

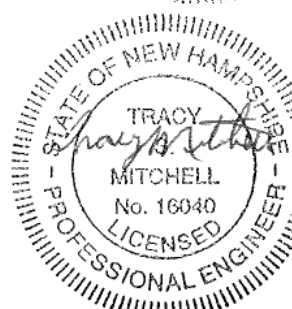
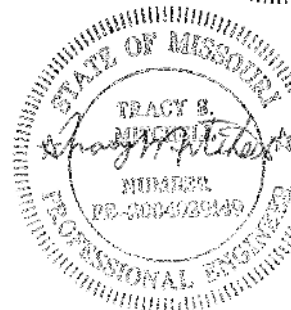
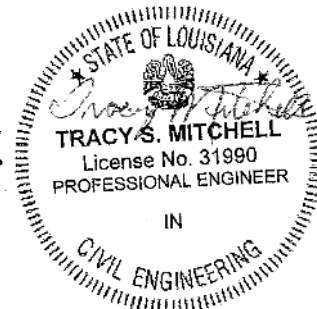
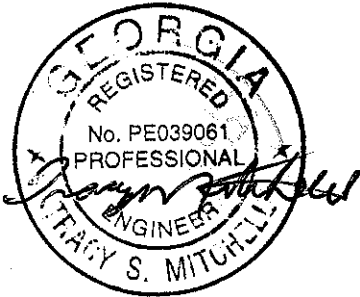
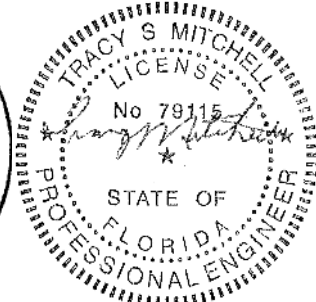
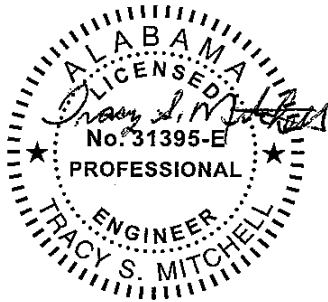
Design Document

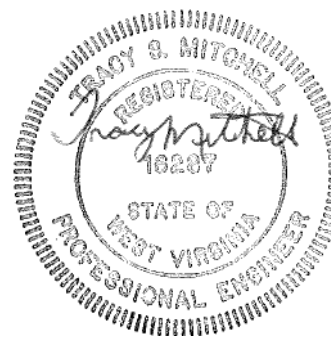
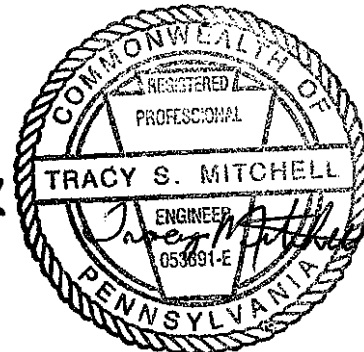
For:

Ground Mount Shade Structure
4 Modules

Exposure Category – C (5.5 ft x 3 ft)
ASCE 7-10 & ASCE 7-16

This Document Approved for the below:





