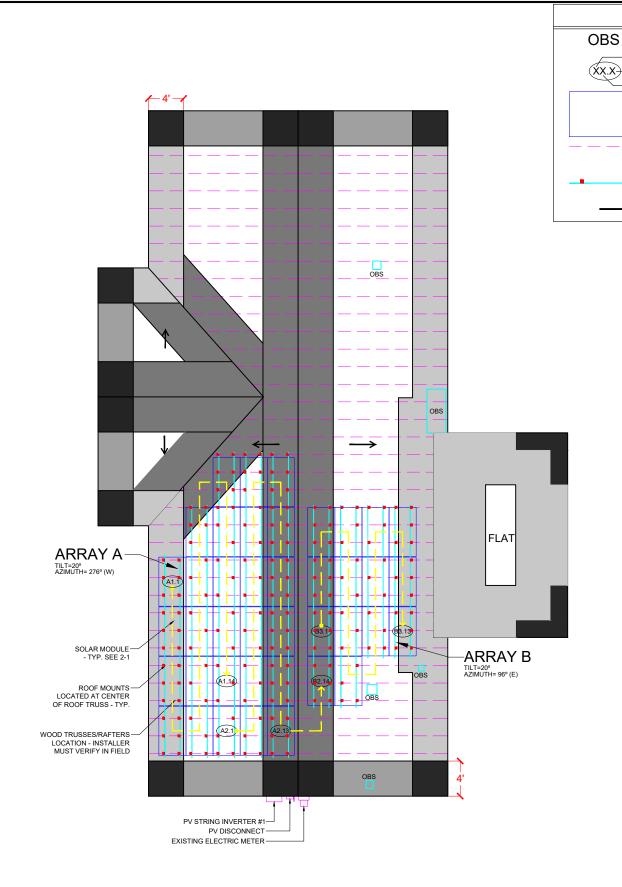
ROOF'S GENERAL NOTES: 1- CONTRACTOR/INSTALLER TO VERIFY ROOF CONDITIONS FOR PROPER INSTALLATION OF THE PV SYSTEM. 2- CONTRACTOR/INSTALLER TO NOTIFY THE OWNER IMMEDIATELY OF ANY ROOF DEFICIENCIES AND/OR REPAIR REQUIRED TO INSTALL THE PV SYSTEM. 3- EOR DOES NOT ASSUME ANY RESPONSIBILITY FOR THE INSTALLATION OF ANY PV SYSTEM ON DEFICIENT ROOFS. 4-CONTRACTOR/INSTALLER ASSUMES ALL RESPONSIBILITY TO INSTALL AS PER MANUFACTURER STANDARDS.

NORTH



LEGEND & SYMBOLS ROOF OBSTRUCTIONS ARRAY # **MODULE #** STRING # PV MODULES TRUSSES OR RAFTERS **ROOF MOUNTS & RAIL ROOF SLOPE**

SOLAR MODULE

UL 1703 CERTIFIED PORTRAIT MAX. SURFACE LOAD: 119 psf LANDSCAPE MAX. SURFACE LOAD: 50.13 psf APPLIED WIND LOAD: 49.07 psf NOTES: -INSTALL MID CLAMPS BETWEEN MODULES AND ENDS CLAMPS AT THE SIL-TITAN END OF EACH ROW OF MODULES. 340 NL (60 CELL) -ALUMINUM RAILS SHOULD ALWAYS BE SUPPORTED BY MORE THAN ONE FOOTING ON BOTH SIDES OF THE

WEIGHTED AVERAGE

WORST CASE MODULE:

ZONE 1: 0% **ZONE 2r: 100%**

49.07(1.0) + 33.64(0.0) = 49.07psf

ULTIMATE WIND SPEED	175	mph
NOMINAL WIND SPEED	118	mph
RISK CATEGORY	II	
EXPOSURE CATEGORY	С	
ROOF SLOPE (°)	20	
ROOF TYPE	GABLED	
PRESSURE ZONE:	1&2	
MEAN ROOF HEIGHT:	12.93	
PERIMETER WIDTH:	4.0	
K_D	0.85	
K _{ZT}	1.0	
K _H	0.85	
VELOCITY PRESSURE (q) = 0.60*0.0	0256* K _H K _z	$_{T}K_{D}V$
VELOCITY PRESSURE (ASD)	15.43	
EXTERNAL PRESSURE COEFFICIEN	NT Z1 0.7	-2.0
EXTERNAL PRESSURE COEFFICIEN	NT Z2e 0.7	-2.0
EXTERNAL PRESSURE COEFFICIEN	NT Z2n 0.7	-3.0
EXTERNAL PRESSURE COEFFICIEN	NT Z2r 0.7	-3.0
EXTERNAL PRESSURE COEFFICIEN	NT Z3e 0.7	-3.0
EXTERNAL PRESSURE COEFFICIEN	NT Z3r 0.7	-3.6
INTERNAL PRESSURE COEFFICIEN	Т	0.18
	-	

