

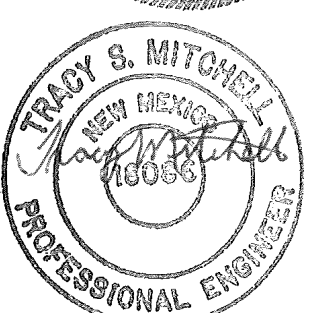
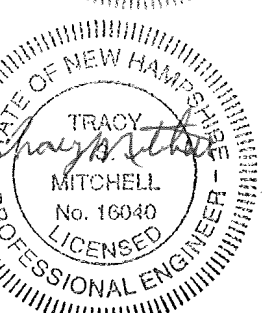
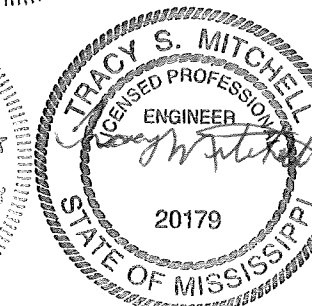
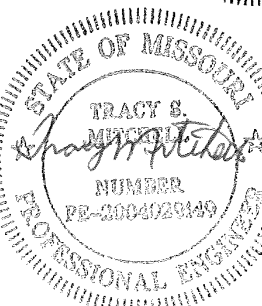
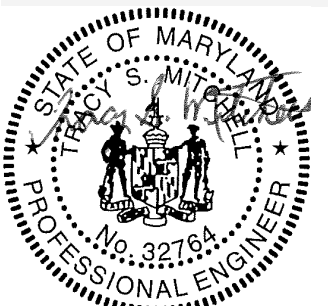
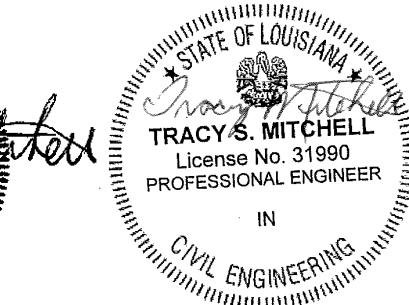
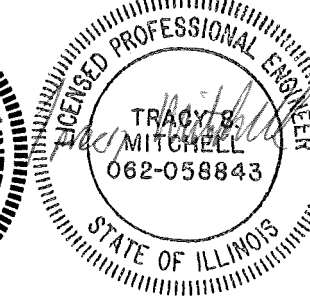
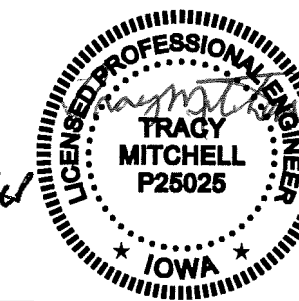
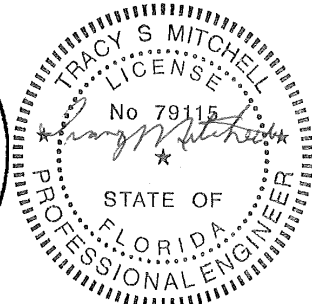
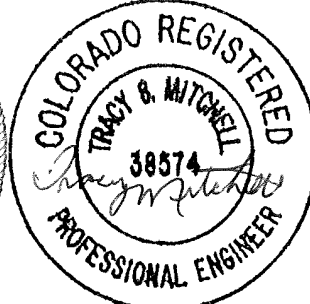
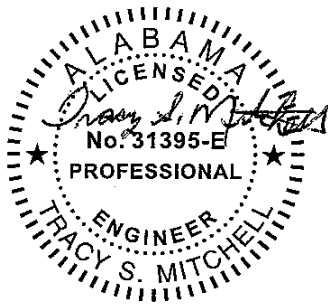
Design Document