EXP. 03/31/2024

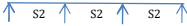


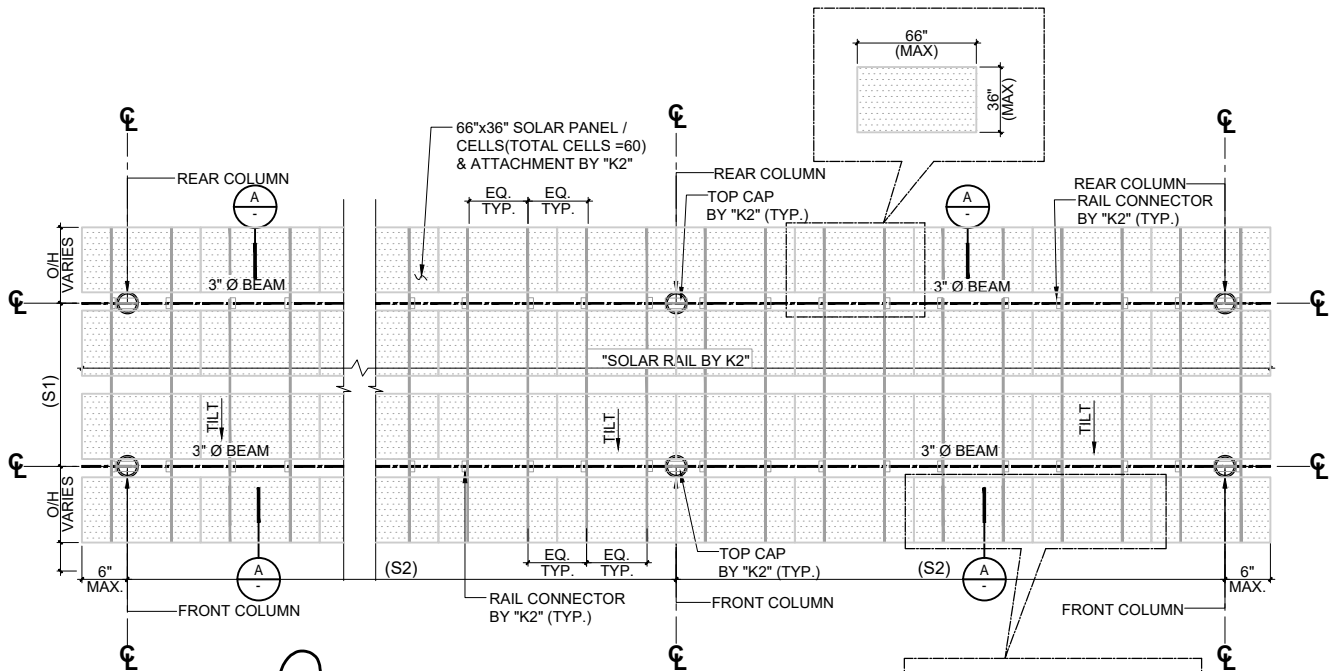
02/08/2022

	GM SOLAR SHADE - [ARIZONA]					
	JOB NAME	→	Tyler Wiggins Everest	DATE	→	May 5, 2022
	JOB NO.	→	AZ20170	CHECKER	→	SAM

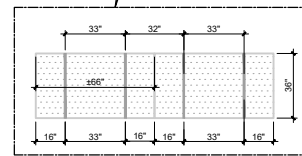
CRITERIA

The system must allow for 4 modules & 5 modules installed in a landscape orientation.

- [A] - **GOVERNING CODE** → IBC 2015, ACI 318-14 & ASCE 7-10 & IBC 2018, ACI 318-14 & ASCE 7-16
- [B] - **WIND SPEED (MPH)** → 90 MPH TO 120 MPH (in increments of 5 mph)
- [C] - **SNOW LOAD (PSF)** → 0 PSF TO 70 PSF (in increments of 10 psf)
- [D] - **TILT ANGLE** → 5 DEGREE TO 25 DEGREE (in increments of 5 Degree)
- [E] - **FOUNDATION** → POLE FOOTING
→ HELICAL PILES (GOLIATH TECH Pile Cataloge)
- [F] - **SOIL- ASSUMPTION** → **SOIL BEARING**
Bottoms of bearing footings shall bear on Undisturbed Native Soil
4'-6" Below Existing Grade
Design Soil Pressure 2000 Psf. per Table 1806.2 of IBC
→ **CLASS OF MATERIALS**
Sand, silty sand, clayey sand, silty gravel and clayey gravel
(SW, SP, SM, SC, GM and GC)
→ **LATERAL BEARING (psf/f below natural grade)**
150 psf
→ **Coefficient of friction** 0.25
- [G] - **ASSUMPTION**
- 3" Dia pipe beam → Three span condition 
 - 3" Dia pipe column → Base fix & Top Free
 - Beam Deflection → L/120
 - Column Deflection → H/120
 - Loads are calculated for the Framing members provided & they are checked in bending, shear and deflection. The posts/column are designed as compression members and checked for compressive stresses.
 - Structural concrete shall be designed in accordance with the 'Building Code requirements for reinforced concrete (ACI 318-14).
 - The reinforcement of ASTM A615 Grade 60 shall be used in all the concrete structures.
 - Structural steel shall be designed in accordance with the specification given in steel construction manual - AISC 14th edition – ASD Method.
 - **Ground mount shade structure design for 4 - modules (5.5ft x 3ft) w/60cells/panels.**
 - **The Tables below assume the ultimate strength of Steel Top Bracket connectors meet the values and the minimum requirements for loading taken in teh calcs and criteria required to resist the member forces. All spacings between helicals are designed under this assumption. Manufacturer shall verify and certify compliance with these tabulated ultimate strength values to match or exceed the design assumptions in calculations thru adequate testing and lab data.**
- [H] - **Pole foundation Assumptions and Limitations:**
- The references used in the different analysis methods in this program are as follows:-
International Building Code (IBC) 2015,/2018 Section 1807.3.2.1, pages 403-404
 - This program will handle both horizontally as well as vertically applied loads. The vertical load may have an associated eccentricity which results in an additional overturning moment which is always assumed to add directly to the overturning moment produced by the horizontal load.
 - This program assumes that the top of the pier is at or above the top of the ground surface level.
 - This program assumes that the actual resisting surface is at or below the ground surface level.
 - This accounts for any weak soil or any soil which may be removed at the top
 - Yield strength of 2-7/8" dia piles - Fy = 60 ksi
 - Compression values are based on fully laterally supported piles (full embeded in soil), if not, contact engineer department for calculations.
 - All Design performed using ASD Method.



