

October 29, 2020

Evan Becka
Pisgah Energy
53 Ashland Avenue, Ste. 103
Asheville, NC 28801

Re: Solar Evaluation
East Asheville Library
Kepa No.: 20200650

Dear Mr. Becka:

Pursuant to your request, Kloesel Engineering, P.A. ("KEPA") has reviewed the proposed installation of photovoltaic solar systems on the roof of the subject building. The installation consists of 207 modules total, 105 on the Reading Room roof and 102 modules on the Community Room roof. The areas of the buildings to receive solar modules are sloped asphalt shingle roofs.

Based on our review and analysis, in our opinion, the existing roof structures will safely support the additional loading presented by the proposed photovoltaic modules in addition to the minimum live loads specified by the North Carolina State Building Code 2018 Edition. The panel layout shall be as indicated by the Pisgah Energy layout drawings dated 9/18/2020.

To the best of our knowledge, based on the information furnished to us, the specifications for the proposed installation are as follows:

- a. Mounting system manufacturer: Ironridge
Product name and model: XR10 Rail
- b. Maximum total weight of PV modules and mounting system: 11385 lb.
- c. Minimum total number of attachment points: 258
- d. Weight per attachment point: 45 lbs
- e. Maximum spacing between attachment points on a rail: 6'-0"
- f. Total surface area of PV modules: 3795 sq.ft.
- g. Maximum distributed weight of PV modules on roof: 3.0 psf

The modules and mounting system shall be installed in accordance with the manufacturer's instructions and accepted industry practice. Mounting rails shall be installed on the existing nail base insulation system with Ecofasten Solar "Eco-44R-NDD" attachment brackets spaced at 4'-6" o.c. maximum along each mounting rail. Install brackets with (8) #15 self-drilling screws using torque controlled drivers to prevent stripping of the substrate.

The scope of this report is limited to matters discussed herein. No opinion is offered, and none should be inferred, regarding other aspects of this structure nor the structure taken as a whole. By accepting this report, you and any other to whom it is distributed, agree to a strict limitation of liability for D. Ben Poss, P.E. and Kloesel Engineering, P.A. to an amount not to exceed the fee paid in hand.

We appreciate the opportunity to be of service to you in this matter. Do not hesitate to contact us if you have any questions or if we can be of further assistance.

Sincerely,



Kloesel Engineering, P.A.

By: D. Ben Poss, P.E.

