



12/10/2024

Freedom Forever LLC
43445 Buisiness Park Dr., Suite 110
Temecula, CA 92590

Job Number: 496748
Project Name: Frank Voigt
Project Address: 135 Southeast Scarlett Way, Lake Cit

Design Criteria:

Applicable Code = ASCE 7-22
Design Wind Speed = 119 mph (3 Second Gust)
Exposure Category = C
Ground Snow Load = 0 psf
Module Type = SILFAB SOLAR: SIL-380 HC
Module Quantity = 21

To whom is may concern,

The above mentioned residential rooftop solar project has been designed to the specifications shown above. The team at Freedom Forever LLC has visited the site to observe the roof and its framing as well as gather other required information for the project. During this observation they did not see any signs of damage or distress to the roof structure which would preclude solar from being installed. Based on that review and the information provided, the calculations on the following pages were completed to determine the adequacy of the roof framing as well as the allowable attachment spacing for the PV panels. The calculations show that the roof can support the proposed PV system without structural modifications.



Taqi
Khawaja
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Digitally signed
by Taqi
Khawaja
Date:
2024.12.10
16:19:11 -06'00'

Mounting Plane	1	2	3	4	5	6	7	8	9	10
Roof Type	Trapezoidal Metal	Trapezoidal Metal								
Framing Type	Rafter	Rafter								
Framing Size	2x2 @ 24	2x2 @ 24								
Upgrade Size	NA	NA								
Attachment Type	S-5 Solarfoot	S-5 Solarfoot								
Lag Count	N/A	N/A								
Embedment Depth	N/A	N/A								

Sincerely,

Taqi Khawaja, PE
Freedom Forever LLC



Signed by: Taqi Khawaja, PE
Signed on: 12/10/2024

[illegible]

[illegible]

Down Force

Mounting Plane	1		2		3		4		5	
Module Location	EM	IM	EM	IM	EM	IM	EM	IM	EM	IM
D+S (psf)	2.97	2.97	2.97	2.97						
D+06W (psf)	9.52	7.34	9.52	7.34						

Mounting Plane	6		7		8		9		10	
Module Location	EM	IM	EM	IM	EM	IM	EM	IM	EM	IM
D+S (psf)										
D+06W (psf)										

Lateral Parallel to Roof

Mounting Plane	1	2	3	4	5
D+S (psf)	0.42	0.42			

Mounting Plane	6	7	8	9	10
D+S (psf)					

Framing Check

Lumber Species: DF

PV Load = 3 psf

Mounting Plane	1	2	3	4	5
Framing Type	Rafter	Rafter			
Framing Size	2x2	2x2			
Framing Spacing (in)	24	24			
Span (ft)	6.66	6.66			
Moment (lb-ft)	111	111			
Shear (lbs)	66	66			
Upgrade Size	NA	NA			

Mounting Plane	6	7	8	9	10
Framing Type					
Framing Size					
Framing Spacing (in)					
Span (ft)					
Moment (lb-ft)					
Shear (lbs)					
Upgrade Size					



Array Attachment Spacing

Module = SILFAB SOLAR: SIL-380 HC

Mounting Plane	1	2	3	4	5
Roofing Material	Trapezoidal Metal	Trapezoidal Metal			
Attachment Type	S-5 Solarfoot	S-5 Solarfoot			
Lag Count Per Attachment	N/A	N/A			
Min Lag Embedment (in)	N/A	N/A			
Landscape	72	72			
Portrait	72	72			

Mounting Plane	6	7	8	9	10
Roofing Material					
Attachment Type					
Lag Count Per Attachment					
Min Lag Embedment (in)					
Landscape					
Portrait					