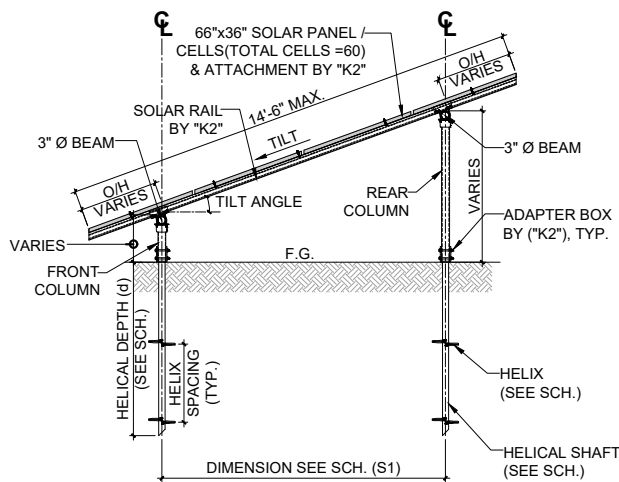
4-MODULE FRAMING PLAN
(66"x36" SOLAR PANEL)



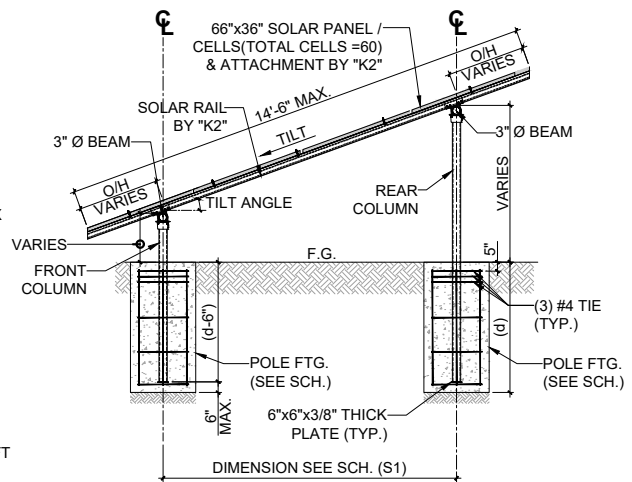
SOLAR RAIL ARRANGEMENT



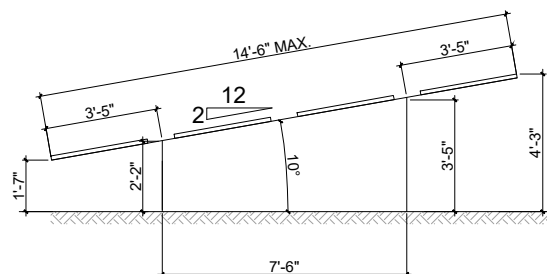
EXP. 03/31/2024



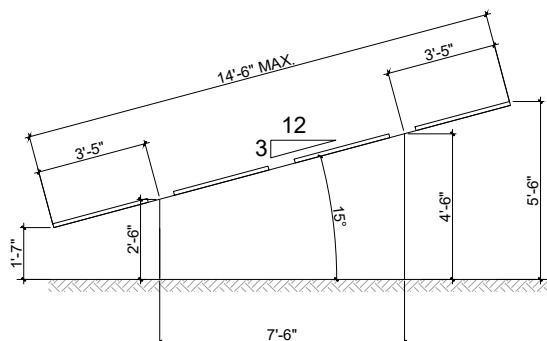
SECTION-'A' W/ HELICAL FOUNDATION



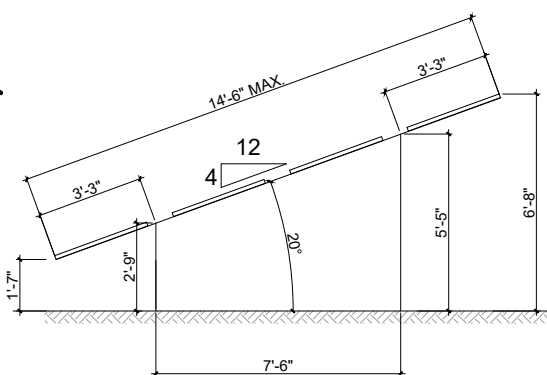
SECTION-'A' W/ POLE FOUNDATION



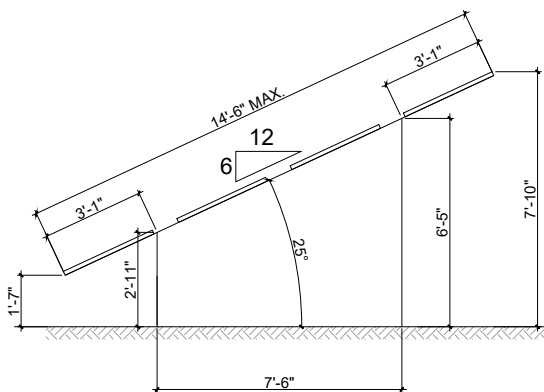
10° TILT



15° TILT



20° TILT



25° TILT

4-MODULE SOLAR FRAME LINE DIAGRAM
(66"x36" SOLAR PANEL)



EXP. 03/31/2024

GM SOLAR SHADE-CHART (ASCE 7-10)- [ARIZONA]

4 - Modules (5.5ft x 3ft) w/60cells/panels & 3" dia. SCH 40 Pipe.

