



May 1, 2024

Lunex Power

6824 S Manhattan Ave
Tampa , FL 33616

RE Edgerly Residence
239 SE Olustee Ave, Lake City, FL 32025
Client Project #:239Edge
PFE Project #: 241813

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: (31) Hanwha - Q.PEAK DUO BLK ML-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	2x6	24"	13'-3"	CDX 1/2"	Metal Corrugated	1

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

Analysis Results			
Mounting Plane	Attachment Hardware	Max Attachment Spacing	Rafter Pass/Fail
1	Roof Tech RT Mini (OSB)	27"	Pass

This office compared the original design load of the roof to the new conditions with solar panels as follows (Note: live load is not considered in areas where solar panels are being placed)

	Original Design Load	New PV Design Load
Dead Load	10 psf	10 psf
Live Load	20 psf	0 psf
Snow Load	0 psf	0 psf
PV Load	0 psf	3 psf
Total Load	30 psf	13 psf

The change in design load due to the addition of solar panels is less than 5%, therefore in accordance with the 2020 Florida Existing Building Code section 503.3, the existing framing has the capacity to resist the applicable design gravity loads.

Based on the uplift calculations, do not place panels on zone 2 and zone 3 of the roof.

Maximum Attachment spacing for Zone 1 = 27"

Maximum Attachment spacing for Zone 2 = 17"

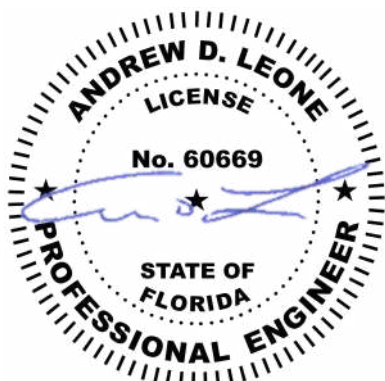
Maximum Attachment spacing for Zone 3 = 14"

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

Digitally signed by
Andrew D. Leone
Date: 2024.05.01
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Andrew D. Leone on the date
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