

October 20, 2023

**Lunex Power**

6824 S Manhattan Ave  
 Tampa, FL 33616

RE Wilds Residence

131 NW KATELYN WAY, Lake City, FL 32055

Client Project #: 131Wild

PFE Project #: 233793

Revision: A - February 8, 2024 Updated codes & attachment spacing

Revision: B - February 29, 2024 Updated codes



On behalf of Lunex Power, Penn Fusion Engineering LLC (PFE) performed a structural analysis of the roof at the above referenced location. The purpose of our analysis was to determine if the existing roof system is structurally sufficient to support the new photovoltaic modules in addition to the code required design loads. Our analysis is based on the information provided by Lunex Power and is limited only to the areas where the modules are intended to be placed.

**System Specifications**

Panel Specs: (21) Hanwha - Q.PEAK DUO BLK-G10+400

Racking System: K2 - 44-X

The modules are to be located on the following roof planes:

Roof Planes						
Mounting Plane	Member Size	Member Spacing	Horizontal Span	Sheathing	Roofing Type	Roofing Layers
1	Truss	24"	30'-2"	CDX 1/2"	Metal Corrugated	1

Design Criteria		
Building Code(s)	Ground Snow $P_g$	Wind Speed $V$
<ul style="list-style-type: none"> <li>• 2020 NEC</li> <li>• 2023 Florida Building Code</li> <li>• 2023 Florida Residential Code</li> <li>• ASCE 7-16</li> </ul>	0 psf	120 mph

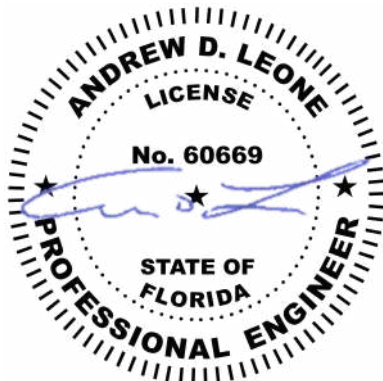
Analysis Results			
Mounting Plane	Attachment Hardware	Max Attachment Spacing	Rafter Pass/Fail
1	S-5! Protea Brackets	40"	Pass

This roof is constructed on a mobile/manufactured home on a permanent foundation. This roof was analyzed by comparing the maximum flat roof snow load of 0 psf plus the solar panel loading of 2.5 psf verse the manufacturer's posted design roof loading of 20 psf. Further, per section 1607.13.15.1 of the IBC, live load does not need to be considered where photovoltaic panels are placed. Comparing the dead load of the panels (2.5 psf) to the removal of the live load (20 psf) yields a reduction in design load. Since the design load is greater than the combined snow load and solar panel load and the reduced live load, it is the opinion of this office that the installation of the PV System as specified above will meet the structural requirements of the above referenced codes when installed in accordance with the manufacture's instructions.

If you have any questions regarding this analysis, please feel free to contact us.

Best Regards,  
Penn Fusion Engineering, LLC

Andrew D. Leone, P.E.  
Principal



02/29/2024

This item has been digitally signed and sealed by Andrew D. Leone on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Andrew D. Leone  
Digitally signed by Andrew D. Leone  
Date: 2024.02.29 12:47:35 -05'00'