JOB NAME
JOB NO. → Tyler Wiggins Everest
AJ220170

DATE
CHECKER →

May 5, 2022
SAM

												Foundation												Top Bracket Connection by K2 (See note 1,2,3,4,5)								
SR- No's	Wind Speed (mph)	Seismic Category	Exposure Category	Tilt Angle (Deg.)	Roof Snow Load (psf)	Mean Roof Height (ft)	3" Pipe Tie Brace		3" Pipe SCH 40 Column Spacing		Pipe over- hang (ft)	Pole Footing Size						Helical Size						Welded Ground Screw (Model No.5)								
							Support @ Base Pole footing	Support @ Base Helical Pile	[S1] (ft- in)	[S2] (ft- in)		Front Column			Rear Column			Front Column			Rear Column			Front Column		Rear Column						
												Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft- in)	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft- in)	Dia (in)	Length (in)	Dia (in)	Length (in)			
1					0							19'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
2					1-10							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20							14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30							12'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40							10'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
6					41-50							9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
7					51-60							8'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
8					61-70							8'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
9					0							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20							14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
12					21-30							12'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40							10'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
14					41-50							9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
15					51-60							8'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
16					61-70							8'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
17					0							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
18					1-10							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
19					11-20							14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
20					21-30							12'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
21					31-40							10'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
22					41-50							9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
23					51-60							8'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
24					61-70							8'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
25					0							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
26					1-10							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
27					11-20							14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
28					21-30							12'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
29					31-40							10'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
30					41-50							9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
31					51-60							8'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
32					61-70							8'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
1					0							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
2					1-10							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20							14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30							12'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40							10'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
6					41-50							9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
7					51-60							8'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
8					61-70							8'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
9					0							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20							14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
12					21-30							12'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40							10'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
14					41-50							9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
15					51-60							8'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
16					61-70							8'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
17					0							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
18					1-10							18'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
19																																

eiff STRUCTURAL ENGINEERS										GM SOLAR SHADE-CHART (ASCE 7-10)- [ARIZONA] 4 - Modules (5.5ft x 3ft) w/60cells/panels & 3" dia. SCH 40 Pipe.																					
JOB NAME		→		Tyler Wiggins Everest		DATE		→		May 5, 2022																					
JOB NO.		→		AZ20170		CHECKER		→		SAM																					
SR. No's	Wind Speed (mph)	Seismic Category	Exposure Category	Tilt Angle (Deg.)	Roof Snow Load (psf)	Mean Roof Height (ft)	3" Pipe Tie Brace		3" Pipe SCH 40 Column Spacing		Pipe overhang (OH) (ft-in)	Pole Footing Size					Foundation					Welded Ground Screw (Model No.-5)				Top Bracket Connection by K2 (See note 1,2,3,4,5)					
							Support @ Base Pole Footing	Support @ Base Helical Pile	[S1] (ft-in)	[S2] (ft-in)		Front Column			Rear Column		Front Column			Helical Size		Rear Column		Front Column		Rear Column		Average Uplift force= 1950 kg (1625 kg w/ FOS)			
												Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft-in)	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft-in)	Dia (in)	Length (in)		Dia (in)	Length (in)	
1					0						17'-0"																				YES
2					1-10						17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20						17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30		NO	NO			17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40						17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
6					41-50						17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
7					51-60						17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
8					61-70						17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
9					0	≤ 5				7'-6"	16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10						16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20						16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
12					21-30		NO	NO			16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40						16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
14					41-50						16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
15					51-60						16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
16					61-70						16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
17					0	≥ 5				7'-6"	15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
18					1-10						15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
19					11-20						15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
20					21-30		NO	NO			15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
21					31-40						15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
22					41-50						15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
23					51-60						15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
24					61-70						15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
25					0	≥ 5				7'-6"	14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
26					1-10						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
27					11-20						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
28					21-30		NO	NO			14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
29					31-40						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
30					41-50						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
31					51-60						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
32					61-70						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
1					0						15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
2					1-10						15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20						14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30		NO	NO			14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40						10'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
6					41-50						9'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
7					51-60						8'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
8					61-70						8'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
9					0	≤ 5				7'-6"	14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20						14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
12					21-30		NO	NO			12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40						10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
14					41-50						9'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
15					51-60						8'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
16					61-70						8'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
17					0	≥ 5					14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
18					1-10						13'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
19					11-20						14'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	1	10	9'-0"</									

