Structural Capacity, PC
STRUCTURAL CONSULTING GROUP
North Carolina Firm License Number – C3406

May 17, 2018

Mr. Sarah Brooks
Power Home Solar
919 N Main Street, Suite 200
Mooresville, NC 28115

Re: Best, Erica (SCPC Project No. – 2018.71.630)
16 Tilden Howington Drive
Lillington, NC 27546

Dear Ms. Brooks:

At the request of Power Home Solar (PHS), Structural Capacity, PC (SCPC) has evaluated the roof structure at the Best Residence located in Lillington, North Carolina to determine its adequacy to support the attachment of roof mounted solar arrays. It is the understanding of SCPC that PHS is proposing to install (23) Mission Solar Energy 295 watt photovoltaic (PV) modules on the roof structure.

The roof structure is composed of wood sheathing supported by pre-engineered wood trusses spaced at approximately 16 inches on center. The design roof live load is 20 psf. The ground snow load is 15 psf. The design wind speed for the location is 90 mph per ASCE 7-05.

Each panel will be supported by (2) mounting rails, (1) at each end. The mounting legs of the solar panel railing will be attached directly to the truss top chord with a 5/16 inch diameter lag screw. The installer shall use best practice construction methods to locate the lag screw in the center of each truss top chord. Per NDS Section 11.1.4, lead holes should be bored into the primary framing member to avoid splitting. All truss members supporting PV modules should consist of sound lumber without significant signs of deterioration.

The mounting legs of the solar panel racking system shall be located at 4'-0" o.c. maximum. The mounting legs should be staggered at the primary framing member spacing (1'-4") at adjacent solar panel rails. The maximum rail cantilever span should be limited to 1'-4".

The existing roof structure is adequate to support the solar panel loading, if installed in accordance with the above stated conditions. If any conditions are found in conflict with those stated above, SCPC should be made aware immediately for re-evaluation and report amendment, as applicable, before proceeding with solar panel installation.

Sincerely,

Structural Capacity, PC

Adrian S. Durham

Adrian S. Durham, PE, SE, LEED AP