September 22, 2024

Mr. Tony Wimberly
Wimberly Builders, LLC

Re: Sunroom Addition
479 D.L. Phillips Lane
Broadway, North Carolina

Mr. Wimberly,

OTG Consulting, PLLC (OTG) was requested to evaluate the design change for the sunroom addition. We understand that an original structural design was performed by Line on Design, dated April 14, 2023. OTG was requested to review the provided value-engineered design performed by you.

The sunroom measures approximately 11'-1" by 29'-8" and will be supported by a shallow foundation system. OTG was provided with a typical cross section detail indicating roof framing, wall framing, and floor framing details. In addition, OTG was provided a plan drawing indicating floor framing layout/spacing as well as overall dimensions. Floor joists for the sunroom are planned to be 2x12 dimensional lumber spaced at 16 inches on-center. The joists will bear on a 2-ply LVL (1-3/4" x 16") band joist adjacent to the house and supported on 16-inch CMU foundation piers. On the opposite wall, the joists will bear on an 8-inch CMU foundation pier, 2-inch insulation board, and brick veneer.

The back wall, away from the house, will be framed with 2x6 studs at 16 inches on-center and 7/16" OSB sheathing. The front wall, adjacent to the house will be supported by either 6x6 fir posts or (3) 2x6 SPF posts. The roof joists will consist of 2x12 spanning approximately 11'-1" and spaced at 16 inches on center. A single-ply LVL (1-3/4" x 14") will be used to support the roof joists at the house with the joists bearing on the 2x6 wall with solid 2x blocking on the opposite wall. The roof will have a 1:12 slope and metal panel roofing with 5/8" OSB sheathing.

Additionally, the existing scissor trusses in the bonus room are being modified to allow for an 8-foot head space. The top chord members will be sistered with 7-1/4" LVL. The LVL's should be fastened using SD10112 screws (#10 x 2-1/2") at 8 inches on center. At the bottom web member of the trusses, the web member should be attached to the top chord using 1/2-inch-thick plywood gusset plate on each side of the connection with (8) SD10112 screws (#10 x 2-1/2"), 4 in the web and 4 in the chord. A 1/2-inch thick plywood gusset plate should also be fastened to each side of the apex of the 8 trusses with (8) SD10112 screws (#10 x 2-1/2"), 4 in each top chord member. The plywood gusset should extend a minimum of 8 inches on each member.

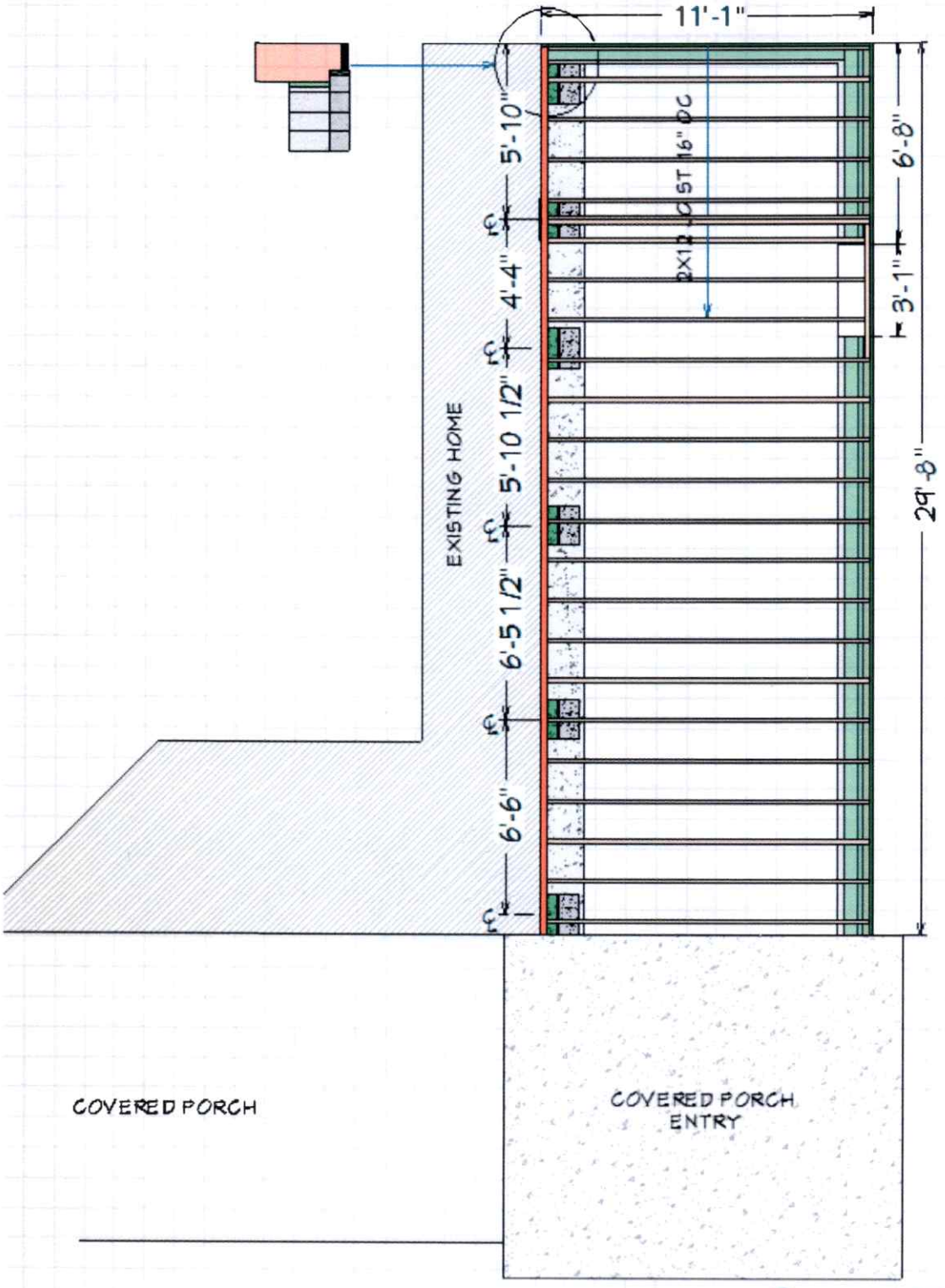
Based on our review of the value-engineered design, the plans are sufficient to support the loads and are in compliance with NC Residential Building Code. OTG recommends that the 6x6 post or (3) 2x6 SPF posts be spaced no more than 8 feet apart and located on a CMU pier for proper load path to the foundation.