					GM SOLAR SHADE-CHART (ASCE 7-10)- [ARIZONA] 4 - Modules (5.5ft x 3ft) w/60cells/panels & 3" dia. SCH 40 Pipe.																										
JOB NAME JOB NO.		→	Tyler Wiggins Everest AJ220170										DATE CHECKER		→	May 5, 2022 SAM															
SR- No's	Wind Speed (mph)	Seismic Category	Exposure Category	Tilt Angle (Deg.)	Roof Snow Load (psf)	Mean Roof Height (ft)	3" Pipe Tie Brace		3" Pipe SCH 40 Column Spacing		Pipe over- hang (OH) (ft- in)	Foundation										Top Bracket Connection by K2 (See note 1,2,3,4,5)									
							Support @ Base Pole footing	Support @ Base Helical Pile	[S1] (ft- in)	[S2] (ft- in)		Pole Footing Size					Helical Size					Welded Ground Screw (Model No.-5)									
												Front Column		Rear Column			Front Column		Rear Column			Front Column		Rear Column		Front Column		Rear Column			
												Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft- in)	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft- in)	Dia (in)	Length (in)	Dia (in)	Length (in)		
1					0						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
2					1-10						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20						14'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
4					21-30						12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40						10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
6					41-50						9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
7					51-60						8'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
8					61-70						8'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
9					0	≤ 5					13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10						13'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20						13'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
12					21-30						12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40						10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
14					41-50						9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
15					51-60						8'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
16					61-70						8'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
17					0	≥ 5					13'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
18					1-10						13'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
19					11-20						13'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
20					21-30						12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
21					31-40						10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
22					41-50						9'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
23					51-60						8'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
24					61-70						8'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
25					0						12'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
26					1-10						12'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
27					11-20						12'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	5'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
28					21-30						12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	5'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
29					31-40						10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	5'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
30					41-50						9'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
31					51-60						8'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
32					61-70						8'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES

NOTES:

1

Top bracket connector design to be provided by "K2". Average Force of top bracket ~ 1950 kg (4299 lbs). Refer to Load test report K2 North America Residential Ground Mount Top Cap 3/8" - 16 LINC x 5/8" set screw

2

If Actual force is greater than Average force, Please contact K2. For special engineering design of Top bracket connection.

3

TOP bracket connector is reviewed only for the uplift value provided in Report prepared by "K2".

4

Factor of Safety (FOS) = 1.2

5

Uplift force of top bracket ~ 1950 kg, uplift force of top bracket with factor of safety ~ 1950 kg/1.2 = 1625 kg.

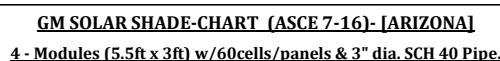
6

Yield Stress of 2-7/8" dia Helical pipe = Fy = 35 ksi & Fu = 58 ksi

7

Yield Stress of 2-7/8" dia Helical pipe = Fy = 60 ksi (refer Galvalith Tech Helical Chart)

NOTE:-
1 Top bracket connector design to be provided by K2. Average Force of top bracket = 1950 kg (4299 lbs). Refer to Load test report K2 North America Residential Ground Mount Top Cap 3/8" - 16 UNC x 5/8" set screw
2 If Actual force is greater than Average force, Please contact K2 for special engineering design of Top bracket connection.
3 TOP bracket connector is reviewed only for the uplift value provided in Report prepared by K2.
4 Factor of Safety (FOS) = 1.2
5 Uplift force of top bracket = 1950 kg, uplift force provided in Report prepared by K2.
6 Yield Stress of 3" dia pipe - Fy = 35 ksi & Fu = 58 ksi
7 Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galath Tech Helical Chart)

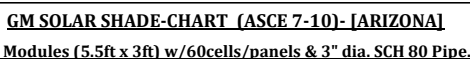
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eiffe										GM SOLAR SHADE-CHART (ASCE 7-16)- [ARIZONA]										4 - Modules (5.5ft x 3ft) w/60cells/panels & 3" dia. SCH 40 Pipe.										May 5, 2022 SAM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
JOB NAME		→		Tyler Wiggins Everest AJZ20170		DATE CHECKER		→																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