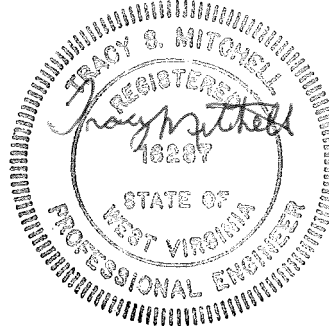
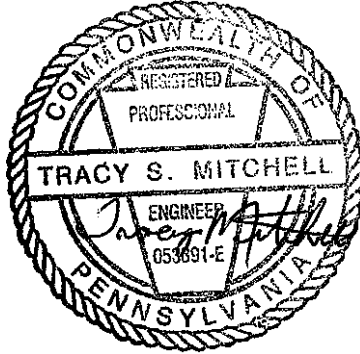
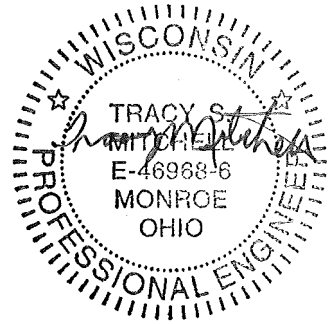
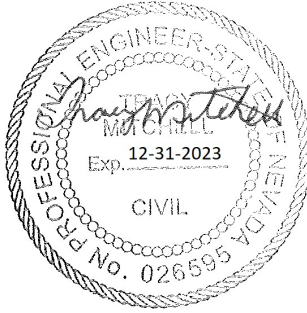
For:

Ground Mount Shade Structure
4 Modules

Exposure Category – B (6.16 ft x 3.42 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	→	April 29, 2022
JOB NO.	→ AZ20170	CHECKER	→	SAM

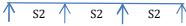
CRITERIA

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
- [E] - **FOUNDATION** → 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

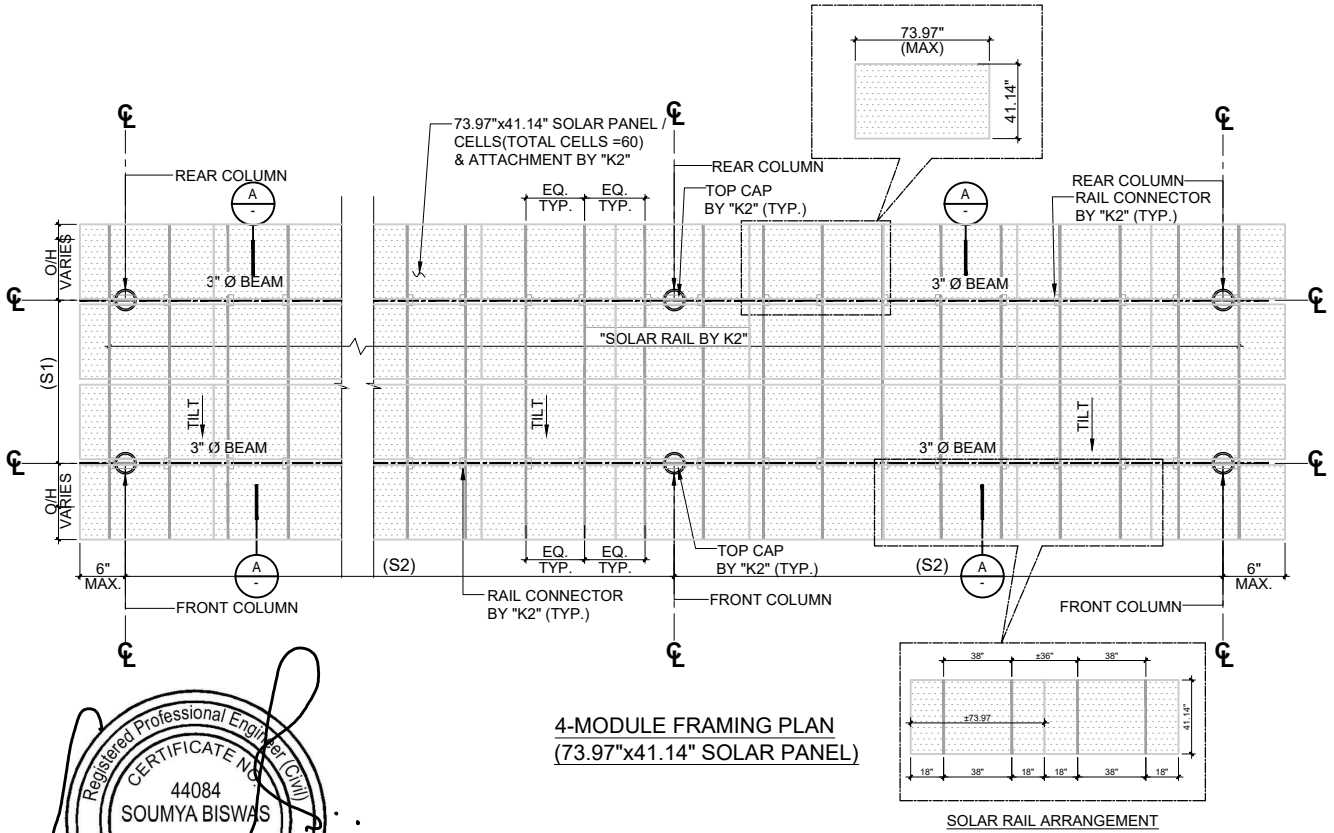
- [G] - **ASSUMPTION**
- 3" Dia pipe beam → Three span condition 
- 3" Dia pipe column → Base fix & Top Free
- Beam Deflection → L/120
- Column Deflection → H/120

