



November 15, 2021

Re: Diane Forsythe
109 Double D Farm Road
Angier, NC 27501

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 metal trapezoidal metal panels on wood sheathing supported by 2x6 wood rafters spaced at 24" O.C. Each metal panel should be attached at 36" o.c. (max) parallel to the roof slope.

Design Criteria:

- Ground Snow Load = 15 psf
- Wind Speed = 120 mph
- Risk Category = II/ Wind Exposure B
- PV Module Dead Load = 3.5 psf (Max.)
- PV Module Count = 20

Each panel will be supported by two (2) mounting rails, one (1) at each end. 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 shall be attached directly to the trapezoidal metal roof ribs with S5! Protea Brackets. The brackets shall be located at 3'-0" o.c. (max). The mounting legs should be staggered at the metal roof trapezoidal rib spacing. The maximum rail cantilever span should be limited to 0'-9".

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,

Peter J. Hazel, PE



11/15/2021