					GM SOLAR SHADE-CHART (ASCE 7-16)- [ARIZONA] 4 - Modules (5.5ft x 3ft) w/60cells/panels & 3" dia. SCH 40 Pipe.																										
JOB NAME JOB NO.		→	Tyler Wiggins Everest AJ220170		DATE CHECKER		→	→	May 5, 2022 SAM																						
SR- No's	Wind Speed (mph)	Seismic Category	Exposure Category	Tilt Angle (Deg.)	Roof Snow Load (psf)	Mean Roof Height (ft)	3" Pipe Tie Brace		3" Pipe SCH 40 Column Spacing	Pipe over- hang (OH) (ft- in)	Foundation																Top Bracket Connection by K2 (See 1,2,3,4,5)				
							Support @ Base Pole footing	Support @ Base Helical Pile			[S1] (ft- in)	[S2] (ft- in)	Pole Footing Size				Helical Size				Welded Ground Screw (Model No.-5)				Average Uplift forces= 1950 kg (1625 kg w/ FOS)						
													Front Column		Rear Column		Front Column		Rear Column		Front Column		Rear Column								
													Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft- in)	Shaft Dia. (D) (in)	No's Helix		Helix Dia. (in)		Depth (d) (ft- in)	Dia (in)	Length (in)	Dia (in)
1					0					14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
2					1-10					14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
3					11-20					14'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
4					21-30					12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
5					31-40					10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
6					41-50					9'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
7					51-60					8'-6"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
8					61-70					8'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
9					0	≤ 5				13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
10					1-10					13'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
11					11-20					13'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
12					21-30					12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
13					31-40					10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
14					41-50					9'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
15					51-60					8'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
16					61-70					8'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
17					0	≥ 5				13'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
18					1-10					13'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
19					11-20					13'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES	
20					21-30					12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
21					31-40					10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
22					41-50					9'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
23					51-60					8'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
24					61-70					8'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
25					0					12'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
26					1-10					12'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
27					11-20					12'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
28					21-30					12'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	5'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
29					31-40					10'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	5'-0"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
30					41-50					9'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
31					51-60					8'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
32					61-70					8'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
NOTES:																															
1. Top bracket connector design to be provided by "K2". Average Force of top bracket = 1950 kg (4299 lbs). Refer to Load test report K2 North America Residential Ground Mount Top Cap 3/8" 16 UNC x 5/8" set screw																															
2. If Actual force is greater than Average Force, Please contact K2 For special engineering design of Top bracket connection.																															
3. TOP bracket connector is reviewed only for the uplift value provided in Report prepared by "K2"																															
4. Factor of Safety (FOS) = 1.2																															
5. Uplift force of top bracket = 1950 kg, uplift force of top bracket with factor of safety = 1950 kg / 2 = 1625 kg.																															
6. Yield Stress of 3" dia pipe: Fy = 35 ksi & Fu = 58 ksi																															
7. Yield Stress of 2-7/8" dia Helical pipe: Fy = 40 ksi (refer Galvalith Tech Helical Chart)																															

NOTE:-
1 Top bracket connector design to be provided by K2; Average Force of top bracket = 1950 kg (4299 lbs). Refer to Load test report K2 North America Residential Ground Mount Top Cap 3/8" - 16 UNC x 5/8" set screw
2 If Actual force is greater than Average force, Please contact K2 For special engineering design of Top bracket connection.
3 TOP bracket connector is reviewed only for the uplift value provided in Report prepared by "K2"
4 Factor of Safety (FOS) = 1.2
5 Uplift force of top bracket = 1950 kg, uplift force provided in Report prepared by "K2"
6 Yield Stress of 3" dia pipe - Fy = 35 ksi & Fu = 58 ksi
7 Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galath Tech Helical Chart)

										GM SOLAR SHADE-CHART (ASCE 7-10)- [ARIZONA] 4 - Modules (5.5ft x 3ft) w/60cells/panels & 3" dia. SCH 80 Pipe.																					
JOB NAME		→		Tyler Wiggins Everest		AJZ20170		DATE		→		May 5, 2022		SAM																	
JOB NO.		→						CHECKER		→																					
SR- No's	Wind Speed (mph)	Seismic Category	Exposure Category	Tilt Angle (Deg.)	Roof Snow Load (psf)	Mean Roof Height (ft)	3" Pipe Tie Brace		3" Pipe SCH 80 Column Spacing		Pipe over- hang (ft)	Pole Footing Size						Foundation						Top Bracket Connection by "K2" (see note 1,2,3,4,5)							
							Support @ Base Pole footing	Support @ Base Helical Pile	[S1] (ft- in)	[S2] (ft- in)		Front Column			Rear Column			Front Column			Rear Column			Welded Ground Screw (Model No.-5)							
												Dia. (ft)	Depth (ft)	#5 Reinf. Spacing	Dia. (ft)	Depth (ft)	#5 Reinf. Spacing	Shaft Dia. (ft)	No's Helix	Helix Dia. (in)	Depth (ft)	Shaft Dia. (ft)	No's Helix	Helix Dia. (in)	Depth (ft)	Dia (in)	Length (in)	Dia (in)	Length (in)	Average Uplift force: 1950 kg (1625 kg w/ FOS)	
1					0						21'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
2					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40						12'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
6					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
7					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
8					61-70						9'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
9					0	≤ 5					20'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
12					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
14					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
15					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
16					61-70						9'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
17					0						19'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
18					1-10						19'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
19					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
20					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
21					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
22					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
23					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
24					61-70						9'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
25					0	≥ 5					19'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
26					1-10						19'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
27					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
28					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
29					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
30					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
31					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
32					61-70						9'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
1					0						20'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
2					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
6					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
7					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
8					61-70						9'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
9					0	≤ 5					18'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10						18'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
12					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
14					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
15					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
16					61-70						9'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
17					0						18'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5		



NOTE:

1	Top bracket connector design to be provided by "K2". Average Force of top bracket = 1950 kg (4299 lbs). Refer to Load test report K2 North America Residential Ground Mount Top Cap 3/8" - 16 UNC x 5/8" set screw
2	If Actual Force is greater than Average Force, Please contact K2 For special engineering design of Top bracket connection.
3	TOP bracket connector is reviewed only for the uplift value provided in Report prepared by "K2".
4	Factor of Safety (FOS) = 1.2
5	Uplift force of top bracket = 1950 kg, uplift force of top bracket with factor of safety = 1950 kg / 1.2 = 1625 kg.
6	Yield stress of 3" dia pipe: $F_y = 35 \text{ ksi}$ & $F_u = 58 \text{ ksi}$
7	Yield Stress of 2.75" dia Helical pipe: $F_y = 60 \text{ ksi}$ (refer Goliath Helical Chart)



GM SOLAR SHADE-CHART (ASCE 7-10)- [ARIZONA]

4 - Modules (5.5ft x 3ft) w/60cells/panels & 3" dia. SCH 80 Pipe.