- 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 (6.16ft x 3.42ft) 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.**

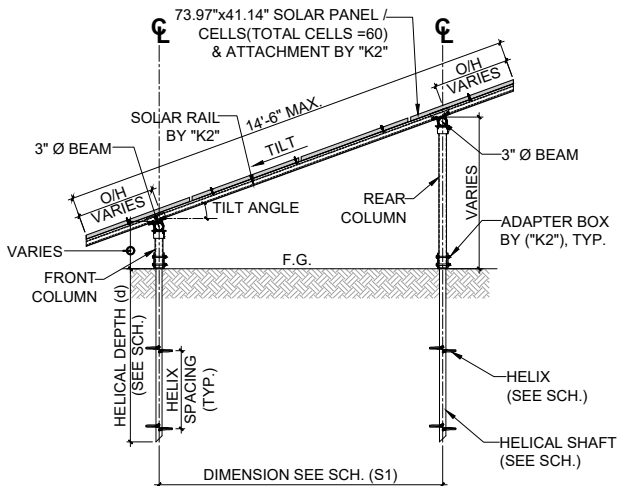
[H] - **Pole foundation Assumptions and Limitations:**

- 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 - $F_y = 60$ ksi
- Compression values are based on fully laterally supported piles (full embedded in soil), if not, contact engineer department for calculations.
- All Design performed using ASD Method.

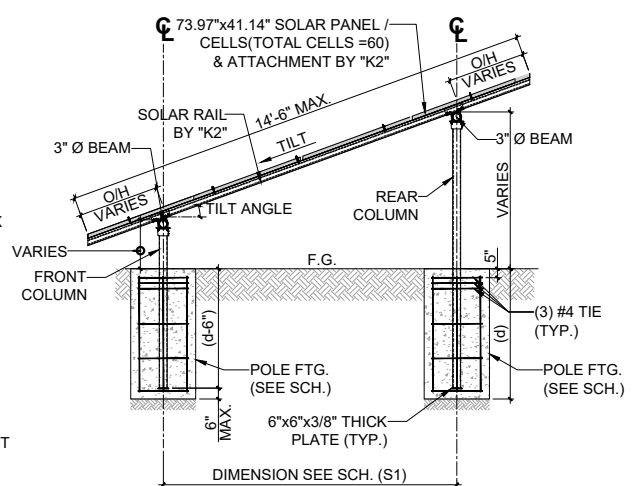
DRAWN	A.K.	SCALE	N.T.S
DESIGN	A.D.	DATE	APRIL-29-2022
CHECKED	SAM		



EXP. 03/31/2024



SECTION-'A' W/ HELICAL FOUNDATION



SECTION-'A' W/ POLE FOUNDATION



2501 N. HAYDEN ROAD STE 101
 SCOTTSDALE, AZ 85257
 P 480 | 580 | 4420
 Web : <http://www.eiffelindustries.com>
 Mail : sam@eiffelindustries.com
 ...providing structural solutions to the world...

