October 1, 2021

Re: Rebecca Lovegreen
        65 Derby Lane
        Lillington, NC 27546

EMPWR Solar has evaluated the roof structure at the above noted site to determine its adequacy to support the attachment of roof mounted solar arrays. The roof structure is comprised of wood sheathing supported by 2x6 wood rafters spaced at 16" O.C. The maximum rafter span does not exceed 13'-6".

Design Criteria:
- Ground Snow Load = 10 psf
- Wind Speed = 120 mph
- Risk Category = II/ Wind Exposure   B
- PV Module Dead Load = 3.5 psf (Max.)
- PV Module Count = 35

Each panel will be supported by two (2) mounting rails, one (1) at each end. The mounting legs of the solar panel railing shall be attached directly to the rafters with a 5/16 inch (min) diameter lag screw. The installer shall use best practice construction methods to locate the lag screw on the center of each truss top chord. All wood members supporting the PV Modules shall consist of sound lumber without any significant signs of section loss and deterioration.

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

The existing roof structure at the above referenced site is adequate to support the solar panel loadings as noted above per the 2018 North Carolina Residential Code, if installed in accordance with the above stated conditions. The adequacy of the solar panels and racking system is outside the scope of this letter and can be provided by the solar panel and racking manufacturer if required.

The roof conditions stated above should be field verified by the installer prior to installation. If any conditions are found to be deficient and in conflict with those stated above, EMPWR Solar shall be notified immediately for re-evaluation and report amendment as applicable prior to proceeding with the solar panel installation.

Sincerely,

NORTH CAROLINA
PROFESSIONAL
SEAL
027575
ENGINEER
PETER J HAZEL

Peter J. Hazel, PE

10/01/2021