



March 6, 2025

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Reference: Engineering Services
9590 Amis Chapel Rd.
Oxford, NC 27565
TE&D Project No.: 2501-020149

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) Assessment of the crawl framing and foundation in response to observed moisture damage.

The following conclusions and recommendations were noted:

- 1) We understand a plumbing pipe within the crawl space was damaged resulting in moisture build-up and damage within the crawl space. Additionally, insect damage was observed within the crawl framing. The crawl framing was spot checked with a probe to determine the extent of the damage. Based on our observations and analysis, portions of the framing remain structurally suitable despite surface moisture damage. All framing members are to be thoroughly treated to prevent future moisture damage and future damage that may be caused by wood destroying insects. The following framing items are to be repaired:
 - A) The majority of the floor framing below the kitchen, the bedroom directly to the left of the kitchen, and the living room were observed to have significant moisture damage. TE&D recommends removing the existing damaged 2 x 8 floor joists and associated exterior bands and replacing with new, treated 2 x 8 floor joists and bands. New joists are to be installed at 16" o.c.
 - B) The existing 4 x 6 girder spanning left to right approximately 11'-0" from the front of the house was observed to have significant moisture damage. The damaged girder is to be removed and replaced with a minimum, treated (3) 2 x 10 girder in the following sections:
 - 0' to 6' from the left foundation wall
 - 0' to 18' from the right foundation wall
 - C) Due to the expansion of the wood framing from moisture exposure, the front exterior band was observed to be pulling away from the floor framing. As a result, the front exterior walls were observed to be skewed and are no longer fully supported by the crawl framing and foundation. The front exterior band is to be removed and replaced with a new, treated, equivalent member. Additionally, a new treated sill plate is to be installed between the floor framing and the foundation wall. The new sill plate is to be anchored to the foundation per the 2018 NC Residential Building Code. Upon installation of the new band and sill plate, the wall above may be shifted back vertical and attached to the repaired floor framing.



Note: Floor joists may be notched for installation of new sill plate.

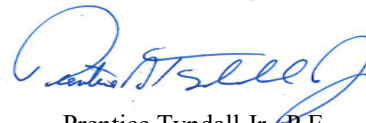
- D) We observed multiple instances of insect damage in existing 4 x 4 reinforcement girders below the living room. All damaged 4 x 4 reinforcement girders are to be removed. No additional reinforcement is required as the new 2 x 8 joists installed in item 1.A. are adequate to support the anticipated loading conditions.
- E) The house framing was observed to not be anchored to the foundation. New Simpson FJA (or equivalent) foundation anchors are to be installed per the manufacturer's specifications at a maximum 6'-0" o.c. at all areas without a new sill plate.
- F) Moisture damage was observed at the rear exterior wall in the back-left bedroom. The bottom plate and a 2 x 4 stud approximately 8'-0" from the left exterior wall are to be removed and replaced with new, treated, equivalent members.
- G) We observed an approximately 1/16" wide, vertically trending crack in the front foundation wall approximately 15'-0" from the left foundation wall. The soils around the foundation were qualitatively probed and subjected to Static Cone Penetrometer (SCP) testing at depths up to 2'-0" below existing grade and were found to be adequate to support the anticipated loading conditions of 2000psf.

Based on our observations and analysis, the existing cracks in the foundation are indicative of the type of cracking typically associated with differential settlement of the underlying soils and shrinkage of the concrete materials. It is TE&D's opinion that the existing cracks do not indicate excessive differential settlement (i.e. more than 1/2" total) and are not a structural concern at this time. Therefore, the existing damage may be regarded as cosmetic and should not affect the overall structural integrity of the dwelling. The foundation cracks may be sealed or pointed up with epoxy and/or mortar. We also recommend that all drains (roof, foundation, HVAC, etc.) be directed away from the foundation with positive drain to daylight.

Upon completion, the above-mentioned recommendations 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
BH | 2501-020149


Prentice Tyndall Jr., P.E.





Site of Inspetion:



Examples of moisture damaged framing:







Front band shifted off foundation wall:





Example of Insect Damage:



Moisture damaged wall framing





Foundation Crack:

