICAL METER  
PV STRING INVERTER #1



"PROPERTY SIDE FACING STREET"

1 ROOF PLAN VIEW / BOS LOCATION  
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PROJECT DESCRIPTION

SYSTEM CAPACITY: 10.88 KW DC / 10.00 KW AC

PV PANELS: (32) SIL-340 BY SILFAB

OPTIMIZERS: (32) P370 BY SOLAR EDGE

INVERTER: (1) SE-10000-US BY SOLAR EDGE

RACKING SYSTEM: CROSS RAIL 48-XL BY EVEREST

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	175 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.

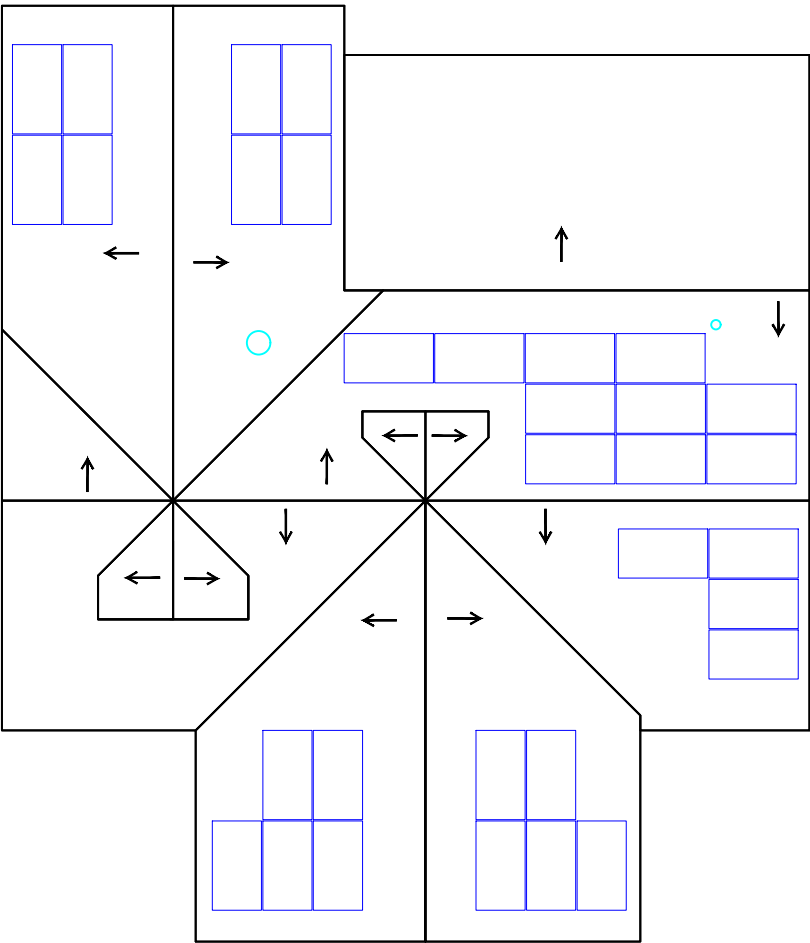
ALL WIRING METHODS AND INSTALLATION PRACTICES SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) 2017, LOCAL STATE CODES, AND OTHER APPLICABLE LOCAL CODES. MEANS SHALL BE PROVIDED TO DISCONNECT ALL CURRENT CARRYING CONDUCTORS OF THE PHOTOVOLTAIC POWER SOURCE FROM ALL OTHER CONDUCTORS IN THE BUILDING. 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.

DOCUMENT CONTROL				DATE		CAD	QC	ENGINEER CONTACT INFORMATION				ENGINEERING STAMP		CONTRACTOR CONTACT INFORMATION		CONTRACTOR LOGO		CUSTOMER:		SHEET NAME:	
ISSUED FOR PERMIT				01-28-21		JG	AF	ENGIPARTNERS LLC				Digitally signed by Rafael A Gonzalez Soto		TITAN SOLAR POWER FL		TITAN SOLAR POWER		JONATHAN MOSER		COVER SHEET	
REV DESCRIPTION				DATE		CAD	QC	C.A. 32661 255 GIRALDA AVE CORAL GABLES, FL 33134				Date: 2021.01.31 19:24:46 -05'00'		12221 N US HIGHWAY 301 THONOTASASSA, FL 33592				PROJECT ADDRESS:			
								DESIGN@ENGIPARTNERS.COM						(813) 982 -9001				249 SE SECLUSION GLEN LAKE CITY, FL 32025			
								833 - 888 - 3644						#EC13008093				PARCEL NUMBER:			
																		10-4S-17-08305-003		PROJECT ID:	
																				TSP64089	
																				ENGINEER OF RECORD:	
																				ENG. RAFAEL A. GONZALEZ SOTO, PE	
																				SHEET TITLE:	
																				C-1	
																				SHEETS:	
																				1 OF 9	
																				DATE:	
																				01-28-2021	



"PROPERTY SIDE FACING STREET"

1

SAFETY PLAN

N.T.S.

LOCATION OF NEAREST URGENT CARE FACILITY


NAME:

ADDRESS:

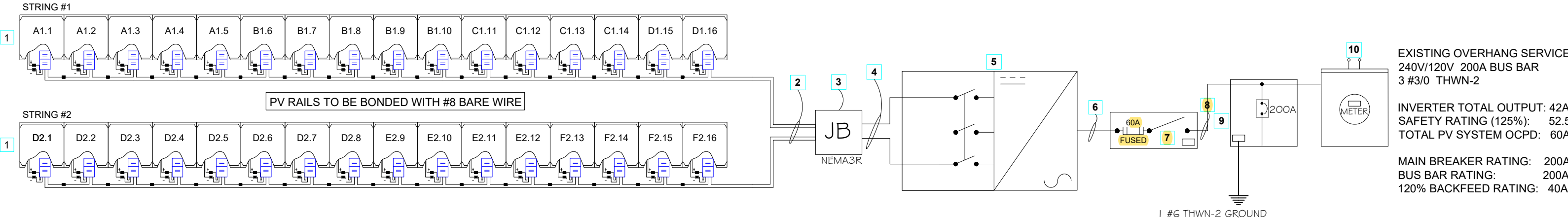
PHONE NUMBER:

NOTES:

1. INSTALLERS SHALL DRAW IN DESIGNATED SAFETY AREA AROUND HOME
2. INSTALLERS SHALL UPDATE NAME ADDRESS AND PHONE NUMBER OF NEAREST URGENT CAR FACILITY RELATIVE TO THE SITE BEFORE STARTING WORK

DOCUMENT CONTROL				DATE	CAD	QC	ENGINEER CONTACT INFORMATION				ENGINEERING STAMP				CONTRACTOR CONTACT INFORMATION				CONTRACTOR LOGO				CUSTOMER:				SHEET NAME:  <div>SAFETY PLAN</div>																
ISSUED FOR PERMIT				01-28-21	JG	AF	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: 2021.01.31 19:24:57 -05'00'				TITAN SOLAR POWER FL  12221 N US HIGHWAY 301  THONOTASASSA, FL 33592  (813) 982 - 9001  #EC13008093								JONATHAN MOSER																				
REV				DESCRIPTION																			DATE								CAD				QC				PROJECT ADDRESS:				
																																							249 SE SECLUSION GLEN LAKE CITY, FL 32025				
																															PARCEL NUMBER:												
																												10-4S-17-08305-003				PROJECT ID:  TSP64089				ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE				SHEET TITLE:  C-2			
																																DATE: 01-28-2021				SHEETS:  2 OF 9							

	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)	(4) #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) #10 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				20 FT.	350V	0.21%	8.1%	
AC (INVERTER TO METER)	(2) #6 AWG THWN-2	(1)#6AWG THWN-2	(1) #8 AWG THWN-2	3/4" EMT CONDUIT	EXTERIOR WALL	"N/A"	42A	52.5A	60A	75A X 0.76 X 1 = 57.0 A				5 FT.	240V	0.1%	7.7%	



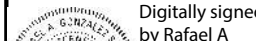
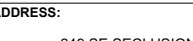
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ONE LINE RISER DIAGRAM


N.T.S.

LEGEND:

1	(32) 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	SE10000H-US BY SOLAREEDGE - REFER TO D-3 SHEET	6	2 #6 L1,L2 THWN-2 1#6 THWN-2 NEUTRAL 1 #8 THWN-2 GROUND 3/4" EMT CONDUIT
7	PV SYSTEM DISCONNECT	8	2 #6 L1,L2 THWN-2 1#6 THWN-2 NEUTRAL 3/4" EMT CONDUIT	9	PV INTERCONNECTION POINT
10	UTILITY ELECTRICAL SERVICE	11	NOT USED	12	NOT USED

DOCUMENT CONTROL				DATE		CAD		QC		ENGINEER CONTACT INFORMATION		ENGINEERING STAMP		CONTRACTOR CONTACT INFORMATION		CONTRACTOR LOGO		CUSTOMER:		SHEET NAME:					
ISSUED FOR PERMIT				01-28-21		JG		AF		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: 2021.01.31 19:25:06 -05'00'		TITAN SOLAR POWER FL  12221 N US HIGHWAY 301  THONOTASASSA, FL 33592  (813) 982 -9001  #EC13008093				CUSTOMER:  JONATHAN MOSER		ONE LINE RISER DIAGRAM					
REV				DATE		CAD		QC										PROJECT ADDRESS:  249 SE SECLUSION GLEN LAKE CITY, FL 32025							
																		PARCEL NUMBER:  10-4S-17-08305-003							
																				PROJECT ID:  TSP64089		ENGINEER OF RECORD: ENG. RAFAEL A. GONZALEZ SOTO, PE		SHEET TITLE:  E-1	
																								DATE: 01-28-2021	






**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)



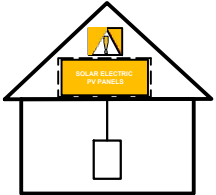
**WARNING**

**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**

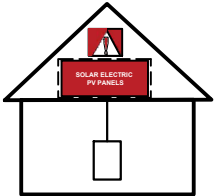
TURN RAPID SHUTDOWN  
SWITCH TO THE "OFF"  
POSITION, TO  
SHUTDOWN CONDUCTORS  
OUTSIDE THE ARRAY.  
CONDUCTORS WITHIN  
ARRAY REMAIN  
ENERGIZED IN SUNLIGHT



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

**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 VOLTAGE240 V

NOMINAL OPERATING AC FREQUENCY60 HZ

MAXIMUM AC POWER10.00 KW

MAXIMUM AC CURRENT42 AMPS

MAX OVERCURRENT DEVICE RATING  
FOR AC MODULE PROTECTIONN/A

LABEL LOCATION:  
INVERTER  
PER CODE: NEC 690.52

**MAXIMUM VOLTAGE**480 VDC

**MAXIMUM CIRCUIT CURRENT**27 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:42 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				01-28-21	JG	AF	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: 2021.01.31 19:25:17 -05'00'				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				SHEET TITLE: E-2			
																											DATE: 01-28-2021				SHEETS: 4 OF 9			