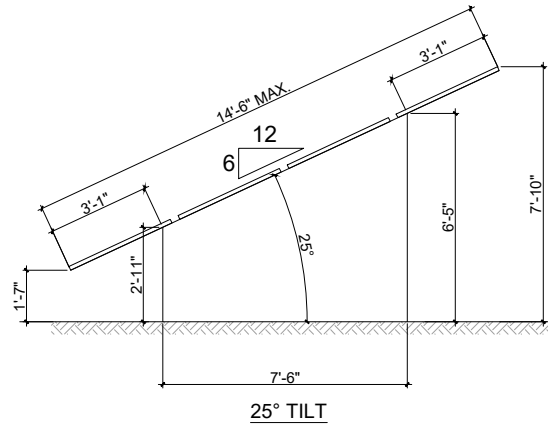
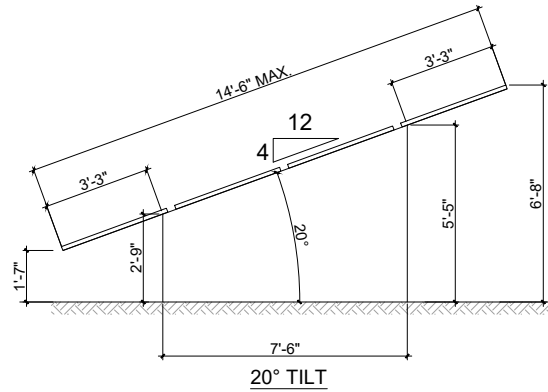
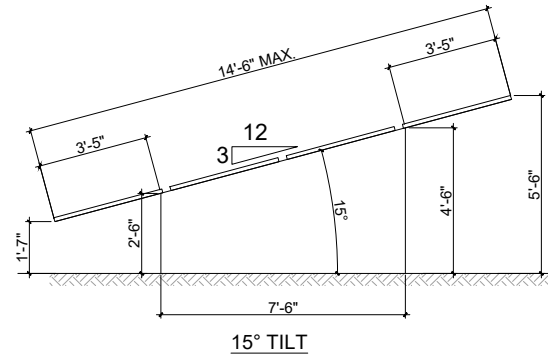
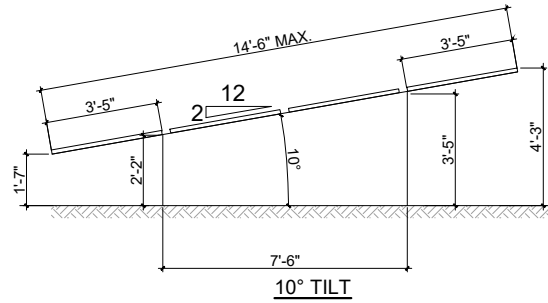
DRAWN	A.K.	SCALE	N.T.S
DESIGN	A.D.	DATE	APRIL-29-2022
CHECKED	SAM		

PROJECT
 TYLER WIGGINS EVEREST
 ARIZONA

DRAWING TITLE
 4-MODULE SOLAR
 FRAME LINE DIAGRAM

PROJECT # AZ20170

DRG# SK-2



EXP. 03/31/2024

4-MODULE SOLAR FRAME LINE DIAGRAM
 (73.97"x41.14" SOLAR PANEL)



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 40 Pipe.

JOB NAME: Tyler Wiggins Everest DATE CHECKER: April 29, 2022
 JOB NO.: AZ20170 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		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)	Pipe overhang (OH) (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				
							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	105	A & B	B	0	0	≤ 5	NO	NO	7'-6"	19'-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
2	105	A & B	B	1-10	11-20	≤ 5	NO	NO	7'-6"	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
3	105	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	18'-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
4	105	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	17'-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
5	105	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	17'-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
6	105	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	16'-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
7	105	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	16'-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
8	105	A & B	B	61-70	0	≥ 5	NO	NO	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
9	105	A & B	B	0	1-10	≥ 5	NO	NO	7'-6"	15'-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
10	105	A & B	B	1-10	11-20	≥ 5	NO	NO	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
11	105	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	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
12	105	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	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
13	105	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	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
14	105	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	12'-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
15	105	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	12'-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
16	105	A & B	B	61-70	0	≥ 5	NO	NO	7'-6"	11'-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
17	105	A & B	B	0	1-10	≥ 5	NO	NO	7'-6"	11'-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	105	A & B	B	1-10	11-20	≥ 5	NO	NO	7'-6"	10'-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	105	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	10'-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
20	105	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	9'-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
21	105	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	9'-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
22	105	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	8'-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
23	105	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	8'-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
24	105	A & B	B	61-70	0	≥ 5	NO	NO	7'-6"	7'-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
25	105	A & B	B	0	1-10	≥ 5	NO	NO	7'-6"	7'-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
26	105	A & B	B	1-10	11-20	≥ 5	NO	NO	7'-6"	6'-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	105	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	6'-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
28	105	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	5'-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
29	105	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	5'-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
30	105	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	4'-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
31	105	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	4'-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
32	105	A & B	B	61-70	0	≥ 5	NO	NO	7'-6"	3'-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
1	110	A & B	B	0	0	≤ 5	NO	NO	7'-6"	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
2	110	A & B	B	1-10	11-20	≤ 5	NO	NO	7'-6"	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
3	110	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	18'-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
4	110	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	17'-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
5	110	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	17'-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
6	110	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	16'-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
7	110	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	16'-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
8	110	A & B	B	61-70	0	≥ 5	NO	NO	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
9	110	A & B	B	0	1-10	≥ 5	NO	NO	7'-6"	15'-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
10	110	A & B	B	1-10	11-20	≥ 5	NO	NO	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
11	110	A & B	B</																											