JOB NAME
JOB NO. → Tyler Wiggins Everest
AZ201770

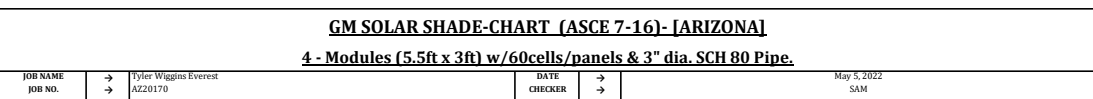
DATE
CHECKER →

May 5, 2022
SAM

SR-No's	Wind Speed (mph)	Seismic Category	Exposure Category	Tilt Angle (Deg.)	Roof Snow Load (psf)	Mean Roof Height (ft)	3" Pipe Tie Brace		3" Pipe SCH 80 Column Spacing		Pipe over-hang (ft)	Foundation												Top Bracket Connection by "K2" (see note 1,2,3,4,5)								
							Support @ Base	Support @ Base	FS1 (ft)	FS2 (ft)		Pole Footing Size						Helical Size						Welded Ground Screw (Model No.-5)								
												Front Column			Rear Column			Front Column			Rear Column			Front Column		Rear Column						
												Dia. (ft)	Depth	#5	Dia. (ft)	Depth	#5	Shaft Dia.	No's	Helix	Depth	Shaft Dia.	No's	Helix	Depth	Length	Length	Length				
1					0							15'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	Average Uplift force- 1950 kg (1625 kg w/ FOS)
2					1-10							17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
3					11-20							16'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30							13'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
5					31-40							12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
6					41-50							11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
7					51-60							10'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
8					61-70							9'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
9					0	≤ 5						16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
10					1-10							16'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
11					11-20							16'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
12					21-30							13'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
13					31-40							12'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
14					41-50							11'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
15					51-60							10'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
16					61-70							9'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
17					0							15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
18					1-10							15'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
19					11-20							15'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
20					21-30							13'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
21					31-40							12'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
22					41-50							11'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
23					51-60							10'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
24					61-70							9'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
25					0	≥ 5						14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
26					1-10							14'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
27					11-20							14'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
28					21-30							13'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	5'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
29					31-40							12'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	5'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
30					41-50							11'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
31					51-60							10'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
32					61-70							9'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES

- NOTE:-
- Top bracket connector design to be provided by "K2". Average Force of top bracket ~ 1950 kg (4299 lbs). Refer to Load test report K2 North America Residential Ground Mount Top Cap 3/8" - 16 UNC x 5/8" set screw
 - If Actual force is greater than Average force, Please contact K2 For special engineering design of Top bracket connection.
 - TOP bracket connector is reviewed only for the uplift value provided in Report prepared by "K2".
 - Factor of Safety (FOS) = 1.2
 - Uplift force of top bracket ~ 1950 kg, uplift force of top bracket with factor of safety ~ 1950 kg 1.2 ~ 1625 kg.
 - Yield Stress of 3" dia pipe - Fy = 35 ksi & Fu = 58 ksi
 - Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galath Tech Helical Chart)

eiffes										GM SOLAR SHADE-CHART (ASCE 7-16)- [ARIZONA]																	May 5, 2022				
STRUCTURAL ENGINEERS										JOB NAME		→		Tyler Wiggins Everest		DATE		CHECKER		→		SAM									
JOB NO.		→		AZ20170																											
SR- No's	Wind Speed (mph)	Seismic Category	Exposure Category	Tilt Angle (Deg.)	Roof Snow Load (psf)	Mean Roof Height (ft)	3" Pipe Tie Brace		3" Pipe SCH 80 Column Spacing		Pipe over- hang (OH) (ft- in)	Foundation										Top Bracket Connection by "K2" (see note 1,2,3,4,5)									
							Support @ Base Pole footing	Support @ Base Helical Pile	[S1] (ft- in)	[S2] (ft- in)		Pole Footing Size					Helical Size					Welded Ground Screw (Model No.-5)									
												Front Column			Rear Column		Front Column			Rear Column		Front Column		Rear Column		Front Column		Rear Column			
												Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Dia. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft- in)	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft- in)	Dia (in)	Length (in)	Dia (in)	Length (in)		
1					0						21'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
2					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
6					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
7					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
8					61-70						9'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
9					0						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
12					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
14					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
15					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
16					61-70						9'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
17					0						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
18					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
19					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
20					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
21					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
22					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
23					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
24					61-70						9'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
25					0						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
26					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
27					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
28					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
29					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
30					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
31					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
32					61-70						9'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
1					0						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
2					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
3					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
4					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
5					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
6					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
7					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
8					61-70						9'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
9					0						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
10					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
11					11-20						16'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
12					21-30						13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	2	8	7'-6"	2-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES
13					31-40						12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
14					41-50						11'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
15					51-60						10'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2-7/8"	2	10	9'-0"	2-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES
16					61-70						9'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
17					0						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
18					1-10						20'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2-7/8"	1	10	9'-0"	2-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES
19					11-20																										