ZONES		PRESSURES (PSF)		MAX. CANTILEVER (IN)	
1		-33.64	4'	16"	
2e		-33.64	2'	8"	
2n		-49.07	2'	8"	
2r		-49.07	2'	8"	
3e		-49.07	2'	8"	
3r		-58.33	2'	8"	
T	OTAL R	OOF AREA		3136.06 sqft	

TOTAL MODULES: TOTAL PHOTOVOLTAIC AREA: WIND LOAD (PSF)

49.07 TOTAL WIND LOAD (LBS): -36,817.22 **TOTAL ROOF MOUNTS:** 185

41

750.3 sq.-ft

TENSION FORCE PER MOUNT (LBS): 199.01

DOCUMENT CONTROL DATE CAD QO 03-18-2021 DP JG REV DESCRIPTION DATE CAD Q

ENGIPARTNERS LLC C.A. 32661 CORAL GABLES, FL 33134 DESIGN@ENGIPARTNERS.COM

833 - 888 - 3644

ENGINEER CONTACT INFORMATION

ENGINEERING STAMP

STRUCTURAL ROOF PLAN & PV MODULES LAYOUT

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

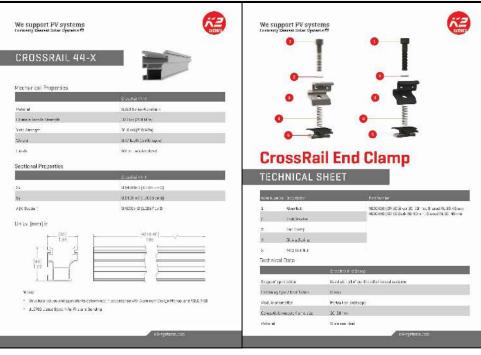
CONTRACTOR CONTACT INFORMATION

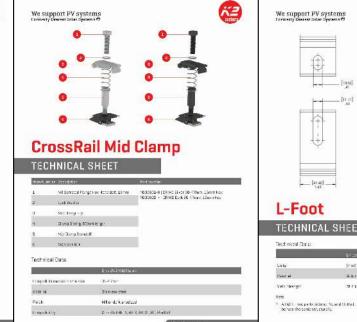


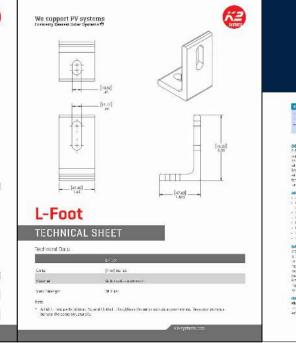
CUSTOMER:		SHI
	MOSES TOWN	
PROJECT ADDRES	S:	
	205 SE JONATHAN WAY	
	LAKE CITY FL 32025	PRO
		lτ
PARCEL NUMBER:		
	15-4S-17-08360-184	

STRUCTURAL PLAN

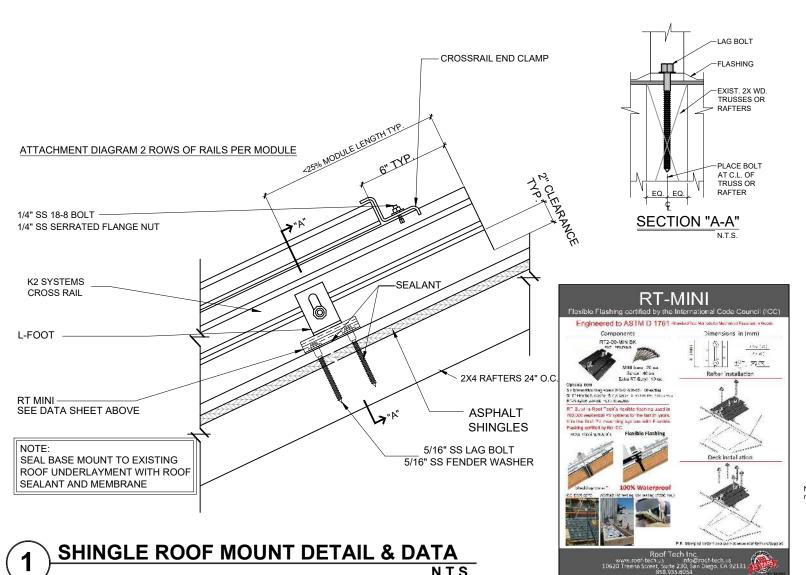
ROJECT ID: S-1 ENG RAFAEL A GONZALEZ SOTO PE TSP68549 5 OF 9 03-16-2021







