TYNDALL
ENGINEERING & DESIGN, P.A.

T 919 773-1200 • F 919 773-9658
250 Shipwash Drive, Suite 104 • Garner • North Carolina • 27529
www.tyndallengineering.com

April 19, 2024

Stacy Judd
10 Sweetwater Ln.
Broadway, NC 27505
Email: stacyjudd72@gmail.com

Reference: Engineering Services
80 Sweetwater Ln.
Broadway, NC 27505
TE&D Project No.: 2401-020343

To Whom It May Concern;

As requested, a representative of Tyndall Engineering & Design, PA (TE&D) was on-site to observe the following item(s):

1) Analysis of the existing unpermitted addition with regards to the 2018 North Carolina Residential Building Code.
2) Analysis of porch framing to support proposed 4" thick concrete slab.

The following conclusions and recommendations were noted:

1) We observed the right side of the house was enlarged by an approximately 4'-0" wide addition to the side and to the front right section of the house. The addition was framed as follows:

Roof Framing

The roof of the center addition was framed with 2 x 6 rafters spanning up to 12'-3" with 2 x 4 collar ties at 16" o.c. The roof of the front of the addition was framed with 2 x 6 rafters at 16" o.c. spanning up to 6'-10" with collar ties at 16" o.c..

First Floor Walls And Ceiling Framing

The ceiling at the front of the addition was framed with 2 x 8 joists at 16" o.c. spanning up to 13'-8" left to right. The ceiling at the center of the addition was framed with 2 x 6 joists at 16" o.c. spanning up to 13'-3". The ceiling joists are supported at the center of the addition by a (2) 2 x 10 beam spanning up to 6'-7". The joists are supported at the front of the addition by a (2) 1-3/4" x 11-7/8" LVL beam spanning up to 13'-8" and supported at each end by (3) 2 x 4 jacks bearing on foundation piers below.

Crawlspace Framing

The floor of the front of the addition was observed to be framed with 2 x 6 joists spanning approximately 4'-1" front to rear. The side of the addition was observed to be framed with 2 x 10 joists at 16" o.c. spanning up to 13'-2". The joists were supported by (2) 2 x 10 girders spanning up to 3'-4". The girders were supported by new 16" x 8" CMU piers on 24" x 24" x 8" concrete footings. The walls were supported by (2) 2 x 10 band spanning up to 5'-6" unsupported.

Based on our observations and analysis, the existing configuration is inadequate to support the anticipated loading conditions. TE&D recommends the following framing modifications be made:

a. The existing 2 x 6 joists at 16" o.c. over the addition are to be enhanced to minimum (2) 2 x 6 joists at 16" o.c.

TYNDALL
ENGINEERING & DESIGN, P.A.

T 919 773-1200 • F 919 773-9658
250 Shipwash Drive, Suite 104 • Garner • North Carolina • 27529
www.tyndallengineering.com

b. The existing 2 x 6 rafters over the center of the addition are to be enhanced to a minimum of (2) 2 x 6 rafters at 16"o.c.

2) We observed the steel decking for the proposed concrete porch was supported by 1-5/8" x 3-1/2" steel tube spanning 4'-1" at up to 5'-3" o.c. The steel tubes were supported by the existing CMU wall on a continuous footing at the front and by 8" x 16" piers on 24" x 24" x 8" piers at the rear. Based on our observations and analysis, the existing framing is adequate to support the proposed concrete slab porch. No further modification is required.

Upon completion, the addition framing and newly framed opening will provide the required support for the anticipated loading conditions and meet the requirements of the 2018 North Carolina Residential Building Code. We appreciate being able to assist you during this phase of the project. If you need further assistance or require additional information, please do not hesitate to contact us.

Sincerely,
Tyndall Engineering & Design

Tripp Amos
JMW | 2401-020343

Prentice Tyndall Jr., P.E.

TYNDALL
ENGINEERING & DESIGN, P.A.

T 919 773-1200 • F 919 773-9658
250 Shipwash Drive, Suite 104 • Garner • North Carolina • 27529
www.tyndallengineering.com

Structure Analyzed

All Rafters and Ceiling Joists Over Center of Addition to be Enhanced

TYNDALL
ENGINEERING & DESIGN, P.A.

T 919 773-1200 ▪ F 919 773-9658
250 Shipwash Drive, Suite 104 ▪ Garner ▪ North Carolina ▪ 27529
www.tyndallengineering.com

Porch Analyzed