NOTE:

1. Top bracket connector design to be provided by "K2". Average Force of top bracket = 1950 kg (4299 lbs). Refer to Load test report K2 North America Residential Ground Mount Top Cap 3/8" - 16 UNC x 5/8" set screw
2. If Actual Force is greater than Average Force, Please contact K2 For special engineering design of Top bracket connection.
3. TOP bracket connector is reviewed only for the uplift value provided in Report prepared by "K2".
4. Factor of Safety (FOS) = 1.2
5. Uplift force of top bracket = 1950 kg, uplift force of top bracket with factor of safety = 1950 kg/1.2 = 1625 kg.
6. Yield stress of 1" dia pipe = 75 ksi & Fu = 58 ksi
7. Yield Stress of 1.75" dia Helical pipe, Fu = 60 ksi (per Goliath Tech Helical Chart)



GM SOLAR SHADE-CHART (ASCE 7-16)- [ARIZONA]

4 - Modules (5.5ft x 3ft) w/60cells/panels & 3" dia. SCH 80 Pipe.

JOB NAME
JOB NO.

→ Tyler Wiggins Everest
AJ220170

DATE
CHECKER

→

May 5, 2022
SAM

SR- No's	Wind Speed (mph)	Seismic Category	Exposure Category	Tilt Angle (Deg.)	Roof Snow Load (psf)	Mean Roof Height (ft)	3" Pipe Tie Brace		3" Pipe SCH 80 Column Spacing		Pipe over- hang (OH) (ft- in)	Foundation																Top Bracket Connection by "K2" (see note 1,2,3,4,5)																										
							Support @ Base Pole footing	Support @ Base Helical Pile	[S1] (ft- in)	[S2] (ft- in)		Pole Footing Size				Helical Size				Welded Ground Screw (Model No.-5)				Average Uplift force- 1950 kg (1625 kg w/ FOS)																														
												Front Column		Rear Column		Front Column		Rear Column		Front Column		Rear Column		Front Column		Rear Column																												
												Dia. (ft)	Depth (ft)	#5 Reinf. Spacing	Dia. (ft)	Depth (ft)	#5 Reinf. Spacing	Shaft Dia. (ft)	No's Helix	Helix Dia. (in)	Depth (ft)	Shaft Dia. (ft)	No's Helix	Helix Dia. (in)	Depth (ft)	Dia (in)	Length (in)	Dia (in)	Length (in)																									
1	120	A & B	C	05-10	0	≤ 5	NO	NO	7'-6"	17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	1	10	9'-0"	2'-7/8"	1	10	9'-0"	4.5	80	4.5	80	YES																								
2																																17'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES		
3																																17'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES		
4																																16'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES		
5																																13'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	3'-6"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES		
6																																21-30	13'-6"	0'-6"	2'-0"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
7																																31-40	12'-0"	0'-6"	2'-6"	3'-0"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
8																																41-50	11'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
9																																51-60	10'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
10																																61-70	9'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	3'-6"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
11																																0	16'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
12																																1-10	16'-0"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES	
13																																11-20	16'-0"	0'-6"	2'-0"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
14																																21-30	13'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
15																																31-40	12'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
16																																41-50	11'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES	
17				51-60	10'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
18				61-70	9'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
19				0	15'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES																													
20				1-10	15'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	4'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES																													
21				11-20	15'-6"	0'-6"	2'-0"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
22				21-30	13'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
23				31-40	12'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
24				41-50	11'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
25				51-60	10'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
26				61-70	9'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	4'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
27				0	14'-6"	0'-6"	2'-0"	3'-0"	8"	2'-0"	5'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES																													
28				1-10	14'-6"	0'-6"	2'-0"	3'-6"	8"	2'-0"	5'-0"	8"	2'-7/8"	2	8	7'-6"	2'-7/8"	2	8	7'-6"	4.5	80	4.5	80	YES																													
29				11-20	14'-6"	0'-6"	2'-0"	3'-6"	8"	2'-6"	5'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
30				21-30	13'-6"	0'-6"	2'-6"	3'-6"	8"	2'-6"	5'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
31				31-40	12'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	5'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
32				41-50	11'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	5'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																													
33	51-60	10'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	5'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																																
34	61-70	9'-0"	0'-6"	2'-6"	3'-6"	8"	2'-6"	5'-0"	8"	2'-7/8"	2	10	9'-0"	2'-7/8"	2	10	9'-0"	4.5	80	4.5	80	YES																																

NOTE:-
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7 Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galath-Tech Helical Chart)