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 40 Pipe.

JOB NAME: Tyler Wiggins Everest DATE CHECKER: April 29, 2022
 JOB NO.: A220170 → 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		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)	Pipe overhang (OH) (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				
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	120	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	16'-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				11-15	1-10					16'-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				11-15	11-20					16'-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
4				11-15	21-30					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
5				11-15	31-40					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
6				11-15	41-50					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
7				11-15	51-60					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
8				11-15	61-70					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
9				11-15	0	≥ 5				16'-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				11-15	1-10					16'-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				11-15	11-20					16'-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
12				11-15	21-30					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
13				11-15	31-40					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
14				11-15	41-50					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
15				11-15	51-60					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
16				11-15	61-70					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
17				11-15	0	≥ 5				16'-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
18				11-15	1-10					16'-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				11-15	11-20					16'-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
20				11-15	21-30					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
21				11-15	31-40					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
22				11-15	41-50					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
23				11-15	51-60					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
24				11-15	61-70					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
25				11-15	0	≥ 5				16'-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
26				11-15	1-10					16'-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				11-15	11-20					16'-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
28				11-15	21-30					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
29				11-15	31-40					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
30				11-15	41-50					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
31				11-15	51-60					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
32				11-15	61-70					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

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 - Fy = 35 ksi & Fu = 58 ksi
 7 Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galvalith Tech Helical Chart)



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 40 Pipe.

JOB NAME: Tyler Wiggins Everest DATE CHECKER: April 29, 2022
 JOB NO.: AZ220170 → 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		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	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	105	A & B	B	0	0	≤ 5	NO	NO	7'-6"	19'-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
2	105	A & B	B	1-10	11-20	≤ 5	NO	NO	7'-6"	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
3	105	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	18'-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
4	105	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	17'-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
5	105	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	17'-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
6	105	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	16'-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
7	105	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	16'-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
8	105	A & B	B	61-70	0	≥ 5	NO	NO	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
9	105	A & B	B	0	1-10	≥ 5	NO	NO	7'-6"	15'-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
10	105	A & B	B	1-10	11-20	≥ 5	NO	NO	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
11	105	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	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
12	105	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	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
13	105	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	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
14	105	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	12'-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
15	105	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	12'-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
16	105	A & B	B	61-70	0	≥ 5	NO	NO	7'-6"	11'-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
17	105	A & B	B	0	1-10	≥ 5	NO	NO	7'-6"	11'-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	105	A & B	B	1-10	11-20	≥ 5	NO	NO	7'-6"	10'-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	105	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	10'-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
20	105	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	9'-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
21	105	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	9'-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
22	105	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	8'-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
23	105	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	8'-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
24	105	A & B	B	61-70	0	≥ 5	NO	NO	7'-6"	7'-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
25	105	A & B	B	0	1-10	≥ 5	NO	NO	7'-6"	7'-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
26	105	A & B	B	1-10	11-20	≥ 5	NO	NO	7'-6"	6'-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	105	A & B	B	11-20	21-30	≥ 5	NO	NO	7'-6"	6'-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
28	105	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	5'-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
29	105	A & B	B	31-40	41-50	≥ 5	NO	NO	7'-6"	5'-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
30	105	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	4'-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
31	105	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	4'-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
32	105	A & B	B	61-70	0	≥ 5	NO	NO	7'-6"	3'-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
1	110	A & B	B	0	0	≤ 5	NO	NO	7'-6"	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
2	110	A & B	B	1-10	11-20	≤ 5	NO	NO	7'-6"	17'-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	110	A & B	B	11-20	21-30	≥ 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
4	110	A & B	B	21-30	31-40	≥ 5	NO	NO	7'-6"	16'-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
5	110	A & B	B	31-40	41-50	≥ 5	NO	NO	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
6	110	A & B	B	41-50	51-60	≥ 5	NO	NO	7'-6"	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
7	110	A & B	B	51-60	61-70	≥ 5	NO	NO	7'-6"	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	YES
8	110	A & B	B	61-70	0	≥ 5	NO	NO	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
9	110	A & B	B	0	1-10	≥ 5	NO	NO	7'-6"	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
10	110	A & B	B	1-10	11-20	≥ 5	NO	NO	7'-6"	13'-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	110	A & B	B</																											