We appreciate the opportunity to help you with this. Should you have any questions or need additional information, please contact me at your earliest convenience. We can be reached at 336-414-1179 or at otgconsulting@protonmail.com.

Sincerely,
OTG Consulting, PLLC

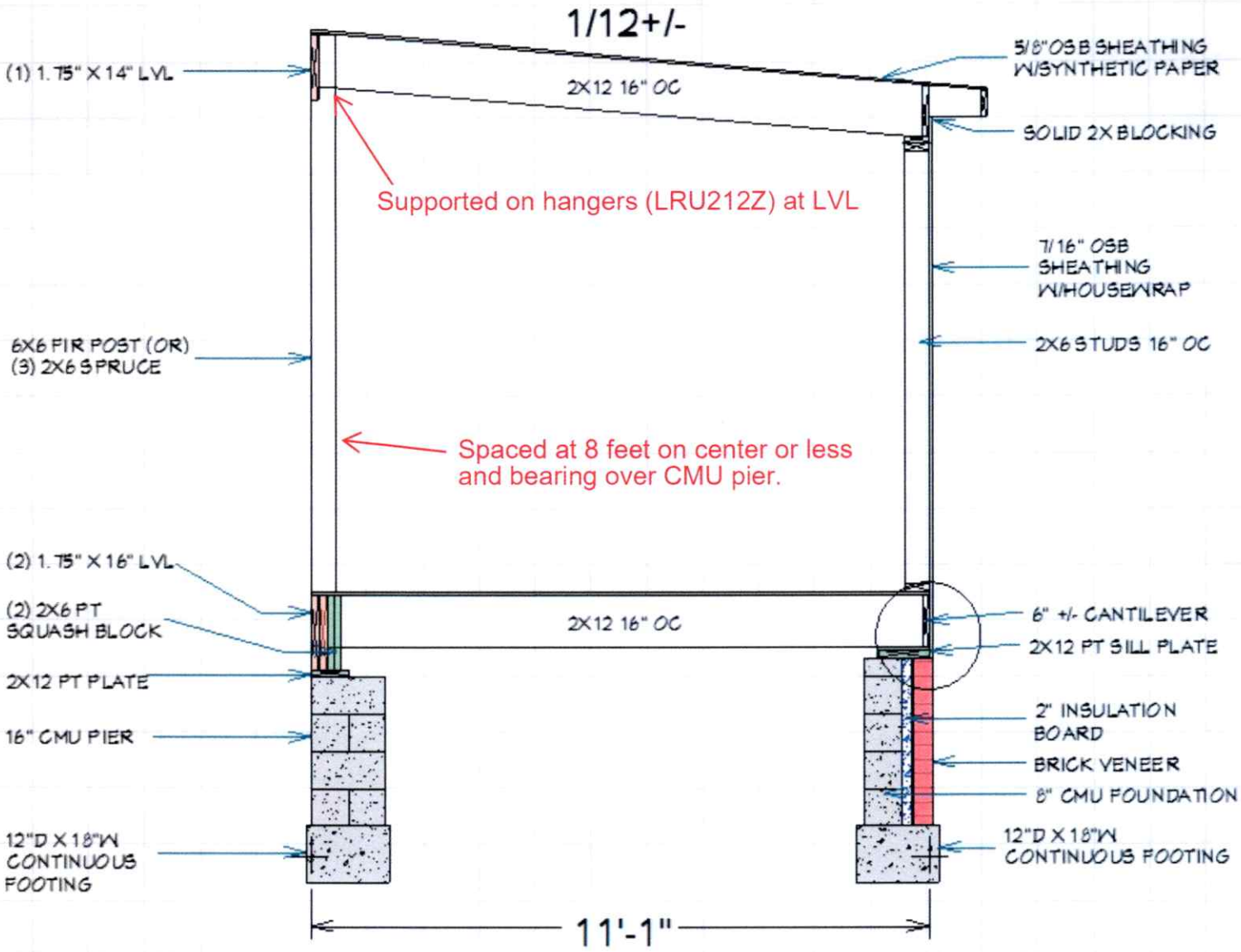
22 Sept 2024
Scott G. Dowell, PE
President
NC PE License No. 037387

SUNROOM OVERVIEW FLOOR DETAIL



NORTH CAROLINA PROFESSIONAL SEAL 037387 ENGINEER SCOTT G. DOWELL

SUNROOM CROSS SECTION DETAIL



NOTES:

- STRUCTURE IS AN ADDITION TO A MANUFACTURED HOME IS DESIGNED TO NOT PUT ANY LOAD ON THE EXISTING HOME.
- ROOF WILL HAVE APPROXIMATELY A 1/12 ROOF PITCH WITH SYNTHETIC UNDERLAYMENT AND METAL ROOF.

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