Penn FUSION Engineering

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March 18, 2019

PowerHome Solar
919 N. Main St
Mooresville, NC 28115

RE: **Baker Residence**
9864 NC-42, Holly Springs, NC 27540
Client Project #: 9864BAKE
PFE Project #: 191834

On behalf of PowerHome Solar, Penn Fusion Engineering LLC (PFE) performed a site visit and structural analysis of the roof design at the above referenced location. The purpose of our analysis was to determine if the existing design of the 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 and is isolated only to the areas where the modules are intended to be placed. If any discrepancies are found by the contractor during installation, please contact PFE.

System Specifications:
Panel Specs: (36) Silfab Solar - SLA-M
Racking System: Iron Ridge - Flush Mount

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

Mounting Plane	Rafter Size	Rafter Spacing	Horizontal Span	Collar Ties	Collar Tie Spacing	Sheathing	Shingle Type	Number of Shingle Layers	Ceiling Profile
1	Truss	24"	28ft. 0in.	N/A	0"	CDX 1/2"	Asphalt Shingles	1	Flat

The roof design has been analyzed in accordance with the 2018 North Carolina Residential/Building Code with design loads as follows:

Ground Snow (Pg): 15 psf
Wind Speed (V): 115 mph

Mounting Plane 1
It has been determined by this office that the roof, as specified above, is adequate to support the new PV modules in addition to the code required design loading.

Attach the module rail brackets to the roof with 5/16" lag bolts at 48 on center maximum. Provide a minimum of 2" of penetration into the wood members.

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

Best Regards,
Penn Fusion Engineering LLC
Firm License No. P-1848

Andrew D. Leone, P.E.
Principal

Andrew D. Leone

Digitally signed by Andrew D. Leone
Date: 2019.03.18 17:57:38 -04'00'