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 40 Pipe.

JOB NAME: Tyler Wiggins Everest DATE CHECKER: → April 29, 2022
 JOB NO.: A220170 → 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)	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			
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	120	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	16'-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	1-10					16'-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	11-20					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
4				21-30	21-30					12'-0"	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
5				31-40	31-40					10'-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
6				41-50	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	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	61-70					8'-0"	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
9				0	0	≥ 5				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	YES
10				1-10	1-10					15'-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
11				11-20	11-20					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
12				21-30	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	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	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	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	61-70					8'-0"	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
17				0	0	≥ 5				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
18				1-10	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
19				11-20	11-20					14'-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
20				21-30	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
21				31-40	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	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	51-60					8'-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
24				61-70	61-70					8'-0"	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
25				0	0	≥ 5				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
26				1-10	1-10					14'-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
27				11-20	11-20					14'-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
28				21-30	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
29				31-40	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
30				41-50	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	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	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

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 - Fy = 35 ksi & Fu = 58 ksi
 7 Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galvalume Tech Helical Chart)



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 80 Pipe.

JOB NAME: Tyler Wiggins Everest
 JOB NO.: AZ201770
 DATE CHECKER: SAM
 DATE: April 29, 2022

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		Foundation												Top Bracket Connection by "K2" (see note 1,2,3,4,5)						
							Support @ Base Pole footing	Support @ Base Helical Pole	[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	Front Column	Rear Column	Front Column	Rear Column	Length (in)	Length (in)					
Di. (D) (ft)	Depth (d) (ft)	#5 Reinf. Spacing	Di. (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)	Di. (in)	Length (in)	Di. (in)	Length (in)												
1	0				0				23'-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				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				11-20				16'-6"	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				21-30		NO	NO	13'-6"	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
5	31-40				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				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				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				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				0				22'-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				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				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				21-30		NO	NO	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				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				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				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				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				0				21'-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
18	1-10				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
19	11-20				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				21-30		NO	NO	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				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				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				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				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				0				21'-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
26	1-10				1-10				20'-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
27	11-20				11-20				16'-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
28	21-30				21-30		NO	NO	13'-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				31-40				12'-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
30	41-50				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
31	51-60				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
32	61-70				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

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 connection 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 - Fy = 35 ksi & Fu = 58 ksi
 7 Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galvalith Tech Helical Chart)



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 80 Pipe.

JOB NAME: Tyler Wiggins Everest
 JOB NO.: AZ220170
 DATE CHECKER: SAM
 April 29, 2022

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		Foundation												Top Bracket Connection by "K2" (see note 1,2,3,4,5)									
							Support @ Base	Support @ Base	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	Front Column	Rear Column												
1	105	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	1-10	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	11-20	≤ 5	NO	NO	7'-6"	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
4	105	A & B	B	05-10	21-30	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	31-40	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	41-50	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	51-60	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	61-70	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	1-10	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	11-20	≤ 5	NO	NO	7'-6"	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
12	105	A & B	B	05-10	21-30	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	31-40	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	41-50	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	51-60	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	61-70	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	1-10	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	11-20	≤ 5	NO	NO	7'-6"	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
20	105	A & B	B	05-10	21-30	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	31-40	≤ 5	NO	NO	7'-6"	18'-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
22	105	A & B	B	05-10	41-50	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	51-60	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	61-70	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	1-10	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	11-20	≤ 5	NO	NO	7'-6"	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
28	105	A & B	B	05-10	21-30	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	31-40	≤ 5	NO	NO	7'-6"	18'-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
30	105	A & B	B	05-10	41-50	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	51-60	≤ 5	NO	NO	7'-6"	18'-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	105	A & B	B	05-10	61-70	≤ 5	NO	NO	7'-6"	18'-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

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 - Fy = 35 ksi & Fu = 58 ksi
 7 Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Goliath Tech Helical Chart)



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 80 Pipe.