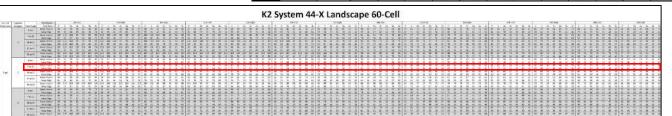




LAG BOLT PULL OUT CALCULATIONS

<u> </u>				
Spruce, Pine,	Per inch Thread Depth	266lbs		
SS Lag Bolt 5/16" x 4"	Min. Thread Depth	0'-3"		
Wood Strength x Thread Depth = Pull Out Strength				
266 lbs. x 3 in = 798 lbs.				
Allowable Pull Out St	798 lbs.			
Max. Pull Out Strength	199.01			
Lag Bolt Pull Out Stre	4.0			

SPAN TABLE FOR RT MINI ANCHORAGE SYSTEM 7 to 27 Degrees



DISTRIBUTED LOAD CALCULATIONS

PV MODULES & RACKING WEIGHT = (INDIVIDUAL MODULE WEIGHT + 3.5 LBS) * (MODULE QTY) = (44.5 LBS) * (41) = 1,824.5 LBS

PER SQUARE FEET (PSF) ARRAY LOAD = PV MODULES & RACKING WEIGHT / TOTAL ARRAY AREA =1,824.5 LBS /750.3 SQFT =2.43 PSF

 $\frac{\text{HENCE, ROOF WILL CARRY THE ADDITIONAL SOLAR SYSTEM}}{\text{LOAD}}$

Notes: (1) Thread must be embedded in the side grain of a Trusses or other structural member integral with the building structure.

- (2) Lag Bolts must be located in the middle third of the structural member.
 (3) These values are not valid for wet services.
 (4) This table does not include shear capacities. If necessary, contact a local engineer to
- specify lag bolt size with regard to shear forces. (5) Install lag bolts with head ad washer flush to surface (no gap). Do nor over-torque.
- (6) Withdrawal design values for lag screw connections shall be multiplied by applicable adjustment factors if necessary. See table 10.3.1 in the American Wood Council NDS

Lag Screw Installation Guidelines

- 1. Determine location for the Mount on roof by drilling through the center of truss from bottom with 5/32" drill bit.
- 2. Mark mounting holes for Mount or underlayment. Mounting holes should be centered on the trusses.
- 3. Drill 15/64" pilot hole
- Apply sealant to bottom of Mount.
 Place Mount over roof underlayment with holes
- 6. Apply sealant to bottom of Mount, apply sealant to lag screws and fasten Mount securely to
- Apply additional sealant to top asset sure all penetrations are sealed.

Uni-Rac Specs. Lag pull-out (withdrawal) capacities (lbs)

in typical roof lumber (ASD) STAINLESS STEEL Lag screw specifications Specific 5/16" shaft, 1 per inch thread depth 0.50 Douglas Fir, Larch Douglas Fir, South 0.46 235 Engelman Spruce, Lodgepole Pine 0.46 235 (MSR 1650 f & higher) 0.43 212 Hem. Fir (North) 0.46 235 0.55 307 Southern Pine 205 Spruce, Pine, Fir 0.42 (E of 2 million psi and higher grades of MSR and MEL) 0.50

Sources: American Wood Council, NDS 2005, Table 11.2A, 11.3A.

	DOCUMENT CONTROL	DATE	CAD	QC	ENGINEER CONTACT INFORMATION	ENGINEERING STAMP	CONTRACTOR CONTACT INFORMATION
SSUE	D FOR PERMIT	03-18-2021	DP	JG	ENGIPARTNERS LLC		TITAN SOLAR POWER FL
REV	DESCRIPTION	DATE	CAD	QC	C.A. 32661		12221 N US HIGHWAY 301
					255 GIRALDA AVE		12221 N 00 HIGHWAT 301
					CORAL GABLES, FL 33134		THONOTASASSA, FL 33592
					DESIGN@ENGIPARTNERS.COM		(813) 982 -9001
					DEGIGNWEINGIFARTNERG.COM		(013) 902 -9001

833 - 888 - 3644



CONTRACTOR LOGO

#FC13008093

	CUSTOMER:	SHEET N.
	MOSES TOWN	l
	PROJECT ADDRESS:	l
	205 SE JONATHAN WAY	
	LAKE CITY FL 32025	PROJECT
		TSP
-	PARCEL NUMBER:	

15-4S-17-08360-184

RACKING PLAN

PROJECT ID:	ENGINEER OF RECORD:	SHEET TITLE:	
TSP68549	ENG. RAFAEL A. GONZALEZ SOTO, PE		S-2
101 00049	DATE : 03-16-2021	SHEETS:	6 OF 9