



January 19, 2023

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Reference: Engineering Services  
905 Cool Springs Rd.  
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TE&D Project No.: 2301-020053

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) The cantilevered roof framing over the rear exterior door.
- 2) The scabbed joists over the front bedroom.
- 3) The kitchen expansion within the garage.
- 4) The garage door openings were not portal framed.

The following conclusions and recommendations were noted:

- 1) We understand the roof framing cantilevers 5'-0" over the rear exterior door. The roof was framed with 2 x 8 rafters at 16" o.c. spanning 15'-0". The ceiling was framed with (2) 2 x 10 joists at 16" o.c. spanning a maximum 10'-0" and cantilevered 5'-0". Based on our observations and analysis, the following modifications are to be made:
  - A) The 2 x 8 rafters are to be reinforced with collar ties at 16" o.c.
  - B) New 2 x 4 vertical studs are to be installed tightly between the 2 x 8 rafters and the (2) 2 x 10 ceiling joists. The new studs are to be installed at 16" o.c. (i.e., every rafter/ceiling joist)
  - C) New 5'-0" wide by 23/32" OSB gusset plates are to be installed to the cantilevered roof framing. The new gusset plates are to be secured to the rafters, ceiling joists, and wall studs (installed in item 1.B.) with (2) rows of 8D nails at 4" o.c.
  - D) The (2) 2 x 10 joists are to be secured together with (3) rows of 10D nails at 16" o.c.
  - E) The wall 10'-0" adjacent to the rear exterior is to be reinforced with Simpson CS16 coil straps (or equivalent) installed per the manufacturer's specification. New coil straps are to be installed at 16" o.c. (i.e., every stud) to prevent uplift from the cantilevered ceiling joists. See attached photo at the top of page 4.
- 2) (3) notched 2 x 8 ceiling joists spanning 13'-10" over the front bedroom were reinforced with 3'-0" long and 5'-0" long "scabs". The existing joists and scabs are suitable and are to be fastened with (2) rows of 10D nails at 4" o.c.



- 3) A 3'-0" x 10'-0" addition to the kitchen was installed within the garage. The floor of the addition was framed with 2 x 10 joists at 16" o.c. spanning 3'-0" front to rear with full bearing at the garage foundation wall and at a (1) 2 x 10 band. Based on our observations and analysis, the (1) 2 x 10 band is not adequately supported and is to be secured to the wall framing with (3) rows of 10D nails at 16" o.c. (i.e., every stud). Additionally, the ledgers are to be secured to the bands with (4) 10D nails per joist.
- 4) We understand that the (2) 9'-0" wide garage doors were not framed using the portal framing method. Based on our observations and analysis, the following modifications are to be made:
  - A) New 1/2" x 8" Simpson Titen HD masonry screws are to be installed per the manufacturer's specifications at each end of the garage doors and between the garage doors. (1) screw is to be installed per location.
  - B) New 23/32" OSB sheathing is to be installed to the interior of the front garage wall. The sheathing is to be secured to all framing members with (1) row of 10D nails at 4" o.c. Sheathing is to be installed in full sheets and is to be cut tightly around openings.

Upon completion, the reinforced framing listed above will provide the required support for the anticipated loading conditions. 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

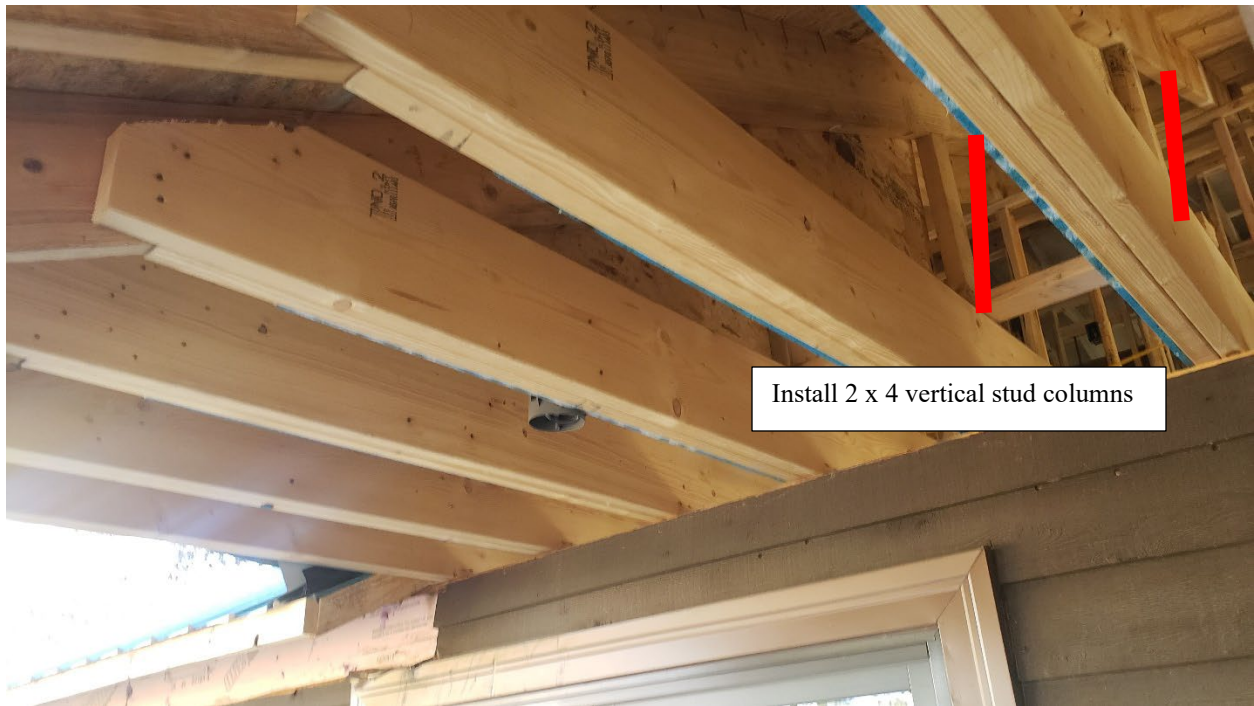
Tripp Amos  
PT III | 2301-020053

Prentice Tyndall Jr., P.E.





### Cantilevered Roof Framing





**“Scabbed” Ceiling Joists**





### **Kitchen Addition within the Garage**





### Garage Door without Portal Framing