JOB NAME → Tyler Wiggins Everest
JOB NO. → AZ20170

DATE CHECKER →

April 29, 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		Foundation												Top Bracket Connection by "K2" (see note 1,2,3,4,5)							
							Support @ Base	Support @ Base	IS11 ft	IS21 ft	Pole Footing Size				Helical Size				Welded Ground Screw (Model No.-5)											
											Front Column	Rear Column	#5	Depth	Front Column	Rear Column	Depth	Shaft Dia.	Length	Front Column	Rear Column									
1	120	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	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	Average Uplift force: 1950 kg (1625 kg w/ FOS)
2										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
3										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										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										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										11'-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
7										10'-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
8										9'-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
9										17'-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										17'-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										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										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										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
14										11'-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
15										10'-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
16										9'-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
17				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						
18				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						
19				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				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				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						
22				11'-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						
23				10'-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						
24				9'-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						
25				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						
26				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						
27				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				13'-6"	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						
29				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						
30				11'-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						
31				10'-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						
32				9'-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						

- 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 = 33 ksi & Fu = 58 ksi
 - Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galath Tech Helical Chart)



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 80 Pipe.

JOB NAME: Tyler Wiggins Everest
 JOB NO.: AZ220170

DATE CHECKER: →

April 29, 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		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)	Pipe over- hang (OH) (ft- in)	Pole Footing Size			Helical Size						Welded Ground Screw (Model No.-5)									
												Front Column	Depth (d) (ft)	#5 Reinf. Spacing	Front Column	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)	Front Column	Length (in)	Rear Column	Length (in)
1	0			05-10	0	≤ 5	NO	NO	7'-6"	23'-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			05-10	0	≤ 5	NO	NO	7'-6"	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			05-10	0	≤ 5	NO	NO	7'-6"	16'-6"	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			05-10	0	≤ 5	NO	NO	7'-6"	13'-6"	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
5	31-40			05-10	0	≤ 5	NO	NO	7'-6"	12'-0"	0'-6"	2'-0"	3'-0"	8"	2'-0"	3'-0"	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			05-10	0	≤ 5	NO	NO	7'-6"	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			05-10	0	≤ 5	NO	NO	7'-6"	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			05-10	0	≤ 5	NO	NO	7'-6"	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			11-15	0	≤ 5	NO	NO	7'-6"	23'-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
10	1-10			11-15	0	≤ 5	NO	NO	7'-6"	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			11-15	0	≤ 5	NO	NO	7'-6"	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			11-15	0	≤ 5	NO	NO	7'-6"	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			11-15	0	≤ 5	NO	NO	7'-6"	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			11-15	0	≤ 5	NO	NO	7'-6"	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			11-15	0	≤ 5	NO	NO	7'-6"	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			11-15	0	≤ 5	NO	NO	7'-6"	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			16-20	0	≥ 5	NO	NO	7'-6"	23'-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			16-20	0	≥ 5	NO	NO	7'-6"	20'-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
19	11-20			16-20	0	≥ 5	NO	NO	7'-6"	16'-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	21-30			16-20	0	≥ 5	NO	NO	7'-6"	13'-6"	0'-6"	2'-0"	3'-0"	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			16-20	0	≥ 5	NO	NO	7'-6"	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			16-20	0	≥ 5	NO	NO	7'-6"	11'-0"	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
23	51-60			16-20	0	≥ 5	NO	NO	7'-6"	10'-0"	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
24	61-70			16-20	0	≥ 5	NO	NO	7'-6"	9'-0"	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
25	0			21-25	0	≥ 5	NO	NO	7'-6"	23'-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			21-25	0	≥ 5	NO	NO	7'-6"	20'-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
27	11-20			21-25	0	≥ 5	NO	NO	7'-6"	16'-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
28	21-30			21-25	0	≥ 5	NO	NO	7'-6"	13'-6"	0'-6"	2'-0"	3'-0"	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
29	31-40			21-25	0	≥ 5	NO	NO	7'-6"	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
30	41-50			21-25	0	≥ 5	NO	NO	7'-6"	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
31	51-60			21-25	0	≥ 5	NO	NO	7'-6"	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
32	61-70			21-25	0	≥ 5	NO	NO	7'-6"	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

NOTE:
 1 Top bracket connector design to be provided by "K2". Average Force of top bracket = 1950 kg (4299 lbs). Refer to Load 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 - Fy = 35 ksi & Fu = 58 ksi
 7 Yield Stress of 2.7/8" dia Helical pipe - Fy = 60 ksi (refer Galvalume Tech Helical Chart)



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

4 - Modules (6.16ft x 3.42ft) w/60cells/panels & 3" dia. SCH 80 Pipe.

