



August 27, 2021

PowerHome Solar

919 N. Main St
 Mooresville, NC 28115

RE Smith Residence
 329 Heathrow Drive, Spring Lake, NC 28390
 Client Project #:329SMIT
 PFE Project #: 213627

On behalf of PowerHome Solar, 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. Information used for this analysis was determined by a site survey performed by a representative of PFE.

System Specifications

Panel Specs: (22) Silfab - SIL
 Racking System: Quick Mount PV - QRail Light

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	12"	13'-2"	CDX 1/2"	Asphalt Shingles	1
2	2x6	12"	13'-2"	CDX 1/2"	Asphalt Shingles	1
3	2x6	12"	13'-2"	CDX 1/2"	Asphalt Shingles	1

Design Criteria		
Building Code(s)	Ground Snow P _g	Wind Speed V
<ul style="list-style-type: none"> ASCE 7-16 North Carolina Residential Code 2018 	10 psf	120 mph

Analysis Results			
Mounting Plane	Attachment Hardware	Max Attachment Spacing	Pass/Fail
1	5/16" lag bolts	48"	Pass
2	5/16" lag bolts	48"	Pass
3	5/16" lag bolts	48"	Pass

This office has determined 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

