



March 5, 2025

**Lunex Power**

4721 N Grady Ave  
Tampa , FL 33614

RE Downing Residence  
251 Irene Ln, Lake City , FL 32055  
Client Project #:251Down  
PFE Project #: 251290

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: (24) Trina Solar - 415 Panels  
Racking System: Unirac - NXT Rail

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"            | 29'-11"         | CDX 1/2"  | Asphalt Shingles | 1              |
| 2              | Truss       | 24"            | 29'-11"         | CDX 1/2"  | Asphalt Shingles | 1              |

| Design Criteria                                                                                                                          |                   |                |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------|
| Building Code(s)                                                                                                                         | Ground Snow $P_g$ | Wind Speed $V$ |
| <ul style="list-style-type: none"><li>• 2023 Florida Building Code</li><li>• 2023 Florida Residential Code</li><li>• ASCE 7-22</li></ul> | 0 psf             | 120 mph        |

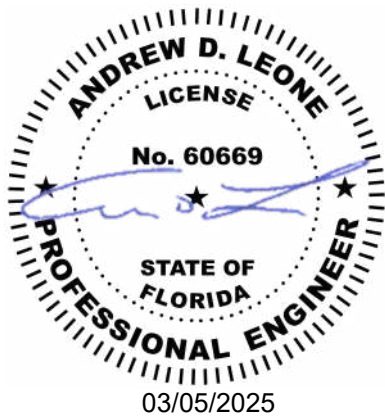
| Analysis Results |                         |                        |                  |
|------------------|-------------------------|------------------------|------------------|
| Mounting Plane   | Attachment Hardware     | Max Attachment Spacing | Rafter Pass/Fail |
| 1                | Unirac Stronghold (OSB) | 48"                    | Pass             |
| 2                | Unirac Stronghold (OSB) | 48"                    | Pass             |

This office has determined that the existing roof as specified above will meet the structural requirements of the above referenced codes in addition to the PV load 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



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