JOB NAME → Tyler Wiggins Everest
 JOB NO. → AZ220170

DATE CHECKER →

April 29, 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		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	#5 Reinf. Spacing	Front Column	Rear Column	No's Helix	Helix Dia. (in)	Depth (d) (ft-in)	Shaft Dia. (D) (in)	No's Helix	Helix Dia. (in)	Depth (d) (ft-in)		Front Column	Rear Column	Length (in)	Length (in)			
1	105	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	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
2	105	A & B	B	05-10	1-10	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	11-20	≤ 5	NO	NO	7'-6"	19'-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
4	105	A & B	B	05-10	21-30	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	31-40	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	41-50	≤ 5	NO	NO	7'-6"	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	105	A & B	B	05-10	51-60	≤ 5	NO	NO	7'-6"	10'-0"	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
8	105	A & B	B	05-10	61-70	≤ 5	NO	NO	7'-6"	9'-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
9	105	A & B	B	11-15	0	≥ 5	NO	NO	7'-6"	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
10	105	A & B	B	11-15	1-10	≥ 5	NO	NO	7'-6"	18'-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
11	105	A & B	B	11-15	11-20	≥ 5	NO	NO	7'-6"	16'-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
12	105	A & B	B	11-15	21-30	≥ 5	NO	NO	7'-6"	13'-6"	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
13	105	A & B	B	11-15	31-40	≥ 5	NO	NO	7'-6"	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	105	A & B	B	11-15	41-50	≥ 5	NO	NO	7'-6"	11'-0"	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	105	A & B	B	11-15	51-60	≥ 5	NO	NO	7'-6"	10'-0"	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
16	105	A & B	B	11-15	61-70	≥ 5	NO	NO	7'-6"	9'-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
17	110	A & B	B	05-10	0	≤ 5	NO	NO	7'-6"	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	110	A & B	B	05-10	1-10	≤ 5	NO	NO	7'-6"	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	110	A & B	B	05-10	11-20	≤ 5	NO	NO	7'-6"	19'-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	110	A & B	B	05-10	21-30	≤ 5	NO	NO	7'-6"	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	110	A & B	B	05-10	31-40	≤ 5	NO	NO	7'-6"	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	110	A & B	B	05-10	41-50	≤ 5	NO	NO	7'-6"	11'-0"	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
23	110	A & B	B	05-10	51-60	≤ 5	NO	NO	7'-6"	10'-0"	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
24	110	A & B	B	05-10	61-70	≤ 5	NO	NO	7'-6"	9'-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
25	110	A & B	B	11-15	0	≥ 5	NO	NO	7'-6"	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	110	A & B	B	11-15	1-10	≥ 5	NO	NO	7'-6"	18'-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
27	110	A & B	B	11-15	11-20	≥ 5	NO	NO	7'-6"	16'-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
28	110	A & B	B	11-15	21-30	≥ 5	NO	NO	7'-6"	13'-6"	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
29	110	A & B	B	11-15	31-40	≥ 5	NO	NO	7'-6"	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	110	A & B	B	11-15	41-50	≥ 5	NO	NO	7'-6"	11'-0"	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
31	110	A & B	B	11-15	51-60	≥ 5	NO	NO	7'-6"	10'-0"	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
32	110	A & B	B	11-15	61-70	≥ 5	NO	NO	7'-6"	9'-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

NOTE:-
 1 Top bracket connector design to be provided by "K2". Average Force of top bracket = 1950 kg (4299 lbs). Refer to Load 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 - Fy = 33 ksi & Fu = 58 ksi
 7 Yield Stress of 2-7/8" dia Helical pipe - Fy = 60 ksi (refer Galvalith Tech Helical Chart)

